BIOLOGICAL ASSESSMENT
FOR THE PROPOSED
BRAC 2005 AND TRANSFORMATION ACTIONS AT
FORT BENNING, GEORGIA

BIOLOGICAL ASSESSMENT

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prepared for
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CORRECTIONS

In August 2007, differences were detected in the data presented in the text and tables within the results section of the *Biological Assessment for the Proposed BRAC 2005 and Transformation Actions at Fort Benning, Georgia* (Final Biological Assessment) (submitted April 2007). Review of the document found a systematic switching error in Section 6.10.5 of the document that was manifested in numbers containing 13s, 14s and 15s. The document has been proofed and all errors have been corrected in this version of document. Note: Errors were confined to numbers in the text of the document only. All data presented in the tables in Section 6.10.5 of the April 2007 Final Biological Assessment were correct and the number of "takes" that are resulting from the 2008-2012 Transformation projects have not changed from that stated in the April 2007 Final Biological Assessment.

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1 INTRODUCTION

Fort Benning Military Installation (Installation or Fort Benning), located in Chattahoochee and Muscogee Counties, Georgia (GA) and Russell County, Alabama (AL) (Figure 1-1), is currently undergoing major changes in its organizational structure as a result of Base Realignment and Closure (BRAC), Army Transformation, Army Modular Force (AMF), Global Defense Posture Realignment (GDPR) and Army Regulation (AR) 5-10 stationing actions. The net result of these actions is a huge construction program and an increase in range and training land requirements across the entire spectrum of weapons systems and training strategies (United States (US) Army Corps of Engineers (USACE) 2006a).

In accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality's regulations, 40 Code of Federal Regulations (CFR) Parts 1502.4 and 1508.25 and the Army's NEPA regulations 32 CFR Part 651.51(a), the above actions are connected, cumulative or similar and are therefore considered to be 1 action for the purposes of NEPA. These actions are collectively referred to in this document as Fort Benning "Transformation." The potential environmental effects of this action are being evaluated in this Biological Assessment and in a separate Environmental Impact Statement (EIS).

This Biological Assessment is being prepared in accordance with the Endangered Species Act (ESA), Section 7(a)(2), as implemented by 50 CFR Part 402. The proposed action is considered to be a major construction activity under 50 CFR Part 402.12(b) and preparation of this Biological Assessment is therefore required in accordance with the procedures set forth in 50 CFR Part 402.12. The purposes of this Biological Assessment are to evaluate the potential effects of the proposed action on Federally-listed species within the Action Area, and, if such effects are likely to be adverse, to serve as the basis for initiating formal consultation with the US Fish and Wildlife Service (USFWS).

Of the Transformation actions, the greatest impact will result from the movement of the US Army Armor Center and School (USAARMC/S) from Fort Knox, Kentucky (KY) to be combined with the US Army Infantry Center and School (USAIC/S) already based at Fort Benning, together forming the Maneuver Center of Excellence (MCOE).

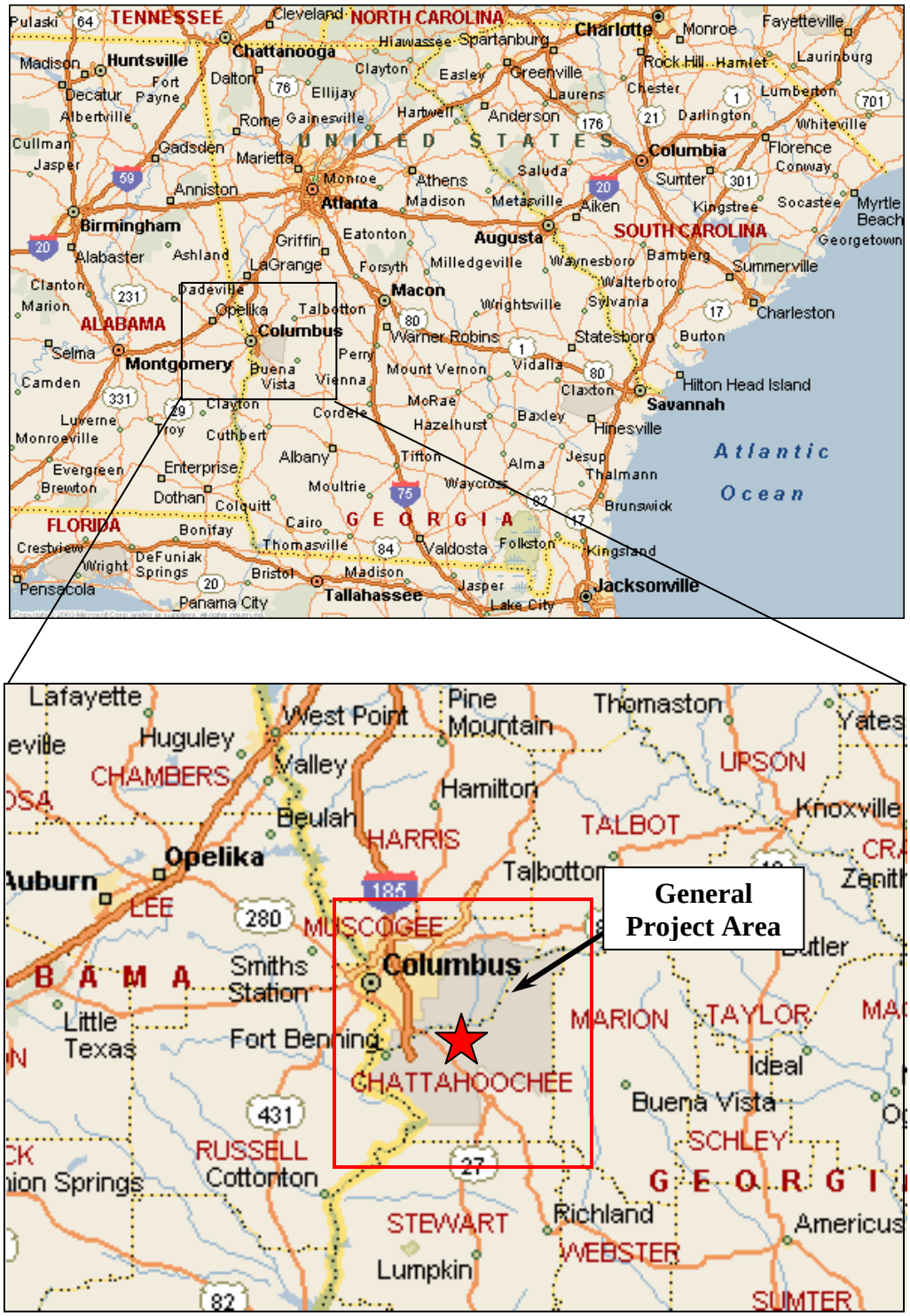


Figure 1-1. General location of the Fort Benning Military Installation near Columbus, Georgia.

2 BACKGROUND/ BASELINE MISSION AND OPERATIONS

Fort Benning is the Home of the Infantry and the USAIC/S and prides itself on being one of the world's premier war fighting schools and deployment centers. The Installation consists of 181,275 acres on either side of the Chattahoochee River in western GA and eastern AL (Figure 1-1). The majority of the training facilities and 93 percent (%) of the total land area are in GA in Chattahoochee and Muscogee Counties. The southwestern corner of the Installation, approximately 12,000 acres, is located in Russell County, AL.

2.1 USAIC/S MISSIONS AND TRAINING

2.1.1 BASELINE MISSION

Fort Benning has 3 broad missions: to provide the nation with the world's best trained Infantry Soldiers and adaptive leaders imbued with the Warrior Ethos, to provide a power projection platform capable of deploying and redeploying Soldiers, civilians and units anywhere in the world on short notice and to define required capabilities for the Infantry to meet the needs of the Future Force (Department of the Army (DA) 2006a). The units stationed at Fort Benning are diverse and consist of varying combinations of mobile mechanized (tracked/ wheeled military vehicles) infantry task forces with organic armor, mechanized infantry, field artillery and combat engineer assets utilizing both mounted (riding on mechanized vehicles) and dismounted (movement by foot) elements for offensive and defensive engagements.

In peacetime, Fort Benning provides ranges and maneuver training areas principally designed to support the Training and Doctrine Command (TRADOC) mission of initial entry training (IET) for Infantry Soldiers and Officers, basic and advanced level Noncommissioned Officer (NCO) and Officer training courses, the Army's Airborne and Ranger schools, and the continued study, testing and development of future joint and combined Infantry doctrine, weapon systems, weapons tactics, techniques and procedures. TRADOC units on the Installation include the 29th Infantry Regiment (Regt), 11th Infantry Regt, NCO Academy, Infantry Training Brigade (Bde), Basic Combat Training Brigade and Physical Fitness School (Table 2-1).

Fort Benning also provides the home station training facilities for Forces Command's (FORSCOM's) 3rd Bde of the 3rd Infantry Division (3rd ID) (Mechanized (Mech)), which has its Division headquarters at Fort Stewart, GA, Special Operations Command's (SOCOM's) 75th

Table 2-1. Units currently at Fort Benning.

USAIS/ TRADOC	Tenant Units
11th Infantry Regt	3 ID/ 3 BDE (Mech)
29th Infantry Regt	75th Ranger REGT
Basic Combat Training BDE	11th ENG Group
Combined Arms and Tactics Directorate	WHINSEC
Directorate of Operations and Training (G-3)	Advanced Marksmanship Unit (AMU)
Infantry Training BDE (ITB)	Criminal Investigation Command (CID)
Office of Infantry Proponency (OIP)	Dental Activity (DENTAC)
Physical Fitness School (PFS)	Logistic Assistance Office
Ranger Training BDE (RTB)	Medical Department Activity (MEDDAC)
Non-commissioned Officers (NCO) Academy	U.S. Customs
	US Army Reserve
	U.S. Air Force
	362nd ENG Company (Multi-Role Bridge)
	11th ENG Battalion (BN)(Combat)
	13th Corps Support BN
	Army Research Institute
	14th Combat Support Hospital

Data compiled from RDP (USACE 2006) and US Army Infantry Homepage (DA 2006a).

Ranger Regiment (Regt) and numerous other active deployable units. The Western Hemisphere Institute for Security Cooperation (WHINSEC) is also located at Fort Benning, which has the mission to train cadets, NCOs and Officers from various Latin American countries (USACE 2006a).

The average daily population at Fort Benning consists of 17,771 military personnel, 8,690 civilian employees and 9,386 students based at Fort Benning (J. Brown, Science Applications International Corporation (SAIC), pers. comm.) (Table 2-2).

Table 2-2. Baseline training throughput at Fort Benning

Type of Training	Number of Students
Infantry School	
Total Student Input	29,915
Daily Average Load	3,305
Infantry Training Brigade	
Total Student Input	19,256
Daily Average Load	5,008
Basic Combat Training Brigade	
Total Student Input	5,319
Daily Average Load	946
Western Hemisphere Institute for Security Cooperation	
Total Student Input	450
Daily Average Load	97
Medical Department Activity (MEDAC)	
Average Load	30
Daily Average Load- Total	9,386

2.1.2 TRAINING ASSETS

Fort Benning has 181,275 acres within the Installation boundary. Permanently dudded impact areas comprise 15,554 acres, or 9% of the total Installation (Figure 2-1). There are 141,471 acres available for training, consisting of 48,171 acres of light maneuver land, 62,958 acres of heavy maneuver land and 30,342 acres of non-dudded impact area. The maneuver lands and non-dudded impact areas comprise 78% of the Installation's total area.

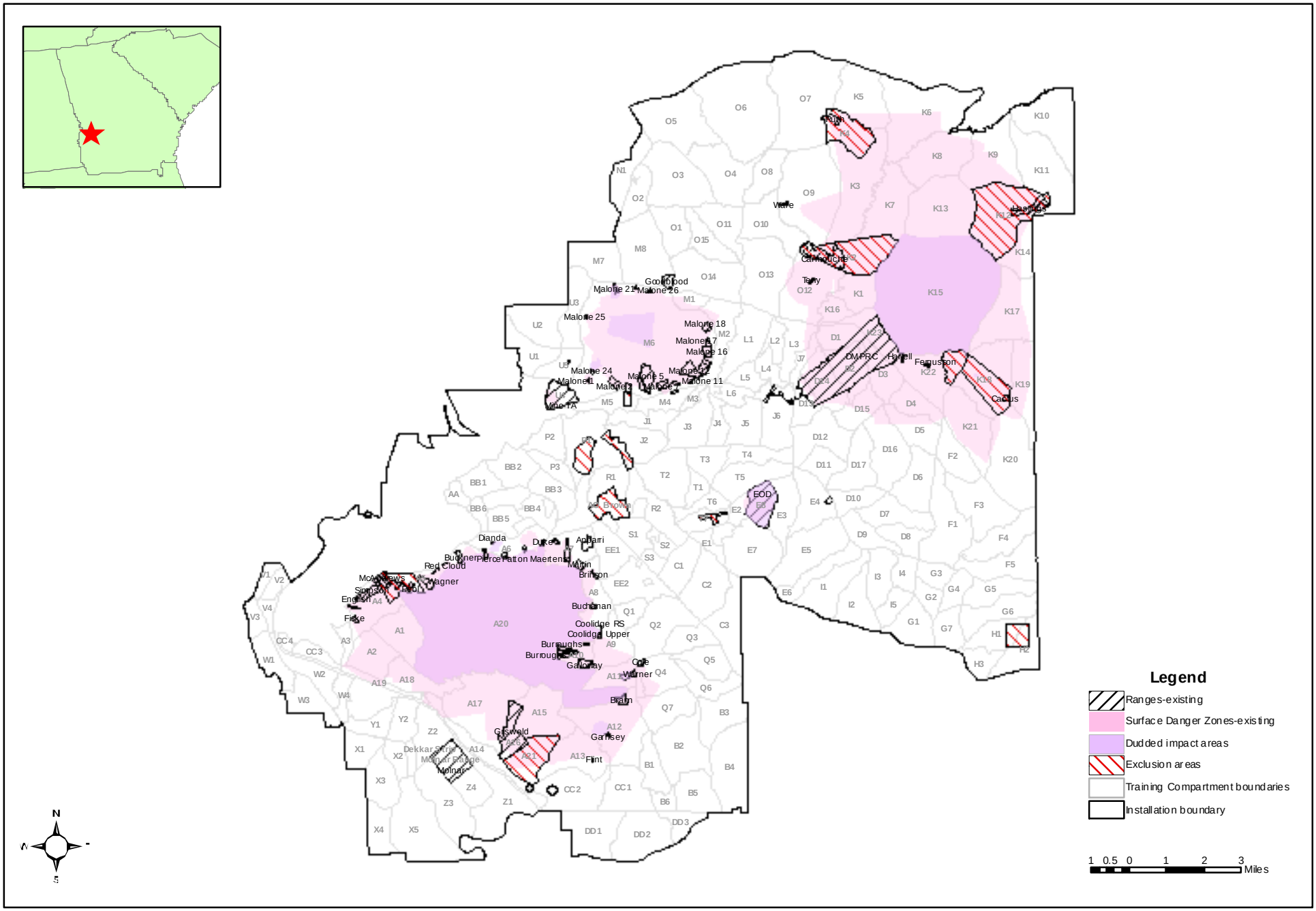


Figure 2-1. Location of existing ranges, dudded impact areas, exclusion areas and training compartments on Fort Benning.

Fort Benning has the following active training facilities (USACE 2006a):

- 38 basic marksmanship ranges (used to qualify or train on rifles, pistols, sniper rifles, grenade launchers, subcaliber light anti-armor weapons, shotguns, machine guns and grenade machine guns)
- 9 direct fire gunnery ranges (used to qualify and train tank and Bradley crews, including ranges used to qualify anti-armor weapons systems using service ammunition)
- 19 collective live fire ranges (used for collective training events, such as Infantry Squad Battle Courses (ISBCs) and Infantry Platoon Battle Courses (IPBCs), multipurpose range complexes and aerial gunnery ranges)
- 36 indirect firing facilities (ranges or dedicated firing points used for the qualification and training of mortars, field artillery, or air defense artillery and observation posts)
- 7 special live fire ranges (ranges and training areas used for qualification and training of demolitions, live hand grenades and claymores)
- 21 other, non-live fire facilities (assets that are used to train Soldiers without the use of weapons such as rappel towers, drop zones, obstacle courses, gas chambers, and other facilities not covered in the previous categories)
- 35 drop/ landing zones

Approved projects currently under construction on Fort Benning include construction, operation and maintenance of an ISBC, IPBC and a Digital Multi-Purpose Range Complex (DMPRC). The DMPRC is expected to be operational in 2008 and will provide a state-of-the-art range facility, meeting the Installation's training needs for conducting effective advanced gunnery exercises in a realistic training environment. Changes in training on other existing ranges (Carmouche and Hastings) will occur to incorporate the new DMPRC. Basic and intermediate tank and BFV training will now take place at the DMPRC, and Carmouche and Hastings ranges will be dedicated to the training of vehicular mounted weapons systems and dismounted training scenarios utilizing BFVs, Strykers, and developing future technologies. In addition, the Installation is, and has been, upgrading various firing points and existing ranges as funding allows. Actions associated with the development, operations and maintenance of these

ranges have been assessed by separate NEPA documentation and were the subject of previous formal or informal consultation with the USFWS.

The inventory of existing ranges is provided in Table 2-3 along with the average number of days used per year (computed based on average use in the 3 previous fiscal years) and projected use (based on 242 annual training days). The ranges used most heavily were the Urban Assault Course, small Military Operations Urban Terrain (MOUT), and non-automated IPBC. According to the Range Training and Land Program (RTLP) Development Plan (RDP) (USACE 2006a), overall utilization of range facilities was relatively steady for fiscal year (FY) 2004 and FY 2005, but increased in FY 2006 based on utilization data for the first half of FY 2006 and projected utilization for the remainder of the year. These utilization rates were greatly affected by wartime deployments during these years. Projections of future requirements more accurately reflect baseline demand, but also include projected Armor School requirements. When this information is analyzed in context of projected range throughputs and range capacities, shortfalls are identified. Many of these shortfalls are because Fort Benning requires standard, modernized ranges for improved training in order to meet their current mission requirements (USACE 2006a).

Restricted areas represent areas that are used for training activities that are incompatible with maneuver training activities and include Ruth, Hastings, Carmouche, Cactus, Concord, DMPRC, Camp Darby, Malone MOUT, the railroad head at Ochillee Junction, McKenna MOUT, and Area of Operation (AO) Brown in the northern range area, and the Kunzig Range Complex and portions of the Dixie Road Range Complex in the southern range area (Figure 2-1).

Every live fire range has a surface danger zone (SDZ), which is an “invisible” line that surrounds the firing range and ordnance impact area portions of a range. The SDZ is an “exclusion” or safety zone for personnel on or in the vicinity of the range. Its function is to provide a buffer zone that accounts for projectiles, fragments, debris and components resulting from the firing of weapon systems; these items have an approximately one in a million chance of landing outside of the SDZ (Fort Benning 2004a). SDZs differ in size and configuration depending on the type of activity occurring on the range (small arms training versus tank gunnery), the location of the firing positions and the type of ammunition being fired on the range (AR 385-63, 2003). The area within the SDZ is closed to all personnel not directly utilizing the range complex during exercises.

Table 2-3. Range training inventory and utilization at Fort Benning.

Range Title	Number of Facilities	Average Days Used/ Year	Days Required
Basic Weapons Marksmanship Ranges			
Basic 10/25 meter Firing Range (M16 zero)	7	124	301
Automated Field Fire Range	1	118	295
Automated Record Fire Range Remote Target System	3	162	398
Modified Record Fire Range Remote Target System	2	118	179
Known Distance Range	4	120	371
Sniper Range	1	185	110
Nonstandard Small Arms Range	9	101	468
Combat Pistol Qualification Course/ Military Police Firearms Qualification Course	1	75	182
Multipurpose Machine Gun	1	82	NA
Multipurpose Machine Gun Automated	2	70	303
M203 Grenade Launcher Range	2	47	140
Direct Fire Gunnery Ranges			
Anti-Armor Tracking and Live Fire Range	3	104	14
Field Artillery Direct Fire Range	1	30	11
Stationary Gunnery Range	1	46	287
Multipurpose Training Range (Non-Automated)	2	59	NR
Multipurpose Training Range (Automated) Carmouche	1	80	491
Aerial Gunnery Range	1	1	NR
Collective Live Fire Ranges			
Tank Platoon Battle Run (Cactus/Whitson)	1	36	NR
UAC	2	287	464
Shoot House	4[a]	10	232
Infiltration Course	1	76	299
Fire and Movement	4[b]	115	126
Squad Defense Range	1	19	269
ISBC (Non-Automated)	1	124	NR
IPBC (Non-Automated)	2	232	216
MOUT Small	2	258	NR
Convoy Live Fire	1	NR	170
Indirect Fire Facilities			
Mortar Scaled Range	1	49	NA
Mortar Range/Firing Points	19	123	46
Field Artillery Indirect Fire Range	22	101	18
Observation Bunker	1	238	NA
Special Live Fire Ranges			
Hand Grenade Familiarization Range	1	49	306
Light Demolition Range	4	35	180

Table 2-3 (cont'd.). Range training inventory and utilization at Fort Benning.

Range Title	Number of Facilities	Average Days Used/ Year	Days Required
Other, Non-Live Fire Facilities			
Rotary Wing Runway Unsurfaced	31	53	NA
Nuclear, Biological, Chemical Chamber	2	91	259
Bayonet Assault Course	1	NA	270
Target Detection Range	3	73	NA
Hand-to-Hand Combat Pit	3	NA	348
Confidence Course	3 [c]	37	179
Leadership Reaction Course	1	70	19
Tracked Vehicle Drivers Course	1	NA	275
Tracked Vehicle Recovery Specialist	1	NA	225
Amphibious Vehicle Training Area	1	53	NA
Combat Trail	1	98	42
Rappelling Training Area	1	53	86
Obstacle Course	1	NA	384
Land Navigation Course	4	53	314
Maneuver Training Areas [d]			
Maneuver/ Training Area Light Forces	83	54	NA
Maneuver/ Training Area Heavy Forces	86	84	NA

Notes: a. Construction on two of the four shoot houses was recently completed; utilization data are not available for inclusion.

b. One of the Fire and Movement Ranges is inactive.

c. Utilization data were unavailable for two of the three confidence courses.

d. Maneuver/training area requirements are calculated based on km ^{2} days required. For light forces, 141,581 km ^{2} are required. For heavy forces, 155,909 km ^{2} are required.

NA = not available NR = not requirement

Source: USACE 2006a

The areas of concern within the SDZ are the dispersion area, impact area, ricochet area, target area, Area A and Area B (defined below) (AR 385-63, 2003). The dispersion area consists of the distribution of rounds fired by one weapon or group of weapons under identical or nearly identical circumstances. It represents a pattern of fire and helps predict where rounds fired by a certain weapon or weapon system will land. The impact area is the primary "danger" area for the range and encompasses the area of impact for all targets within the range. The ricochet area consists of the zone between the impact area and Area A and accounts for ammunition that ricochets off targets, berms, hills or other obtrusive elements and lands outside of the line of fire. The target area is the location where the targets are placed and rounds are expected to land. Area A is the secondary "danger" area and parallels both sides of the impact area; it is designed to contain fragments from rounds exploding or ricocheting on the far right and far left sides of the impact area. Area B is also a secondary "danger" area and is located down-range (far edge) of the impact area; it is designed to contain fragments from rounds exploding or ricocheting on the far edge of the impact area.

Areas within SDZs are closed to all personnel not directly using the range complex during ongoing exercises. SDZs are activated when range complexes are in use. When they are not in active use, areas within SDZs are accessible for other compatible land uses such as training, maintenance and land management activities.

2.2 BASE REALIGNMENT AND CLOSURE

The US Department of Defense (DoD) is reorganizing installation infrastructure, doctrine and force structure to support more efficiently and effectively its force structure and increase operational readiness through the BRAC process. On 8 September 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended a set of domestic realignment and closure actions, including those "BRAC" actions addressed in this Biological Assessment (BRAC Commission 2005). These recommendations were approved by the President on 15 September 2005 and were sent forward to Congress. Congress did not make any alterations to the recommendations, and on 9 November 2005 the recommendations became law (DoD 2006). The Defense Base Closure and Realignment Act of 1990 requires that all BRAC-directed closures and realignments must be initiated no later than 2 years after the date the President transmits the BRAC Commission's report to Congress (Sec. 2904 (a)(3), Public Law

(PL) 101-510, as amended). All such closures and realignments must be completed within 6 years of that same date (Sec. 2904(a)(4), PL 101-510, as amended). Therefore, the BRAC-directed actions at Fort Benning must be initiated no later than 15 September 2007 and completed no later than 15 September 2011.

The 2005 BRAC represents the 5th round of BRAC actions. In previous rounds of BRAC, the explicit goal was to save money and downsize the military in order to reap a "peace dividend." While acknowledging the importance of financial savings as a BRAC goal in this round, the BRAC Commission went beyond a business model analysis of DoD's recommendations and weighed the strategic environment within which recommendations would be implemented and their effect on DoD's transformational goals. The purpose of many of the 2005 BRAC-directed actions was to advance the goals of Army Transformation, improve capabilities and enhance military value (BRAC Commission 2005). This initiative will bring approximately 12,683 people to Fort Benning (see Section 4.3.1).

2.3 ARMY MODULAR FORCE

In October 1999, the Secretary of the Army and the Chief of Staff introduced what is now termed the AMF initiative (U.S. Army Corps of Engineers (USACE 2002)). Using this initiative, the Army is transitioning from a division-based organization to a modular brigade-based organization. The resultant combat arms brigades will be task organized with organic combined arms capabilities, whereas supporting brigades will have standardized headquarters, but variable subordinate units (Eastin 2006).

The transformation of Army forces responds to the Army's need to become more strategically responsive and dominant at every point in the spectrum of operations. In March 2002, the Army published its *Programmatic Environmental Impact Statement for Army Transformation* for its proposal to conduct a multiyear, phased and synchronized program of transformation (USACE 2002). This EIS covers a series of activities affecting virtually every aspect of Army doctrine, training, leadership development, organizations, installations, materiel and Soldiers occurring over a 30-year time period. On 11 April 2002, the Army issued a Record of Decision (ROD) reflecting its intent to transform the Army (USACE 2002).

The AMF initiative involves converting to a modular force to make the Operational Army more powerful, flexible and rapidly deployable. This modular conversion effort is driven

both by wartime necessities and the need to support the homeland. AMF is the greatest restructuring of Army forces since World War II and it affects nearly every combat and support organization in the Army. AMF is aimed at increasing the quality and the effectiveness of the Army through the creation of Brigade Combat Teams (BCTs), which are the Army's essential fighting units, and standardizing Support Brigades, Theater Commands and Headquarters that are all organized for immediate deployment and employment. The Army's 3 primary goals for reorganizing into a modular, brigade-based force are as follows:

• Increase the number of available BCTs to meet operational commitments while maintaining combat effectiveness that is equal to, or better than, that of previous divisional BCTs.

• Create brigade-based combat and support formations of common organizational designs that can be easily tailored to meet the varied demands of the Geographic Combatant Commanders, reducing joint planning and execution complexities.

• Redesign organizations to perform as integral parts of the Joint Force, making them more effective across the range of military operations and enhancing their ability to contribute to joint, interagency and multinational efforts (DoD 2006).

The Army plans to form a rotational pool of 70 BCTs in order to sustain global commitments, surge forces for unforeseen contingencies and reduce stress on Soldiers and equipment. Of this rotational pool of 70 BCTs, 42 will be in the active component and 28 will be in the Army National Guard. These BCTs will be organized into one of three standard designs: Infantry, Heavy or Stryker. More than 200 active and reserve Support Brigades will support these BCTs to enable them to accomplish a broad range of missions and provide essential capabilities to support civil authorities in homeland defense missions and disaster relief. Support Brigades are organized into two categories: Multi-functional Support Brigades and Functional Support Brigades. The Multi-functional Support Brigades perform operational roles including combat aviation, combat support (maneuver enhancement), sustainment, fire (e.g., close fire support/ collaboration with joint armed forces fire support on precision-strikes, counterstrikes, etc.) and battlefield surveillance. The Functional Support Brigades perform broad support roles on a theater-wide basis including air defense, engineer, explosive ordnance disposal (EOD), Military Police (MP), signal and others. Most combat formations and headquarters will be complete by 2008, Theater Army Headquarters will be completed by 2009 and Support

Brigades will be completed by 2011 (DoD 2006). This initiative will bring approximately 671 people to Fort Benning (see Section 4.3.1).

2.4 GLOBAL DEFENSE POSTURE REALIGNMENT

The reshaping of the domestic military infrastructure includes providing basing for the return of units currently based overseas as part of the GDPR (previously termed Integrated Global Presence and Basing Strategy).

At the request of the Chairman of the Joint Chiefs of Staff, combatant commanders submitted a series of recommendations for overseas basing plans for their respective areas of responsibility. The recommendations were part of an interagency assessment of the DoD's long-term overseas force projection and basing needs. The assessment resulted in a series of recommendations which provided the blueprint outlining the size, character and location of long-term overseas forces presence. On the basis of the GDPR results, the Secretary of Defense announced that some forces currently based overseas will return to the US over a period of years (Commission on Review of Overseas Military Facility Structure of the United States 2005). The 2005 BRAC recommendations take into account and adopt some of the basing recommendations of the GDPR. This initiative will bring approximately 71 people to Fort Benning (see Section 4.3.1).

2.5 OTHER DISCRETIONARY STATIONING ACTIONS

Finally, some discretionary stationing actions (activations, inactivations, realignments and relocations), including those authorized by Army Regulation (AR) 5-10 Stationing (DA 2001), contribute to and are interrelated with the Transformation process. These actions will bring approximately 644 people to Fort Benning (see Section 4.3.1).

2.6 APPLICABLE ENVIRONMENTAL LEGISLATION, REGULATIONS AND AGREEMENTS

Environmental documents, agreements and legislation pertinent or applicable to this Biological Assessment include:

Endangered Species Act. In accordance with Section 7(a) (2) of the ESA, a federal agency (in this case, the Army) must consult with the Secretary of the Interior to ensure that implementation of the proposed action is not likely to jeopardize the continued existence of any

Federally Threatened or Endangered species or result in the destruction or adverse modification of any designated Critical Habitat for Threatened or Endangered species.

A written Biological Assessment is required for all major construction activities prior to a Federal agency authorizing, funding or implementing proposed actions that may adversely affect a Federally Threatened or Endangered species or its Critical Habitat. The purpose of the BA is for the action agency to determine how the proposed action may affect a Federally-listed species or designated critical habitat. If it results in a determination that the action "may affect" and "is likely to adversely affect" a Federally-listed species or designated critical habitat, formal consultation is required. The contents of the BA are discretionary; however, if it is to be used to initiate formal consultation it must at a minimum contain descriptions of the following: (a) the proposed action; (b) the area likely to be affected; (c) listed species that may be affected; (d) the manner in which such species may be affected and non-federal cumulative effects; (e) relevant reports and studies; and (f) any other relevant available information relevant to the action, species and effects (USFWS and National Marine Fisheries Service (NMFS) 1998).

Formal consultation involves up to a 90-day consultation period and an additional 45-day period for the USFWS to prepare a Biological Opinion (BO) (135 days total). A BO is a written statement from the USFWS which summarizes the information on which the opinion is based and details how the proposed action will affect the species or its Critical Habitat. If the proposed action is expected to result in Incidental Take ("take") of a Federally Threatened or Endangered species, an Incidental Take Statement is also included in the BO. The BO, in addition to discussing the information upon which it is based, must also disclose the direct, indirect and cumulative effects of the action on listed species. It must determine whether the overall effect is likely to jeopardize the continued existence of a listed species; and, if so, offer reasonable and prudent alternatives for the agency to implement. If the ultimate opinion is one of "no jeopardy," it must include an incidental take statement ("take"). In addition to specifying the amount of Incidental Take allowed, the statement must include reasonable and prudent measures (RPMs), implemented by mandatory terms and conditions, to minimize impacts to the species. Incidental Take Statements are issued for the specific action and the type of take expected (e.g., cluster abandonment due to loss of foraging habitat versus direct removal of cavity trees) proposed by the action agency. The BO establishes situations requiring re-initiation of formal consultation, including exceeding the level of authorized "take". In addition, it suggests discretionary

conservation recommendations the action agency can implement to meet its duty to conserve listed species under Section 7(a)(1) of the Act (USFWS and NMFS 1998).

USFWS red-cockaded woodpecker (RCW) (*Picoides borealis*) policies and guidance. The 2003 RCW Recovery Plan (Recovery Plan) (USFWS 2003a) establishes guidelines, protocols and policies for the management, monitoring and recovery of the RCW. The Recovery Plan establishes a recovery goal and establishes Fort Benning as a primary core population. Since approval of the Recovery Plan, the USFWS has issued additional guidance on the determination of Incidental Take and the information required in Biological Assessments, which includes up to 5 levels of analysis for projects impacting RCWs: Foraging Partition, Group, Neighborhood, Population and Recovery Unit (USFWS 2005). Additional guidance and clarifications since the Recovery Plan address the use of the USFWS RCW Foraging Habitat Matrix software (Matrix) for foraging habitat analyses (FHAs) (USFWS 2006a) and protocols for monitoring the effect of traffic on nesting RCWs (USFWS 2006b).

NEPA Process. Every action with a potential environmental effect (e.g., training exercises, timber operations or construction) is required to be preceded by the submission of a completed Fort Benning Form 144-R (FB Form 144-R) to the Environmental Management Division (EMD), Directorate of Public Works (DPW). This form is not the same as the record of environmental consideration as defined in the Army NEPA regulation. Submittal of Fort Benning's Record of Environmental Consideration (REC) constitutes the first step in NEPA compliance at Fort Benning. The NEPA process provides the necessary environmental analysis required to establish that proposed actions are eligible for categorical exclusions in accordance with Army NEPA Regulation. The NEPA process also helps to determine if proposed actions have been adequately covered by existing NEPA documents (Environmental Assessment (EA) or EIS) and would therefore be exempted from further NEPA consideration. This process is discussed in greater detail in Section 8, as well as what scenarios cannot be approved under this level of environmental analysis.

Sikes Act, 16 U.S.C. 670a, AR 200-3. This regulation sets forth responsibilities, policies and procedures to wisely use, scientifically manage and systematically restore renewable natural resources existing on Army lands consistent with the local military mission, national security and current Federal laws pertaining to renewable natural resources and the quality of the environment (DA 1995). This regulation requires implementation of Integrated Natural Resources

Management Plans (INRMPs), as well as applicable Endangered Species Management Plans (ESMPs).

INRMP and ESMPs. Fort Benning currently has ESMPs for the RCW, bald eagle (*Haliaeetus leucocephalus*), wood stork (*Mycteria americana*), American alligator (*Alligator mississippiensis*) and relict trillium (*Trillium reliquum*), which are appendices to the Installation's INRMP. The INRMP was approved on 30 September 2001 with the final RCW ESMP added upon its completion and approval. The INRMP brings together in one document all of the plans and information relating to natural resources management at Fort Benning. It is designed to serve as the comprehensive repository of planning information and management theory and practice. Its underlying purpose is to ensure that natural resource conservation measures and military activities on Fort Benning training land and cantonment areas are integrated and are consistent with Federal stewardship requirements.

The USFWS issued a BO on the RCW ESMP (USFWS 2002), which approved use of the 1996 Management Guidelines for the Red-cockaded Woodpecker on Army Installations (1996 Army Guidelines) (DA 1996) on Fort Benning. This superseded a 1994 Jeopardy Biological Opinion (JBO) that, among other restrictions, bound Fort Benning to the stricter 1994 Army Guidelines.

1996 Army Guidelines. The 1996 Army Guidelines (DA 1996) apply to all Army installations where the RCW is present and establish baseline standards for RCW management on which each installation's RCW ESMP is developed. The Guidelines include setting installation RCW population goals, training restrictions, habitat monitoring and management and RCW monitoring and management (DA 1996) (Table 2-4).

2006 Army Guidelines. The 1996 Guidelines were recently updated to incorporate the Revised RCW Recovery Plan (USFWS 2003a) and updated scientific data. These guidelines are currently the subject of consultation with the USFWS. Once approved, installations will be required to revise their INRMPs with an Endangered Species Management *Component* (ESMC) (ESMPs are termed ESMCs in the 2006 Guidelines) to reflect the new RCW/ military training guidance provided in the 2006 Guidelines. The new guidelines may be implemented upon approval of installation ESMCs through consultation with USFWS (DA 2006b). Revision of Fort Benning's INRMP is in progress, however, due to the magnitude of changes expected from

Table 2-4. Training activity permitted within marked red-cockaded woodpecker (RCW) buffer zones according to the 1996 Army RCW Guidelines (DA 1996).

	Allowed within 200 ft. of marked cavity tree?
MANEUVER AND BIVOUAC:	
HASTY DEFENSE, LIGHT INFANTRY, HAND DIGGING ONLY (2 HOURS MAXIMUM)	YES
HASTY DEFENSE, MECHANIZED INFANTRY/ARMOR	NO
DELIBERATE DEFENSE, LIGHT INFANTRY	NO
ESTABLISH COMMAND POST, LIGHT INFANTRY	NO
ESTABLISH COMMAND POST, MECHANIZED INFANTRY/ARMOR	NO
ASSEMBLY AREA OPERATIONS, LIGHT INFANTRY/MECH INFANTRY/ARMOR	NO
ESTABLISH CS/ CSS SITES	NO
ESTABLISH SIGNAL SITES	NO
FOOT TRANSIT THRU THE COLONY	YES
WHEELED VEHICLE TRANSIT THRU THE COLONY (1)	YES
ARMORED VEHICLE TRANSIT THRU THE COLONY (1)	YES
CUTTING NATURAL CAMOUFLAGE, HARDWOOD ONLY	YES
ESTABLISH CAMOUFLAGE NETTING	NO
VEHICLE MAINTENANCE FOR NO MORE THAN 2 HOURS	YES
WEAPONS FIRING:	
7.62mm AND BELOW BLANK FIRING	YES
0.50 CAL BLANK FIRING	YES
ARTILLERY FIRING POINT/ POSITION	NO
MLRS FIRING POSITION	NO
ALL OTHERS	NO
NOISE:	
GENERATORS	NO
ARTILLERY/ HAND GRENADE SIMULATORS	YES
HOFFMAN TYPE DEVICES	YES
PYROTECHNICS/ SMOKE:	
CS/RIOT AGENTS	NO
SMOKE, HAZE OPERATIONS ONLY, GENERATORS OR POTS (2)	YES
SMOKE GRENADES	YES
INCENDIARY DEVICES TO INCLUDE TRIP FLARES	NO
STAR CLUSTERS/ PARACHUTE FLARES	YES
HC SMOKE OF ANY KIND	NO
DIGGING:	
TANK DITCHES	NO
HASTY INDIVIDUAL FIGHTING POSTIONS, HAND DIGGING ONLY, FILLED AFTER USE	YES
DELIBERATE INDIVIDUAL FIGHTING POSITIONS	NO
CREW-SERVED WEAPONS FIGHTING POSITIONS	NO
VEHICLE FIGHTING POSITIONS	NO
OTHER SURVIVABILITY/ FORCE PROTECTION POSITIONS	NO
VEHICLE SURVIVABILITY POSITIONS	NO

NOTES:

1. Vehicles will not get any closer than 50 feet of a marked cavity tree unless on existing roads, trails or firebreak.

2. Smoke generators and smoke pots will not be set up within 200 feet of a marked cavity tree, but the smoke may drift through the 200 feet circle around a cavity tree.

the proposed action, a delay in revision was approved. The revised INRMP and RCW ESMC are expected to be completed in late 2007/ early 2008.

Restrictions established in the 2006 Guidelines are the same as those described in the 1996 Guidelines for populations with <250 RCW potential breeding groups (PBGs). However, the 2006 Guidelines allow the removal of training restrictions on clusters incrementally as installations exceed 250 PBGs. While the 2006 revisions to the Army RCW Management Guidelines may relax training restrictions as populations exceed established numbers, habitat management practices must continue to be implemented for all RCW clusters (DA 2006b).

Many of the training restrictions in the 1996 Guidelines remained the same in the 2006 Guidelines. In this Biological Assessment, where the training restrictions being discussed are included in both sets of Guidelines, they are collectively referred to as the **"Army RCW Guidelines (DA 1996, DA 2006b)."**

Land Exchange. A land exchange between Fort Benning and the City of Columbus (City) was finalized in 2001 (Land Exchange). Development of the City property, the Muscogee Technology Park (MTP), would result in the Incidental Take of RCW Cluster N02-01. The City compensated for this Incidental Take by successful RCW occupation of 2 of 4 recruitment sites that were created on Fort Benning in March 1999, as required in the USFWS BO for the Land Exchange (King 1998).

Environmental obligations resulting from the Land Exchange included management of foraging habitat for RCW Clusters N01-02 and N02-02, near the northwestern boundary of the Installation. Because foraging habitat was insufficient on Fort Benning alone, enough area on City property was designated as "protected areas" to provide the necessary habitat. The Memorandum of Agreement (MOA) states that Fort Benning will provide and manage foraging habitat for these 2 clusters so there will ultimately be sufficient foraging habitat on the Installation. At that time, the City will be able to clear and develop the protected areas (Fort Benning and City of Columbus 1999).

DMPRC Final EIS and BO. A ROD for a Final EIS and a BO were completed in 2004 for a DMPRC (Fort Benning 2004a, USFWS 2004a, DA 2004, USFWS 2006c). This range is currently under construction and is expected to be operational by 2008. The loss of up to 8 managed clusters as a result of range construction and operation was offset by "managing" 8

clusters in the A20 dudded Impact Area, per an RPM in the BO (USFWS 2004a, DA 2004, Fort Benning 2005, USFWS 2006c). In order to study the impacts of range construction and operation on RCW foraging habitat use, home range and dispersal, Fort Benning is also conducting "home range follows" at 11 RCW clusters adjacent to the range. This entails following RCW groups inhabiting these 11 clusters regularly from sunrise to 3 pm and recording their location and behavior at regular intervals (every 30 minutes). Because the DMPRC was a large introduced clearing (approximately 1,500 acres) and such openings can have a detrimental effect on RCW dispersal and demographic stability (see Section 6.10.4.6), RCWs in an additional 30 clusters within the RCW "neighborhood" (defined in Section 3.2) are "monitored" in order to document effects of habitat fragmentation. (Activities conducted at "managed" and "monitored" clusters are described in Section 6.10.2). Many of the clusters currently being managed, monitored and/ or followed as minimization for the DMPRC will be affected by Transformation projects; these are noted in the impacts analyses.

Summary and Status of Current Incidental Take Permits. The BO for the RCW ESMP approved Incidental Take for the loss of up to 5 active cavity trees per year due to military training or training-related wildfires, 41 RCW groups in the K15 and A20 Impact Areas due to explosive munitions or associated wildfires (not including 3 clusters deemed to be manageable) and 15 potential groups associated with existing and future Supplemental Recruitment Clusters (SRCs) due to the lack of training restrictions in SRCs (USFWS 2002, DA 1996). SRCs and the treatment of clusters within dudded impact areas are discussed further in Section 6.10.2. Since the ESMP, no "takes" (abandoned due to harassment impacts or harm impact of damaged cavity trees or loss of forage) have been documented in the impact areas or SRCs, and no active cavity trees have been lost due to military training (M. Barron, Fort Benning, pers. comm.).

The Land Exchange BO provided an Incidental Take permit for one RCW group on the land acquired by the City of Columbus (King 1998). This cluster contained a PBG in 2006, although the majority of its foraging habitat was removed by winter 2005. As stated above, this "take" was compensated for by the creation of recruitment clusters on Fort Benning. As an additional minimization effort, Fort Benning also increased its installation RCW population goal from 350 to 351 PBGs.

The 2004 BO for the DMPRC provided Incidental Take for an additional 7 clusters adjacent to the range due to loss of foraging habitat and potential harassment impacts (USFWS

2004a), and the number was increased to 8 in 2006 (Fort Benning 2005, USFWS 2006c). Since the initial timber clearing, no clusters have been abandoned as a result of the action (additional details on these clusters can be found in Section 6). As part of the minimization effort, Fort Benning arranged to manage 8 clusters in the A20 impact area, resulting in a total of 11 managed clusters within the A20 impact area (USFWS 2004a, Fort Benning 2005, USFWS 2006c).

3 ACTION AREA/ AFFECTED ENVIRONMENT

This section describes general existing conditions within the Action Area. In order to minimize repetition, the pre-project conditions of specific project sites are presented in Section 4.3.

The Endangered Species Consultation Handbook (USFWS and NMFS 1998) states that "when determining an Action Area it must include the project area and all the areas surrounding the activity up to where the effects will no longer be felt by the listed species." The Action Area for the proposed action includes all areas on Fort Benning, areas outside of the Installation but within the RCW "neighborhood" and/ or within the RCW survey area and, for some purposes, disjunct RCW populations that have received, or are likely to receive, birds from Fort Benning through the USFWS Southern Range Translocation Cooperative (SRTC) (Figures 3-1, 3-2 and 3-3).

3.1 INSTALLATION

The USFWS has recommended including the entire Installation in the Action Area, since Transformation actions have the potential to affect the entire Post, if not directly then indirectly (meeting between representatives of USFWS, Headquarters (HQ) DA, Fort Benning and Dr. J.H. Carter III and Associates, Inc. (JCA) 21 November 2006).

3.1.1 TOPOGRAPHY/ GEOLOGY

Most of Fort Benning is located south of the Piedmont Province, however small inclusions of Piedmont geology, soils and vegetation occur in the northern portions of the Installation. Fort Benning is located where Coastal Plain strata overlaps on top of Piedmont rocks, a zone defined as the Fall Line. This is also the area where the Piedmont basement rocks are first exposed in streams flowing to the Atlantic Ocean and the Gulf of Mexico (Gulf South Research Corporation 1999).

Fort Benning's location relative to the Fall Line results in an overlapping diversity of Piedmont and Coastal Plain habitats and their associated plant and animal communities. This effect is not limited to terrestrial communities, but is also reflected in the physical features and

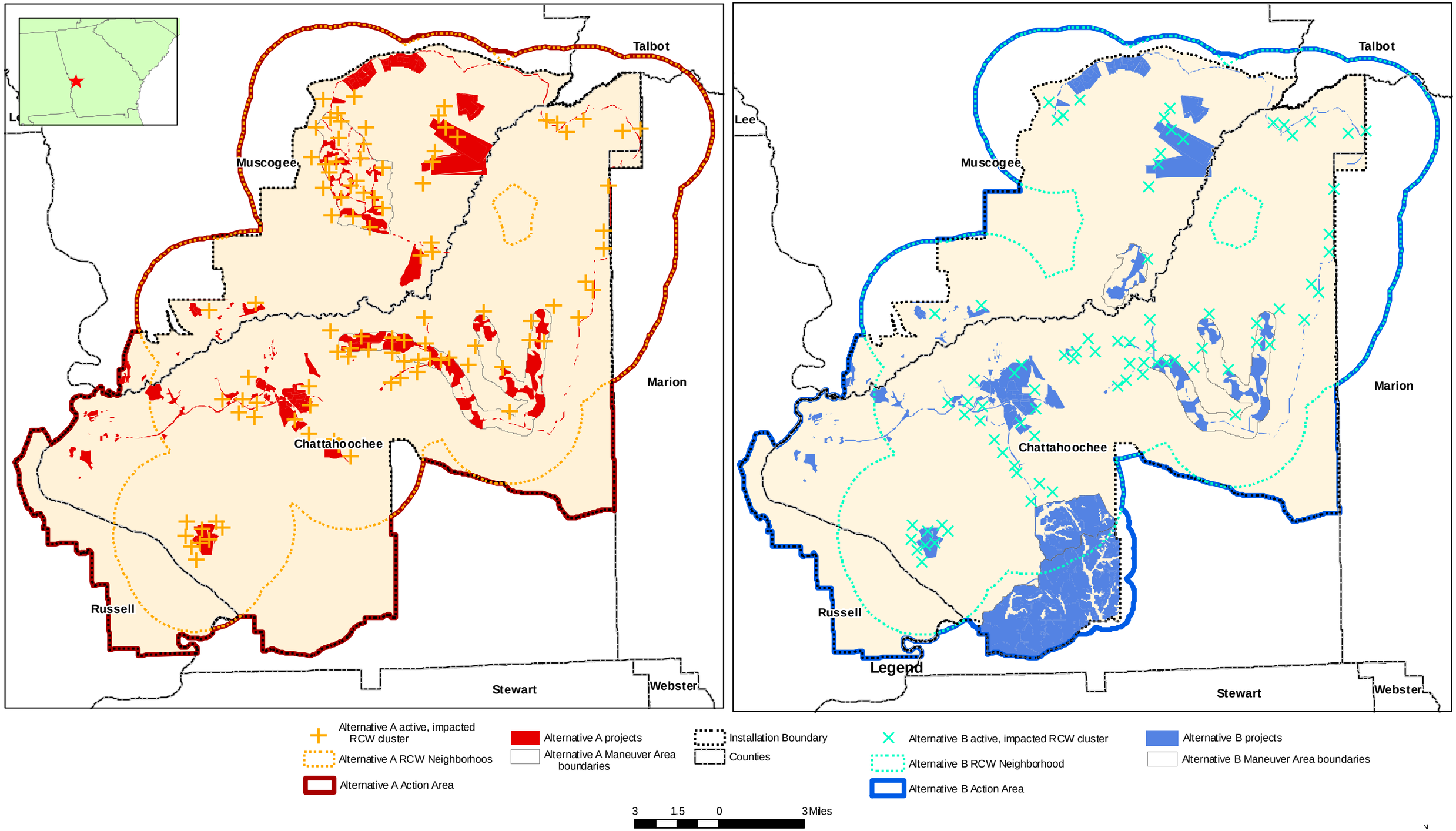


Figure 3-1. Action Area for the proposed Fort Benning Transformation, Alternatives A and B, comprised of the entire Installation and adjacent lands within the RCW "neighborhood."

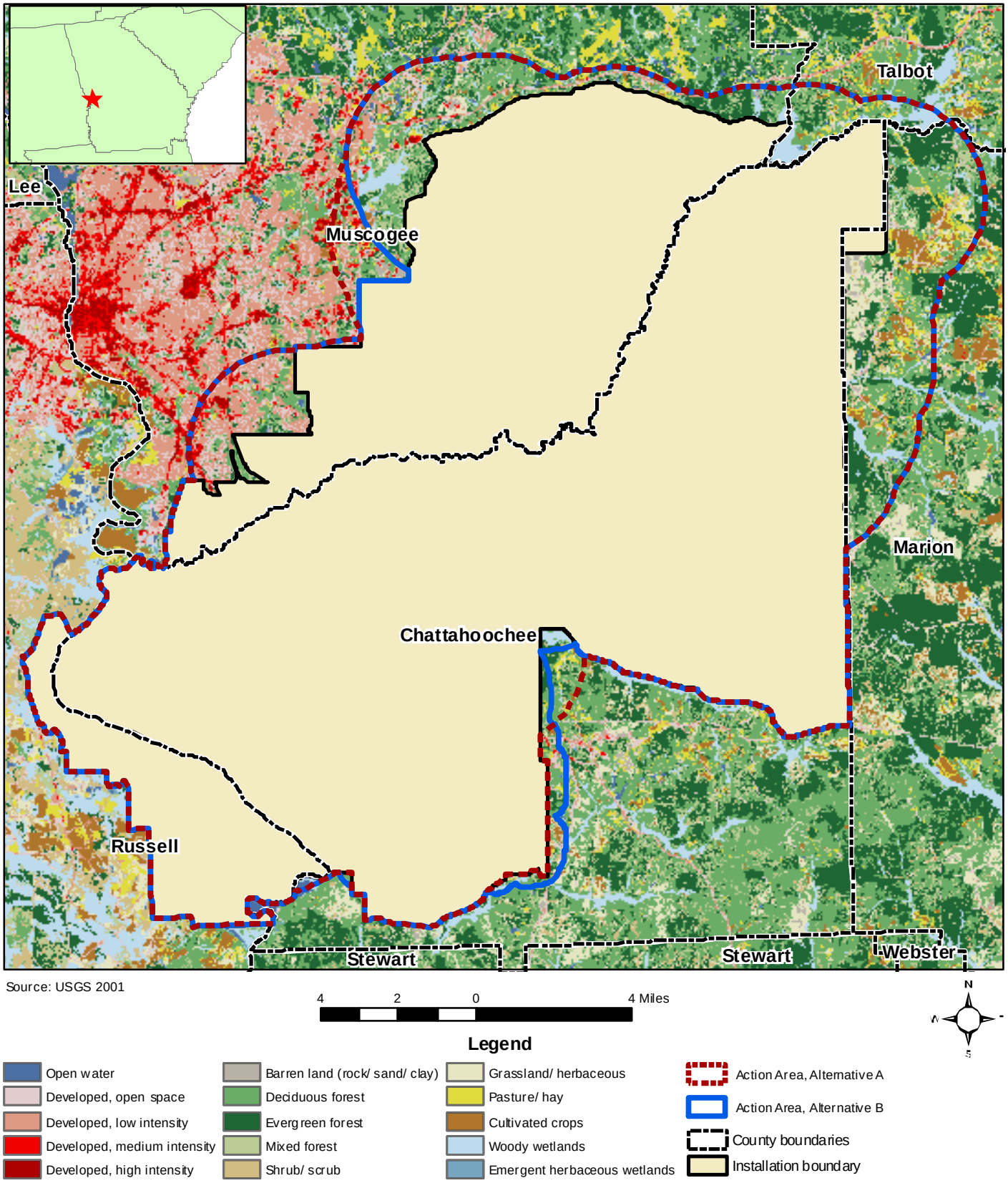


Figure 3-2. Land use of areas adjacent to Fort Benning and within the Action Area for the proposed Fort Benning Transformation, Alternatives A and B.

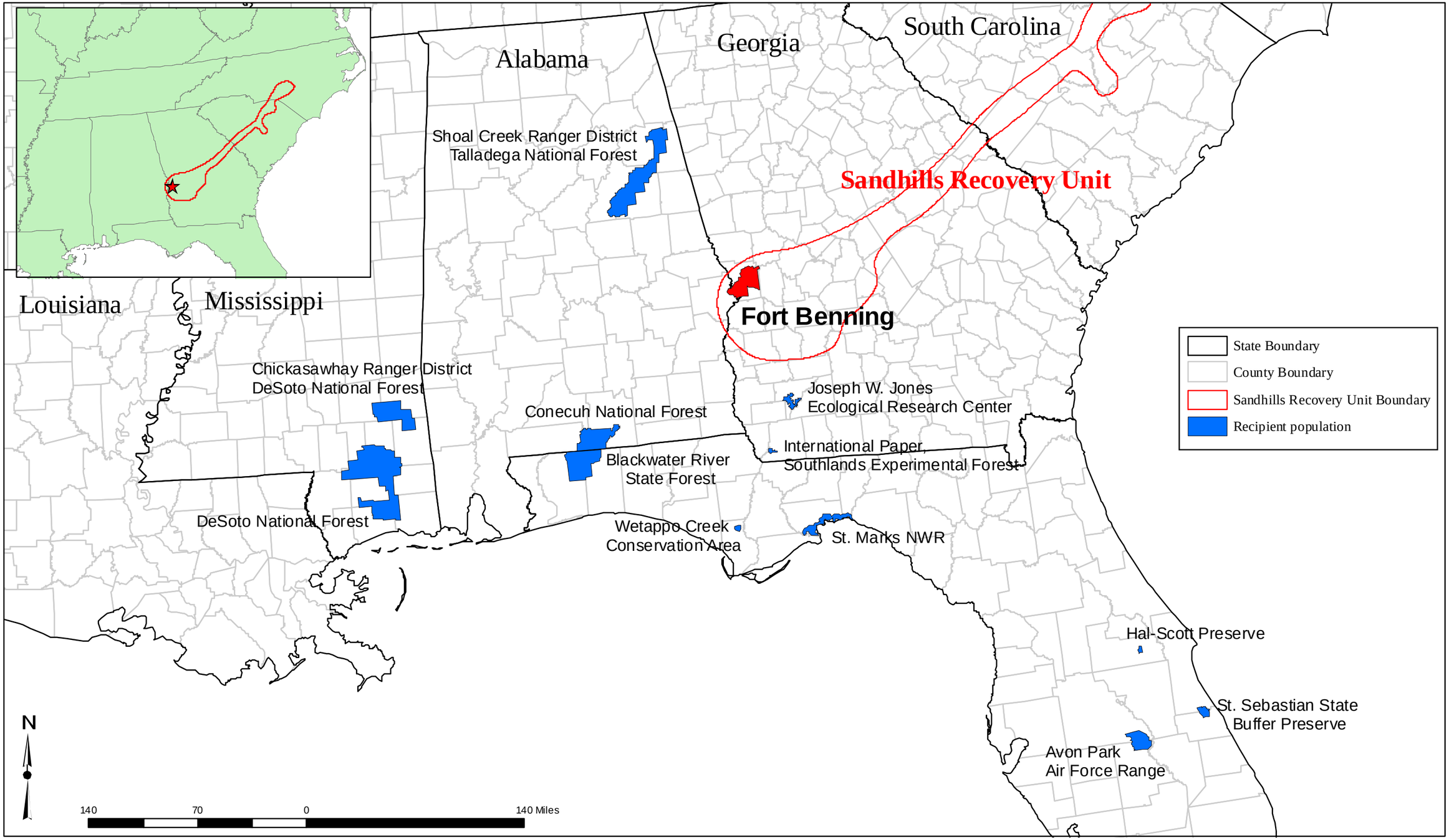


Figure 3-3. Location of recipient populations of red-cockaded woodpeckers (RCW) donated by Fort Benning.

biotic composition of the streams that pass through or arise within the Installation. The predominantly rolling terrain is highest in the east, rising approximately 740 feet (ft.) above mean sea level (MSL), and lowest in the southwest along the Chattahoochee River, about 190 ft. above MSL (Fort Benning 2001).

The sedimentary sequences of the Coastal Plain that overlie the crystalline basement rocks at Fort Benning consist of materials deposited during the Cretaceous, Tertiary and Quaternary Periods. The Cretaceous Period sediments form the uplands and consist of the 5 following geologic formations. Descriptions are taken from Reinhardt et al. (1994):

Kr - Ripley Formation (Upper Cretaceous): Fine to very fine, calcareous quartz sand, massive burrowed to bioturbated, greenish-gray, weathers to dusky yellow, contains abundant muscovite, glauconite and locally abundant carbonaceous debris; local clean quartz sand lenses. Ledge-forming, carbonate-cemented sand beds and calcareous concretions are common in the upper part of the unit. Thickness ranges from 133 to 250 ft. The Ripley Formation occurs only along the southeastern boundary of Fort Benning where the highest elevations on the Installation are found.

Kc - Cusseta Sand (Upper Cretaceous): Medium to coarse quartz sand, pale yellow to light olive gray, thinly bedded to laminated clay, medium olive-gray to brownish-black and micaceous fine sand, light olive-gray. Formation thickness ranges from 150 to 233 ft. The Cusseta Sand Formation is located in the southeastern corner of Fort Benning.

Kb - Blufftown Formation (Upper Cretaceous): Fine sand to sandy clay, calcareous, glauconitic, and micaceous, light brownish-gray to olive-gray, interfingers with medium to coarse sand, quartzose, pale yellow. Locally abundant carbonaceous debris, shell beds and calcareous concretions; thickness ranges from 200 to 433 ft. The Blufftown Formation is the dominant formation south of Upatoi Creek.

Ke - Eutaw Formation (Upper Cretaceous): Fine to very coarse sand, very pale orange to yellow, and clay, brownish -gray; thickness ranges from 100 to 280 ft. The Eutaw Formation is found adjacent to tributaries of Upatoi Creek in the center of the Installation.

Kt - Tuscaloosa Formation (Upper Cretaceous): Fine to very coarse sand, pale yellowish-green to pale orange, crossbedded, quartzose and containing abundant potassium feldspar, interbedded with massive sandy clay, pale olive to reddish-brown, locally mottled. Gravelly and poorly bedded deposits at base are difficult to distinguish from residuum on underlying crystalline rocks, and thickness ranges from 165 to 500 ft. The Tuscaloosa Formation is the dominant formation on uplands north of Upatoi Creek.

3.1.2 SOILS

There are two basic soil provinces on Fort Benning: the Georgia Sand Hills and the Southern Coastal Plain. The Georgia Sand Hills are a narrow belt of deep sandy soils with rolling to hilly topography. These soils are primarily derived from marine sands, loams and clays that were deposited over acid crystalline and metamorphic rocks. South of the Sand Hills are Southern Coastal Plain soils, which are divided into nearly level to rolling valleys and gently sloping to steep uplands. Southern Coastal Plain soils in this area have a loamy or sandy surface layer and loamy or clayey subsoil (Cooperative Extension Service 1993).

A soil texture map for Fort Benning is shown in Figure 3-4. Mapping units represent the relative proportions of sand, silt and clay in a soil. The dudded areas of A20 and K15 are not mapped in the modern method of soil surveying because of restricted access, however, data from a 1928 soil survey (USDA 1928) was used to fill these gaps (Figure 3-4). Based on the available soil survey data, a majority of Fort Benning's soils are identified as highly erodible. The degree of erodibility is determined by factors such as drainage, permeability, texture, structure and % slope.

3.1.3 SURFACE WATERS

Most streams found within Fort Benning drain into the Chattahoochee River through Upatoi Creek on the GA side and Uchee Creek on the AL side. The southernmost portion of Fort Benning drains directly into the Chattahoochee River and the northwestern portion of the Installation drains into Bull Creek. A very small area in the southeastern corner drains into the Flint River Basin to the east (Fort Benning 2001).

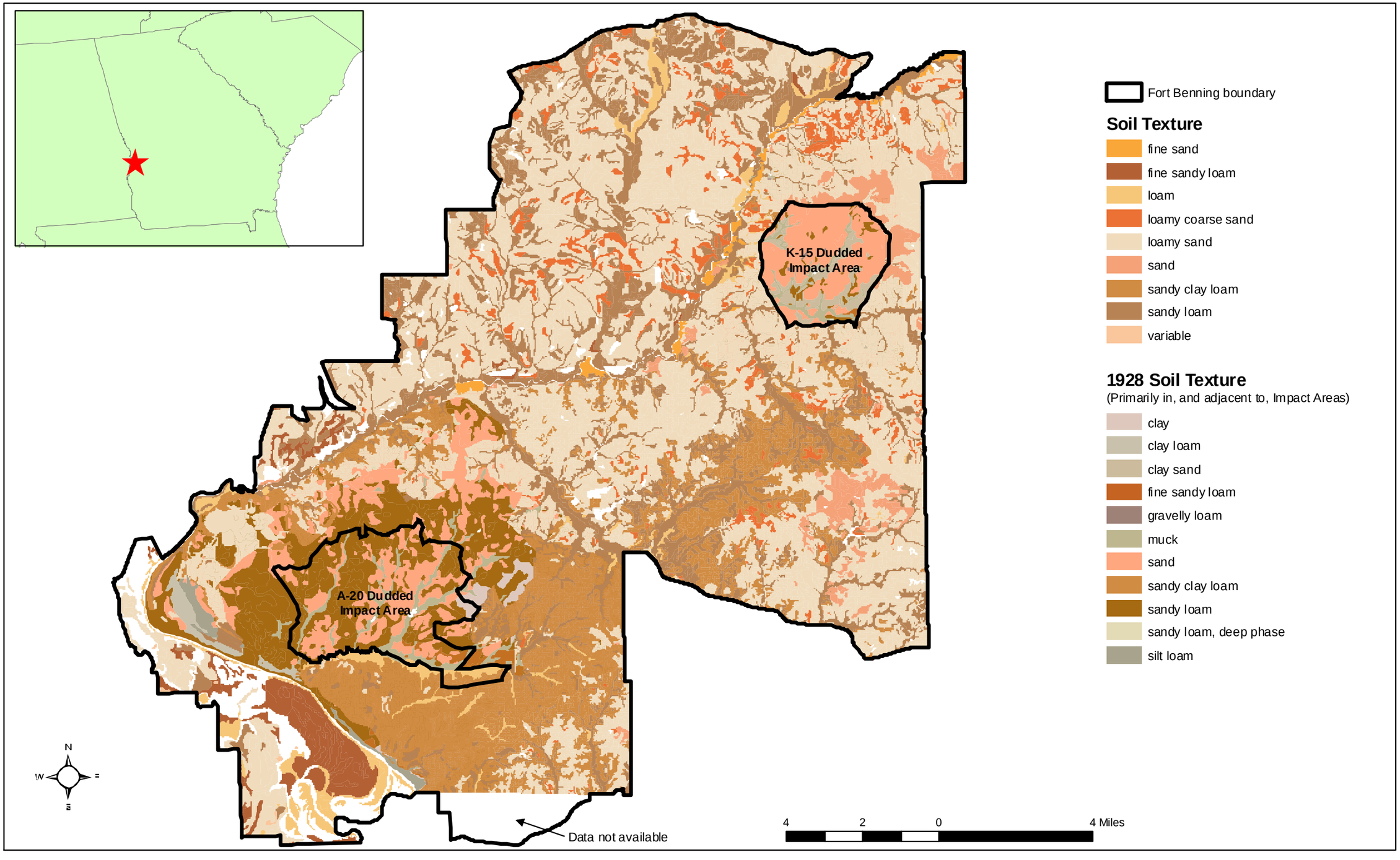


Figure 3-4. Soil texture map for Fort Benning.

The streams at Fort Benning are either Piedmont or Coastal Plain in origin. Piedmont streams generally flow in a southerly direction. Major Piedmont streams include Baker, Cox, Dozier, Kendall, Randall, Uchee and Upatoi Creeks, as well as the Chattahoochee River. Coastal Plain streams generally flow from east to west on the GA side and west to east on the AL side. Ochillee, Pine Knot, Little Pine Knot, Sally Branch and Bonham Creeks are the major Coastal Plain streams on Fort Benning. Oswichee Creek has intermediate characteristics between a Piedmont and Coastal Plain stream (Fort Benning 2001).

The largest waterway on Fort Benning is the Chattahoochee River, which is a major river that flows through approximately 15 miles of the Installation, separating it into its Alabama and Georgia portions. Several dams have been built on the Chattahoochee River upstream and downstream of Fort Benning to regulate river flow and produce electricity. The northern portion of Lake Walter F. George extends into the southwestern portion of the Installation. Numerous oxbows, old meander channels, isolated ponds and wetland areas are found along the Chattahoochee River (Fort Benning 2001).

There are 14 man-made ponds that range in size from 1 to 72 acres on Fort Benning. Numerous natural ponds such as beaver (*Castor canadensis*) ponds are also present.

3.1.4 ECOLOGICAL COMMUNITIES

The vegetation of Fort Benning can be classified into over 70 vegetation alliances. An alliance is a group of plant associations that share one or more diagnostic species, which, as a rule, occur in the uppermost strata of the vegetation. The Nature Conservancy (TNC) has delineated these vegetation alliances across the entire Installation based on a subset of the National Vegetation Classification System (NVCS) tailored to Fort Benning's vegetation (Association for Biodiversity Information (ABI) 2001). The alliance map was created by interpretation of 1999 color imagery and depicts alliances over the entire installation. Final accuracy assessment for the map identified an overall, or "map user," accuracy of 83% for the map (Pyne et al. 2001).

In addition to vegetation alliances, TNC has delineated finer-scale plant associations on selected portions of the Installation (UEAs and other areas where associations of conservation concern were known to exist). A plant association is a plant community with a definite (recognizable and somewhat repeatable) floristic composition, occurs within uniform habitat

conditions and possesses uniform physiognomy. Associations are ranked by their relative imperilment to determine their relative conservation priority.

The associations and alliances may be combined and categorized in a variety of ways, depending on one's analytical or assessment objective. A much-generalized depiction of the vegetation alliances (Figure 3-5) groups the alliances into 6 broad categories (W. Harrison, unpub. data.) based on the overstory tree species composition, plus categories for open water and urban/ military use. This map is perhaps the most useful coarse-scale illustration of the NVCS delineation of Fort Benning. It reflects 1999 overstory vegetation across the installation (including dudded impact areas) and includes boundaries of ecological communities regardless of training compartments, stands or other administrative or management-related delineation. The map legend of Figure 3-5 is intended to illustrate effects of fire history and hydrology on the vegetation. Vegetation alliances dominated by longleaf pine and scrub oaks have likely received the highest fire frequency, followed by alliances dominated by "other pine," and then those dominated by upland hardwoods. Vegetation alliances associated with wetlands, combined here in one category, would have received very infrequent fire.

The vegetation can also be divided based on the ecological groups, which are groups of plant associations that tend to be found in similar environments and are influenced by similar ecological processes. The ecological groups are based more on the *natural* community type of an area than the current conditions (e.g., areas that are currently classified as "Pinus palustris woodland," "Pinus taeda forest" or "Quercus laevis woodland" alliances are all included in the "Longleaf pine sandhills" ecological group). Broad descriptions of ecological groups are listed below and are shown in Figure 3-6 (descriptions were taken from the INRMP (Fort Benning 2001) and International Classification of Ecological Communities (ICEC)).

3.1.4.1 Dry-Mesic Hardwood and Dry-Mesic Hardwood/Pine Forest

These forests are quite variable on the Installation and occur in the ecotones between dry ridge tops and mesic bottoms. Common overstory species found in these areas include white oak (*Quercus alba*), water oak (*Q. nigra*), southern red oak (*Q. falcata*), post oak (*Q. stellata*), sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), shortleaf pine (*P. echinata*), tulip poplar (*Liriodendron tulipifera*) and pignut hickory (*Carya glabra*). Sourwood (*Oxydendrum arboreum*), sparkleberry (*Vaccinium arboreum*), red maple (*Acer rubrum*),

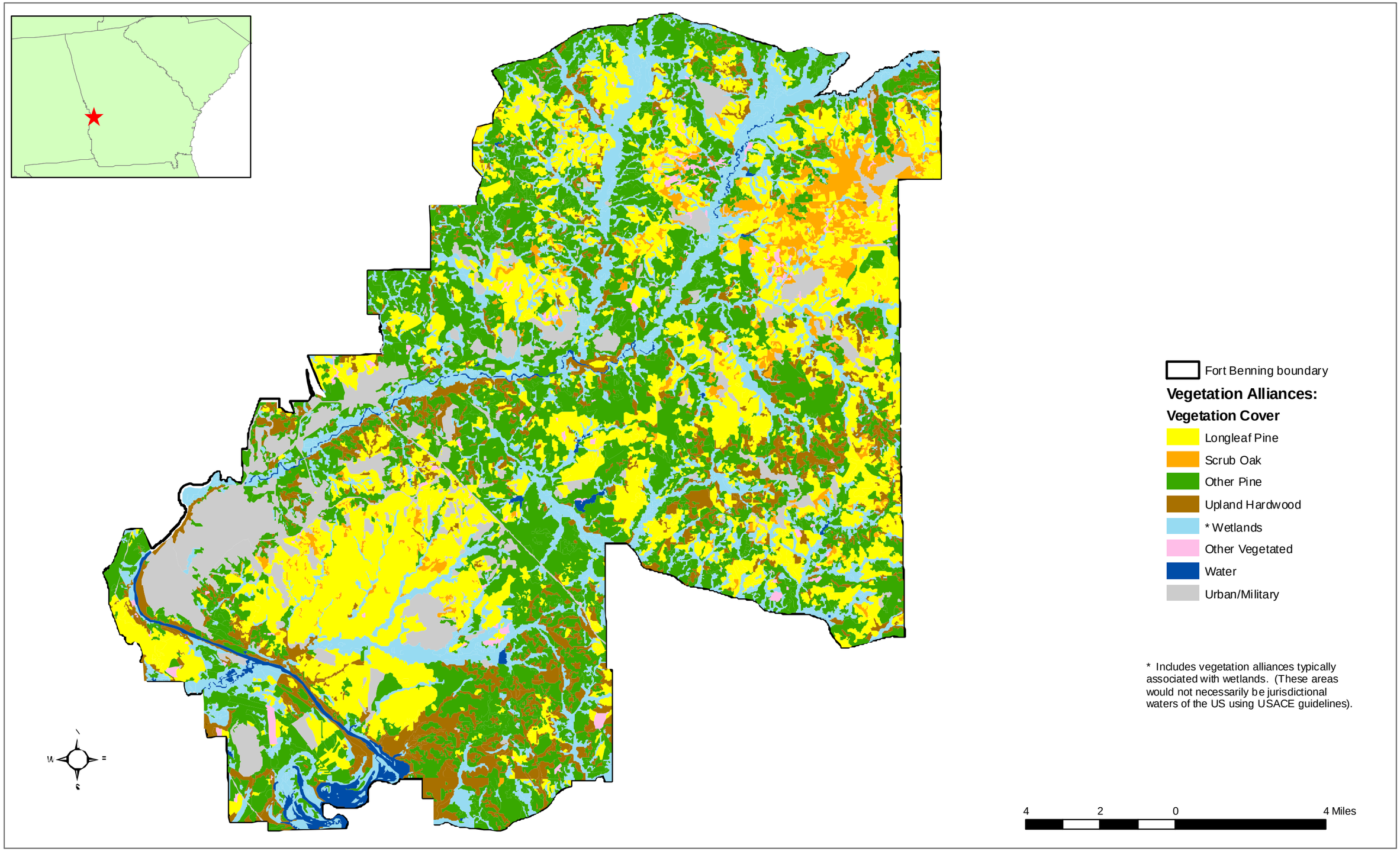


Figure 3-5. Categories of vegetation aliances (National Vegetation Classification System) found on Fort Benning, 1999. Mapped by The Nature Conservancy.

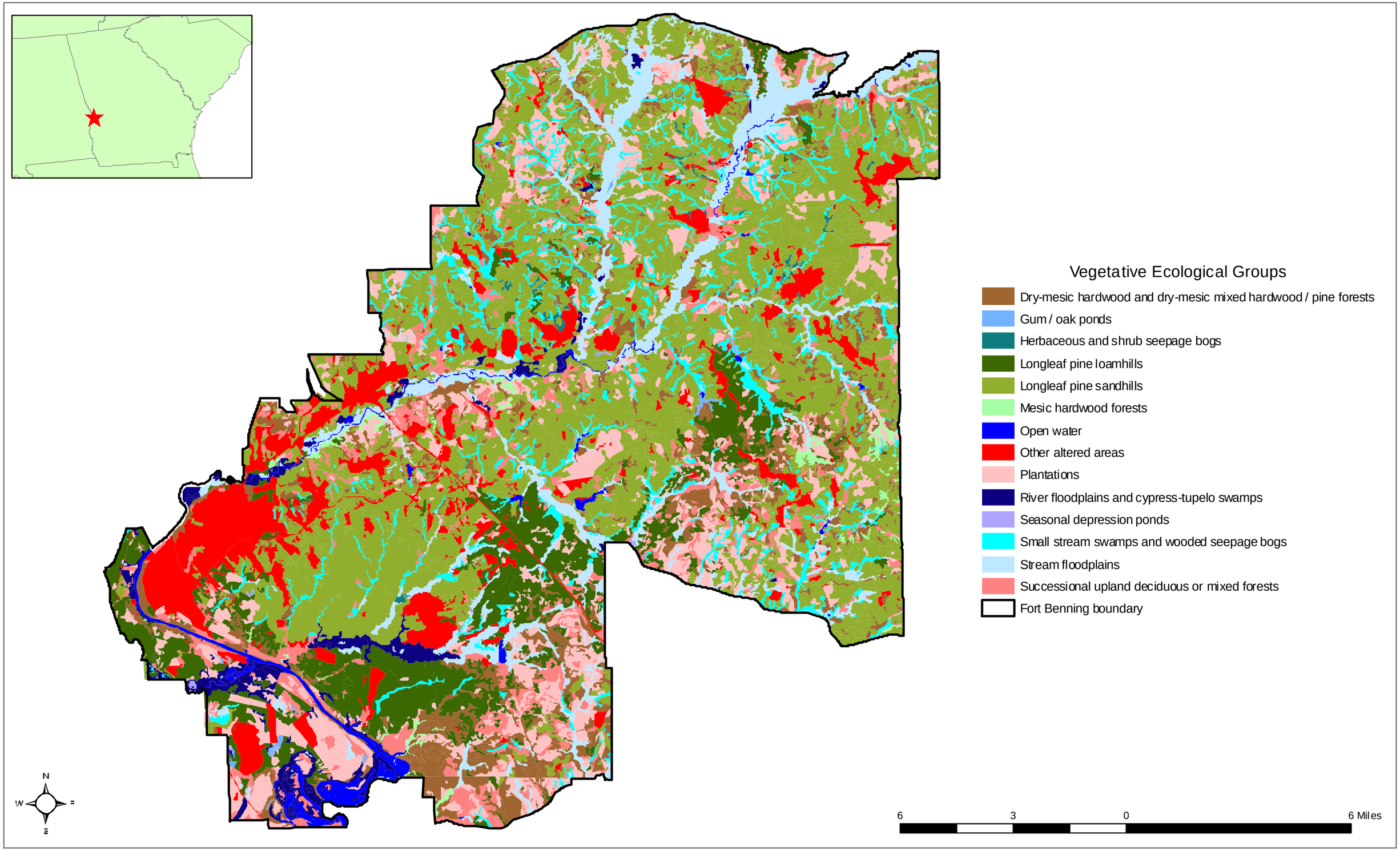


Figure 3-6. Vegetative ecological groups located on Fort Benning. Mapped by The Nature Conservancy.

flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), sassafras (*Sassafras albidum*), redbud (*Cercis canadensis*) and ironwood (*Carpinus caroliniana*) are common understory species. Common shrubs in these areas include deerberry (*Vaccinium stamineum*) and littlehip-haw (*Crataegus spathulata*). Woody vines include greenbriers (*Smilax* spp.), muscadine grape (*Vitis rotundifolia*), crossvine (*Bignonia capreolata*) and yellow jessamine (*Gelsemium sempervirens*). Herbaceous species include arrowleaf heartleaf (*Hexastylis arifolia*), partridge berry (*Mitchella repens*) and several grasses.

3.1.4.2 Gum / Oak ponds

Gum / oak ponds are usually small and isolated and are mostly found in uplands where small depressions hold water for long periods of time. They are not filled by running water or seepage; instead, they hold rainwater and the water levels change with the season. Dominant overstory species can be sweetgum, swamp blackgum (*Nyssa biflora*), water tupelo (*N. aquatica*), willow oak (*Q. phellos*), laurel oak (*Q. laurifolia*) or water oak. The shrub layer is variable depending on an individual pond's water depth, but American holly, sweet-pepperbush (*Clethra alnifolia*), dog-hobble (*Leucothoe axillaris*), buttonbush (*Cephalanthus occidentalis*) and wax myrtle (*Myrica cerifera*) are commonly present. Sedges and ferns are the most common herbaceous species in some ponds; mosses and orchids may also be present.

3.1.4.3 Herbaceous and Shrub Seepage Bogs

The switch cane (*Arundinaria gigantea* ssp. *tecta*) and pitcher plant bogs within the Malone Impact Area are the best example of this ecological group on Fort Benning. Fire is a necessary component for maintaining these bog systems and these areas burn frequently. A smaller, lower quality bog is located in Training Compartment O14, but woody species have invaded the site due to infrequent fire. Woody species common to these bogs include switch cane, inkberry (*Ilex glabra*), sweet gallberry (*I. coriacea*), wax myrtle, sourwood and greenbriers. Herbaceous species include sweet pitcherplant (*Sarracenia rubra*), sphagnum mosses (*Sphagnum* spp.) and various ferns.

3.1.4.4 Longleaf Pine Loamhills

Areas with loamy soils support some of the best remaining longleaf pine (*P. palustris*) stands on the Installation. Longleaf pine is often mixed with loblolly and shortleaf pines. These

stands naturally experienced frequent low intensity surface fires. Today the fire-return interval for some stands is more frequent, in part because of the many ordnance-induced wildfires. Common understory species include post oak, blackjack oak (*Q. marilandica*) and flowering dogwood. Pine regeneration also is a common component of the understory. Shrubs include deerberry, inkberry, sparkleberry, wax myrtle and sassafras. Common herbaceous species typically include a variety of native legumes, native grasses, including little bluestem (*Schizachyrium scoparium*), bracken fern (*Pteridium aquilinum*), blazing stars (*Liatris* spp.), goldenrods (*Solidago* spp.) and asters (*Aster* spp.). Disturbed areas may contain broomsedge (*Andropogon virginicus*).

On Fort Benning, sites classified as part of this ecological group may not currently support a longleaf pine forest or woodland. Historical land-use, especially lack of fire frequency until recently, has often favored lobolly pine or shortleaf pine in these areas (for communities currently dominated by longleaf pine, see Figure 3-5).

3.1.4.5 Longleaf Pine Sandhills

Pine stands in this habitat type are typically less dense than those in loamhill stands and so are used for mechanized training that can damage susceptible plant and animal communities. Erosion is a major management concern in these areas. Because of the deep, dry, sandy soils, longleaf pine maintains dominance over other pines better in the sandhills. Scrub oaks that are a common understory component include bluejack (*Q. incana*), sand post (*Q. margarettiae*) and turkey oaks (*Q. laevis*). Sassafras, sparkleberry and hawthorns (*Crataegus* spp.) are common shrub species. Grasses, legumes, goldenrods and asters are diverse and common in the ground cover. The longleaf pine stands in these dry sandy areas support RCWs, gopher tortoises (*Gopherus polyphemus*) and dusky gopher frogs (*Rana capito sevosa*).

On Fort Benning, sites classified as part of this ecological group may not currently support a longleaf pine forest or woodland. Historical land-use, especially lack of fire frequency until recently, has often favored lobolly pine or shortleaf pine in these areas (for habitat currently dominated by longleaf pine, see Figure 3-5).

3.1.4.6 Mesic Hardwood Forests

Mesic hardwood forests (typically non-oak dominated) are often found in the bottoms of cool, shady, steep ravines. Beech (*Fagus grandifolia*), white ash (*Fraxinus americana*), sweetgum, southern magnolia (*Magnolia grandiflora*), white oak and bitternut hickory (*C. cordiformis*) are common overstory species. Common understory species are flowering dogwood, ironwood, witch hazel (*Hamamelis virginiana*) and red bay (*Persea borbonia*). Shrub species include titi (*Cyrilla racemiflora*), mountain laurel (*Kalmia latifolia*) and fetterbush (*Lyonia lucida*). Common woody vines include muscadine grape, partridge berry, wild sarsaparilla (*Smilax pumila),* Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Toxicodendron radicans*). Indian cucumber-root (*Medeola virginiana*), cranefly orchid (*Tipularia discolor*), wide-leaf bunchflower (*Melanthium latifolium)*, croomia (*Croomia pauciflora*) and beech drops (*Epifagus virginiana*) are found in the herbaceous layer.

3.1.4.7 Open Water

This ecological group includes areas of open water such as lakes and ponds (natural or man-made), borrow pits, rivers and streams. Impounded water communities include beaver - created ponds and ponds artificially constructed by humans. There are 14 named artificial ponds on Fort Benning. Several of these are managed for recreational use through fertilization and fish stocking, whereas several are abandoned and one (Victory Pond) is used for Ranger training. The numbers, sizes and characters of beaver ponds are changing constantly. Common plants found in impounded water communities include white water lily (*Nymphaea odorata*), watershield (*Brasenia schreberi*), yellow pond lily (*Nuphar lutea*), buttonbush, tag alder (*Alnus serrulata*) and wax myrtle.

3.1.4.8 Other Altered Areas

This group includes altered areas such as old fields, pastures, abandoned farmland and manicured lawns. Dominant vegetation may include broomsedge, bahia grass (*Paspalum notatum*), browntop millet (*Urochloa ramosa*) or Bermuda grass (*Cynodon dactylon*). Associated species vary with location and habitat and typically inlcude weedy successional species.

3.1.4.9 Plantations

This vegetative type includes areas planted in even-aged pines, which would historically be forested in one of the natural pine communities listed in this section. Approximately 16,000 acres of loblolly and slash pine (*Pinus elliottii*) were planted on Fort Benning from 1962 to 1994. Since the 1990s, forest management goals have shifted from wood production to ecosystem restoration. In pre-colonial times, loblolly pine is thought to have naturally occurred only in drainages or other areas naturally excluded from frequent fires. Slash pine is not native to the area, but has been planted in plantations throughout the Southeast. Shortleaf is native to Fort Benning, but is thought to have occurred mostly in areas that were infrequently burned. These species, when dominant in areas where they historically would have been uncommon or absent because of interspecies competition, soils, fire return intervals or other environmental conditions, are often referred to as **"off-site."** Loblolly, slash and shortleaf pine stands, particularly plantations, are being converted to longleaf pine where stands are in decline due to site constraints, insect infestations or disease and where longleaf would have historically been the dominant species. These conversions are being implemented in order to regenerate stands to longleaf pine before the off-site pine stands reach traditional rotation ages. Additionally, abandoned wildlife openings are being converted to longleaf pine where appropriate. Longleaf is being planted for uneven-aged management.

Fort Benning currently has approximately 16,213 acres of even-aged pine plantations on the Installation, of which 14,770 acres are <30 years old (FBLMB, unpub. data). More information about timber management on Fort Benning can be found below in Section 3.1.6.

3.1.4.10 River Floodplains and Cypress-Tupelo Swamps

The Chattahoochee River floodplain and its associated backwaters and tupelo swamps, are found in the southwestern portion of the Installation. Plant communities are dominated by flood tolerant species, such as swamp blackgum, sweetgum, sycamore (*Platanus occidentalis*), river birch (*Betula nigra*) and water oak. Loblolly pines are scattered along the banks of the river. Common understory species include red maple, green ash (*Fraxinus pennsylvanica*), elms (*Ulmus* spp.), flowering dogwood, hackberry (*Celtis occidentalis*), ironwood and various oaks. Common shrubs include American holly, blueberries (*Vaccinium* spp.), dwarf pawpaw (*Asimina*

parviflora), switch cane and multiple viburnums (*Viburnum* spp.). Vines, grasses and herbaceous plants are common and varied.

3.1.4.11 Seasonal Depression Ponds

Seasonal depression ponds are upland depressions which typically have a pronounced seasonal fluctuation in water level, filling in the winter and often drying completely in the summer. Dominant species and other species present vary widely among ponds. During some years, the deepest zone in the center of the depression may remain inundated. Some ponds that remain inundated may include wetland trees and shrubs such as swamp black gum and buttonbush. Shallow water and intermittently exposed edges may contain a variety of emergent and wetland plants including small-fruit spikerush (*Eleocharis microcarpa*), creeping rush (*Juncus repens*), soft rush (*J. effusus*), maidencane (*Panicum hemitomon*), horsetail spikerush (*E. equisetoides*) and narrow-fruit horned beaksedge (*Rhynchospora inundata*).

3.1.4.12 Small Stream Swamps and Wooded Seepage Bogs

The braided streams that are characteristic of this group are found scattered across the northern half of the Installation. Sweetgum, water oak, willow oak and river birch are dominant overstory species. American holly, red bay and sweetbay (*Magnolia virginiana*) are common in the understory. Shrubs include titi, bayberry (*Myrica heterophylla*), dog-hobble and fetterbush. Understory herbaceous species are sparse due to the saturated substrate, but common species include sedges (*Carex* spp.), sphagnum moss and netted chain-fern (*Woodwardia areolata*).

Wooded seepage bogs are depressions fed by side-slope seepage from the surrounding uplands. Standing water may be present during some parts of the year. The tree bases are usually buttressed, ground-cover diversity is low and ferns are common. Dominant overstory species include swamp blackgum and willow oak. Understory species include poison sumac (*Toxicodendron vernix*), red maple and sweetbay. Shrub may include viburnum, sparkleberry and American holly. Common ferns include netted chain-fern, cinnamon fern (*Osmunda cinnamomea*) and southern lady fern (*Athyrium asplenioides*).

3.1.4.13 Stream Floodplains

Stream floodplains at Fort Benning are extensive and the associated plant communities vary somewhat with geographic location on the Installation. Oaks, hickories, sycamore, beech, ash and elms dominate the overstory. Loblolly and spruce pines (*P. glabra*) are scattered throughout these communities. Common understory species are red maple, flowering dogwood, silverbells (*Halesia carolina*), witch hazel, redbud, ironwood, tag alder and American holly. Shrubs include blueberries, sweet gallberry, dwarf pawpaw, wax myrtle and spicebush (*Lindera benzoin*). Herbaceous species include switch cane, longleaf spanglegrass (*Chasmanthium sessiliflorum*), may-apple (*Podophyllum peltatum*) and Atamasco lily (*Zephyranthes atamasco*). Common woody vines are muscadine grape, greenbriers, poison ivy, Virginia creeper and crossvine. Relict trillium, a Federally Endangered plant, occurs in five populations along the stream floodplains.

3.1.4.14 Successional Upland Deciduous or Mixed Forests

This group includes a variety of natural and disturbance-related forests dominated by sweetgum, red cedar (*Juniperus virginiana*) and hardwoods, including various hickories, oaks, red maple, tulip poplar and black gum (*Nyssa sylvatica*). Loblolly pine may also be dominant in areas. Species composition depends on soil type, moisture regime and level of disturbance.

3.1.5 UNIQUE ECOLOGICAL AREAS

In accordance with DoD Instruction 4715.3, Fort Benning has identified several areas that either have unique or rare ecological characteristics or that represent the best example on Fort Benning of a particular habitat or plant community type (Figure 3-7). These areas were chosen based on characteristics of soil type, topography, slope, aspect, elevation, hydrology, flora, fauna and other biotic and abiotic features. Some areas contain remnant native plant communities that have experienced minimal disturbance relative to similar communities elsewhere. As a result, at least a few areas, or portions thereof, may require little or no active management to maintain their condition. Such areas can serve as reference sites for the biodiversity and ecological processes associated with represented natural communities. To preserve the ecological integrity of these areas, Fort Benning uses the designation of Unique Ecological Areas (UEAs) to ensure

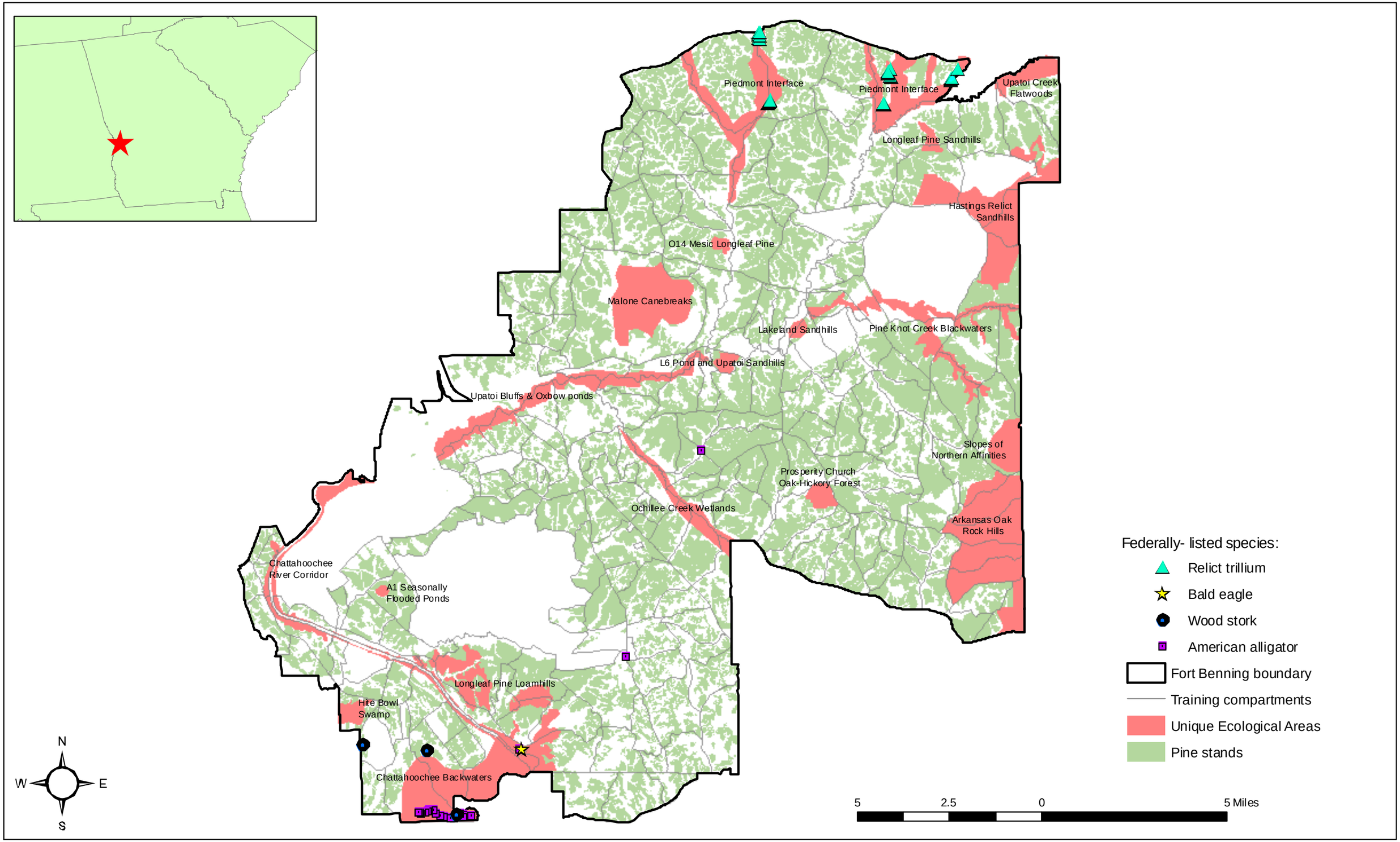


Figure 3-7. Unique Ecological Areas and known occurrences of Federally-listed relict trillium, bald eagle, wood stork and American alligator prior to the 2006 surveys on Fort Benning.

future land-use planning and training activities take into account their presence and preservation policy.

Designation as a UEA shifts management emphasis from a single species to a community focus, a key element in ecosystem management. Since UEAs represent some of the rarest or highest quality habitats on Fort Benning, they receive priority for management activities and monitoring efforts. In some cases, such as in hardwood bottomlands, no "active" management is required. Such areas are monitored, however, for unauthorized disturbances, and surveys are conducted to determine the presence of Federally Threatened and Endangered species. Some UEAs receive active management in the form of timber harvest and prescribed burning.

UEAs receive priority for soil erosion projects, invasive species control, longleaf pine reforestation, road closures and strict adherence to BMPs for timber harvest and soil erosion control. Further development of the UEA concept will include a determination of the conservation significance of these areas, better-defined boundaries and buffers and a specific management plan for each UEA (Prior et al 2005).

Transformation projects could potentially affect UEAs by direct vegetation clearing or by indirect effects such as increased edge effect. These impacts will be addressed in detail in the EIS for Transformation.

3.1.6 CURRENT HABITAT MANAGEMENT

3.1.6.1 Management of Pine Stands For RCW Habitat

Historical records show that up to 75% of Fort Benning was cleared of timber prior to 1920. The Installation continued to be subjected to extensive timber harvesting throughout the 20th century (Doresky et al. 2004). Past agricultural use, logging operations, the planting of off-site pine species and fire suppression have left Fort Benning with a relatively young (Installation-wide average approximately 50 years old (FBLMB, unpub. data)) forest that is highly fragmented by military development and, in some areas, large even-aged plantations. Information on the pre-colonial, “natural” ecosystem on Fort Benning is limited, however, it is generally accepted that longleaf pine was at least a significant component, if not the dominant species, in the area.

Today, approximately 86,000 acres on Fort Benning are managed to provide mature pine forest for RCWs. Management goals for these areas include eventual conversion of off-site pine and hardwood stands to longleaf, prescription burning pine stands on a 3 year rotation and limiting hardwood midstory encroachment (Fort Benning 2002). Fort Benning's goal is to transition all pine stands into uneven aged management. Per the ESMP, all acreage on the installation that is managed for RCWs is burned on an average 3-year fire return interval (Fort Benning 2002). Burns are primarily conducted during the growing season (March- May), but winter burns are also used to reduce fuel loads, introduce variation in the burning regime, to keep stands on the 3 year schedule that could not be burned 'on time' because of military or weather restraints and to maintain stands with little to no midstory (Fort Benning 2002).

All managed stands on the Installation are inventoried once every 10 years (10% of the Installation is inventoried every year) (Fort Benning 2002). Data collected includes standard timber cruise data such as forest type, the quantity, size classes and species of trees in the stand, data required by the 2003 RCW Recovery Plan such as hardwood midstory and herbaceous groundcover (USFWS 2003a), crown health, evidence of insect/ disease damage, number of snags per acre and other property-specific data. This provides managers with a current comprehensive dataset for use when preparing timber prescriptions as well as for keeping track of RCW habitat availability and suitability.

Stand Composition. In 2003, stands dominated by loblolly pine were estimated to comprise approximately 70% of the pine stands ≥30 years old at Fort Benning (Doresky et al. 2004). Today, approximately 63% of the pine stands ≥30 years old (38,570 of 61,482 acres) are dominated by loblolly pine or mixed pine and 34% (20,813 of 61,482 acres) are longleaf pine (Table 3-1), with the remaining 3% in slash or shortleaf pine stands. Conversely, as a result of Fort Benning's efforts to restore longleaf pine, 76% of the pine acreage <30 years old is planted longleaf pine (13,788 of 18,131 acres) (FBLMB, unpub. data) (Figure 3-8).

RCW cavity trees. In 1993, TNC reported that there were 1,807 RCW cavity trees on Fort Benning: 1,303 loblolly pines, 424 longleaf pines and 80 shortleaf pines (TNC, unpub. data) 2006 data collected by FBCB personnel documented 2,925 RCW cavity trees: 1,574 loblolly pines, 1,287 longleaf pines, and 64 shortleaf pines (17 trees did not have trees species documented). These data show a large increase in the number of longleaf pines with RCW cavities from 1993 to 2006. This is mainly due to the installation of artificial

Table 3-1. Baseline conditions of all managed stands on Fort Benning.

Dominant overstory species	Stands <30 yrs. old		Stands >=30 yrs. old		Total	
	Stands <30 yrs. old (acres)*	% of total pine stands <30 yrs.	Stands >=30 yrs. old (acres)	% of total pine stands >=30 yrs	Total (acres)	% of total acreage
Longleaf pine	13,788	76.0%	20,813	33.9%	34,602	39.8%
Loblolly pine	3,841	21.2%	26,714	43.5%	30,556	35.1%
Shortleaf pine	48	0.3%	919	1.5%	967	1.1%
Slash pine	2	0.0%	1,181	1.9%	1,183	1.4%
Mixed pine	451	2.5%	11,856	19.3%	12,307	14.2%
Subtotal- All pine	**18,131**	----	**61,482**	----	**79,615**	----
Hardwoods	----	----	----	----	5,456	6.3%
Other: disturbed, open, or military use areas	----	----	----	----	1,599	1.8%
No stand type data	----	----	----	----	299	0.3%
Total	----	----	----	----	**86,969**	----

* Stands that had forest type data but were missing age data were included in pines <30 yrs. old

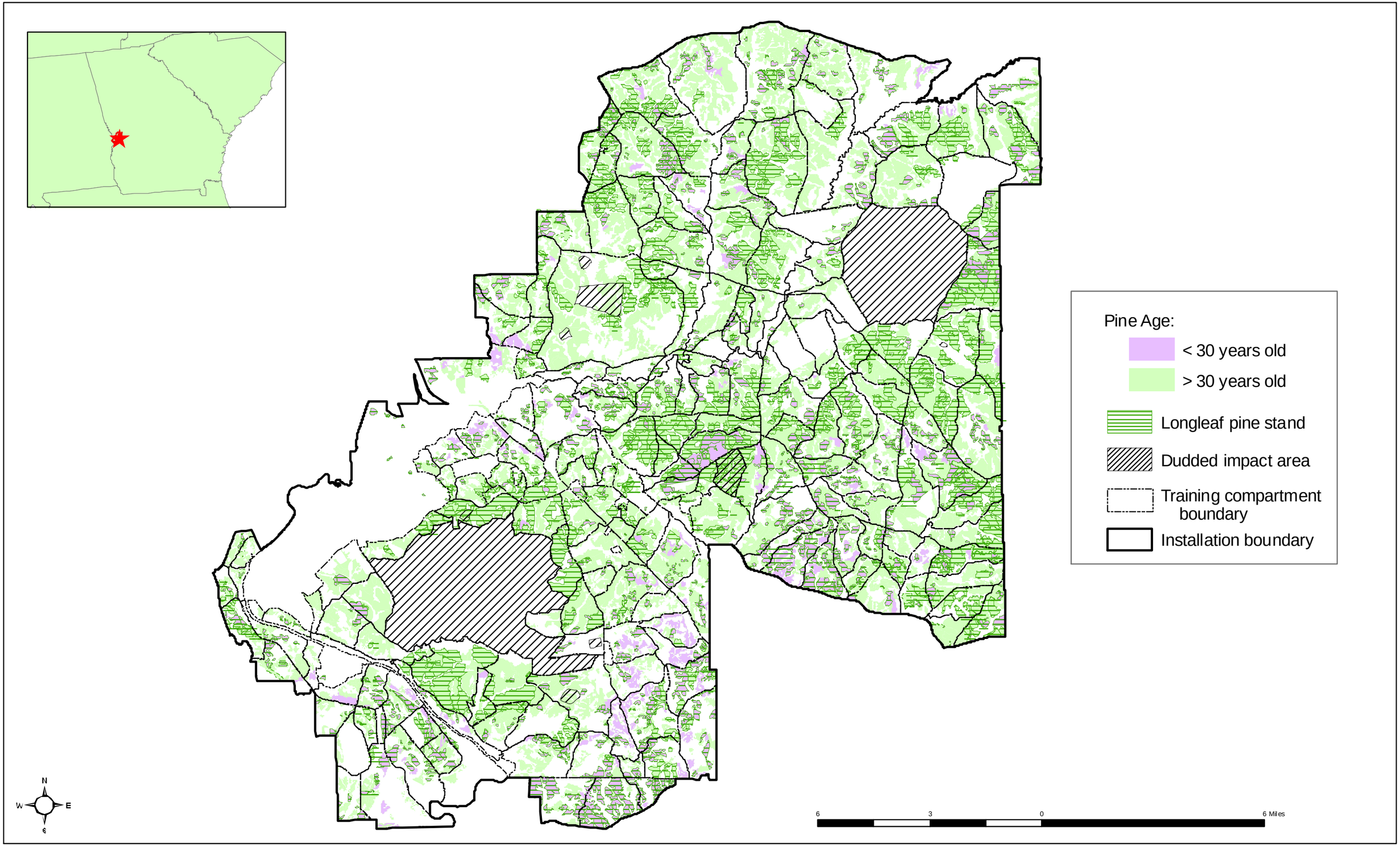


Figure 3-8. Pine stands by age and species on Fort Benning.

and drilled cavities. In 2006, there were 957 trees with artificial cavities. Of these, 846 were in longleaf pines. Additionally, 52.8% of all active cavities were artificial, indicating the positive role that artificial cavities have had upon the population (FBCB, unpub. data).

3.1.6.2 Habitat Conditions

On Fort Benning and at various locations in GA, AL, South Carolina (SC) and Louisiana, land managers have observed an increasing number of pines dying prematurely from a condition that has been termed "loblolly decline." Symptoms are similar to, and have been mistaken for, both senescence and littleleaf disease, the latter caused by at least two soil-born fungi, *Phytophthora cinnamomi* and *Pythium* sp. These symptoms include sparse crowns, reduced crown vigor, reduced radial growth, root deterioration and premature death. Symptoms are most often seen in off-site pine stands between 30 and 50 years of age, but have been observed in younger stands (Eckhardt et al. 2004a).

A forest health survey conducted on Fort Benning in 2004 revealed that 5% of the standing trees tallied were dead, and of the remaining live trees, 7% had low crown vigor. Specifically, 16% of all loblolly pines inventoried were either dead or had low crown vigor, and collectively nearly12% of all pines inventoried were either dead or low-vigor (TNC 2006). In similar longleaf systems off-Post, 0-1 dead trees per acre has been the typical mortality rate (TNC 2006).

Loblolly decline is thought to be caused by a combination of factors which alone would typically not cause mortality. These factors include pathogens, insects, site factors and stress. The primary pathogen associated with decline symptoms is one or more species of vascular stain fungi (*Leptographium* spp.). A likely insect vector of this fungus is a bark beetle (*Hylastes* sp.). These components are often present in healthy stands without ever causing decline symptoms. When trees are weakened by a disturbance, this can create an environment that is conducive to the insect vector and that is vulnerable to the pathogen, thereby triggering a decline in tree health from which trees do not recover (Eckhardt 2005). Disturbance, as pertaining to forest decline, can be categorized as anthropogenic (silvicultural (e.g. logging, prescribed fire)), recreational or training activities (e.g. heavy maneuver) or natural (weather, drought) and affects tree health by damaging the roots, bole or crown and/ or compacting the soil (impacting hydrology and nutrient absorption). Preventative recommendations relative to military training, particularly heavy

maneuver training, include restricting activity to as small of an area as feasible (vs. training over a large area) and for vehicles to stay as far as possible from the crown edge (recommended 50 ft. from crown edge or drip line) in order to keep vehicles off of tree roots (L. Eckhardt, Auburn University, pers. comm.).

Prescribed burning in loblolly and/ or shortleaf pine stands presents a management challenge. Fire is considered to be a disturbance that can contribute to decline, particularly when compounded with other impacts such as training. Fire is also an integral component of the desired longleaf pine ecosystem, however, and is essential to control hardwood and off-site pine species regeneration, promote the growth of native herbaceous species and maintain the open forest structure ideal for RCW management.

In 2004, researchers from Louisiana State University Agricultural Center completed a model that weighed factors that have been associated with decline, including slope and aspect. One product of this work was a "Loblolly Decline Risk Map" containing a Geographic Information Systems (GIS) layer that shows the areas on Fort Benning which, if forested with loblolly or shortleaf pine, are at high, moderate, low or minimal risk of decline (Figure 3-9). Disturbance, as defined above, greatly increases the chances of decline, specifically in the moderate and low risk zones. Loblolly or shortleaf stands can be productive in these zones if disturbance is minimized.

A similar decline condition has been observed in longleaf pines in recent years. Symptoms are similar to those of loblolly decline, but involve a specific vascular stain fungi (*Leptographium serpens*). Research on both decline situations is being conducted at Fort Benning and is described in Section 8.

In addition to decline, there is an ongoing problem with disease and insect damage in off-site pine stands. Slash pine is the only local pine species that does not seem to be affected by the pathogens associated with decline (L. Eckhardt, Auburn University, pers. comm.), however it is highly susceptible to other problems such as fusiform rust and ice damage (R. Larimore, FBLMB, pers. comm.). Off-site stands on Fort Benning in general are more susceptible to insect and disease problems than they would be in their natural habitat, particularly on sites where the topsoil was historically degraded by agriculture and/or timber operations and in areas that receive frequent fire. Figure 3-10 shows dominant pine species on Fort Benning and where applicable, associated decline risk.

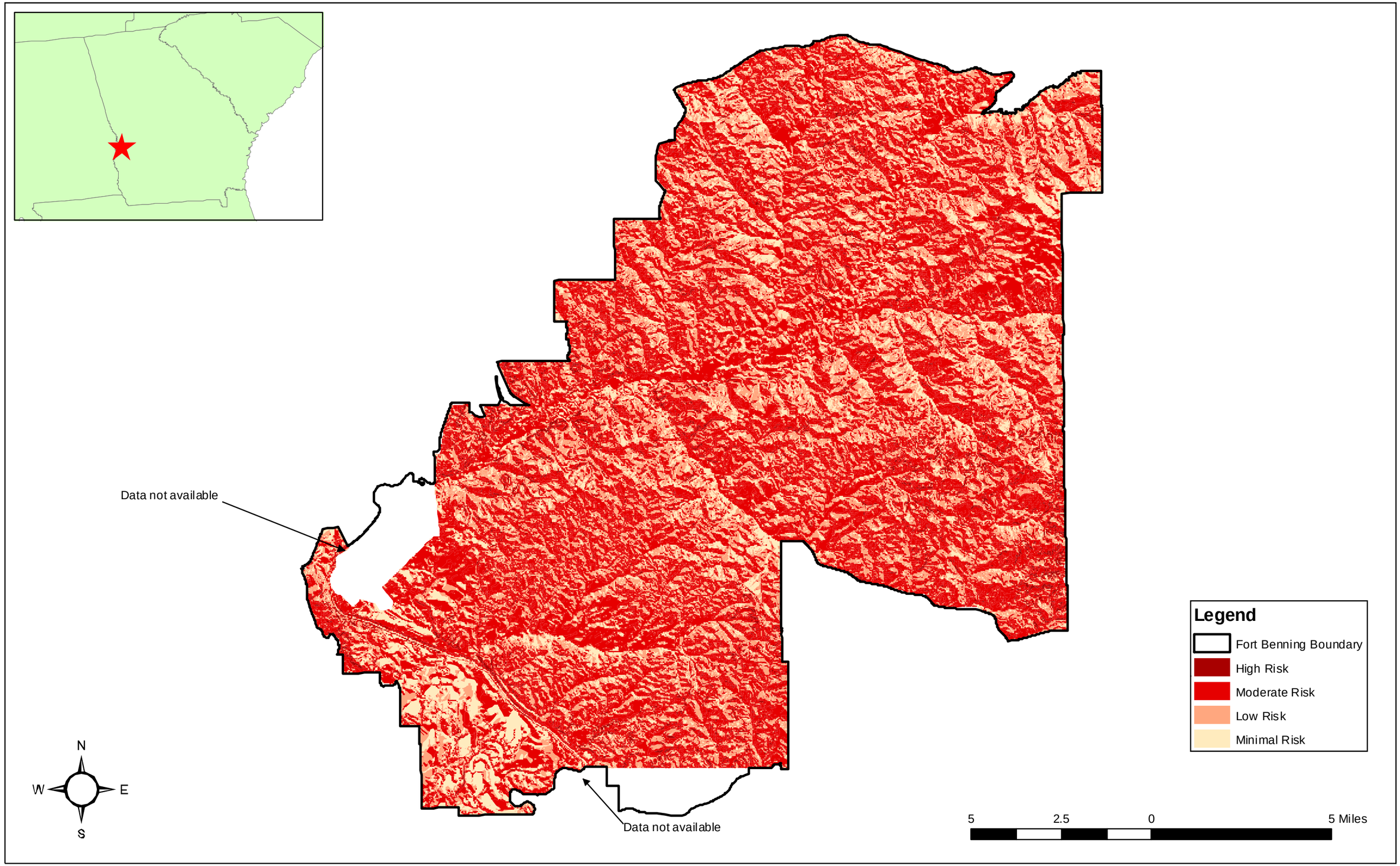


Figure 3-9. Loblolly Decline Risk Map prepared by Louisiana State University Agricultural Center (2004) for Fort Benning showing the risk of decline if areas are forested in loblolly or shortleaf pine.

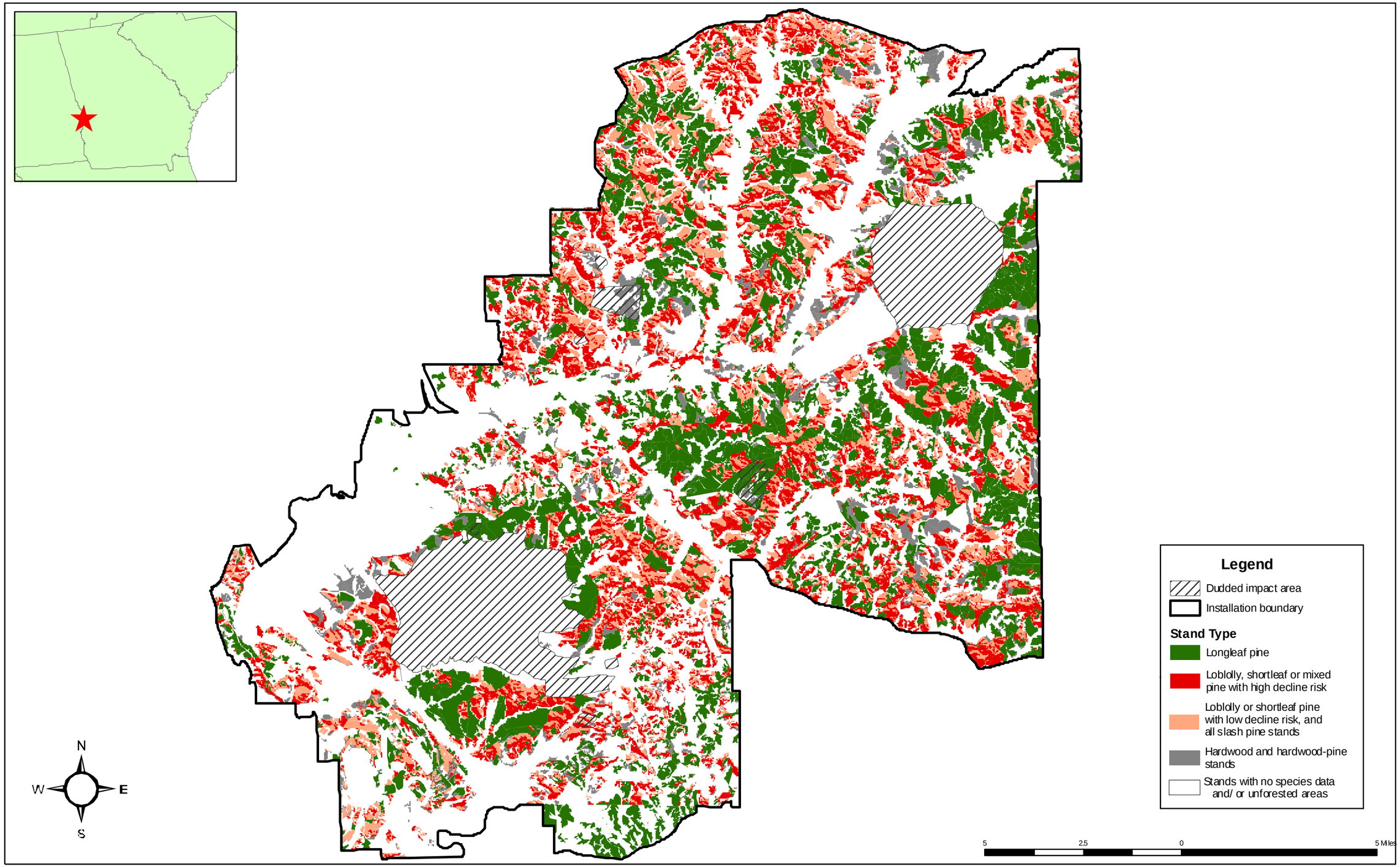


Figure 3-10. Dominant pine species on Fort Benning and, where applicable, associated risk of decline.

3.1.6.3 Installation- Wide Habitat Restoration

It has been reported that Fort Benning contains the largest RCW population strongly reliant on off-site loblolly pines. This is a concern to Installation land managers because of the overall poor health of the off-site stands due to forest decline (described above) and other factors. A potential population bottleneck could occur if the loss of mature loblolly pines exceeds the replacement rate of longleaf regeneration (Doresky et al. 2004).

In order to address the ongoing loss of current and potential RCW habitat due to declining or otherwise unhealthy stands of off- site pine species, Fort Benning plans to continue and intensify its efforts to convert loblolly, shortleaf and slash pine stands to longleaf pine. Details of large-scale habitat restoration/ reforestation on Fort Benning are currently being discussed with USFWS through informal consultation and will be a significant portion of the next INRMP and subsequent BO.

Approximately 962 acres were planted in longleaf plantation between 1989 and 1994 (FBLMB, unpub. data). Following the 1994 JBO, Fort Benning began aggressively regenerating longleaf pine on all appropriate sites. Approximately 1,000 acres have been planted annually in longleaf pine since 1995, with approximately 1,250 acres in 2006 and 1,320 acres in 2007 (as of February) for a total of 12,864 acres planted to date (FBLMB, unpub. data). This has been accomplished by clear-cutting and converting unhealthy/ unproductive off-site pine stands and by thinning mature off-site stands and underplanting with longleaf pine.

Approximately 2,114 acres of the above total have been underplanted with longleaf pine.

Additionally, FBLMB is in the process of identifying upland hardwood stands for pine conversion purposes. As of March 2007, approximately 740 acres in 25 stands of upland hardwoods had been designated for conversion to longleaf pine. This action could potentially add substantial acreage of RCW habitat to Fort Benning (P. Swiderek, FBCB, pers. comm.). Fort Benning intends to complete stand conversions to longleaf pine as quickly as feasible to ensure future RCW habitat, however, there are risks associated with altering too much habitat within a short time frame. Care must be taken to minimize “shock” to the ecosystem as well as to maintain, at a minimum, sufficient mature pine habitat to support the current RCW population. Additionally, due to the risk of unforeseen circumstances (e.g., natural disasters or potential mortality from *Leptographium serpens* (see Section 3.1.6.2)), it is advisable to preserve as much

additional mature habitat as is practicable. Another potential conflict exists between training and young pine stands: typically, training restrictions are necessary within plantations for the first 10-20 years after planting in order to protect seedlings and saplings from damage from mechanized and dismounted training. Consideration must be given when scheduling timber harvests to ensure that enough acreage remains available for training, in the appropriate areas, so as not to impede Installation training missions.

Stand treatments vary with the location and condition of the stands. The choice of whether to underplant or clear-cut depends on a variety of factors including the health and likelihood of survival of the "leave" trees, whether or not the stand is within a RCW foraging habitat partition and, if within a partition, how much other habitat is available to the resident RCW group. For instance, unhealthy stands that are not within a RCW foraging partition may be clear-cut and replanted with longleaf pine, while similar stands that provide vital RCW foraging habitat may be thinned from below, chemically treated, prescription-burned and underplanted with longleaf pine.

Partly in preparation for the proposed action, the Installation is in the process of shifting its timber schedules in order to prioritize those areas that will have restricted or limited access once proposed ranges and cantonment projects are constructed (e.g., within SDZs) and as training uses of areas change (e.g., within concentrated Heavy Maneuver Areas (see Section 4.3.2). Fort Benning is also incorporating timber clearing needs for proposed projects into the schedule, as well as any management needed within active RCW partitions affected by Transformation (see Section 9) and/ or inactive recruitment clusters necessary for continued population growth. For efficiency, most treatments will be conducted on the compartment-level, accomplishing as much management as is needed with a single entry. Research currently being conducted on underplanting and forest decline at Fort Benning (Section 8) will provide valuable information in determining which treatment methods are best for each stand.

The rate at which stands will be converted/ underplanted will be dependent upon formal consultation with USFWS for the next INRMP. Preliminary estimates show that if 1,500 acres continue to be planted in longleaf pine/ year, all acres managed for RCWs will be longleaf-dominated in or around 2032.

3.1.7 PROJECTED RCW "RECOVERY"

Based on the current population growth trend, 11 years of breeding data and the current proportions of active (PBGs, solitary males or captured sites) and inactive clusters, and without taking habitat availability into consideration, Fort Benning could have 351 PBGs (one criteria of "recovery") by 2014 (FBCB, unpub. data). However, Fort Benning is restricted in potential recruitment site locations due to poor habitat conditions in many areas of the Installation.

Using the average percentages of active, inactive, captured (territory occupied by a neighboring RCW group) and solitary bird clusters at Fort Benning, 428 clusters are necessary in order to yield 351 PBGs (M. Barron, FBCB, pers. comm.). In order to reach this number, there must be sufficient stands of nesting quality for 428 clusters, configured in such a way that every cluster has ≥120 acres of potential foraging habitat (unless naturally constricted by neighboring partitions). Current estimates show that Fort Benning currently has sufficient potential foraging habitat (calculated as all pine stands ≥30 years old regardless of basal area (BA)) to support 428 RCW clusters at 150 acres/ cluster (150 was used to allow a "buffer" for future project removals or loss of stands due to disease or wildfire). However, this calculation does not take spatial configuration or habitat contiguity into account: the acreage included in the calculations could be anywhere on the Installation. For an estimate of when 351 PBGs would be achievable regardless of the configuration of the stands, the year when sufficient stands ≥80 years old was calculated. Because there are still many unknowns about underplanting off-site stands regarding the survivorship of the overstory and the optimal overstory BA, dates were calculated using two extremes: a) assuming canopy pines over underplanted stands remain viable enough to serve as foraging or nesting habitat until the underplanted longleaf is of foraging quality, and b) assuming that canopy pines do *not* survive in sufficient amounts to contribute to foraging/ nesting habitat. Assuming that 1,500 acres are planted in longleaf/ year and canopy pines in underplanted stands are functional RCW habitat, enough stands will be ≥80 years old to support 428 clusters in or around 2047. Conversely, if the overstory does not survive to contribute to RCW foraging/ nesting habitat, sufficient acreage will exist for 428 clusters in 2010-2112.

Because of the generally poor health of loblolly, shortleaf and slash pine on the Installation, particularly in areas frequently burned and managed for RCWs, it is arguable that habitat conditions will not adequately support 351 PBGs until the required habitat is dominated by longleaf pine. Regardless of whether the overstory pines in underplanted stands are

functional RCW habitat, if 1,500 acres are planted in longleaf/ year, sufficient foraging habitat for 428 clusters will be forested in longleaf pine in 2062, and sufficient nesting habitat in 2112 (W. Harrison, pers. comm.).

3.1.8 PROJECTS CURRENTLY APPROVED AND/ OR UNDER CONSTRUCTION

Approved projects currently under construction on Fort Benning include construction, operation and maintenance of an ISBC, IPBC, DMPRC, a National Infantry Museum, a new Post Exchange and various cantonment area projects. In addition, the Installation is, and has been, upgrading various firing points and existing ranges as funding allows. Actions associated with the development, operations and maintenance of these ranges have been assessed by separate NEPA documentation and were the subject of previous formal or informal consultation with the USFWS. The IPBC and ISBC are not expected to have RCW impacts once operational. RCW impacts (8 "takes") were expected and accounted for in the DMPRC BO and subsequent consultation (USFWS 2004a, Fort Benning 2005, USFWS 2006c). Extensive monitoring of these clusters by FBCB will show what reaction the RCWs have to the range once use begins. The DMPRC is expected to be operational in 2008. If the level of 'take' exceeds that which was expected, the neighborhood analyses in this Biological Assessment may underestimate the effects of the Transformation. In that case, Fort Benning will reinitiate consultation with USFWS.

3.2 RCW NEIGHBORHOOD, ADJACENT LANDS

For projects impacting RCWs, the Action Area must include the RCW "neighborhood," which is defined by a buffer extending beyond the directly impacted area(s) equal to the average dispersal distance of RCWs within that RCW population or subpopulation (USFWS 2005). Dispersal is defined as the movement of individuals from their natal cluster to their first breeding location, or between consecutive breeding locations (USFWS 2003a). For this Biological Assessment, dispersal distance was defined as the average distance Fort Benning RCWs have traveled from their natal cluster to find an available niche, or between consecutive breeding locations. This included birds that were part of a breeding pair, helpers to an unrelated breeding pair and solitary birds defending a vacant territory (R. Costa, USFWS, pers. comm.). Fort Benning RCW dispersal data collected over 11 years was analyzed by FBCB and revealed an

average dispersal distance of 2.57 miles (M. Barron, FBCB, pers. comm.). This buffer was applied to all active RCW clusters impacted by Transformation Alternative A or B (alternatives will be discussed further in Section 4.2). In addition, if not already included in the RCW neighborhood, the area encompassed by the RCW survey area (methodology described in Section 5.1.1) was also included. The combination of the Installation and all adjacent areas within the Action Area was 217,222 acres under Alternative A and 215,819 acres under Alternative B (Figures 3-1 and 3-2).

The portion of the Action Area outside of the Installation boundary, but within the RCW neighborhood, includes portions of Chattahoochee, Marion, Muscogee and Talbot Counties, GA. Under either Alternative A or B, changes in land use adjacent to Fort Benning would potentially occur as a result of the secondary impacts of induced growth. In terms of land use, it is anticipated that primary changes would result from increased demand for residential land use and commercial and public services.

Chattahoochee County, GA is dominated by Fort Benning lands; the approximately 20% of the county that is not included within the Installation is located southeast of Fort Benning. The majority (84%) of the land use in the county and on most lands adjacent to Fort Benning are characterized as agriculture or forestry. Approximately 12% of the county land use is low-density and rural residential and occurs primarily within the City of Cusseta and along State Route 26 and US Highway (Hwy.) 27-280. Single-family detached housing is the predominant residential land use. Public/ institutional land uses account for approximately 2% of all land uses and are located in close proximity to the center of Cusseta (USGS 2001). Areas south of the Installation within the Action Area contain a portion of the Chattahoochee River and deciduous forest. Areas southeast of the Installation within the Action Area contain hardwood-dominated stands along floodplains of Hichitee Creek, Halloca Creek, Ochillee Creek, Stevens Branch and Spring Branch; young (<30 years old) pine plantations; US Hwy 27/ 280, GA Hwy 55 and GA Hwy 26; low-density residential areas; agricultural fields and recreational fields. A portion of the young pine stands between the Installation and Hwy. 27 were recently sold but will, at least temporarily, remain in timberlands (TNC 2006). There are a few areas visible on the 2003 aerial photography that appear to be pine stands ≥60 years old within the Action Area for Alternative A, however these are separated from the Installation boundary by >200 ft. of non-habitat. Therefore, if RCWs were present in these areas, any habitat removed for the proposed action

would be considered noncontiguous. No Federally-listed species are known to occur within the Action Area off-Post in Chattahoochee County.

Marion County, GA is located on the eastern boundary of Fort Benning. No major communities are located in this county adjacent to the Installation (USGS 2001). The land immediately adjacent to the Installation is dominated by agricultural areas and pine plantations <30 years old and also contains hardwood- pine stands; floodplains of Pine Knot Creek, Little Juniper Creek and unnamed tributaries; and low density residential development, primarily along GA Hwy 355 and county roads. Portions of the Action Area are under fee by timber companies, and other portions were recently sold. No Federally-listed species are known to occur off-Post within the Action Area in Marion County.

Talbot County, GA is located on the northeastern boundary of Fort Benning and does not include any major communities in the area adjacent to the Installation. The land uses adjacent to the Installation are described as rural agricultural areas (USGS 2001). Deciduous and evergreen forests make up the predominant land use within either Alternative outside of Fort Benning (Figure 3-1). Approximately 25% of the off-Post area within Talbot County and the Action Area is forested in hardwood floodplains of Baker and Upatoi Creeks, which form the boundary of the Installation before joining and flowing onto the Installation. Relict trillium is known to exist in Talbot County either within or near the Action Area; no other Federally-listed species are known to occur off-Post within the Action Area in Talbot County.

Muscogee County, GA is located on the northwestern boundary of Fort Benning. Columbus is currently the third largest city in Georgia and has dramatically increased in size within the last 50 years. Land uses within the Action Area for either Alternative include residential and commercial development, City municipal buildings including a prison and an animal control center, a landfill, a golf course, pastures and large, fragmented tracts of evergreen and deciduous forest. Cox, Randall, Dozier, Bull, Opossum, Tiger and Kendall Creek and the Tar River run through Muscogee County and occur within the two Alternative Action Areas.

The MTP is also within the Action Area and is mostly undeveloped, however much of the pine habitat was cleared in 2005 (JCA 2004). This property will be used primarily as an industrial park with some park land. Construction of the northern half of a 4-lane road through the center of the property, a cul-de-sac south of Chattsworth Rd. and buildings on 2-3 parcels on Chattsworth Rd. has been completed. Timber has been cleared for the remainder of the central

road, 2 parcels in the northeastern section of the tract and approximately 337 acres in the southern section of the property (excluding RCW "protected areas") (JCA 2004). As mentioned in Section 2.7, Fort Benning has an obligation to provide habitat for 2 RCW clusters (N01-02 and N02-02) that have foraging partitions that overlap onto City property. Neither of these clusters will be affected by Transformation projects. The "taken" cluster, Cluster N02-01, was inhabited by a PBG in 2006 (JCA, unpub. data).

Bald eagles have been reported in Muscogee County, however they are unlikely to occur within the Action Area due to the lack of large bodies of water. No other Federally-listed species are known to occur within the Action Area off-Post in Muscogee County.

3.3 OFF-POST RECOVERY RCW POPULATIONS

Fort Benning has participated in the USFWS RCW Southern Range Translocation Cooperative (SRTC) as a donor population since 1998. One of the goals of this initiative is to increase both the size and growth rate of RCW populations across the Southeast on private, state, and Federal properties to expedite recovery and thereby help minimize conflicts between RCWs and military activities (R. Costa, USFWS, pers. comm.). Fort Benning is highly valued as a donor population to the Cooperative. The proposed action, however, has the potential to reduce greatly the number of RCWs Fort Benning is able to contribute annually, which could indirectly impede the growth of other recovery populations. Since participation in the SRTC is a discretionary conservation action, the Installation cannot be "penalized" for reducing its contributions as a result of the proposed action. The impact of the proposed action, however, on those RCW populations that would otherwise be supplemented with Fort Benning RCWs does warrant recognition. These recipient populations are listed in Table 3-2 and are shown in Figure 3-3. The primary recipient populations since 1998 have been International Paper's Southlands Experiment Forest, GA; Shoal Creek Ranger District, Talladega National Forest, AL; and the DeSoto and Chickasawhay Ranger Districts, DeSoto National Forest, Mississippi.

Table 3-2. Recipient populations of birds donated by Fort Benning from 1996-2006

		Male	Female	**Total**
1996:	Daniel Boone National Forest, KY	0	1	**1**
1999:	International Paper, Southlands Experimental Forest, GA	3	7	**10**
	Joseph W. Jones Ecological Research Center, GA	3	3	**6**
2000:	International Paper, Southlands Experimental Forest, GA	3	3	**6**
	DeSoto Ranger District, DeSoto National Forest, MS	3	3	**6**
	St. Marks National Wildlife Refuge, FL	2	1	**3**
2001:	International Paper, Southlands Experimental Forest, GA	2	2	**4**
	Chickasawhay Ranger District, DeSoto National Forest, MS	1	1	**2**
	Blackwater River State Forest, FL	2	1	**3**
	Joseph W. Jones Ecological Research Center, GA	1	1	**2**
2002:	Avon Park Air Force Range, FL	3	1	**4**
	International Paper, Southlands Experimental Forest, GA	1	1	**2**
	Chickasawhay Ranger District, DeSoto National Forest, MS	1	1	**2**
2003:	Shoal Creek Ranger District, Talladega National Forest, AL	2	3	**5**
	DeSoto Ranger District, DeSoto National Forest, MS	2	3	**5**
				0
2004:	Conecuh National Forest, AL	3	3	**6**
	Wetappo Creek Conservation Area, FL	3	1	**4**
	Chickasawhay Ranger District, DeSoto National Forest, MS	3	3	**6**
2005:	Conecuh National Forest, AL	2	2	**4**
	Shoal Creek Ranger District, Talladega National Forest, AL	3	4	**7**
	Hal Scott Preserve, FL	0	2	**2**
	St. Sebastian Buffer Preserve, FL	0	1	**1**
2006:	Shoal Creek Ranger District, Talladega National Forest, AL	3	3	**6**
	DeSoto Ranger District, DeSoto National Forest, MS	3	6	**9**
		49	57	**106**

4 DESCRIPTION OF THE PROPOSED ACTION

The following describes the missions being realigned, relocated, activated and inactivated under the proposed action; the personnel or force structure changes associated with these Transformation efforts; the construction activities supporting these mission changes and realignments; operation and maintenance of all types of facilities and the associated equipment use and operational needs.

4.1 PURPOSE AND NEED

The proposed action assessed in this Biological Assessment is the implementation of Transformation actions at Fort Benning (BRAC, AMF, GDPR and other stationing actions) that are interrelated to such an extent that they are, in effect, a single course of action. The overarching need for the proposed action is to improve the ability of the US to respond rapidly to challenges of the 21st century.

All construction projects and training area use changes assessed in this document have been identified by the Army as necessary in order to provide facilities, structures, roads, ranges and maneuver areas for the Army to carry out the BRAC-directed actions and other restationing actions at Fort Benning. This includes cantonment area construction and conversion to accommodate additional Soldiers and their family members, students and civilian personnel; range construction and conversion to address new Programs of Instruction (POIs) of current units and of arriving units; road construction and upgrades for increased vehicle traffic (wheeled and tracked) and increased and/ or change in use of training areas, including maneuver areas.

4.2 ALTERNATIVES

As described in Section 1, environmental consequences of the proposed action and related mitigation are currently being evaluated in an EIS as part of the NEPA process. In compliance with Army NEPA and CEQ regulations, the Army must consider reasonable alternatives to the proposed action. Only those alternatives determined as reasonable relative to their ability to fulfill the need for a proposed action warrant detailed analysis. To be considered reasonable, an alternative must not only fulfill the purpose and need for the action, it must be technically and fiscally feasible. Through a rigorous evaluation, an agency needs to examine a range of

alternatives, determining those deemed reasonable, and summarize those not carried forward for detailed analysis.

In conformance with these requirements, the Army explored potential alternatives. Options considered in this examination included alternative locations for facilities, activities, and ranges; phasing of implementation; and modifying personnel realignments. As discussed below, few of these options proved reasonable relative to the purpose and need. In particular, the directed realignments of functions, units, and personnel, as specified under the BRAC Law must, according to law, be implemented. BRAC Law states that the provisions of NEPA shall not apply to the consideration of alternatives for BRAC-directed actions to the military installation which has been recommended for realignment, or alternatives for transferring functions to any military Installation selected as the receiving installation. Since these realignment actions (e.g., USAARMC/S) constitute the majority of the proposed action and cannot be substantively modified, options for the remainder of the related (but non-BRAC) actions to support the realignments are, necessarily, constrained.

Two action alternatives were identified that would meet the purpose and need of the proposed action, referred to in this document as Alternative A and Alternative B. The Army has identified Alternative B as its preferred alternative because, taking a variety of factors into consideration, it best meets the purpose and need of the proposed action.

All restationing actions, training activities and construction projects necessary to implement the proposed action are included in both Alternatives, and many locations and training area uses are the same. **Unless otherwise specified, the associated actions described below apply to both alternatives.**

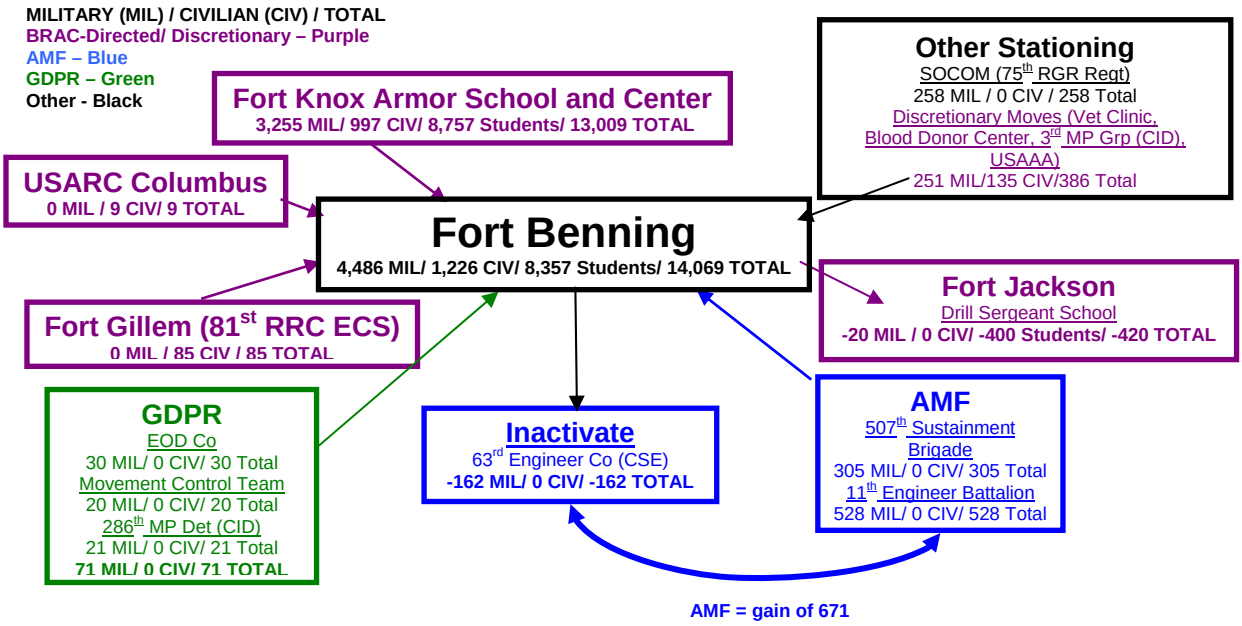
4.3 ASSOCIATED ACTIONS

Restationing, training use changes and construction projects associated with the proposed action are discussed below. The proposed action also includes the ongoing conservation efforts described in Section 8 and minimization efforts described in Section 9.

4.3.1 RESTATIONING ACTIONS

Figure 4-1 provides an overview of baseline numbers of personnel, the proposed Transformation restationing actions and numbers of personnel associated with each

Figure 4-1. Realignment and restationing actions associated with Transformation, and projected military (MIL), civilian (CIV) and student personnel gains and losses upon completion of all Transformation projects at Fort Benning.



TRANSFORMATION ACTION	PERSONNEL			
	Military	Civilian	Students*	Total
BASELINE	17,771	8,690	9,386	35,847
BRAC-DIRECTED				
Relocate Armor School And Center, Fort Knox, KY	3,255	997	8,757	13,009
Relocate USARC, Columbus, GA	0	9	0	9
Relocate 81st ECS, Fort Gillem, GA	0	85	0	85
Relocate Drill Sergeant School to Fort Jackson, SC	-20	0	-400	-420
TOTAL BRAC	**3,235**	**1,091**	**8,357**	**12,683**
AMF				
Inactivate 63rd Engineer Co	-162	0	0	-162
Activate 11th Engineer Bn (tied to above)	528	0	0	528
Gain 507th Sustainment Bde	305	0	0	305
TOTAL AMF	**671**	**0**	**0**	**671**
GDPR				
EOD Co	30	0	0	30
Movement Control Team	20	0	0	20
286th MP Det (CID)	21	0	0	21
TOTAL GDPR	**71**	**0**	**0**	**71**
OTHER ACTIONS				
BRAC-Discretionary relocations (including Vet. Clinic, Blood Donor Center, 3rd MP Group [CID], USAAA)	251	135	0	386
SOCOM (75th Ranger Regt)	258	0	0	258
TOTAL OTHER	**509**	**135**	**0**	**644**
TOTAL GAIN AT FORT BENNING	**4,486**	**1,226**	**8,357**	**14,069**
POST-TRANSFORMATION TOTAL	**22,257**	**9,916**	**17,743**	**49,916**
PERCENT GAIN	**25.2%**	**14.1%**	**89.0%**	**39.2%**

Sources: J. Brown, Science Applications International Corporation (SAIC), pers. comm.; USACE 2006a

* Student totals vary throughout the year- numbers represent increase in the average daily number of students.

Once all Transformation activities are complete, there will be a 39.2 % increase (14,069) in Fort Benning personnel (military, civilian, and students). It is assumed that all personnel associated with BRAC-directed actions will arrive at Fort Benning no later than 15 September 2011 in accordance with the BRAC legislation.

4.3.1.1 BRAC-Directed

The BRAC Commission directed the following realignments and restationing actions at Fort Benning:

• Relocate the USAARMC/S from Fort Knox, KY to Fort Benning in order to establish the MCOE. The USAARMS trains Armor and Cavalry Soldiers, NCOs and Officers to fight in full spectrum operations to meet the requirements of the Army in the contemporary operational environment. The USAARMS serves as the trainer for the current mounted force and develops the tools for the future mounted force. The USAARMS also trains Marines as M1A1 Tank Crewmen and Tank Mechanics. This training includes basic Military Occupational Specialty training as well as advanced Military Occupational Specialty training for Senior NCOs and Officers. The USAARMC/S will join the existing USAIS/ USAIC at Fort Benning to form the MCOE, where Soldiers will be trained in both armor and infantry tactics.

Training units relocating from Fort Knox include the 1st Armor Training Bde, the 16th Cavalry Regt and the US Army NCO Academy (NCOA). The training missions of these units will be described in more detail below.

• Relocate the 81st Regional Readiness Command (RRC), 43rd Equipment Concentration Site (ECS) from Fort Gillem, GA to Fort Benning. In general, the 81st RRC has command and control of units assigned to prepare for successful mission performance and mobilization. The ECS receives, stores, maintains and issues equipment that supports the home station training needs for Army Reserve units located throughout GA. This equipment is required for mobilization and annual training.

• Close the US Army Reserve Center (USARC) in Columbus, GA. This unit will be relocated to a new USARC on Fort Benning and consolidated with the Army Reserve Units currently there. The Army Reserve's mission is to provide trained and ready Soldiers and units with the critical combat support capabilities necessary to support national strategy during peacetime, emergency contingencies and war.

• Relocate the Drill Sergeant School from Fort Benning to Fort Jackson, SC. The Drill Sergeant School trains NCOs in the duties and responsibilities associated with Drill Sergeants so that they can train, supervise and lead initial entry Soldiers.

4.3.1.2 Army Modular Force

Under AMF, the 3rd Bde of the 3rd ID will continue to transform to create the Army's new heavy BCT force structure at Fort Benning. The 36th ENG Group at Fort Benning is realigning as the 11th ENG Battalion (Bn), which includes the 362nd Multi-Role Bridge Company (Co) (MRBC) and the 63rd ENG Co (Combat Support Equipment (CSE). The 507th Sustainment Brigade would also be activated at Fort Benning. The net gain at Fort Benning from AMF restationing will be approximately 671 personnel (Figure 4-1).

4.3.1.3 GDPR

For the GDPR, the 286th MP Detachment (Det) (Criminal Investigation Division (CID)) would relocate from overseas to Fort Benning and join other CID units (with similar and/ or complementing missions) being relocated under BRAC. In addition, the EOD Co and a Movement Control Team will be moved to Fort Benning from overseas. No construction projects specific to the GDPR actions are proposed. These actions are limited to personnel realignments and the increase in personnel, which would be stationed either within existing facilities or accommodated in one of the new facilities being built in support of BRAC, AMF or other stationing actions.

4.3.1.4 Other Discretionary Restationing

<u>BRAC-discretionary restationing actions</u> at Fort Benning are directly related to the BRAC-directed actions. Most of these actions address current functions of two GA Army Installations slated for closure under BRAC (Fort McPherson and Fort Gillem) for which there is an ongoing need, but which were not specifically addressed in the BRAC Commission actions. These actions include:

• Relocating the Criminal Investigation Command (CID) from Fort McPherson, GA to Fort Benning. CID's mission is to investigate and deter serious crimes in which the Army has an interest. CID also provides criminal investigative support to all Army elements and deploys on

short notice in support of contingency operations worldwide. CID is a worldwide command with fewer than 2,000 Soldiers and civilians and approximately 900 special agents.

• Relocating the 3rd MP Group (CID) from Fort Gillem to Fort Benning. The 3rd MP Group is responsible for all felony criminal investigation matters with an Army interest throughout the eastern half of the United States, the Caribbean, Central America (less Mexico) and South America.

• Relocating the 86th MP Det. from Fort McPherson to Fort Benning. Its mission is similar to that described for the 3rd MP Group.

• Relocating the Veterinary Clinic from Fort McPherson to Fort Benning. The clinic provides quality, economical animal care and preventive medicine for all pets of authorized personnel.

• Relocating the Blood Donor Center from Fort Knox, KY to Fort Benning. The donor center helps Soldiers by collecting blood from the military community, for use by the military community. It provides quality blood products, blood substitutes and services for all worldwide Soldiers in peace and war.

• Reassigning field agents from the U.S. Army Audit Agency (USAAA) from Atlanta, GA to Fort Benning. The USAAA provides objective and independent auditing services to assist the Army in making informed decisions, resolving issues, using resources effectively and efficiently and satisfying statutory and fiduciary responsibilities.

AR 5-10 stationing activities include the addition of personnel from other locations across the U.S. to the Special Operations Command (SOCOM) at Fort Benning.

4.3.2 USAARMC/S MISSIONS AND TRAINING

The range and training operations requirements of the proposed action are primarily driven by the gain of the USAARMC/S, however, they are also interrelated and synergistic with other Transformation activities and existing missions at Fort Benning. Range and training operation requirements are reflected in the equipment to be used, the operations undertaken and the ranges and maneuver areas proposed.

The equipment used by units/ organizations relocating to Fort Benning include tanks, Bradley Fighting Vehicles (BFVs), High Mobility Multipurpose Wheeled Vehicles (HMMWVs), trucks and trailers for operational needs as well as maintenance instruction. Table 4-1 provides

an overview of the vehicles currently in the Fort Benning inventory and those currently in the USAARMS inventory. All of these vehicles will move to Fort Benning:

Table 4-1: Existing Fort Benning and USAARMS Vehicle Inventories

Vehicle	Type	Fort Benning Existing	USAARMS Existing	Percent (%) Increase
Tracked Armor Equipment	Includes tanks, armored personnel carriers, BFVs, recovery vehicles, tanks with assault bridges and mine clearers	201	530	263.7 %
Wheeled Heavy Equipment	Stryker, HMMWVs (carriers, cargo, armament and heavy weight trucks)	328	311	94.8 %
Wheeled Heavy Trucks	Heavy cargo equipment transport, fuel tankers, wrecker/ recovery vehicles	141	37	26.2%
Wheeled Trailers	Low-bed trailers for armaments, water and utility towing	216	67	31.0 %
Wheeled Medium/ Light Trucks	Fork lifts, cargo and general personnel carriers	193	90	46.6 %
	Total Vehicles	**1,079**	**1,035**	**95.9 %**

4.3.2.1 Training Courses

Training units of the USAARMS relocating to Fort Benning include the 1st Armor Training Bde, 16th Cavalry Regt and U.S. Army NCOA. Together, these units are responsible for training every Armor Crewman in the Army and Marines.

More than 70 training courses currently conducted at Fort Knox, ranging in length from 1 to 20 weeks, will be shifted to Fort Benning as part of Transformation. The initial entry Armor Crewman and Cavalry Scout training courses are the most frequently taught courses at USAARMS. The 19D One Station Unit Training (OSUT) Cavalry Scout course trains initial entry Cavalry Scouts in small arms training, BFV and HMMWV mechanics, use of simulators, gunnery, dismounted training, driver training and field training exercises (FTXs). Cavalry Scouts are trained to operate BFVs and HMMWVs at the basic and advanced drivers training courses (described in Section 4.2.5.1) and live fire at the gunnery ranges. There is also an FTX encompassing approximately 3,705 acres. Approximately 40 tracked vehicles are used during this course, but students rotate between the ranges and driver training course. Up to 14 vehicles are typically present in any given area. Off-road, Cavalry Scouts generally follow each other or form small formations (M. Gillette, USAARMS, pers. comm.).

The 19K OSUT Armor Crewman course trains Armor Crewmen in the same aspects as above with M1A1 Abrams tanks. This course involves approximately 55 tracked vehicles and includes a FTX encompassing 2,470 acres. As with the 19D OSUT, the vehicles are dispersed between the ranges and Driver Training Course and generally stay in single-file lines and/ or small formations.

The Scout Leaders Course is designed to train and educate platoon leaders, platoon sergeants and section sergeants how to effectively lead a reconnaissance platoon. The course includes 4 days of mounted tactical training during which Cavalry Scouts plan and execute a variety of mounted and dismounted operations. The Scout Leaders Course at Fort Knox involves 5 BFVs and 25 wheeled vehicles (primarily HMMWVS) encompassing an approximately 43,472 acre area. Approximately 35% of the field training is conducted at night.

The largest-scale FTXs at USAARMS are during the Basic Officer Leader Course (BOLC) III, which at Fort Knox involves 61 vehicles (26 tracked) over an approximately 43,472 acre area, during 10-day FTXs occurring 11 times per year. Approximately 50% of the training will be conducted at night including at least one full exercise using all vehicles and limited platoon size (4 to 10 vehicles) exercises composed of night movements and offensive, defensive and security operations. During the FTX, co-use of the area by other units and/ or civilian personnel is possible, but limited (M. Gillette, USAARMS, pers. comm.). The BOLC III also includes 2 4-day situational training exercises (STXs) conducted 11 times per year.

The remaining courses range in extent and duration and can be found in Table 4-2.

Many USAARMS courses are being revised prior to the relocation. The Armor Crewman/ Scout Advanced NCO Course (ANCOC) is combining with the Infantry ANCOC to form the Maneuver ANCOC. The Armor Captains Career Course and the Infantry Captains Career Course are combining to form the Maneuver Captains Career Course. Both of these new courses will be taught by a mixture of Infantry and Armor Soldiers and Officers and will include a mixed student population from both branches. These courses will train graduates in the skills common to mounted and dismounted Soldiers and leaders, as well as the unique skills specific to their military occupational specialty and unit of assignment. Both courses will occur at both Fort Benning and Fort Knox until Fort Benning has the training facilities, ranges, classrooms and billets to accommodate this training.

Table 4-2. Selected USAARMS training courses relocating to Fort Benning.

Course	Scope	Duration (Days)	Number of Classes/ Year	Total Days/ Year	Vehicle types	Number of Vehicles by Type	Acres Occupied	Percent of Training Conducted at Night
1st ATB								
19 D OSUT Cavalry Scout	Basic combat training tasks; Army values; physical fitness; first aid; nuclear, biological and chemical threats; engineer; communications; land navigation; weapons; individual tactical training; intelligence; M3 Bradley and M1025 series HMMWV operation and maintenance	7	24	168	Tracked	40	3,750	25%
19 K OSUT A1A Abrams Armor Crewman	Basic combat training tasks; Army values; physical fitness; first aid; nuclear, biological and chemical threats; engineer; communications; land navigation; weapons; individual tactical training; M1A series tank and M1025 series HMMWV operation and maintenance	7	14	98	Tracked	55	2,470	50%
63A10 OSUT M1A1 Abrams Tank System Maintainer	Test and troubleshoot systems; inspect, service, lubricate, replace and adjust components; use of publications, special tools, test measurement and diagnostic equipment; fundamentals and principles of engine, fuel, exhaust, cooling, and electrical systems; track, suspension, steering control, hydraulic systems, engine power train and hull of the M1A1 Abrams tank, perform preventive maintenance checks and services; inspect, service, lubricate, replace, remove, install, adjust, test, purge, and troubleshoot components and control of electrical, mechanical, fire control components on the M1A1 tank turret.	8	17	136	Tracked	14	1,483	N/A
63M10 M2/M3 BFV System Maintainer	Same as above, but for the M2/M3 BFV.	8	21	168	Tracked	20	….	N/A
ASI H8 Tank Vehicle Recovery Specialist	Test and troubleshoot systems; inspect, service, lubricate, replace and adjust components; starting, charging, auxiliary power units, brakes, and main winch systems; operating, servicing and using track recovery vehicles and equipment; procedures used in rigging, recovering and towing of track vehicles.	21	21	441	Tracked	8	6,670	N/A
U.S. Marine Corps	Similar training to the 19 K OSUT, A1A Abrams Armor Crewman, and 63A10 OSUT, M1A1 Abrams Tank System Maintainer, but for the Marine Corps.	1	13	13	Tracked	….	….	….

Table 4-2 (cont.). Selected USAARMS training courses relocating to Fort Benning.

Course	Scope	Duration (Days)	Number of Classes/ Year	Total Days/ Year	Vehicle types	Number of Vehicles by Type	Acres Occupied	Percent of Training Conducted at Night
16th Cavalry Regiment								
Basic Officer Leader Course (BOLC) III	Indoctrination of Army programs and initiatives; military problem solving; risk management; after action review; suicide prevention; combat stress; 9mm pistol qualification; and a two-day field exercise designed to validate pre-commissioning skills. Hands-on equipment oriented instruction is used to train preventive maintenance, checks and services and the M1A1 tanks, tank crew station tasks, and pre-gunnery skills culminating with the tank crew gunnery skills test; property accountability; platoon maintenance operations; and individual and crew nuclear, biological, and chemical operations. Fundamentals of platoon offensive and defensive operations and FTX including force-on-force, free-play, offensive/defensive exercise with opposing forces, conduct troop leading procedures; pre-deployment and deployment operations; and Post-exercise inspections. Also includes tank gunnery, completion training, and cavalry enhancement training.	18	11	198	Tracked Wheeled	26 35	43,472	50%
2E-F137/521-F2 Scout Leaders Course	Identify and operate within the contemporary operating environment, applying the skills, knowledge and capabilities necessary to ascertain and communicate the nature of the threat with respect to the operating environment to ensure mission success. Involves constructive, virtual, live and computer based training. Includes intelligence preparation of the battlefield and practical exercises to plan and conduct advance reconnaissance and security missions on linear and nonlinear modern day battlefields. Tactical and technical proficiency in all aspects of mounted and dismounted reconnaissance and security operations.	4	11	44	Tracked Wheeled	5 25	43,472	35%
NCOA								
19D BNCOC Cavalry Scout	In a combat simulated cavalry scout platoon environment: mine warfare; secure communications; tactical movements; demolitions; nuclear, biological, chemical threats; maintenance; safety; troop leading procedures; physical fitness training; training management; tactics; conduct of fire training; BFV gunnery; Field FTX; Common Leader Training ; Common Military Training; and tactical seminars in a 24-hour a day NCOA environment.	3	5	15	Tracked Wheeled	9 25	247	20%
19K BNCOC Armor Crewman	In a combat-simulated tactical environment: armor tactics; secure communications; maintenance; tank gunnery; mine warfare; tank weapons; tank crew gunnery skills test; safety; troop leading procedures; physical fitness training; conduct of fire trainer; STX; and tactical seminars in a 24-hour a day NCOA environment.	3	5	15	Tracked Wheeled	14 15	247	20%

4.3.2.2 Maneuver Training Land

In the following discussion and throughout this document, the following terminology is used for areas used for heavy maneuver training:

Heavy maneuver land- The total area on Fort Benning that may be used for heavy maneuver training, with approval of a FB Form 144-R (approximately 63,000 acres).

Heavy Maneuver Areas- Areas and/ or corridors within the heavy maneuver land where training exercises will be concentrated, and where efforts to upgrade and construct roads and tank trails will be focused.

Maneuver heavy use areas-Areas within the Maneuver Areas that are expected to receive the highest amount of use.

On Fort Benning, maneuver training occurs only in areas designated for that purpose. Maneuver occurs both on and off roads depending on the vehicles' capability to move across the existing topography. Maneuver lands are designated for either light or heavy use.

Light maneuver areas are used to train dismounted Soldiers from the individual Soldier level through the unit level (up to 220 Soldiers). Tracked vehicles can travel on existing and established roads in light maneuver areas, but off-road traffic is limited to wheeled vehicles only.

Heavy maneuver lands are used to train armored fighting vehicle crewmen in units ranging from individual crews in a single vehicle to multiple company-sized units of up to 60 vehicles, of which 24 are tracked and weigh up to 70 tons (including BFVs and tanks).

In implementing the proposed action, there will be a substantial and quantitative increase in heavy maneuver training which will result in impacts to Federally-listed Threatened and Endangered species and their habitats. Therefore, the discussion of training in this Biological Assessment is limited to the land designated for heavy maneuver training.

<u>Heavy maneuver land.</u> According to the RDP (USACE 2006a), excluding dudded impact areas, non-dudded impact areas, controlled access areas and other exclusion areas, Fort Benning currently has approximately 63,000 acres of designated heavy maneuver training area (USACE 2006a). For clarification, this total area is **referred to in this document as 'heavy maneuver land**.' Once existing ranges, surface danger zones (SDZs) and restricted access areas are

subtracted, approximately 58,805 acres remain for heavy maneuver training (Figures 4-2 and 4-3). Most training within heavy maneuver land that is not in the more concentrated areas described below will take place on roads and existing tank trails.

While some loss of foraging habitat may occur in the areas designated as heavy maneuver land in addition to that assessed in this document, Fort Benning does not expect these losses to bring clusters below foraging standards, nor does it request Incidental Take for these clusters at this time. All current and proposed maneuver training exercises will continue to require the submittal of a FB Form 144-R for approval by EMD. Upon review, if EMD personnel determine that the exercise will result in adverse environmental impacts not addressed, or exceeding those addressed, in this document or that the exercise will violate applicable Army RCW Guidelines (DA 1996, DA 2006b), the training plan will either be disapproved or approved with restrictions. The training will be modified to meet final restrictions or will not be conducted (F. Weekley, Range Division, pers. comm.).

Under Alternative A, the areas currently designated as heavy or light maneuver lands will not change ("heavy maneuver land- current" on Figure 4-2). While the total amount and type of maneuver training (courses described in Section 4.3.2.1) conducted will be the same under both alternatives, under Alternative B, the total area designated as heavy maneuver land would increase by approximately 11,260 acres to include areas southwest of Hwy 27-280 that are currently designated as light maneuver (see below) (Figure 4-3). Heavy maneuver lands north of Hwy. 27-280 would likewise be used to a lesser extent under Alternative B than under Alternative A.

Maneuver Areas. Fort Benning has designated smaller areas within the heavy maneuver land for the most frequent, concentrated or intense off-road use as a result of the proposed action, **collectively referred to in this document as "Maneuver Areas.**" Accordingly, they will be the areas that experience substantial impacts to the existing flora and fauna and will require the greatest amount of sustainability resourcing and impact mitigation.

Some stands in the Maneuver Area between maneuver heavy use areas may need to be thinned to an average BA of 40 ft^2 in pines ≥10 inches (in.) diameter at breast height (dbh) to facilitate formation maneuvering by tracked and wheeled vehicles. These stands, however, have not been identified at this time. As additional design charrettes are held and trainers further solidify

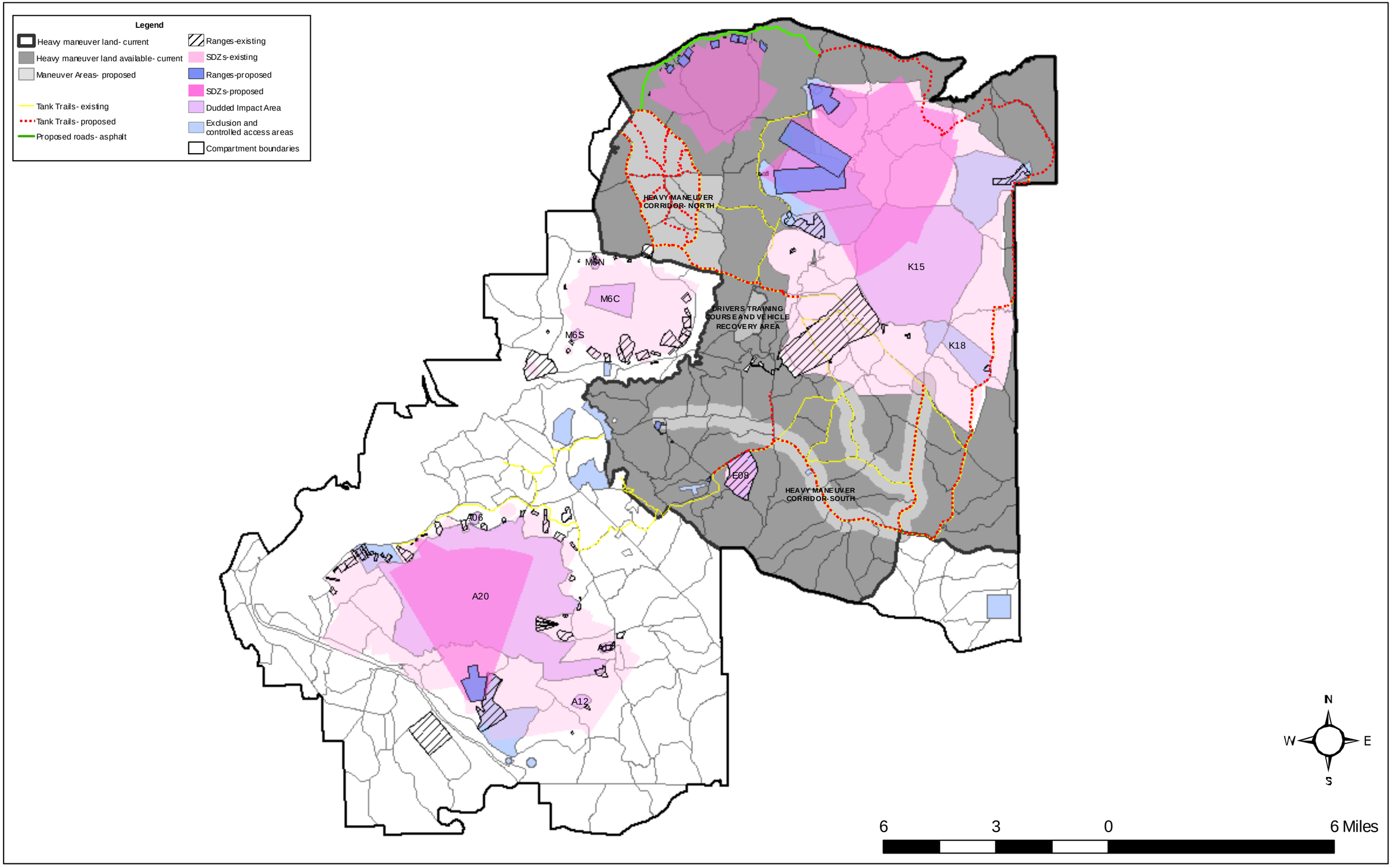


Figure 4-2. Current and proposed Heavy Maneuver Area usage, excluding surface danger zones (SDZs), impact areas and other exclusion areas as designated by Range Division, **Alternative A Transformation**, Fort Benning.

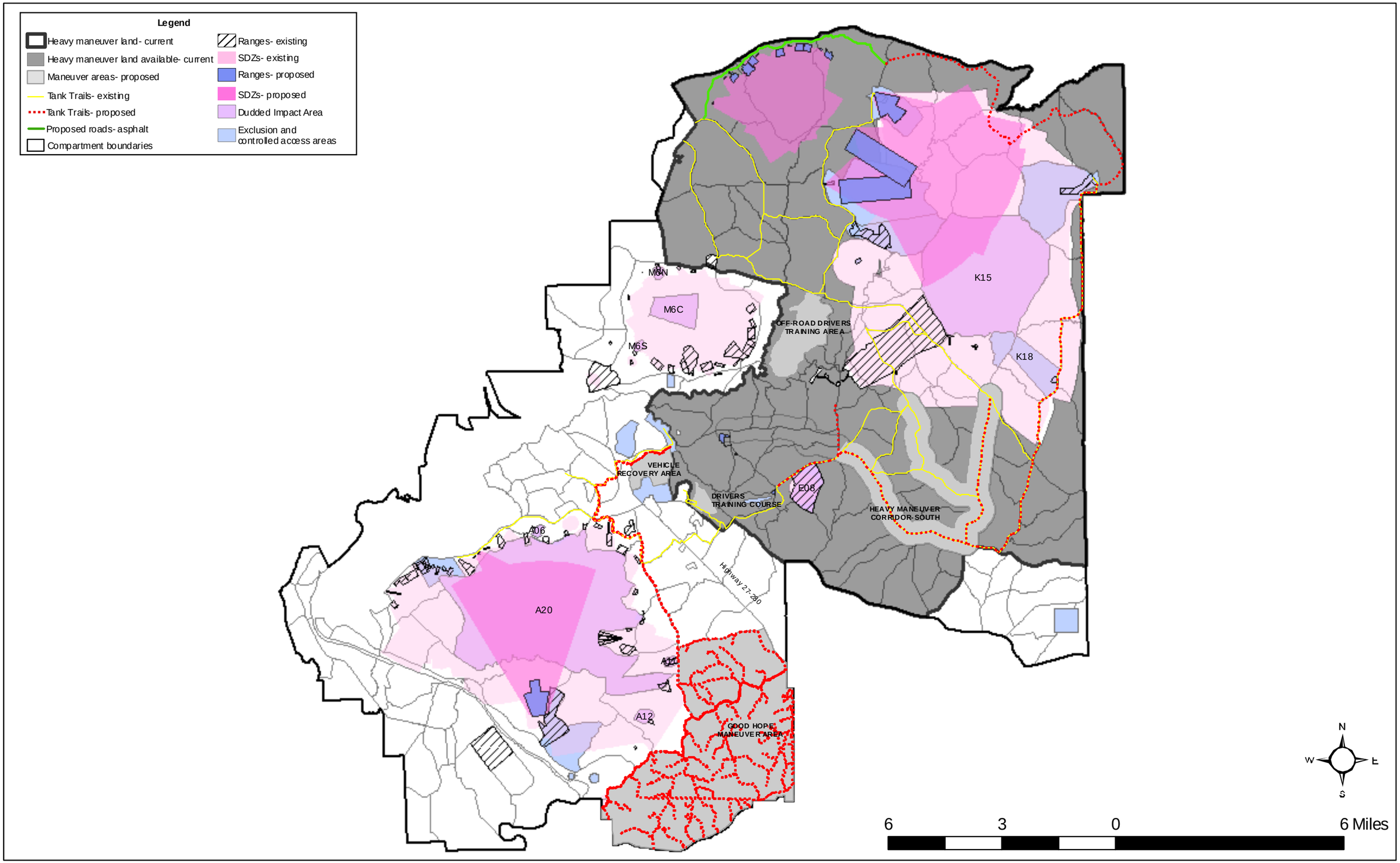


Figure 4-3. Current and proposed Heavy Maneuver Area usage, excluding surface danger zones (SDZs), impact areas and other exclusion areas as designated by Range Division, **Alternative B Transformation**, Fort Benning.

plans in the Maneuver Areas, potential impacts not presented in this document will be assessed either through the Fort Benning NEPA process/ FB Form 144-R or through consultation with USFWS as appropriate. Maneuver training within the Maneuver Areas outside of the maneuver heavy use areas will stay ≥50 ft. from all RCW cavity trees and otherwise adhere to the applicable Army RCW Guidelines (DA 1996, DA 2006b), therefore no cavity tree impacts are expected.

Maneuver heavy use areas. To further identify and quantify the impacts within the Maneuver Areas, planning charrettes were held with representatives from USAARMS and Fort Benning. Personnel utilized GIS to evaluate topographical data such as terrain, existing vegetation, environmental attributes (including location of RCW cavity trees) and current training use patterns in order to further delineate the areas within the corridors likely to sustain the heaviest impacts, **referred to in this document as the "maneuver heavy use areas**." The expected frequent activity in these areas will likely result in root damage. This impact, coupled with forest decline syndrome, is likely to lead to the loss of 100% of foraging habitat and cavity trees over time in the maneuver heavy use areas. Stands within the "maneuver heavy use areas" (areas shown on Figures 4-4, 4-5 and 4-6) will initially be thinned to an average BA of 20 ft^2/ acre in pines ≥10 inches dbh to allow sufficient space for tanks to maneuver. Additionally, some larger openings will also be created within the maneuver heavy use areas.

Details for specific maneuver training scenarios have not been solidified at this time; however, adherence to certain requirements of the Army RCW Guidelines (DA 1996, DA 2006b) does not appear to be feasible within the maneuver heavy use areas.

The training activities anticipated to take place in the Maneuver Areas are discussed above and are listed in Table 4-2.

4.3.2.2.1 Alternative A

As part of Alternative A, Fort Benning has designated two Maneuver Areas within the current total Heavy Maneuver Area: the Maneuver Area- North and the Maneuver Corridor-South (Figure 4-4).

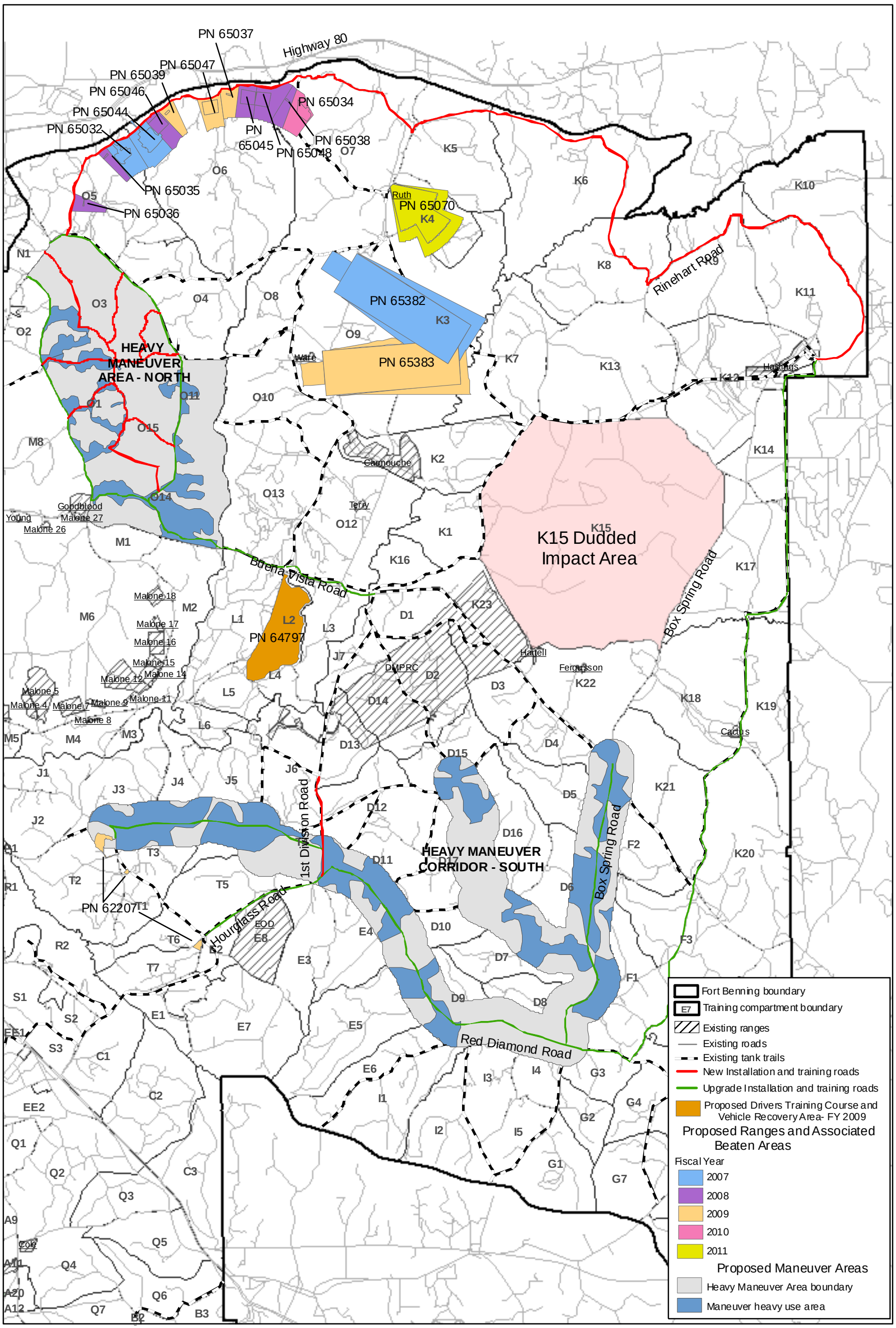


Figure 4-4. Fiscal years 2007-2011 construction activities for the Transformation projects located in the Northern Ranges, **Alternative A**, Fort Benning, Georgia.

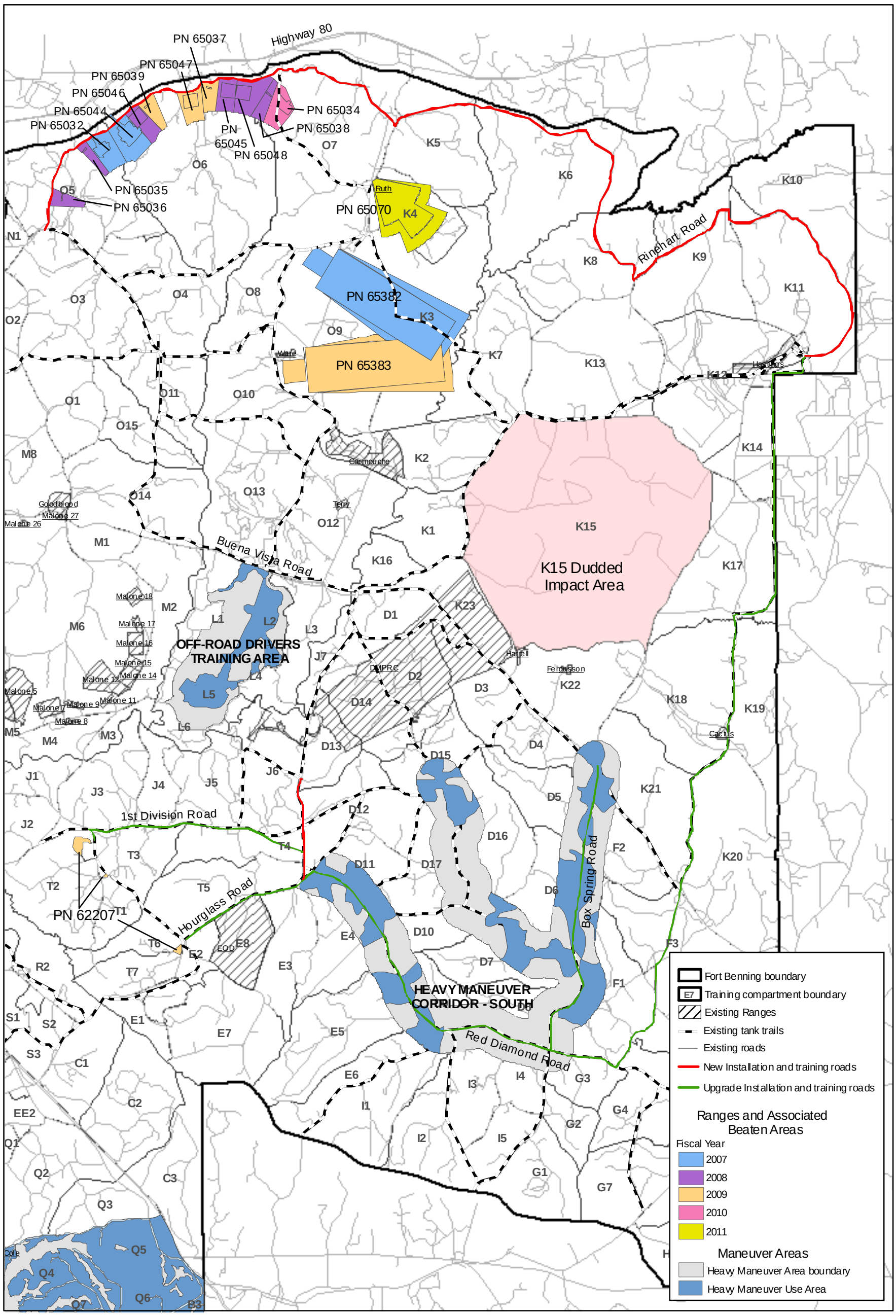


Figure 4-5. Fiscal years 2007-2011 Transformation projects located in the Northern Ranges, **Alternative B**, Fort Benning, Georgia.

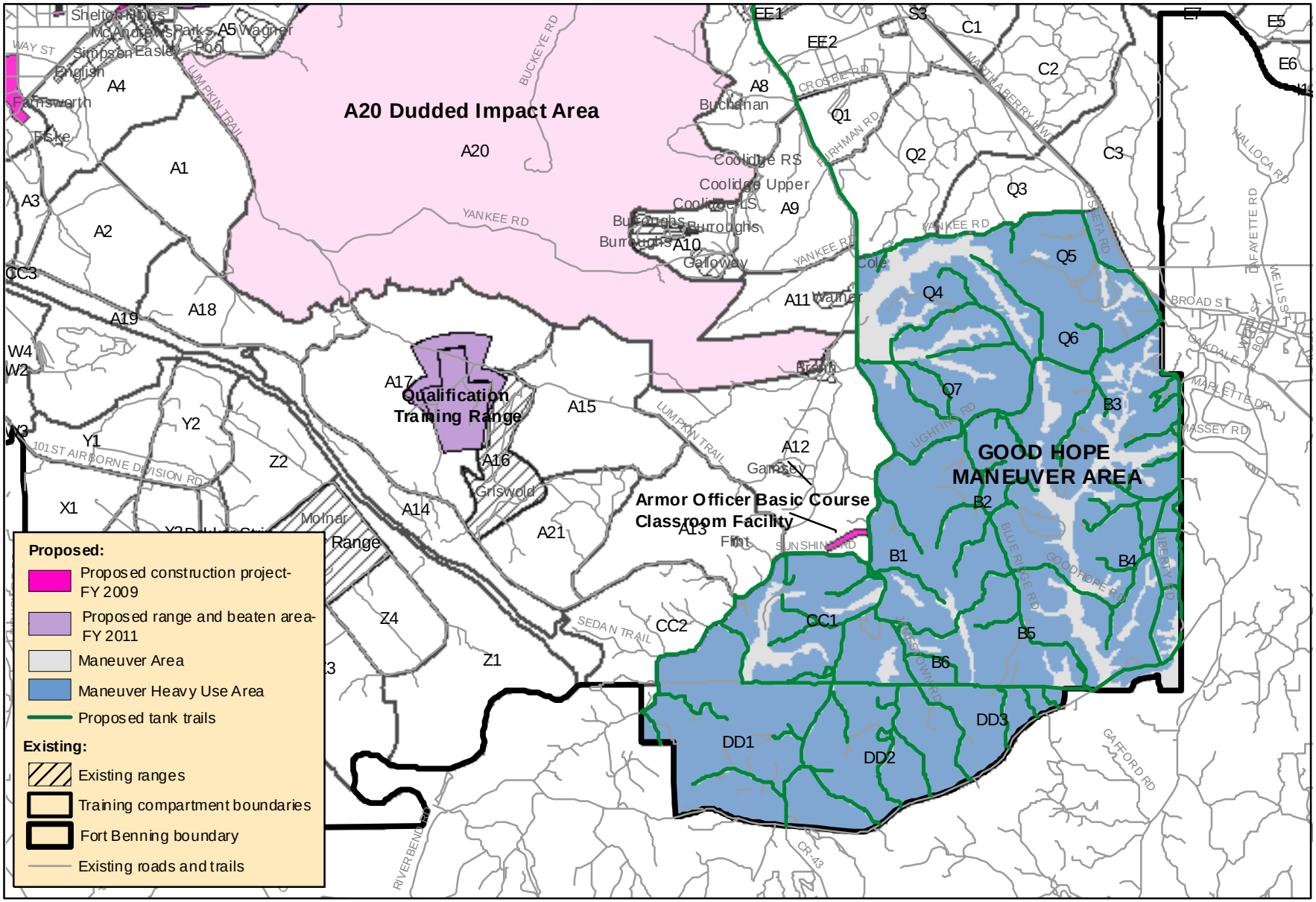


Figure 4-6. Fiscal year 2009-2011 Transformation projects located in the Southern Ranges, **Alternative B**, Fort Benning, Georgia.

0 0.45 0.9 1.8 2.7 3.6 Miles

N W E S

These concentrated Maneuver Areas were designated based on pre-existing areas of heavy maneuver impact as well as proximity to other proposed projects, specifically two proposed tank ranges (Project Numbers (PNs) 65282 and 65283) between the Maneuver Area-North and the K15 Impact Area and CACTF projects, both existing and under construction (Figure 4-4).

The Maneuver Area-North totals 4,677 acres, and encompasses Compartments O1, O3, O11, O14, and O15 (Figure 4-4). It is characterized by hilly terrain with narrow ridges and contains numerous streams and creeks. During the planning charrette and subsequent analyses, approximately 943 acres were identified as maneuver heavy use areas. The Maneuver Area-North currently contains approximately 3,048 acres of pine forest, of which 1,237 acres are forested in longleaf pine. The proposed heavy maneuver use areas will potentially cause the loss of 810 acres of pine forest habitat, 307 acres of which are longleaf pine-dominated.

The Maneuver Corridor-South totals 6,392 acres and traverses portions of ±28 training compartments (D4-11, D15-17, E4-6, F1,F2, G3, I1, I3, I4, J3-6 and T2-5). Portions of this corridor, primarily east of Hourglass Rd., are currently used for heavy maneuver training by the 3rd Bde. The maneuver corridor limits contain approximately 4,540 acres of forested habitat, of which 1,898 acres are forested in longleaf pine. Areas delineated as maneuver heavy use areas by USAARMS personnel totaled approximately 2,734 acres and will potentially result in the loss of 2,034 acres of forested habitat, of which 897 acres are longleaf pine.

4.3.2.2.2 Alternative B

Under Alternative B, off-road heavy maneuver training would be conducted in a portion of the Maneuver Corridor- South, the Good Hope Maneuver Area and an Off-Road Drivers Training Area (Figures 4-5 and 4-6).

Impacts in the Maneuver Corridor- South would be the same as Alternative A east of Hourglass Road (Rd.)(Compartments D4 - 11, D15 - 17, E4 - 6, F1 - F2, G3, I1 and I3 - I4) (Figure 4-5). West of Hourglass Rd., maneuver training would be restricted to Cavalry Scout training courses, specifically 16th Cavalry Regt's Scout Leaders Course, which train using BFVs and HMMWVs (Table 4-2). Cavalry courses do not require the open timber spacing of the tank maneuver training courses, therefore no timber thinning will be necessary in these areas. While tree mortality due to ground disturbance could still be an issue, the impacts are expected to be

minor but are unfortunately unpredictable. Vegetation monitoring proposed in Section 9 would allow Fort Benning to react if unexpected impacts occur, and USFWS would be notified for guidance.

Areas delineated as maneuver heavy use areas east of Hourglass Rd. total approximately 1,838 acres. This area would be used for a variety of USAARMS courses, particularly the Scout Leaders Course, and would also continue to be used by the 3rd Bde. The total corridor contains approximately 3,259 acres of forested habitat, of which 1,125 are longleaf-dominated stands. The maneuver heavy use areas could result in the loss of ≤1,225 acres of forested habitat, of which 444 acres are dominated by longleaf pine.

The Good Hope Maneuver Area would consist of approximately 11,259 acres in Training Compartments B1-6, Q4-7, CC1-2 and DD1-3, of which approximately 9,498 acres are delineated as maneuver heavy use areas (Figure 4-3 and 4-6). Historically, with the exception of the DD Compartments, this area was used for heavy maneuvering, but in the past 20 years it has primarily supported land navigation courses and light infantry training that includes use of wheeled vehicles, small arms, blank ordnance deployment and pyrotechnics. Most of the Good Hope area is relatively young (≤20 years old) planted longleaf forest. The total area contains approximately 4,780 acres of forested habitat, of which 2,512 acres are longleaf stands. The maneuver heavy use area covers most of the total area, and will result in the potential loss of up to 4,303 acres of forested habitat, of which 2,300 acres are longleaf pine-dominated. Approximately 2,156 acres within Compartment s DD1, DD2 and DD3 were acquired by Fort Benning in the Land Exchange finalized in 2001 (JCA and Kaiser Engineers, Inc. 1998).

To accommodate the introduction of heavy maneuver training to the Good Hope Area, the light infantry and other training currently conducted in the area would move to the Maneuver Area- North identified under Alternative A.

The Good Hope Maneuver Area would primarily be used for the BOLC III, which is the largest-scale training course conducted by the USARMC/S (described in Section 4.3.2.1 and Table 4-2). This area would also be used as available for the Scout Leaders Course to relieve scheduling conflicts with 3rd Bde for the Southern Maneuver Corridor.

An Off-Road Drivers Training Area would be located in portions of Training Compartments L1, L2, L4 and L5 on an approximately 1,285-acre site (Figure 4-5). This area would be used for the 19K and 19D OSUT courses, which are off-road driver training courses

(Table 4-2). USAARMS/C personnel delineated approximately 472.7 acres as heavy maneuver use areas within this area (Figure 4-5). As with the other heavy maneuver areas, some thinning may be required. The maneuver heavy use areas would result in the loss of up to 263 acres of forested habitat, of which 154 are longleaf pine. Under Alternative A, these training courses would be taught within the Maneuver Area-North and the Maneuver Corridor- South.

4.3.2.3 Vehicle Recovery Area

A Vehicle Recovery Area will be used for the Tank Vehicle Recovery Specialist training course (Table 4-2). Students will be trained in towing and recovering vehicles in 26 different scenarios (including buried, stuck or flipped over). Fort Knox currently rotates recovery exercises between 40 stations. FBRD plans to line the bottom of large holes with concrete in order to maintain the integrity of the mire.

Under Alternative A, the Vehicle Recovery Area would be co-located with the Basic and Advanced Drivers Training Courses (described below with construction projects, Section 4.3.5.1) on an approximately 400-acre site between 2nd Armored Division Rd. and Upatoi Creek, south of Buena Vista Rd. in portions of Compartments L2 and L4 (Figure 4-4). This site is primarily forested with mature longleaf pine and young longleaf pine plantation. Because of space constraints, use of this area would require 100% timber clearing, including RCW cavity trees.

Under Alternative B, the Vehicle Recovery Area would be separate from the Drivers Training Courses on an approximately 500-acre site in Compartment R1, northeast of and adjacent to Harmony Church (Figure 4-7). This site contains some disturbed areas, but is mostly forested in young (<15 years old) longleaf plantations, pine stands 30-60 years old, pine stands over 60 years old and hardwood drainages. The use of this area will be the same as that described under Alternative A, however because the area will not be shared with the Drivers Training Course, Fort Benning expects to be able to position stations in existing openings and require limited timber harvesting primarily for tank trails and mire sites. As described in Section 5.2.5 below, 100% of the habitat was analyzed as cleared because of the uncertainty of where training stations and trails will be positioned, but all cavity trees will be preserved and activities will follow the applicable Army RCW Guidelines.

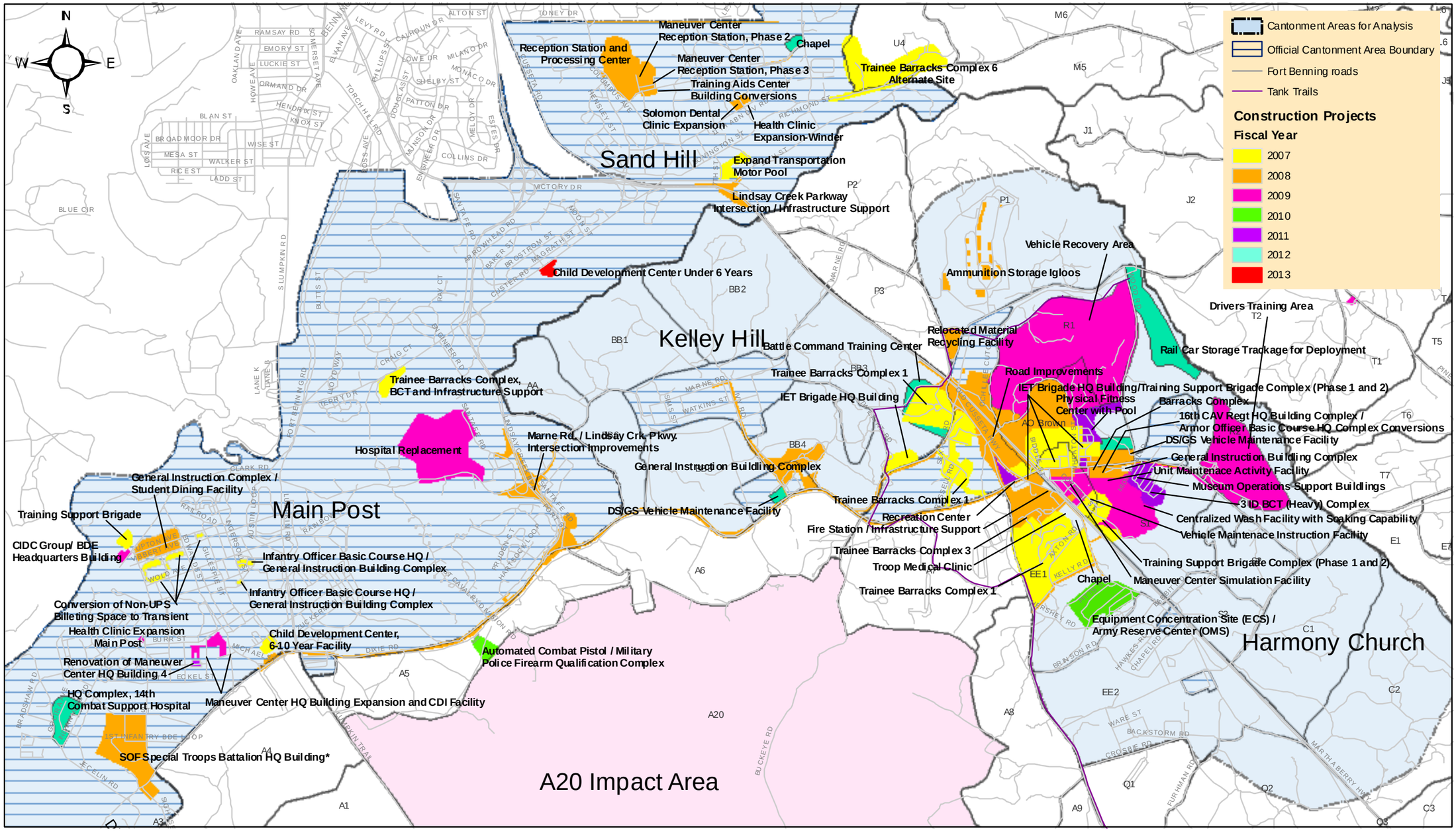


Figure 4-7. Fiscal years 2007-2013 construction activities for the Transformation projects located in the Cantonment area, Alternative B, Fort Benning, Georgia.

4.3.2.4 Increased maneuver land use

In accordance with the methodology defined in Army Training Circular 25-1 (TC 25-1), the Nakata Group completed a RDP for Fort Benning in June 2006 (USACE 2006a). One purpose of the study was to identify the heavy maneuver training requirements associated with the USAARMS programs of instruction (POIs) in support of the proposed action.

Heavy maneuver requirements were calculated in terms of square kilometer days (km^2 days) using methodology from TC 25-1, which takes into account the area needed to complete a task, the number of units involved, the number of days per task and the number of iterations conducted per year. An example is shown below:

Area (km^2)	x	Number Iterations	x	Days/ Iteration	x	Number Units	=	km^2 days
24		4		2		6		1,152

Using the current POI requirements for the USAIS, the study indicated that the 3rd Bde currently has a heavy maneuver requirement of 42,625 km^2 days. The majority of this training occurs within the proposed Southern Maneuver Corridor. Further, the study determined that the heavy maneuver requirements to support the USAARMS POIs totaled 105,425 km^2 days (USACE 2006a). This represents an increase in maneuver training of > 247% upon implementation of the proposed action. As described above, this increase will be accommodated in all areas designated as heavy maneuver lands, but will be concentrated in the Maneuver Areas and specifically, the maneuver heavy use areas.

4.3.2.5 Increased Range Use

Under the proposed action, Transformation activities would also include an increase in weapons use at existing and new ranges. Table 4-3 provides an overview of small caliber (i.e., those used in rifles, pistols, shotguns and grenade launchers) and large caliber (i.e., inert and high explosive rounds from howitzers, tanks and BFV mortars.)

TABLE 4-3: Projected Annual Weapon Ammunition Use Increase

Weapon	Day	Night	Total
Small Caliber	7,629,799	745,596	**8,375,395**
Percent Day/Night	91	9	
Large Caliber	416,231	67,759	**483,990**
Percent Day/Night	86	14	

Source: Fort Benning 2006 and U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) 2006.

4.3.3 TRAINING AREA ROADS

The limits of disturbance for new roads and trails were analyzed at 60 ft. from the centerline (or 120 ft wide) to account for berms and erosion control measures. The potential area of disturbance for upgraded roads will be 40 ft. from the road centerline (or 80 ft. wide) and the estimated operational width will be approximately 30 ft. Once the trail is established it is expected that the average width of the road would be 30 ft. including berms, to support the variety of wheeled and tracked vehicles (M1A1 Tanks to HMMWVs) used for USAARMS training.

An estimated 29 new water crossings are funded and will be established along proposed range roads. These water crossings will be approximately 30 ft. wide and use gravel and concrete cloth to ensure access road and stream bank stability.

Under Alternative A, up to 68 miles of roads would be constructed repaired or upgraded in the training areas north of US Hwy. 27-280.

Under Alternative B, up to 120 miles of roads or tank trails would need to be constructed, repaired or upgraded. The bulk of this would be in the Good Hope Maneuver Area, as the trails in that area have not been used for heavy maneuvering in recent history and are not currently equipped for tank traffic. Under Alternative B, tracked vehicles stationed in Harmony Church would need to move from one side of U.S. Hwy. 27-280 to the other in order to access the Good Hope Maneuver Area. Existing tank trails would need to be upgraded, new ones constructed, and a new bridge constructed across Hwy. 27-280 bridge depending on the access option chosen. Bridging options include building a new bridge across the highway approximately 0.25 mile south of the Harmony Church access point (Option 1), constructing a new tank trail to Jamestown Road from Harmony Church (Option 2) and using an existing tank trail and underpass (about a mile south of the existing Harmony Church access point); however, the

underpass would need widening since it cannot accommodate the larger tracked vehicles and tanks used by the USAARMC/S. Option 2 would use an existing tank trail around and to the north of Harmony Church that would require upgrading and/ or reinforcement, but would require that vehicles travel a much further distance than under Option 1.

4.3.4 CONSTRUCTION PROJECTS

Carrying out the requirements of the proposed action will involve constructing new facilities and renovating/ upgrading existing facilities and infrastructure to support additional Soldiers and their family members, construction of and modifications to ranges and training areas and increasing the use of live-fire training ranges and maneuver areas. Efforts are being made to minimize the amount of new construction needed by converting existing ranges and structures to meet the needs for Transformation. However, with the increase in personnel and the training requirements of current and arriving units, construction of new cantonment and range projects is necessary. New construction was sited to coincide with and/ or be a complement to:

- existing missions
- facility operations and functions
- using existing infrastructure to the greatest extent possible
- minimizing potential impacts to the environment (e.g., avoid sensitive species habitat)
- locating Transformation activities on previously disturbed or developed locations.

The cantonment area on the Installation is divided into 4 areas; these are the areas where infrastructure facilities on the Installation are typically concentrated. However, many of the proposed projects fall outside of the areas traditionally defined as the cantonment area. For the purposes of analysis, all non-range projects located in the general cantonment area were divided into 4 broad analysis areas using the applicable cantonment area names: Harmony Church, Kelley Hill, Main Post and Sand Hill (Figures 4-7 and 4-8). These broader analysis areas may therefore contain projects not typically considered ‘cantonment’ projects, such as ammunition supply areas. Likewise, infrastructure projects that are located within range areas are listed within the appropriate geographic area. Training lands are grouped into 3 general areas: South

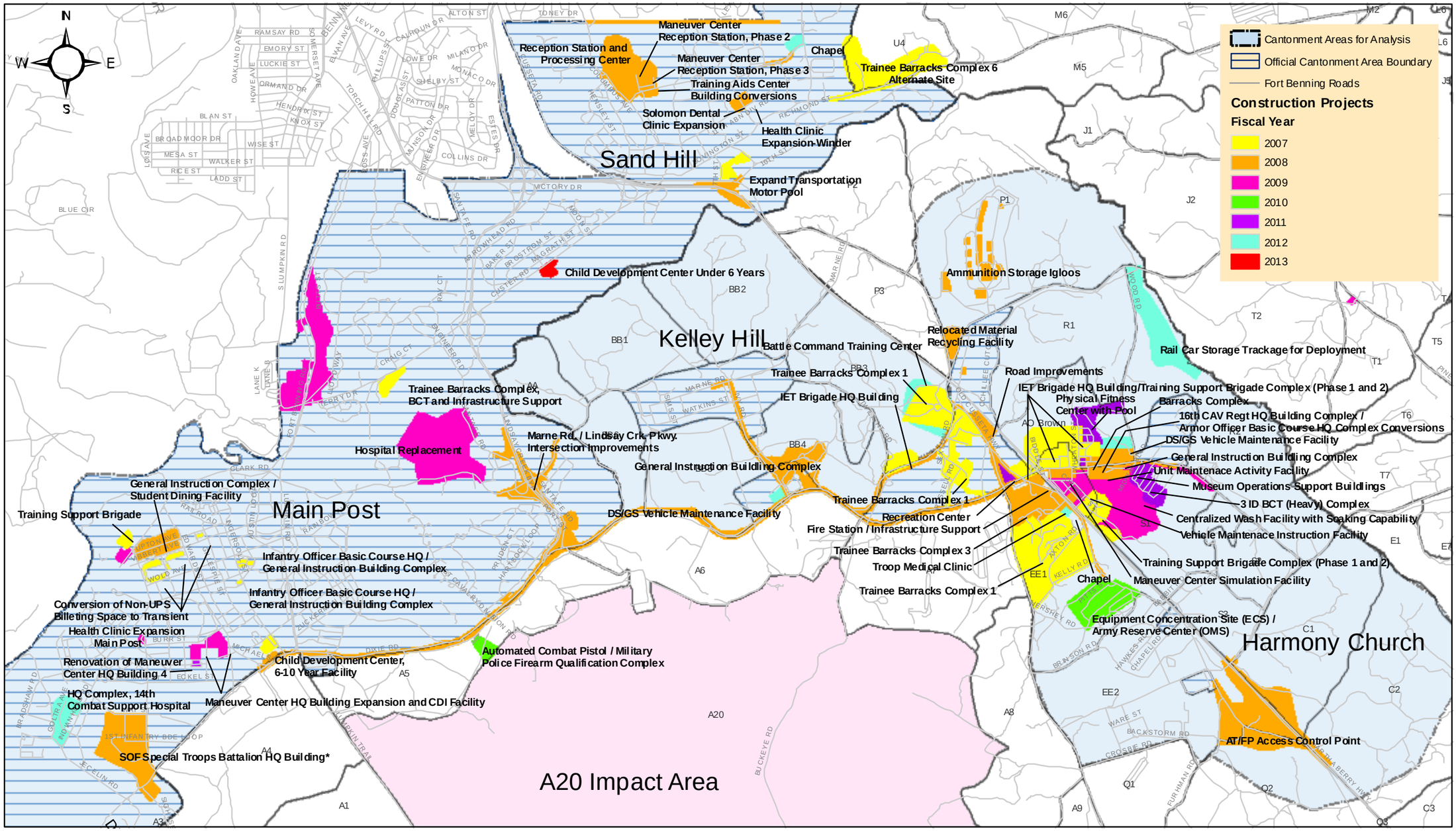


Figure 4-8. Fiscal years 2007-2013 construction activties for the Transformation projects located in the Cantonment area, Alternative A, Fort Benning, Georgia.

(southwest of Hwy. 27-280), North (all training compartments northeast of Hwy. 27-280) and the Oscar Small Arms Complex (Oscar Complex).

Table 4-4 identifies proposed construction projects with the corresponding project number (where available), month/ FY in which the project is programmed for funding (the federal FY begins on 1 October and ends 30 September), type of facility and general location within Fort Benning where the project would occur. Where projects have several numbers, these indicate either phases of construction within the same general footprint or building complexes where more than one PN applies to the same construction footprint. Acreages are presented for both alternatives, and projects that differ between alternatives are indicated.

PNs are used along with the project names throughout this document as a reference tool to keep projects separate. The PNs correspond with the current DoD Form 1391 and the anticipated year of construction corresponds to the Program Objective Memorandum (POM). However, with the magnitude of this action, PNs and funding sources are likely to change, so it is likely that the PNs associated with some Transformation projects will change by the time of construction. If project impacts, including the implementing year, are modified, the USFWS will be notified.

Limits of construction for many cantonment projects overlapped and the same area could be disturbed for adjacent projects. To avoid double-counting disturbed acreage, that acreage was 'given' to the first project to be built (for overlaps in different fiscal years) or divided between the applicable projects (when projects were to be built in the same year) (K. Rose, TEC, pers. comm.). Acreages presented below and in Table 4-4 are the acreages analyzed for environmental impacts. Therefore, the sum of all acreages in Table 4-4 equals the total acreage potentially disturbed by Transformation projects. However, the area analyzed for any individual project may not equal the maximum area disturbed for that project, e.g. overlapping acreage may be included in the analysis for another project.

The acreage of range footprints are presented in Table 4-4. Note range impacts are the same under both alternatives. Each firing range has an associated surface danger zone (SDZ) which consists of the firing area, target area, impact area, and danger area. The shape and size of the SDZ vary with the type of weapon being fired. The probability of rounds hitting is greatest in the firing and target areas, then the impact areas, then the danger areas. While most of the environmental impacts will be within the range footprints, for some ranges a substantial amount

Table 4-4. Fiscal years 2007-2013 Transformation projects on Fort Benning, Alternatives A and B.

Program Type	Project Number	Project Title	Fiscal Year (Start Date)	Location- Alternative A	Area- Footprint, Alternative A (Acres)	Area- Range "Beaten Areas" Alternatives A & B (Acres)	Location- Alternative B	Area- Footprint, Alternative B (Acres)
BRAC	64370/ 65040	Trainee Barracks Complex 1 and Borrow Areas	2007	Harmony Church and Kelley Hill	282	----	Harmony Church	281
BRAC	64459/ 65862	Training Support Brigade Complex (Phase 1 and 2)	2007-2008	Harmony Church	74	----	Harmony Church	74
BRAC	65056	IET Brigade Headquarters Building	2007	Harmony Church and Kelley Hill	77	----	Harmony Church and Kelley Hill	77
BRAC	54931	Child Development Center 6-10 Years	2007	Main Post	6	----	Main Post	6
BRAC	65382	Tank/ Fighting Vehicle Stationary Gunnery Range 1	2007	Northern Range	741	243.34	Northern Range	741
BRAC	65032	Fire and Movement Range 1	2007	Northern Range - Oscar Complex	23	82.08	Northern Range - Oscar Complex	23
BRAC	65044	Modified Record Fire Range 2	2007	Northern Range - Oscar Complex	44	90.08	Northern Range - Oscar Complex	44
BRAC	65068	Trainee Barracks Complex 2	2007	Sand Hill	117	----	Sand Hill	117
BRAC	64080	Troop Medical Clinic	2008	Harmony Church	8	----	Harmony Church	8
BRAC	65041	Trainee Barracks Complex 3	2008	Harmony Church	54	----	Harmony Church	54
BRAC	65251	Unit Maintenance Activity Facility	2008	Harmony Church	15	----	Harmony Church	15
BRAC	65253	16th CAV Regt HQ Building Complex (BDE, BN, COs)	2008	Harmony Church	5	----	Harmony Church	5
BRAC	67648	Maneuver Center Simulation Facility	2008	Harmony Church	8	----	Harmony Church	8
BRAC	65285	Maneuver Center Renovations, Building 4	2008-2010	Main Post	3	----	Main Post	3
Other	65394	SOF Special Troops Battalion HQ Bldg	2008	Main Post (2800/ 2900 Block)	107	----	Main Post (2800/ 2900 Block)	107
Other	65396	SOF Ranger HQ Addition	2008	Main Post (2800/ 2900 Block)		----	Main Post (2800/ 2900 Block)	
Other	65397	SOF Vehicle Maintenance Shop	2008	Main Post (2800/ 2900 Block)		----	Main Post (2800/ 2900 Block)	
Non-BRAC	65035	Rifle/ Machine Gun Zero Range 1	2008	Northern Range - Oscar Complex	1	38.07	Northern Range - Oscar Complex	1
Non-BRAC	65036	Rifle/ Machine Gun Zero Range 2	2008	Northern Range - Oscar Complex	1	48.65	Northern Range - Oscar Complex	1
Non-BRAC	65038	Rifle/ Machine Gun Zero Range 4	2008	Northern Range - Oscar Complex	1	47.98	Northern Range - Oscar Complex	1
Other	65045	Modified Record Fire Range 3	2008	Northern Range - Oscar Complex	24	50.10	Northern Range - Oscar Complex	24
BRAC	65046	Modified Record Fire Range 4	2008	Northern Range - Oscar Complex	24	51.97	Northern Range - Oscar Complex	24
BRAC	65048	Modified Record Fire Range 6	2008	Northern Range - Oscar Complex	24	91.30	Northern Range - Oscar Complex	24
BRAC	62956	Health Clinic Expansion - Winder	2008	Sand Hill	3	----	Sand Hill	3
BRAC	64368	Solomon Dental Clinic Expansion	2008	Sand Hill	4	----	Sand Hill	4
BRAC	64462/ 51256/ 67419	Reception Station Barracks and Processing Center (Phases 1, 2 and 3)	2008-2010	Sand Hill	85	----	Sand Hill	85
BRAC	65287	Training Aids Center Building Conversions	2008	Sand Hill	0	----	Sand Hill	
BRAC	65322/ 67458/ 67529/ 65118/ 65283/ 65288	General Instruction Building Complex	2008-2010	Installation-Wide	72	----	Installation Wide	72
		Student Dining Facility, Main Post Cuartels			0	----		
		Conversion of Non-UPH Billeting Space to Transient UPH AST			0	----		
		Infantry Officer Basic Course Headquarters Complex Building Conversions			0	----		
BRAC	65439/ 64461/ 65337/ 65062/ 65056/ 65440/ 65552	Infrastructure Support (includes Fire Station, Ammunition Supply Point, AT/ FP Access Control Point, Marne Rd./ Lindsay Crk. Pkwy. Intersection Improvements and Relocation of Material Recycling Facility)	2008	Harmony Church	326	----	Harmony Church	365
				Kelley Hill	46	----	Kelley Hill	46
				Main Post	147	----	Main Post	147
				Sand Hill	36	----	Sand Hill	36
				Infrastructure Total	*555*	----	Infrastructure Total	*595*
BRAC	65252/ 48644	Centralized Wash Facility with Soaking Capability	2009	Harmony Church	103	----	Harmony Church	103
BRAC	65286	Armor Officer Basic Course HQ Complex (includes Utility Corridor)	2009	Harmony Church *	0 (shared site with PN 65253)	----	Southern Range- Good Hope *	20
BRAC	65438	Vehicle Maintenance Instruction Facility	2009	Harmony Church	33	----	Harmony Church	33
BRAC	65440	AT/FP Access Control Point	2008	Harmony Church	15	----	Harmony Church	
BRAC	65552	Marne Rd/Lindsay Crk Pkwy Intersection Improvements	2008	Kelley Hill	15	----	Kelley Hill	
Non-BRAC	65061	Museum Operations Support Buildings	2009	Harmony Church and Main Post	104	----	Harmony Church and Main Post	104
BRAC	65080	Consolidated Troop Medical Clinic	2009	Main Post	1	----	Main Post	
BRAC	65081	Hospital Replacement	2009-2010	Main Post	165	----	Main Post	165
Non-BRAC	65578	CIDC Group/ BDE Headquarters Building	2009	Main Post	4	----	Main Post	4

* denotes different project locations

Table 4-4 (cont'd.). Fiscal years 2007-2013 Transformation projects on Fort Benning, Alternatives A and B.

Program Type	Project Number	Project Title	Fiscal Year (Start Date)	Location- Alternative A	Area- Footprint, Alternative A (Acres)	Area- Range "Beaten Areas" Alternatives A & B (Acres)	Location- Alternative B	Area- Footprint, Alternative B (Acres)
Other	62207	Combined Arms Collective Training Facility, Phase I	2009	Northern Range	28	----	Northern Range	28
BRAC	64797	Drivers Training Course	2009	Northern Range *	398	----	Harmony Church *	201
	N/A	Vehicle Recovery Area	2009	Northern Range *		----	Harmony Church *	501
Non-BRAC	N/A	Maneuver Area- North	2009	Northern Range *	943	----	N/A *	N/A
Other	65037	Rifle/ Machine Gun Zero Range 3	2009	Northern Range - Oscar Complex	1	53.88	Northern Range - Oscar Complex	1
Other	65039	Rifle/ Machine Gun Zero Range 5	2009	Northern Range - Oscar Complex	1	49.89	Northern Range - Oscar Complex	1
BRAC	65047	Modified Record Fire Range 5	2009	Northern Range - Oscar Complex	24	61.72	Northern Range - Oscar Complex	24
BRAC	65383	Tank/ Fighting Vehicle Stationary Gunnery Range 2	2009	Northern Range - Ware Range	676	213.15	Northern Range - Ware Range	676
Non-BRAC	N/A	Maneuver Corridor- South	2009	Southern Range	2734	----	Southern Range	1838
	N/A	Good Hope Maneuver Area	2009	N/A *	N/A	----	Southern Range- Good Hope *	9498
BRAC	64491	Army Reserve Center/ OMS/ Unheated Storage	2010	Harmony Church	71	----	Harmony Church	71
BRAC	65405	Equipment Concentration Site (ECS)	2010	Harmony Church		----	Harmony Church	
BRAC	65284	Maneuver Center Headquarters Building Expansion and CDI Facility	2010	Main Post	16	----	Main Post	16
BRAC	65034	Fire and Movement Range 3	2010	Northern Range - Oscar Complex	20	74.86	Northern Range - Oscar Complex	20
BRAC	65079/ 55101	Automated Combat Pistol/ Military Police Firearm Qualification Complex	2010	Southern Range (Coursen East Range)	1	13.90	Southern Range (Coursen East Range)	1
BRAC	65554	Construct Installation-wide Roads, Paved	2010	Installation Wide	419	----	Installation Wide	271
BRAC	65557	Repair Existing Training Area Roads, Paved	2010	Installation Wide	403	----	Installation Wide	282
BRAC	65246	Recreation Center	2011	Harmony Church	8	----	Harmony Church	8
BRAC	65248	Physical Fitness Center with Pool	2011	Harmony Church	34	----	Harmony Church	34
Other	38134	Barracks Complex	2011	Harmony Church and Main Post	3	----	Harmony Church and Main Post	3
AMF	63799	3rd ID BCT (Heavy) Complex	2011	Harmony Church	36	----	Harmony Church	36
Other	65395	SOF Ranger Support Company HQ	2011	Main Post (2800/2900 Block)	0 (shared footprint)	----	Main Post (2800/2900 Block)	0.00 (shared footprint)
AMF	64548/ 67012	Qualification Training Range (QTR)	2011	Southern Range	253	179.10	Southern Range	253
AMF	65070	Multi-purpose Machine Gun Range 3	2011	Northern Range	238	166.43	Northern Range	238
Other	62953	Rail Car Storage Trackage for Deployment	2012	Harmony Church	95	----	Harmony Church	95
BRAC	64460	DS/ GS Vehicle Maintenance Facility	2012	Harmony Church and Kelley Hill	22	----	Harmony Church and Kelley Hill	22
BRAC	64790	Battle Command Training Center	2012	Harmony Church	25	----	Harmony Church	25
BRAC	65065	Chapel	2012	Harmony Church	4	----	Harmony Church	4
Other	62952	Headquarters Complex, 14th Combat Support Hospital	2012	Main Post	34	----	Main Post	34
BRAC	65249	Chapel	2012	Sand Hill	8	----	Sand Hill	8
BRAC	65580/ 46676	Child Development Center (under 6 years)	2013	Main Post (Custer Road)	8	----	Main Post (Custer Road)	8

* denotes different project locations

of impact could occur outside of the footprint, but within the SDZ areas. In Table 4-4, the "beaten area" acreages are those areas within the ordnance-impacted areas that Fort Benning expects to receive a substantial impact from ordnance outside of the range footprint. See Section 5.2.2 for a more detailed explanation.

BRAC projects identified in Table 4-4 are projects that are primarily generated by the BRAC-directed actions and are programmed to occur by September 2011 as required by the BRAC legislation. These projects are included in the Army's Future Years Defense Program that must be executed in accordance with the September 2011 legislative requirement. "Non-BRAC" construction projects identified in Table 4-4 with construction dates from 2011 through 2013 are not required to meet the immediate legislated BRAC realignment actions, but are identified as other MILCON projects that are within the budget planning cycle through 2013 and have been identified as projects necessary to optimize full operation of the MCOE at Fort Benning. These projects are not required to be completed by September 2011, but are needed to support the increased number of Army personnel on the Installation. The construction start dates for those projects from 2011 to 2013 are best estimates of Installation needs and are subject to change based on the availability of funds and changing priorities. Therefore, the proposed action is based on an estimate of the maximum amount of construction that would occur if all Transformation projects were fully funded (BRAC, AMF, GDPR and Other BRAC-Discretionary actions).

Additional project needs beyond 2013 that are generated by Transformation requirements have been initially identified, but have not been validated. At this time, funding has not been secured and planning has not progressed to a point at which it would be appropriate to analyze these projects with the level of scrutiny that the projects in Table 4-4 are evaluated in this Biological Assessment. Instead, identified project needs beyond 2013 are considered as part of the reasonably foreseeable ongoing development of Fort Benning as the MCOE. These projects, if approved for funding, will be treated as any other Army projects and will not receive priority as "BRAC-critical." Detailed analyses of these projects will be conducted as funding sources and plans solidify.

Transformation projects that could impact Federally-listed species (e.g. vegetation clearing required) are listed below, with a general project site description. Stand types were taken from Fort Benning 2003 and 2006 forest inventory datasets.

NOTE: • Projects in developed areas that will not require any vegetation clearing, such as building conversions and expansions, are not described in detail below, but can be found in Table 4-4 and Figures 4-4, 4-5, 4-6 and 4-7.

• Unless otherwise indicated, project descriptions apply to both Alternatives A and B.

4.3.4.1 Harmony Church

More than half of the area of potential impact within the cantonment areas will occur within the Harmony Church area (see Table 4-4). The Harmony Church area has historically supported, and currently supports, a diverse assortment of low density facilities including the Infantry Fighting Vehicle Maintenance and Gunnery Training Facility, semi-permanent barracks, motor pool facilities, administrative facilities, an ammunition supply point and various recreational fields. The proposed action would provide for continued infill development and expansion of the Harmony Church cantonment area primarily to support troop housing and maintenance facilities, but also other administrative, training, operational, community and medical facilities (Figures 4-7 and 4-8). Many areas with demolished buildings have been reclaimed and planted in longleaf pine in the last 10 years.

The area south of Harmony Church in Compartments EE1 and EE2 contains various administrative and training facilities that support the Sniper and Ranger schools. The proposed action will roughly double the size of this zoned cantonment area to approximately 1,420 acres. Training associated with AO Brown and EE1 and EE2 light maneuver areas will be displaced by the development of cantonment facilities.

Under Transformation Alternative A, the proposed projects would impact up to 693 acres of pine-dominated habitat, of which approximately 579 acres are ≥ 30 years old. Of the acreage ≥30 years old, 159 acres are dominated by longleaf pine. Approximately 99 of the 114 acres of pines <30 years are longleaf pine.

Under Alternative B, the proposed action would impact up to 957 acres of pine habitat, of which 808 acres are ≥30 years old. Approximately 320 acres of longleaf pine ≥30 years old and 141 acres of longleaf <30 years old would be impacted. Note: these totals include areas disturbed for development and use of the Vehicle Recovery Area described above in Section

4.3.2.3. Minimal vegetation clearing would be required in this area, but tree mortality from repeated use is expected.

Principal differences between Alternatives A and B in the Harmony Church area include the location of the Vehicle Recovery Area, Drivers Training Course, tank trail construction (described above in Section 4.3.3) and a highway access control point.

4.3.4.1.1 FY 2007 Projects

Trainee Barracks Complex 1 (PN 64370/ 65040) will be constructed southwest of Hwy. 27-280, south of Eighth Division Rd., east of Jamestown Rd. and north of Axton and Kelley Rds. to house 10 companies of USAARMS initial entry Soldiers (Figures 4-7 and 4-8). These barracks will be designed with 5 separate wings of 3-story buildings (the first floor of each building is used for operations and training and the second and third floors are used for housing trainees), company operations facilities, classroom space, covered training areas, battalion headquarters, a dining facility, storage, energy plant and a running track. Approximately 171 acres were assessed for this project site, which is currently forested in sparse to moderately dense longleaf pine north of Axton Rd. and dense 58 year old loblolly pine between Axton Rd. and Kelley Rd.

An approximately 48 acre area between First Division Rd., Cusseta Rd. and Eighth Division Rd. will be used as a borrow area for barracks construction. Three access roads will be created for entry and exit: two from Eighth Division Rd. and one from First Division Rd. The majority of the site is planted in longleaf pine <10 years old.

An additional borrow area will be across First Division Rd. in Kelley Hill (see Section 4.3.4.2).

The Training Support Brigade Complex (PNs 64459 and 65862) includes buildings in 3 locations in Harmony Church. One site is north of Eighth Division Rd., east of Hwy. 27-280 and west of Wood Rd. (Figures 4-7 and 4-8). This 38-acre complex will include barracks, brigade and battalion headquarters, company operations facilities, a dining facility and associated facilities to support unaccompanied permanent party enlisted personnel assigned to the USAARMS. The site is within AO Brown, which is used by the 29th Infantry Regt as a light maneuver area and qualification site (DA 2006b). The majority of the site is forested in hardwood-pine, with approximately 25% of the site planted in longleaf pine.

This project also includes a Vehicle Maintenance Instructional Building to be located south of Eighth Division Rd., which will be part of a vehicle maintenance complex paralleling Hwy. 27-280 (Figures 4-7 and 4-8). This site and a smaller area to the southeast total 31.28 acres and are forested in dense, mature loblolly and longleaf pine, with some young longleaf plantation. A separate 5-acre facility is located on Main Post and has no impacts.

The IET Bde Headquarters project (PN 65056) includes several buildings in Harmony Church and Kelley Hill to support elements of a new Armor IET brigade. This project includes brigade headquarters, company headquarters, general purpose administrative facilities and an associated parade/graduation field with covered bleachers. Several buildings will be located in the same complex as the Training Support Brigade Complex (PNs 64459 and 65862), occupying approximately 52 acres within AO Brown. This area is primarily forested in hardwood-pine, with approximately 7 acres of open area and approximately 15 acres of mature loblolly pine. Separate buildings and parking lots will be on a 9 acre site west of Hwy. 27-280 on the corner of Eighth Division and Cusseta Rds. that is currently forested in mature oak-hickory forest (Figures 4-7 and 4-8).

4.3.4.1.2 FY 2008 Projects

A Troop Medical Clinic (PN 64080) will be built along the west side of Hwy. 27-280, southwest of Old Cusseta Hwy. and north of Defranzo Street and will disturb up to 8 acres (Figures 4-7 and 4-8). This site currently consists of open disturbed area and sparse, mature loblolly pine.

Trainee Barracks Complex 3 (PN 65041) is proposed for construction just north of Trainee Barracks Complex 1 (PN 64370), essentially forming one large barracks complex. Trainee Barracks Complex 3 is necessary to house and train 5 companies of USAARMS initial entry Soldiers (Figures 4-7 and 4-8). These barracks are planned in the configuration described above and will consist of company operations facilities, classroom space, covered training areas, battalion headquarters, a dining facility, storage and a running track. Most of the project site will likely be cleared in FY 2007 during construction of Trainee Barracks 1. The 54-acre project site is currently forested in sparse, mature loblolly pine, with areas of hardwood drainage and sparse mature longleaf pine.

A Unit Maintenance Activity Facility (PN 65251) is proposed to meet USAARMS needs and will be located northeast of the Vehicle Maintenance Instructional Building (PN 65862), south of Eighth Division Rd. and east of Hwy. 27-280. This project will disturb up to 15 acres (Figures 4-7 and 4-8). The majority of this site is cleared, with the exception of approximately 4 acres of moderately dense mature loblolly pine.

A 16th Cavalry Regt HQ Building Complex (PN 65253) is proposed in the same complex as the IET Bde Headquarters (PN 65056) and Training Support Brigade Complex (PN 64459) north of First Division Rd (Figures 4-7 and 4-8). This complex will contain brigade headquarters, battalion headquarters, company operations buildings and classroom space for the 16th Cavalry Regt restationing from Fort Knox as part of the MCOE. Approximately 1.6 acres of 13 year old longleaf pine plantation will be cleared.

A General Instruction Building Complex (PN 65322) project will be constructed on an approximately 19-acre site in Harmony Church, north of Eighth Division Rd. and west of Wood Rd. (Figures 4-7 and 4-8). This complex will provide classroom, administrative and dining space to support the greatly increased training requirement resulting from the proposed action. Approximately 11 acres of sparse mature loblolly pine and 1 acre of dense loblolly pine-hardwood will be cleared.

The Infrastructure Support (PN 65439) project includes infrastructure improvements across the Installation, many of which are in Harmony Church. These projects are programmed in FY 2008. Infrastructure Support projects will affect up to 326 acres in Harmony Church under Alternative A and up to 365 acres under Alternative B (Figures 4-7 and 4-8).

• A new fire station is planned on a 5-acre site between Hwy. 27-280, Cusseta Rd. and Eighth Division Rd. This site is mostly forested with loblolly pine.

• Construction of new water, sanitary sewer, natural gas and underground electrical and communications distribution lines will be throughout the area, primarily following existing roads.

• A pedestrian bridge across Hwy. 27-280 is planned to connect the USAARMS trainee barracks (PNs 64370 and 65041) with training and simulation facilities across the highway.

• The ammunition supply point east of Hwy. 27-280, north of First Division Rd. and east of Cusseta Rd. will receive construction and improvements. Ammunition storage at Fort Benning is currently inadequate to support the missions of the future MCOE. Twelve new

storage igloos, a surveillance building, a storage and charging shed and associated paving, fencing and site improvements, with a disturbance limit of up to 29 acres, will be necessary. Some pines within the ammunition supply area may be removed for construction, however this habitat is not managed by FBLMB and has not been counted as RCW foraging habitat.

• The DoD Elementary and Secondary Schools (DODESS) maintenance facility (bus barn) on First Division Rd., the MP Working Dog Kennel at the ammunition supply point and the material recycling facility on Cusseta Rd. will be demolished and relocated, because they are within footprints of new utility and road construction. The bus maintenance facility and dog kennels will be relocated to Main Post. The Material Recycling Facility will be rebuilt on a 17-acre site between Cusseta and First Division Rds. in Harmony Church and will require vegetation clearing approximately 13 acres of 43 year old slash pine plantation.

• First Division Rd. will be improved to 4-lanes from Dixie. to Cusseta Rds. (Figures 4-7 and 4-8), and Eighth Division Rd. will be widened to 4-lanes from its intersection with First Division Rd. to Hwy. 27-280. These road widenings will require minor vegetation clearing along the existing roads. A new bridge will be constructed on Eighth Division Rd. over Hwy. 27-280 and a 14 foot-wide sidewalk will be constructed on one side of Eighth Division Rd.

• A new access control point and interchange will be constructed for ingress/egress to Harmony Church from Hwy. 27-280. Access control facilities will be constructed at the new interchange and will include a visitor control center, entry control points and electronic gates. Supporting facilities will include, but are not limited to: construction of privately owned vehicles (POV) and truck holding lanes; POV, truck and military parking; intersection turn lanes; utilities; median road lighting; concrete safety barriers; additional road lighting on approaches to the entry point, lighting of all parking lots and caution lights.

The Alternative A location for the access point would be south of the intersection of Hwy. 27-280 and Hourglass Rd. (Figure 4-8). Approximately 188 acres were analyzed for this alternative, including 135 acres of mature, moderately dense loblolly pine, 15 acres of mature mixed pine, 8 acres of mature longleaf and 6 acres of longleaf planted in early 2007.

Under Alternative B, the Hwy. 27-280 access point would be between First and Eighth Division Rds., west of the highway. Approximately 168 acres were analyzed for project impacts. Approximately 19 acres of 51 year old upland hardwood-pine, 4 acres of

pine-upland hardwood mix, 5 acres of longleaf planted in 2006, 2 acres of mixed pine-longleaf, and 18 acres of mature oak-hickory forest will be cleared. The remaining areas are previously disturbed or developed areas including a material recycling facility and a portion of a landfill (Figure 4-7).

A Maneuver Center Simulation Facility (PN 67648) will support USAARMS trainees in constructive and virtual simulations. Under both alternatives, this facility would be located east of Hwy. 27-280 and south of Eighth Division Rd. in the same area as the FY 2007 Vehicle Maintenance Facility (PN 65862) (Figures 4-7 and 4-8) and would disturb up to 8 acres of 13 year old longleaf plantation.

4.3.4.1.3 FY 2009 Projects

A Vehicle Maintenance Shop (PN 65061) to support National Armor Museum operations will be built on an unforested 3-acre site south of Eighth Division Rd. (Figures 4-7 and 4-8). The majority of the construction associated with this PN is on Main Post (below).

The Armor Officer Basic Course Headquarters Complex (PN 65286) is proposed to provide battalion headquarters, company headquarters and general instructional facilities to support the new Armor Officer Basic Course that will be taught with the establishment of the MCOE. Under Alternative A, these facilities will be built within the same complex as the 16th Cavalry Regt Headquarters Building Complex (PN 65253), north of Eighth Division Rd. and east of Hwy. 27-280, and will not require additional timber clearing (Figure 4-8). Under Alternative B, the same area would be used in Harmony Church, plus additional classroom space would be constructed in the Southern Range area (Section 4.3.5.3) (Figure 4-6).

A Vehicle Maintenance Instructional Facility (PN 65438) is proposed to support the maintenance training mission of the Armor School and will include a concrete apron and tactical vehicle hardstand. Much of the project site, located with other vehicle maintenance facilities east of Hwy. 27-280 and south of Eighth Division Rd., will be cleared for 2007 and 2008 projects (Figures 4-7 and 4-8). Approximately 33 acres were analyzed, of which 20 acres are planted longleaf pine 6-13 years old and 8 acres are mature, moderately dense loblolly pine.

A Centralized Wash Facility with Soaking Capability (PNs 65252 and 48644) will be located with the vehicle maintenance facilities south of Eighth Division Rd. (Figures 4-7 and 4-8). This approximately 103-acre facility will consist of heavy vehicle baths, a vehicle final wash

area, vehicle staging area hardstand, a detention pond, a two-acre sludge drying bed and a concrete tank road leading to the facility. The project site is currently forested with mature loblolly and longleaf pines and a hardwood-pine stand.

4.3.4.1.4 FY 2010 Projects

A new USARC (PN 64491) consisting of a training building, operational maintenance shop and storage unit will be built along Hwy. 27-280, west of Old Cusseta Hwy., north of Hershey Rd. and south of Elcaney Rd. (Figures 4-7 and 4-8). The new USARC is to accommodate the closing of the USARC in Columbus, GA and consolidation of it with other Fort Benning Army Reserve units. In the same 71-acre building complex, an ECS warehouse and maintenance shop (PN 65405) would be built to accommodate the 81st RRC ECS from Fort Gillem. The site currently contains some structures and disturbed areas, approximately 24 acres of sparse to moderately dense, mature loblolly pine and 4 acres of sparse mature longleaf pine.

4.3.4.1.5 FY 2011 Projects

A Barracks Complex (PN 38134) containing a brigade headquarters building, company operations facilities, two battalion headquarters buildings, and 4-story barracks for the 29th Infantry Regt (150-person occupancy) (Figures 4-7 and 4-8) is proposed for this site. The project site for this complex will most likely be cleared prior to FY 2011 for the Training Support Brigade Complex (PN 64459) and the 16th CAV Regt Headquarters (PN 65253). Approximately 3 acres of 13-year longleaf pine plantation were analyzed for this project. The rest of the construction associated with this PN will be on Main Post within the construction limits of the Special Operations Forces Headquarters buildings (PN 65394 and 65395).

A Recreation Center (PN 65246) is planned for construction between Jamestown Rd., Old Cusseta Hwy. and Eighth Division Rd. (Figures 4-7 and 4-8). The disturbance limits for this project are approximately 12 acres, of which 6 acres are forested in mature loblolly pine.

A Physical Fitness Center with a swimming pool and athletic fields (PN 65248) are programmed for FY 2011 east of Hwy. 27-280 and north of Eighth Division Rd. in the same complex as other USAARMS facilities (Figures 4-7 and 4-8). The 34-acre site is predominately forested in hardwoods, with 8 acres of sparse, mature loblolly pine.

Some components of a 3rd ID BCT (Heavy) Complex (PN 63799) are planned for south of Eighth Division Rd. and east of the Unit Maintenance Activity Facility (PN 65251) (Figures 4-7 and 4-8) and will disturb up to 36 acres of sparse to moderately dense mature longleaf and loblolly pine. This complex will provide administrative and maintenance facilities to support the reorganization and stationing of the 3rd ID BCT.

4.3.4.1.6 FY 2012 Projects

A chapel (PN 65065) is proposed for 2012 west of Hwy. 27-280, south of Defranzo Street and east of the proposed Trainee Barracks 3 (PN 65041) (Figures 4-7 and 4-8). The disturbance limits are approximately 4 acres, the majority of which is already cleared.

An expansion of the Rail Loading Facility (PN 62953) will be built northeast of Harmony Church and south of the intersection of First Division Rd. and Ochillee Creek, known as Ochillee Junction (Figures 4-7 and 4-8). There is currently a Rail Loading Facility at this location, but it is used solely for physical loading of the rail cars with equipment, not for static storage. The proposed expansion will be a storage/ loading area for up to 250 railcars to support deployment of units stationed at Fort Benning and will entail construction of 26,328 linear feet of rail car storage track ballast (6 new rail spurs), a switching system between the Norfolk Southern Railroad Company railroad line and these storage tracks, a temporary construction access road and rail crossing, a blocking/operations building, widening of the existing concrete tank trail and a railroad crossing warning signal system with flashing lights and gate assemblies. The limit of disturbance for this project includes approximately 95 acres and is comprised mainly of hardwood stands, with 21 acres of mature, sparse loblolly pine.

A Direct Support/General Support (DS/ GS) Vehicle Maintenance Facility (PN 64460) is proposed for the intersection of Wood and Eighth Division Rds. (Figures 4-7 and 4-8). Approximately one-half of the site will be cleared for the General Instruction Building Complex (Shop 1 Replacement Facility) (PN 65322). The additional 15 acres analyzed is comprised of mature loblolly-hardwood and hardwood stands.

4.3.4.2 Kelley Hill

Kelley Hill, which is principally accessed by Marne and Ivy Rds., currently supports a concentrated area (approximately 400 acres) of development for troop housing, plus community and maintenance facilities. As part of the proposed action, various buildings within Kelley Hill

are proposed for construction and conversion to accommodate the 3rd ID BCT in 2011. In addition, road and infrastructure improvement projects will occur along the Marne and Ivy Rds. corridors within Kelley Hill (Figures 4-7 and 4-8). Under either Alternative, the Kelley Hill projects collectively will require removal of approximately 85 acres of pine habitat, of which 75 acres are ≥30 years old. Approximately 47 acres are forested in longleaf pine ≥30 years old and 11 acres are in longleaf pine <30 years old.

4.3.4.2.1 FY 2007 Projects

A 56-acre borrow area for the Trainee Barracks Complex 1 (PN 64370/ 65040) will be used west of First Division Rd. and south of an existing tank trail. Approximately half of this site is currently disturbed. The remaining area is forested in sparse to moderately dense mature longleaf and loblolly pines. This site will also be used for construction of Battle Command Training Center (PN 64790) in FY 2012. Most of this site is cleared, with approximately 21 acres of mature longleaf and loblolly pine and 5 acres of white oak- red- oak-hickory forest.

One of 3 sites for the IET Brigade Headquarters (PN 65056) will be on a 16 acre site at the corner of First Division and Twilight Rds., on the boundary of Harmony Church (Figures 4-7 and 4-8). Most of this site is currently a parade field, with portions of an underplanted slash pine stand and a 30-60 year old longleaf stand.

4.3.4.2.2 FY 2008 Projects

Infrastructure Support (PN 65439) projects in the Kelley Hill area include widening First Division and Ivy Rds. and associated curb, gutter, sidewalks and utilities. Under Alternatives A and B, the disturbance limits for all Kelley Hill infrastructure improvements total approximately 46 acres.

General Instruction Building Complex (PN 65322) projects to be built in the Kelley Hill area will encompass approximately 53 acres on the corner of Ivy and First Division Rds. and will include a warehouse, weapons maintenance facility and hardstand (Figures 4-7 and 4-8). Construction of this project will disturb up to 21 acres of moderately dense 40-60 year old longleaf pine and 10 acres of young longleaf pine.

4.3.4.2.3 FY 2012 Projects

A Battle Command Training Center (PN 64790) located on a 79 acre site on the corner of First Division Rd. and Hwy. 27-280 (Figures 4-7 and 4-8) will support USAARMS training in constructive and virtual simulations. However, all but 25 acres of this site may be cleared in 2007 for a borrow area for the Trainee Barracks Complex 1 2007 (PN 64370). The additional areas to be cleared are currently forested in upland hardwood stands and sparse mature loblolly and longleaf pine stands.

4.3.4.3 Main Post

The existing 8,850-acre Main Post cantonment area includes a mix of low density to high density land uses including troop and family housing, training ranges, administrative, community, maintenance, supply and storage, outdoor recreation, medical and industrial facilities. Lawson Army Airfield is located on the southwest side of Main Post.

The proposed action includes infill development for various uses, including troop housing and medical, administrative, community and operational facilities. The majority of the proposed projects at Main Post are building conversions and construction in historically developed areas. These projects are not discussed in detail because of the absence of Federally-listed Threatened and Endangered species or potential habitat in these areas, but can be found in Table 4-4 and Figures 4-7 and 4-8. Projects outside the fully developed portion of Main Post and/ or that will require vegetation clearing are listed below. These projects will collectively require clearing of 2.35 acres of pine habitat, half of which are forested in longleaf pine. All Main Post projects are the same under both Alternatives.

4.3.4.3.1 FY 2008 Projects

Infrastructure Support (PN 65439) components on Main Post will total approximately 147 acres under both alternatives. On the western edge of Kelley Hill, the Marne Rd. and Lindsay Creek Pkwy. intersection will be improved and an exit ramp will be constructed for direct hospital access from the parkway. An overpass will be constructed at the intersection of Lindsay Creek Pkwy. and First Division Rd., and Marne Rd. will be widened to 4 lanes from Lindsay Creek Pkwy. to the eastern boundary of Building 9230 (Figures 4-7 and 4-8).

The bus maintenance facility in Harmony Church will be demolished and relocated as part of the Infrastructure Support project because it is within the footprint of new utility and road construction. It will be relocated to an 11- acre site on Custer Rd. south of its intersection with Craig Dr. Half of this site is unforested and contains two baseball fields, and the remaining acreage is forested in upland hardwoods.

4.3.4.3.2 FY 2009 Projects

Museum Operations Support Buildings (PN 65061) are proposed around the new National Infantry Museum currently under construction on the western Installation boundary, east of Lumpkin Rd. (Figures 4-7 and 4-8). The project disturbance limits will be up to 101 acres and consist of unmanaged loblolly pine.

A new hospital (PN 65081) will be constructed west of the existing facility on a 164- acre site west of Lindsay Creek Pkwy., north of Marne Rd. and south of Custer Rd. (Figures 4-7 and 4-8). This site is forested in unmanaged mixed pine and hardwood stands.

4.3.4.3.3 FY 2012 Projects

The Headquarters Complex for the 14th Combat Support Hospital (PN 62952) will be constructed east of Lawson Airfield on Indianhead Rd. (Figures 4-7 and 4-8). This project will disturb up to 34 acres and will consist of company operations facilities, a vehicle maintenance shop, an organizational storage building and a general purpose administrative building to support the activation of the 14th Combat Support Hospital. The majority of this site is open fields, with approximately 9 acres of bottomland hardwood- loblolly pine.

4.3.4.3.4 FY 2013 Projects

A Child Development Center for children under 6 years old (PN 65580) is proposed on an 8 acre site on Custer Rd., south of its intersection with McGill St. and west of Morris McBride School (Figures 4-7 and 4-8). Approximately half of the site is forested in unmanaged pine-hardwood.

4.3.4.4 Sand Hill

Existing land uses within the 2,510-acre Sand Hill cantonment area consist primarily of trainee barracks and supporting community facilities. The proposed action will provide for

additional barracks and community facilities including expansion of the health and dental clinic and a chapel, and will provide for the conversion of an existing building into a Training Aids Center. As with the Main Post projects, only those projects with potential environmental impacts (i.e., requiring clearing of vegetation) are presented below. The remaining projects can be found in Table 4-4 and Figures 4-7 and 4-8. Collectively and under either Alternative, Sand Hill projects will require the removal of approximately 109 acres of pine habitat, of which approximately 102 are ≥30 years old. Approximately 15 acres are longleaf pine ≥30 years old, and there are no longleaf stands <30 years old. Sand Hill Transformation projects are the same under both Alternatives.

4.3.4.4.1 FY 2007 Projects

Trainee Barracks Complex 6 (PN 65068) is proposed north of 2nd Division Rd. between Moye and Wildcat Rds. on a 106- acre site within Compartment U4 (Figures 4-7 and 4-8). This training complex will accommodate 10 companies and will include open-bay billeting space, company operations headquarters, classroom space, covered training areas, battalion headquarters, a dining facility, central energy plant, equipment storage building and a running track. This area is currently used as a Mine Training Area; this training will be shifted to other areas on the Installation (F. Weekley, FBRD, pers. comm.). Approximately 14 acres of the project site is moderately dense longleaf pines 40-75 years old, 16 acres are moderately dense pine-hardwood and 14 acres are sparse mature loblolly pine. The remaining acreage is open disturbed areas commonly used for training.

4.3.4.4.2 FY 2008 Projects

A Reception Barracks Center and Processing Center (PNs 64462/ 51256/ 67419) is planned for a site north of Thompson Ave., east of Whitney Rd. and 3rd Infantry Division Rds. (Figures 4-7 and 4-8). This center will provide adequate permanent facilities to support 5 battalions of IET Soldiers. Construction will include a reception station processing building, Soldier community building, dining facility, a physical training field with a running track, general-purpose storage building and a central energy plant. This project will be constructed in 3 phases, and will disturb up to approximately 85 acres collectively. A total of 50 acres of mature

yellow pine-upland hardwood will be cleared for this project; the remaining acreage is currently disturbed.

Components of the Infrastructure Support project (PN 65439) in the Sand Hill area include construction of new water, sanitary sewer, natural gas, underground electrical and communications distribution lines, sanitary sewer and septic tank systems, improvement of existing roadways, POV parking; fencing; information systems, a new overpass and expansion of the Sand Hill Transportation Motor Pool (TMP). A new administration building, expanded vehicle parking area, vehicle fueling station and associated fuel storage tanks and vehicle wash racks will be constructed at the Sand Hill TMP. Under both alternatives, the disturbance limits total approximately 36 acres.

4.3.4.4.3 FY 2012 Projects

A Chapel (PN 65249) will be located on the northwest corner of Moye Rd. and Bourge Ave. (Figures 4-7 and 4-8). Up to 8 acres will be disturbed, including 3 acres of 20- year old loblolly pine plantation and 1 acre of upland hardwood- yellow pine forest.

4.3.5 RANGES

Proposed construction projects in the range areas include several new ranges, a CACTF, Drivers Training Courses and road construction and repairs.

Range area projects are described below. All live fire ranges and beaten areas are the same under Alternatives A and B.

4.3.5.1 Northern Ranges

The northern range area is used for a variety of training exercises by USAIS and tenant units and contains small arms and large-caliber ranges, dudded and nondudded impact areas, heavy maneuver areas, an airstrip, and numerous other training facilities (Figures 4-4 and 4-5).

4.3.5.1.1 FY 2007 Projects

The Tank/ Fighting Vehicle Stationary Gunnery Range (SGR) 1 (PN 65382) will be built between Ruth and Ware Ranges, west of the K15 Impact Area (Figures 4-4 and 4-5). Primary facilities include a gunnery range, range control tower, general instruction building, latrine,

operations and storage building, unit staging area, bleacher enclosure, covered mess and ammo loading dock. This complex will be used by the USAARMS OSUT to train and test Soldiers on the skills necessary to employ weapons and identify, track, engage and defeat stationary and moving armored targets presented individually or as part of a tactical array.

The standard requirements for this range are a company-sized unit firing 120mm tank guns from 14 firing points at approximately 0.5 hour/ iterations. Fort Benning's TRADOC requirement for a Stationary Gunnery Range is equivalent to 447 range days, however since there are 2 SGRs as part of the proposed action, this number will be reduced to 223.5 range days (USACE 2006a). SGR 1 has a footprint of approximately 741 acres, and a beaten area covering an additional 243 acres. The project site is forested with sparse to moderately dense longleaf and loblolly pine stands ≥30 years old and young longleaf pine plantation.

This range is currently in design. The range footprint was originally sized to include two primary shooting 'lanes' with 7 firing points each, however, preliminary surveys show that topography limits the design to one lane. Less land may be cleared than is analyzed in this Biological Assessment (USACE and M. Barron, FBCB, pers. comm.).

4.3.5.1.2 FY 2009 Projects

The CACTF, Phase II (PN 62207) is planned to be near the CACTF Phase I currently under construction, at 3 locations in Compartments T1, T2 and T7 (Figures 4-4 and 4-5). This project is designed to integrate all major urban challenges into a single training complex, accommodating up to battalion-size TRADOC and FORSCOM units in a variety of urban and suburban settings. An approximately 21-acre residential area south of First Division Rd. and west of Pine Tree Rd. will contain a school, 6 residences, a soccer field, a vehicle service station and a farmstead. A two acre military compound will be west of Pine Tree Rd. and CACTF Phase I and will contain a jailhouse and administrative building. A 6-acre "shanty town" will be located at the corner of Pine Tree and Hourglass Rds. east of McKenna Air Strip, and will contain several multipurpose buildings and a barracks building. A small area of 30-60 year old longleaf pine will need to be cleared for the residential area and military compound, and the remaining areas are currently longleaf pine plantations.

Fort Benning has a training throughput requirement of 132 days for the CACTF, which will support approximately 11 battalions. Training exercises will last approximately 8 hours per exercise.

Tank/ Fighting Vehicle Stationary Gunnery Range 2 (PN 65383) is planned to be built at the existing Ware Range, south of SGR 1, west of and firing into the K15 Impact Area. This range will be similar to SGR 1 and will be used for the USAARMS OSUT.

The standard requirements for this range are a company-sized unit firing M1A1s or M3A3s from 14 firing points at approximately 0.5 hour/ iteration. As described above, Fort Benning's TRADOC requirement for each SGR is essentially 223.5 range days (USACE 2006a). SGR 2 has a footprint of approximately 675 acres, and a beaten area covering an additional 213 acres. The project site is forested with sparse to moderately dense mixed pine and mixed pine longleaf stands ≥60 years old and young longleaf pine plantation.

As with SGR 1, the project site analyzed in this Biological Assessment was delineated to include 2 primary firing lanes with 7 firing points each. As this range is designed, Fort Benning will determine whether 2 lanes are feasible with topography, soils, and other constraints. If not, the environmental impacts may be less than those evaluated in this Biological Assessment.

A Tank Drivers Training Course (PN 64797) is scheduled for 2009 to be used by students enrolled in many of the training courses described in Section 4.3.2.1. This area will contain integrated Basic and Advanced Driver Training Courses for wheeled and tracked vehicles. Training requirements include a variety of multi-surfaced driving sections (e.g., paved, unpaved, gravel, sand) with terrain variations (i.e., various slopes and grades). The driving courses will include underpasses, road debris (e.g. wrecked automobiles, guard-rails, concrete blocks) that replicate urban terrain, including small groups of buildings in order to replicate narrow city/town driving conditions. Light fixtures on the Drivers Training Course will replicate urban driving conditions in order to support training with night vision equipment under "wash-out" conditions.

Under Alternative A, the course would be constructed in Compartments L2 and L4 on an approximately 398-acre site between 2nd Armored Division Rd. and Upatoi Creek, south of Buena Vista Rd. The Vehicle Recovery Area described in Section 4.3.2.3 would also be established at this location. This area would most likely require clearing of the entire site for course construction (Figure 4-4). The project site is forested with sparse longleaf pine stands

≥60 years old, longleaf pine plantation < 30 years old and small stands of loblolly pine. The remainder of the project site is drainage and forested with sweetbay-tupelo-red maple stands.

Under Alternative B, the Drivers Training Course and Vehicle Recovery Area would be at separate locations. The Drivers Training Course would be constructed on an approximately 201-acre site in Compartment R2 northeast of existing driver training facilities at Suitor Hill (Figure 4-5). Uplands on the site are forested with moderately dense mixed pine-longleaf pine, and drainages are either forested with sweetbay-tupelo-red maple stand or are open, with early-successional species.

4.3.5.1.3 FY 2011 Projects

A MPMG (PN 65070) is planned for construction in Compartments K3 and K4 at the site of the existing Ruth Range (Figures 4-4 and 4-5). This range will be used by 3rd ID/ 3rd Bde and the USAARMS to train and test individual Soldiers on the skills necessary to identify, engage, and defeat stationary infantry targets for day/ night qualification requirements. This range will contain stationary infantry and armor targets in 10 firing lanes. Targets will be at 3,280 ft. (1,000 m) and 4,920 ft. (1,500 m) for M60 and 0.50 caliber weapons, respectively, and the 238 acre range footprint will be 100% cleared. The beaten area will be approximately 166 acres. The majority of the proposed range site is currently disturbed due to the existing Ruth Range. The remaining undisturbed areas are forested with small loblolly pine, slash pine and mixed pine-longleaf stands approximately 30-50 years old.

4.3.5.2 Oscar Complex

A small arms complex (Oscar complex) similar to the existing Malone complex is proposed along the northern edge of the Installation. Although not specifically proposed/ funded, FBRD intends to construct berms at 3 ranges to prevent or lessen downrange habitat impacts. The remaining ranges either have a natural backstop or will not impact priority potential RCW habitat.

4.3.5.2.1 FY 2007 Projects

Fire and Movement (FM) Range 1 (PN 65032) is planned to be in the Oscar Complex in Compartment O5 (Figures 4-4 and 4-5). This small arms range will include 5 firing lanes, a

range operations center, operations/ storage building, bleacher enclosure, ammunition breakdown building and a latrine. This range will be used by the USAARMS OSUT to train and test Soldiers on basic fire and movement techniques against stationary infantry targets. The footprint will be approximately 23 acres, with a beaten area of approximately 82 acres. The uplands of the proposed range and beaten area are forested with sparse to moderately dense loblolly pine stands approximately 30-50 years old and a longleaf pine plantation < 30 years old. The remainder of the project site is drainage and is forested with drainage sweetbay-tupelo-red maple stands. Fort Benning intends to berm this range to protect foraging habitat for both current and potential future RCW clusters in the area, which will greatly reduce the beaten area analyzed for this range.

Modified Record Fire Range 2 (PN 65044) is planned to be adjacent to the FM 1 in the Oscar Complex and will consist of the range, a general instruction building, ammunition breakdown building, bleacher enclosure, range operations and control center, range operations and storage building, latrine, covered mess and, range control tower (Figures 4-4 and 4-5). Students in the USAARMS OSUT and/ or BOLC III will identify, engage, and defeat stationary infantry targets for day/ night qualification requirements with M16 and M4 rifles. MRF 2 will have a footprint of approximately 44 acres and a beaten area of approximately 90 acres. The uplands of the proposed range and beaten area are forested with sparse to moderately dense loblolly pine stands approximately 60+ years old. The remainder of the project site is drainage and is forested with sweetbay-tupelo-red maple stands.

4.3.5.2.2 FY 2008 Projects

Three Rifle/ Machine Gun Zero (Z) Ranges (Z1, Z2 and Z4) (PNs 65035, 65036 and 65038) are planned for the Oscar Complex in FY 2008 (Figures 4-4 and 4-5). Primary facilities at each range will include 32 lanes with targets at 10 and 25 meter, a security barrier, range operations and control area, operations/ storage building, general instruction building, latrine, bleacher enclosure, covered mess and ammunition breakdown building. These ranges will be used to train and test individual Soldiers in USAARMS OSUT and BOLC III courses on the skills necessary to align sights and practice basic marksmanship techniques against stationary targets using M16 and M4 series rifles and crew-served machine guns. The footprints are 0.79 acre each, and the associated beaten areas are 38, 49 and 48 acres, respectively.

Fort Benning intends to berm Z1 in order to conserve habitat, which will greatly reduce its beaten area.

Three MRF ranges (MRF3, MRF4 and MRF6) (PNs 65045, 65046 and 65048) are programmed for FY 2008 in the Oscar Complex. These ranges will be similar to MRF 1 (PN 65044) with 24-acre footprints and 16 lanes each. Beaten areas will cover approximately 50, 52 and 91 acres, respectively. The proposed ranges and beaten areas are forested with sparse loblolly pine stands 30 - 60+ years old. A small drainage forested with sweetbay-tupelo and red maple traverses the project site.

4.3.5.2.3 FY 2009 Projects

Two Rifle/ Machine Gun Zero Ranges (Z3 and Z5) (PNs 65037 and 65039) are planned for the Oscar Complex on either side of MRF5 (PN 65047) (Figures 4-4 and 4-5). These ranges will be similar to the Zero ranges described above (PNs 65035, 65036 and 65038). Footprints are 0.79 acre each and associated beaten areas are 54 and 50 acres, respectively. The proposed ranges and beaten areas are forested with sparse to moderately dense loblolly pine stands approximately 30-60 years old and a small longleaf pine plantation < 30 years old. A small drainage forested with sweetbay-tupelo and red maple traverses the project site.

MRF5 (PN 65047) is planned for 2009 in the Oscar Complex, east of MRF 4 (PN 65046) (Figures 4-4 and 4-5). This range will be the same design as the 2007 and 2008 MRFs (PNs 65044, 65045, 65046 and 65048) and will be used by the USAARMS to train Soldiers using M4 and M16 rifles. The footprint will be approximately 24 acres and the beaten area will be approximately 55 acres. Fort Benning intends to berm this range, which will greatly reduce habitat impacts. The proposed range and beaten area is forested with sparse to moderately dense loblolly pine stands approximately 30-60 years old and a small longleaf pine plantation < 30 years old. A small drainage forested with sweetbay-tupelo and red maple traverses the project site.

4.3.5.2.4 FY 2010 Projects

Fire and Movement Range 3 (PN 65034) will be the easternmost range in the Oscar Complex (Figures 4-4 and 4-5). This will be similar to FM1 (PN 65032) and will be used for the

USAARMS OSUT. The disturbance limits for this range were drawn using the designs for FM 1, however, terrain at FM 1 allowed for 5 lanes instead of the 4 that are standard Army design. Fort Benning will determine whether FM 3 will have 4 or 5 lanes. A 20-acre footprint and 75-acre beaten area were analyzed. The project site is forested with sparse to moderately dense loblolly pine stands approximately 30-60 years old. A small drainage forested with sweetbay-tupelo and red maple traverses the project site.

4.3.5.3 Southern Ranges

4.3.5.3.1 FY 2009 Projects

Under Alternative B, the Armor Officer Basic Course Headquarters Complex (PN 65286) project would include a classroom facility in the Southern Range area to accommodate Soldiers training in the Good Hope Maneuver Area. This facility would be built on an 18-acre site in Compartment A12 between Jamestown and Sunshine Rds. (Figure 4-6). The project site is forested with loblolly pine plantation < 30 years old. A utility corridor would also be constructed to connect the facility with areas in Harmony Church.

4.3.5.3.2 FY 2010 Projects

An Automated Combat Pistol/ MP Firearm Qualification Complex (CPQC) (PN 65079) is planned to go at the existing Coursen East Range, south of First Division Rd. and firing into the A20 Impact Area (Figures 4-6 and 4-9). Coursen East is currently an inactive mortar range that will be converted to a 1 acre, 15 lane pistol range. No timber clearing will be necessary and the beaten area is expected to impact up to 14 acres of hardwood- pine stands 30-60 years old.

4.3.5.3.3 FY 2011 Projects

A Qualification Training Range (QTR) (PN 67012) is proposed for south of the A20 Impact Area in Compartment A17 (Figures 4-6 and 4-9), for use by 3rd ID/ 3rd Bde and 3rd BCT. This range combines the functionality of a 10/ 25-meter Z range, CPQC, MRF range and Multipurpose Machine Gun Range (MPMG) and will contain range control towers, a general instruction building, range operations and storage building, ammo breakdown building, covered mess, bleacher enclosure and latrine. The MPMG component of the range requires the most area

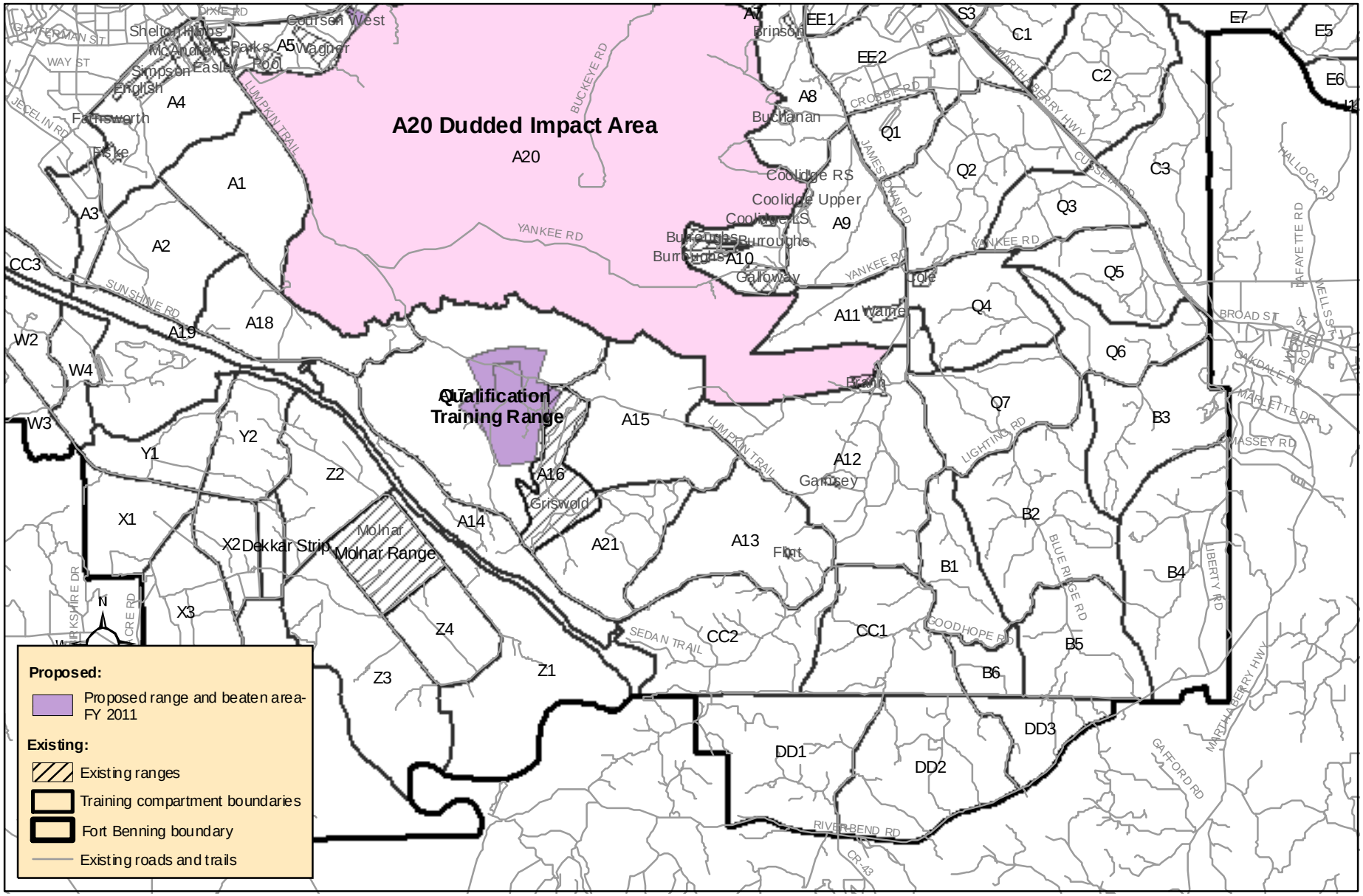


Figure 4-9. Fiscal year 2011 Transformation project located in the Southern Ranges, **Alternative A**, Fort Benning, Georgia.

0 0.45 0.9 1.8 2.7 3.6 Miles

and will have targets at 3,280 ft. (1,000 m) for M60 weapons and 4,920 ft. (1,500 m) for 0.50 caliber weapons. The range footprint is 253 acres and will need to be 100% cleared for line-of-sight. The beaten area adds approximately 179 acres. The site is currently forested with moderately dense loblolly and longleaf pine > 60 years old.

5 METHODOLOGY

5.1 PROTECTED SPECIES SURVEYS

5.1.1 TERRESTRIAL SPECIES

USFS personnel conducted a survey on approximately 60,000 acres for 6 Federally-listed plant and animal species known or expected to occur on Fort Benning in 2006: relict trillium, Michaux's sumac (*Rhus michauxii*), American alligator**,** bald eagle, wood stork and RCW (Appendix A) (Figure 5-1).

Additionally, the Good Hope Maneuver Area and other additional areas that were identified as part of Alternative B in late 2006 were surveyed by FBCB personnel for RCWs (Figure 5-1).

Survey methods for all terrestrial Federally-listed species included foot transects within pre-determined potentially suitable habitat. Parallel transects were walked wherever feasible and were spaced relative to visibility, terrain and suitability of habitat. Where parallel transects could not be used due to landscape features or man-made obstacles, GPS units were utilized to ensure that all potential habitat was sufficiently covered (USFS 2006).

A variety of resources were utilized in preparation for field surveys, including aerial photographs, GIS data, topographic maps, correspondence with the FBCB and other coordination between biologists and Fort Benning (USFS 2006).

Michaux's Sumac, American Alligator, Bald Eagle and Wood Stork. Survey area boundaries for these species included all proposed project footprints, beaten areas and Maneuver Areas and a 660 foot (200 meter) buffer around each. All potentially suitable habitat for each species was surveyed within this area. All potentially suitable habitat was surveyed for Michaux's sumac via foot transects as described above. Surveys for bald eagles were conducted by observation of large trees near large bodies of water within the survey area. Riverbanks, marshes, swamps, ponds and lakes were observed for occurrence of wood storks, eagles and/ or alligators. Additionally, these species were searched for while conducting transects through wetlands for State-listed species, which was necessary for the EIS for the proposed action.

Relict Trillium. Surveys for relict trillium were concentrated in potentially suitable habitat, which was identified based on tree species composition, soil types, proximity to stream corridors and proximity to known populations. Relict trillium surveys were scheduled during its

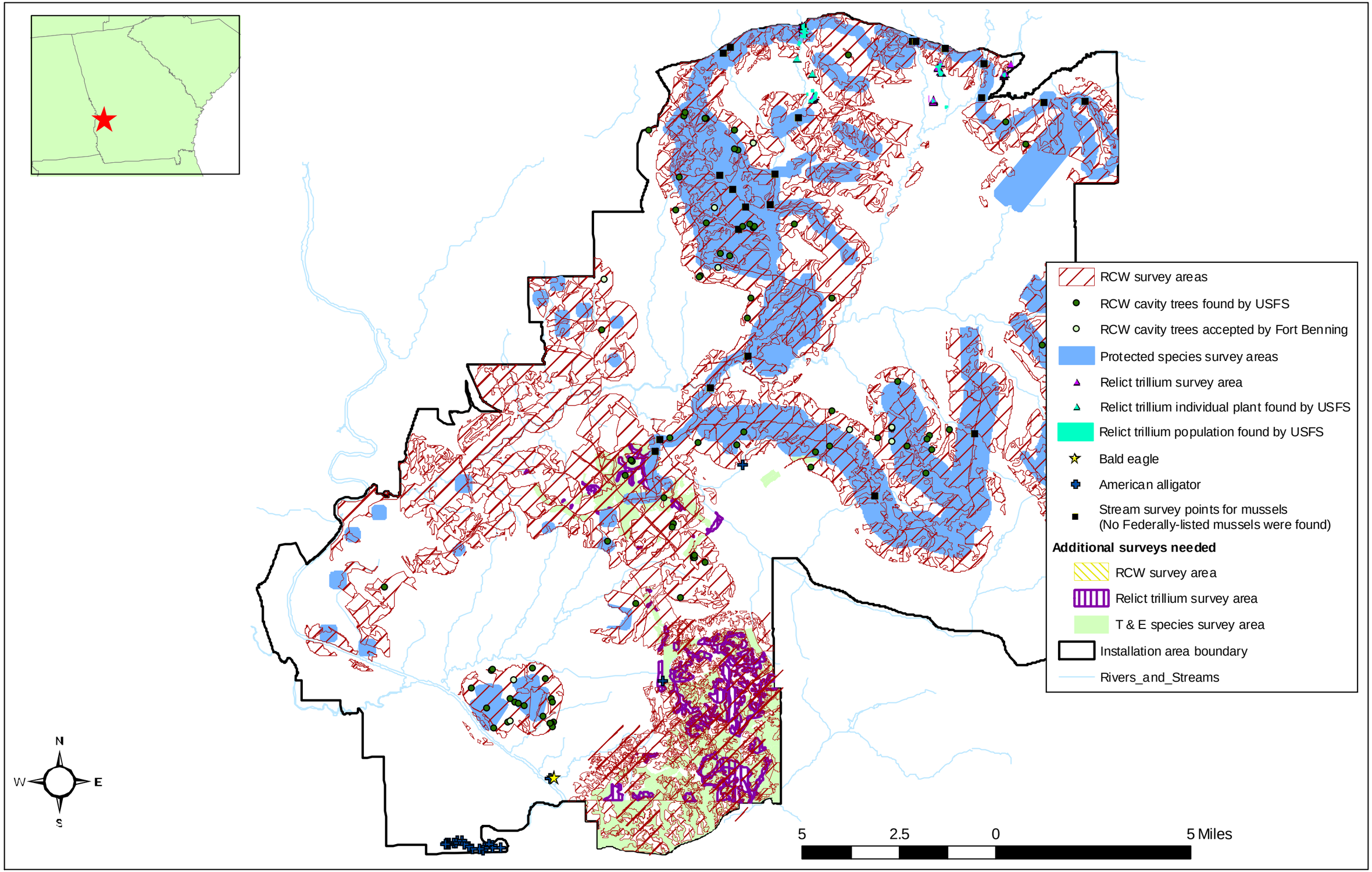


Figure 5-1. Areas surveyed by the U.S. Fish and Wildlife Service and the U.S. Forest Service (USFS) for Federally protected species and species locations found by the USFS on Fort Benning.

flowering period (April June) (Fort Benning 2001).

RCW. All potential RCW nesting habitat on Fort Benning is surveyed on a 10 year rotation (M. Barron, FBCB, pers. comm.). In preparation for the Fort Benning Transformation, this rotation was modified so that all areas potentially affected by the Transformation were surveyed in 2006. According to the Recovery Plan, if a project is to remove potential foraging habitat (defined as pine-dominated habitat ≥30 years old, regardless of Matrix criteria), all potential nesting habitat (defined as stands containing pines ≥60 years old, regardless of Matrix criteria) within 0.5 miles of the project must be surveyed for the presence of RCW cavities, "regardless of ownership" (USFWS 2003a). A 0.5 mile radius buffer was drawn around all proposed Transformation projects, and all pine-dominated stands ≥30 years old potentially containing pines ≥60 years old (potential nesting habitat) within this buffer were surveyed for RCW cavity trees. Portions of the 0.5 mile buffer overlapped onto private property outside the Installation. Potential nesting habitat within these areas would have also been surveyed, however when these areas were examined using 2003 aerial photography and other resources, no habitat was found to be potential RCW nesting habitat.

Some preliminary data were collected by USFS as cavity trees were found, including height of cavity, tree species, dbh and understory density. FBCB personnel then visited and verified each cavity tree, tagged them with a numbered aluminum tree tag, painted white bands where necessary (all clusters but supplemental recruitment clusters (SRCs)) and recorded additional data. The additional surveys of the Good Hope area by FBCB were conducted using the same methodology described above.

5.1.2 FRESHWATER SPECIES

A survey was conducted by USFWS personnel in May and June 2006 for 4 Federally-listed freshwater mussel species: the purple bankclimber (*Elliptoideus sloatianus*), shiny-rayed pocketbook (*Lampsilis subangulata*), Gulf moccasinshell (*Medionidus pencillatus*) and oval pigtoe (*Pleurobema pyriforme*) (USFWS 2006d) (Appendix B). Surveys were conducted according to the "Draft- Freshwater Mussel Survey Protocol for the Southeastern Atlantic Scope and Northeastern Gulf Drainages in Florida and Georgia," (USFWS and GA Department of Transportation 2005). Field reconnaissance determined the stream segments to be surveyed. Twenty-seven sites at existing or future road crossings were determined to be potentially suitable

mussel habitat and tactile and visual searches were used in all habitats within those areas (Figure 5-1). The species and number of all freshwater mussels encountered at each site were recorded.

5.1.3 ADDITIONAL SURVEYS SCHEDULED

As mentioned above, some project sites proposed in this document under Alternative B, including the Good Hope Maneuver Area, were added during the fall 2006. The majority of these areas have been surveyed for RCWs by FBCB biologists. Due to some project location changes, however, approximately 2,130 acres have been added and will be surveyed by FBCB during the spring 2007 (Figure 5-1).

Because of the time of year that changes were made, no other Federally-listed species surveys have been conducted in the additional areas. Surveys for terrestrial species are planned for spring- summer 2007 and spring 2008, and will be scheduled during the optimal survey time for each species (such as the flowering period of relict trillium). Results of these additional surveys will be provided to USFWS. No mussel surveys are necessary in the additional areas (S. Abbott, USFWS, pers. comm.).

5.2 ASSESSMENT OF PROJECT IMPACTS/ ASSUMPTIONS

5.2.1 CANTONMENT AREAS

In order to complete the extensive number of military construction (MILCON) projects necessary to implement the 2005 BRAC recommendations within the allowed timeframe, USACE has changed the protocol for MILCON project proposals and construction (USACE 2006b). Cantonment projects are “design-build” projects, meaning that the USACE design team does not supply designs to prospective construction contractors. Instead, on the Request for Proposals (RFPs), contractors are provided the general specifications of the project and a map with the construction limits. The contractor must design, then construct the facilities within the construction limits specified on the maps. There are no final designs available for this Biological Assessment. RFPs will contain site plans with environmentally sensitive areas taken into account, and Fort Benning will work with design firms to minimize Federally-listed species impacts as much as practicable (D. Miller, Fort Benning Master Planning Division, pers. comm.).

Because avoidance of Federally-listed species and their habitat is not guaranteed for the cantonment projects, the construction limits were used as the project site for each cantonment project. For RCW foraging habitat and cavity tree impacts, we assumed 100% loss of the project site. Although the project limits of construction ("polygons") were delineated to avoid Federally Threatened and Endangered species and their habitat as much as possible, it is likely that the actual impact on these sites will still be less than what is analyzed in this document.

Construction limits were delineated and provided by Fort Benning Master Planning Division (K. Holloway, Fort Benning Master Planning Division, pers. comm.) for every cantonment project. However, since many cantonment projects occur in close proximity to one another, several projects have the potential to disturb the same areas during construction (staging areas, grading etc.). In order to avoid double-counting the disturbed acreage and/ or biological resources, TEC divided the polygons so that there is no overlap. Where there was overlap between projects, the overlap area was allocated to the earliest FY project (K. Rose, TEC, pers. comm.).

5.2.2 RANGES

Range projects are "design- bid- build," meaning that Fort Benning will have significant input during the design process. At production of this document, only two FY 2007 ranges in the Oscar Complex (Fire and Movement range (FM) PN 65032 and Modified Record Fire range (MRF) 65044) are past 65% design and have fairly definite footprints and clearing limits. For these projects, construction limits provided by USACE were used to determine cavity tree and foraging habitat loss. The remainder of the range projects were analyzed using footprint polygons either supplied by or created with input from FBRD ITAM personnel. These polygons should represent the maximum extent of disturbance during vegetation clearing and construction of the proposed range.

The footprints of all new ranges were assumed to be 100% cleared although some forested habitat, particularly in the Stationary Gunnery Ranges (PN 65382 and 65383), may remain post-project. As ranges are designed, any habitat remaining after the ranges are operational that could be counted as potential RCW foraging habitat will be added back into the total pine acreage, with USFWS concurrence.

Projected uses of ranges and times of use are taken from the 2006 RDP, which is based on the premise that, with the MCOE, Fort Benning will support Armor School, and Infantry School and active duty units (USACE 2006a). Typically, active duty units and Army schools train primarily on weekdays, and training is normally not scheduled on weekends or over holidays. For the RDP and this Biological Assessment a total of 242 available training days was used, the result of 365 days/year minus 15 days for winter holidays, 4 days for Thanksgiving, 5 3-day holidays, 1 day for Independence Day and 88 days for the remaining weekends (USACE 2006a). Ranges assessed were proposed, in part, because a deficiency/ shortfall was identified in the RDP. These shortfalls could be that a required range type does not exist, exists but is not standard, or exists but there is insufficient capacity to meet the throughput requirements.

The areas outside of the proposed range footprints within the associated SDZ that are likely to receive substantial impacts from live fire to the extent that tree mortality can be expected were identified by FBRD as "beaten areas" to be analyzed in this document. "Beaten areas" within the ordnance impact area of each range were delineated using topography, aerial photography of similar ranges on Fort Benning and personal experience. Staging areas that are likely to be impacted during construction were also included in the "beaten areas." For analyses in this document, beaten areas were expected to experience 100% loss of Threatened or Endangered species habitat over time from live fire impacts, although these areas will not be deliberately cleared of vegetation. Impacts could be overestimated or underestimated in these areas depending on factors such as the extent of tree mortality, tree species and placement of targets. Also, the beaten areas for the Oscar Complex include staging areas and ordnance-impacted areas assuming no berms will be built. Fort Benning intends to berm 3 of the small arms ranges to minimize habitat damage (see Section 9.8).

Range footprints, staging areas and beaten areas are expected to have 100% loss of habitat, however, the time frame and type of disturbance differ. The range footprints and staging areas will be impacted during timber harvesting and range construction, while the beaten areas will not have any impacts until the ranges are operational.

5.2.3 ROADS

Most road limits of disturbance were provided by FBRD as a distance from the centerline. Road centerlines were provided by Fort Benning ITAM, and JCA and TEC buffered

these with the distances provided and overlaid them onto the foraging habitat delineations to calculate the acreage impacted. A disturbance limit of 60 ft. from the centerline was used for new training area roads and trails and 40 ft. from the centerline was used for upgrades and repairs of existing training area roads and trails, to account for berms and erosion control measures (F. Weekley, FBRD, pers. comm.).

Plans for tank trails within the Good Hope Maneuver Area (Alternative B) have not been finalized, therefore for the EIS and Biological Assessment, all main trails within the Good Hope Maneuver Area were identified for upgrades and improvements. Given the size and extent of training exercises planned for this area during the BOLC III, this is a realistic assumption.

All roads provided by Fort Benning ITAM and Master Planning Division were analyzed in this assessment, regardless of the funding sources. Therefore, the linear ft. may not match what is described in the DoD Form 1391s.

All habitat within the disturbance limits (described above) was assumed to be 100% cleared for analyses in this Biological Assessment, although it is unlikely that all areas will require clearing. As roads are designed, soil and topographic surveys are completed, road layouts are likely to change. Some RCW impacts projected in this document could be avoided as roads are designed. Fort Benning will work with planners to minimize impacts wherever possible. Fort Benning will notify USFWS if impacts are materially different from what is assessed in this Biological Assessment.

5.2.4 MANEUVER AREAS

Based on topography, vegetation and hydrology, Fort Knox USAARMC/S personnel delineated areas within the Maneuver Areas under both alternatives that were likely to receive the most heavy maneuver impact ("maneuver heavy use areas"). Although pine stands within the maneuver heavy use areas (shown on Figures 4-4 and 4-5) will initially be thinned to an average BA of 20 ft^2/ acre in pines ≥10 in. dbh to allow sufficient space for tanks to maneuver, these areas were analyzed as 100% loss of foraging habitat and cavity trees over time. While no specific RCW cavity trees have been identified for removal at this time, it is possible that some will need to be cut for training exercises. Regardless, tracked and wheeled vehicles will need to maneuver within 50 ft. of cavity trees. This greatly increases the risk of tree mortality due to

root damage and subsequent decline, especially with loblolly pines (L. Eckhardt, Auburn University, pers. comm.).

Because cavity trees will not necessarily be cut in the maneuver heavy use areas, they could continue to be used by RCWs for a number of years prior to the trees dying, if the trees die. Prior to the cavity trees in the maneuver heavy use areas dying ("harm"), RCWs roosting or nesting in these trees could be subject to "Incidental Take" in the form of "harass", since training activities could cause birds to open-roost or contribute to nest failure. Therefore, clusters with cavity trees within the maneuver heavy use areas were assessed for potential harassment impacts (see Section 5.4.7).

Outside of the heavy maneuver use areas, but within the Maneuver Areas, maneuver training will stay ≥50 ft. from cavity trees and otherwise adhere to the applicable Army RCW Guidelines (DA 1996, DA 2006b), therefore no direct cavity tree impacts were assessed. Keeping vehicles 50 ft. from tree boles (or groups of boles), or optimally from the edges of crowns, minimizes root damage and greatly increases the chances of tree survival, in light of forest decline (L. Eckhardt, Auburn University, pers. comm.). As described in Section 4.3.2, some stands in these areas, may need to be thinned to an average BA of 40 ft^2 in pines ≥10 in. dbh in order to facilitate formation maneuvering by tracked and wheeled vehicles between maneuver heavy use areas. These stands, however, have not been identified at this time. See Figure 5.2 for BAs in these areas. As additional design charrettes are held and trainers further solidify plans in the Maneuver Areas, potential impacts not presented in this document will be assessed either through the Fort Benning NEPA process/ FB Form 144-R or through consultation with USFWS as appropriate.

5.2.5 VEHICLE RECOVERY AREA

Under Alternative A, the Vehicle Recovery Area would be within the same area as the Basic and Advanced Drivers Training Courses. Construction of the courses and the Vehicle Recovery Area would most likely require the entire area allotted, therefore 100% of the polygon was considered to be cleared of vegetation. For Alternative B, separate areas were identified for the Drivers Training Course and the Vehicle Recovery Area. We are still assuming 100% loss within the Drivers Training Course polygon for construction of the courses. Within the Vehicle Recovery Area, Fort Benning intends to position training stations in existing clearings and all

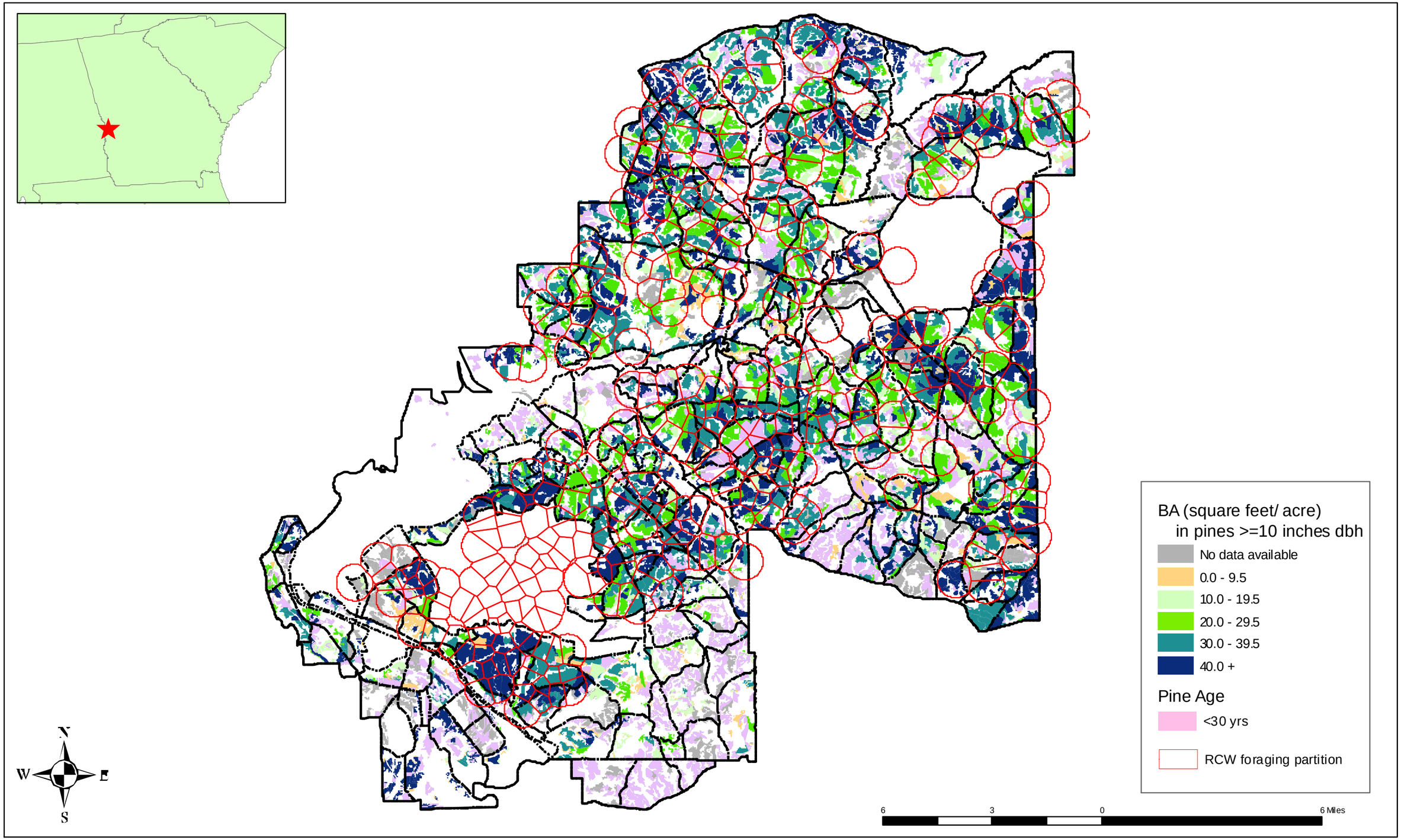


Figure 5-2. Average basal area (BA) in pines >=10 inches diameter at breast height (dbh) of pine stands on Fort Benning.

training will adhere to Army RCW Guidelines (DA 1996, DA 2006bb), therefore no RCW tree impacts are expected. However, because the exact locations of the trails and stations is unknown, we assessed the extent of the polygon, minus the cavity trees, to be 100% lost. This is likely an overestimation; once the Vehicle Recovery Area is in use and habitat impacts from training are understood, Fort Benning will reassess how much habitat is remaining and revisit any Incidental Takes issued for that project.

5.3 General Acreage Calculations

For the general habitat descriptions and totals throughout this document that apply to the entire Installation, 2006-2007 inventory data were used where available. However, in order to have some data, albeit not current, on the stands that have not been inventoried since implementation of new inventory protocol (January 2006, see Section 5.4.1), pertinent data were extracted where needed from the 2003 dataset. Stands that had a forest type but no age or BA were calculated as the correct forest type and 0 years old. Stands with no forest type were separated and were not included with any species ("null" categories). For cavity tree information, trees with no species were not included in the total or the percentages. Unless otherwise indicated, loblolly pine and mixed pine stands were combined.

5.4 Cluster Level Analyses (Including Foraging Habitat Analyses)

5.4.1 Data Collection and Foraging Habitat Calculations

Stands are inventoried once every 10 years, or 10% of the Installation is inventoried every year (DA 2001). However, the 2003 Recovery Plan requires new data parameters that have not been collected in the past, some of which are used to determine Incidental Take. For this reason, current foraging habitat data was collected for all pine-dominated stands within or partially within each 0.5-mile radius RCW foraging partition that was affected by the proposed action (foraging habitat partitioning methodology described in Section 5.4.2).

Foraging habitat data were collected between 3 January 2006 and 19 January 2007 for approximately 46,690 acres (approximately 1,503 pine-dominated stands) by qualified FBLMB personnel with some assistance from Fort Stewart Forestry Branch personnel. Data were collected for every pine-dominated stand ≥30 years old that was at least partially within a 0.5 mile radius RCW foraging habitat partition potentially affected by a Transformation project,

according to USFWS guidance on procedures for collecting FHA data (USFWS 2005). FBCB and JCA first determined which RCW clusters would be affected by Transformation projects, either by the removal of cavity trees or by the removal of pine-dominated habitat within their 0.5 mile radius foraging partitions. FBLMB then determined which stands were within those partitions affected and collected FHA data for those entire stands (not just the stand sections within the partitions).

Stands were delineated on aerial photography according to contiguity of characteristics such as species composition, age and/ or distribution of age classes. Each stand (10 acre minimum, with exceptions) was identified by a number beginning with a training compartment letter(s) and a 2 digit compartment number proceeded by a 2 digit stand number.

Sample points in each stand were determined using a GIS systematic random procedure and were modified to allow for an adequate distribution of points to reflect stand diversity. The sample points were systematically placed on a square grid pattern (in each cardinal direction), and the distance between sample grid points were determined by stand acreage. A line transect was established along the longitudinal axis of each stand; transects that paralleled drains, ridges, trails and other linear features were avoided if possible. If 1 transect was not sufficient to collect enough data points, the sampling scheme (e.g., parallel transects, perpendicular transects, triangular transects) was modified to allow for an adequate distribution of points to reflect stand diversity. Sample points were collected in 2-5 chain (1 chain = 66 ft.) intervals along each transect; the first point in each stand was placed at one-half the distance between sample points.

Homogeneous stands were defined as pine plantations less than 30 years old. All other stands were considered heterogeneous. Ten points were collected for homogeneous stands and 20 points were collected for heterogeneous stands. If a stand was smaller than 10 acres, 1 point per acre was collected for both homogeneous stands and heterogeneous stands. Fiscal year 2003 forest inventory stand ages, adjusted to 2006, were used unless there was evidence indicating that these ages were incorrect. In this instance, age was determined at every other plot by aging one dominant or codominant pine tree using an increment borer, except in pine plantations, where it was only necessary to core one tree per stand.

Pine and overstory hardwood data were obtained using a 10-factor BA prism and the variable radius prism-plot method. The following characteristics were recorded for each sample

plot: tree species, dbh of each pine and hardwood tree > 5 in. dbh, health of tree (crown vigor) and applicable disease/insects.

Midstory data was collected at all sample points using a 0.1-acre circular plot (~37 ft. radius). Midstory species were categorized as scrub oak, sweetgum, upland hardwood (red oak, white oak, hickory) or other hardwood. Determining midstory density was subjective, but followed these basic criteria: a stand with a sparse hardwood midstory had few or no hardwoods present, a stand with a dense hardwood midstory had limited visibility and movement through the stand was difficult, and a stand with a moderately dense hardwood midstory was intermediate. Each habitat type was further subdivided according to hardwood midstory height. Midstory hardwoods less than 7 ft. in height were considered low, hardwoods from 7-15 ft. tall were considered moderate and hardwoods greater than 15 ft. in height were considered tall.

Groundcover data was collected at all sample points using a 0.01 acre circular plot (~11 ft. radius). Four percentages (totaling 100%) were recorded: % herbaceous ground cover, % bare ground, % pine straw and % woody vegetation. Stand fire history was recorded as the date of the last prescribed burn.

Plot data were collected by FBLMB using PocketDog software (Foresters Incorporated (Inc.) 2006) on Trimble® Recon® GPS units and summarized using OfficeDog software (Foresters Inc. 2006). The creators of this software, Foresters Inc., were also contracted to provide Fort Benning with the ability to generate tables in the correct format that summarized all of the data needed for the USFWS RCW Foraging Habitat Matrix (USFWS 2006a) (USFWS Matrix Tool Version 1.0.0.7, 2006), in addition to other specific forestry data.

The custom summary table output by the Foresters Inc. software was then joined to the stand delineation GIS shapefile by FBLMB. These delineations, complete with all associated data, were used by JCA to import into the Matrix.

The Matrix was used to determine the suitability ("score") of each stand using the Standard for Managed Stability (SMS) and the Recovery Standard (RS) (USFWS 2003a). However, there were several parameters, either specific to Fort Benning or otherwise, that were necessary for evaluation of the stands and that were not generated by the Matrix. For this reason, we did not use the summary tables generated by the Matrix, but instead used the scores generated by it along with attributes from the shapefile to create summary tables for each cluster in Microsoft® Excel™.

To calculate pre-and post-project acreage totals, GIS tools in ArcMap™ (Environmental Systems Research Institute® (ESRI) 2005) and XTools Pro© (Data East 2003) were utilized.

Because of some of the attributes of the plot data collected, the software used for data processing (Foresters Inc.) and the software used to score the data (Matrix) were all new to this project, the accuracy of each step in the process was checked by FBLMB and/ or JCA.

Efforts were made early in the field data collection process to ensure consistency. A re-check of a random sample of plots was conducted by FBLMB to ensure that plot data was being collected consistently. Additional plots were also placed within inventoried stands to validate that the plot data collected were representative of the stands (verifying that the locations of plots and the number of plots per stand were sufficient to represent what was actually in the stand). FBLMB and JCA checked the averages calculated by the custom summary program with the raw plot data to ensure that averages were being calculated correctly. JCA personnel also checked Matrix calculations against those calculated by hand using data from Fort Benning and unrelated properties to ensure that acreage calculations and suitability assessments were consistent.

5.4.2 FORAGING HABITAT PARTITIONING

One half-mile radius foraging habitat partitions were created using the Matrix (USFWS 2006a) for every RCW cluster on Fort Benning, including active, inactive and unmanaged clusters. However, since the USFWS does not issue Incidental Take for inactive clusters, and the habitat allocated to them in reality is probably being used by adjacent groups, inactive clusters were disregarded for the purposes of the FHAs and their respective habitat reallocated to adjacent active clusters. The 0.5 mile radius foraging partitions were then modified, leaving out the inactive clusters affected by Transformation. The partitions created during this step were used to calculate the pre-project foraging habitat totals found in Section 6.10.5.

After FHAs were completed and an initial “take” determination (cluster-level only) was made, all clusters “taken” either by cavity tree removal or by foraging habitat removal were excluded from the creation of new 0.5 mile partitions.

In some areas two or more adjacent clusters were “taken” by loss of foraging habitat and/ or cavity trees. Where there was sufficient combined habitat remaining post-project amongst taken partitions to support at least one cluster, new partitions were created using either the “taken” cluster in the best condition (foraging habitat or cavity trees) or shifting one of the

cluster centers in order to optimize the use of the available habitat. Groups in these clusters were still considered to be "taken," however, through repartitioning or artificial cavity installation these "takes" may be offset. Experience has shown that remaining RCW groups will adjust to the new configuration of habitat. The results of this repartitioning can be found in Section 6.10.5.

5.4.3 FORAGING HABITAT GUIDELINES

Foraging habitat was assessed using both the Standard for Managed Stability (SMS) and the Recovery Standard (RS) described in the Recovery Plan (USFWS 2003a). SMS is typically the threshold used for Incidental Take, therefore all projects impacting RCWs must be measured against the SMS criteria (USFWS 2006e). Since Fort Benning is a RCW recovery population, foraging partitions must also be analyzed according to the RS to show that each cluster has the potential to meet RS in the future.

The SMS requires a minimum of 3,000 square ft. (ft^2) of pine BA in stems $\geq$10 in. dbh on at least 75 acres of good quality foraging habitat contiguous to the cluster as defined below (USFWS 2003a):

a. Pine stands must be at least 30 years of age or older.

b. Average BA of pines $\geq$ 10 in. dbh must be between 40 and 70 ft^2/acre.

c. Average BA of pines < 10 in. dbh must be less than 20 ft^2/acre.

d. If a hardwood midstory is present, it must be sparse and less than 7 ft. in height.

e. Total stand BA, including overstory hardwoods, must be less than 80 ft^2/acre.

Additionally, no more than 200 ft. can separate suitable foraging habitat and it is recommended that all land counted as foraging habitat should be within 0.25 mile of the cluster.

USFWS guidance since the Recovery Plan has established the following clarification of the total stand BA requirement:

• Overstory hardwood BA must be $\leq$10 ft^2/ acre

• Total stand BA can exceed 80 ft^2/ acre if the maximum limits for overstory hardwood BA and pines <10 in. dbh are not exceeded, and the BA in pines 10-14 in. dbh is 40-70 ft^2/ac. (in other words, the excess in BA is comprised of pines $\geq$14 in. dbh.) (R. Costa, USFWS, pers. comm.).

In addition to low and sparse hardwood midstories being suitable (criteria d. above), sparse-medium and sparse-tall midstories were also considered to be suitable in this assessment. This is acceptable as long as there is data to support stability and breeding success of the resident RCW groups (R. Costa, USFWS, pers. comm.).

The only minimum criteria for stand suitability (listed above) in the SMS is the BA in pines ≥10 in. dbh; all other criteria are maximum values that could be improved with management. Therefore, in most cases, if a stand meets the BA in pines ≥10 in. dbh criteria, it will be classified as either "suitable" or "potentially suitable" habitat. Of 254 active foraging partitions analyzed, 62 (24.4%) had ≥75 acres of stands with a minimum of 40 ft^2/ acre in pines ≥10 in. dbh and therefore could potentially meet the SMS. Of these, 18 clusters (7.0%) had ≥120 acres and 44 (17.3%) had 75-119 acres. Twenty three clusters (9.1%) contained 0 acres of stands with ≥40 ft^2 BA/ acre. The majority (168 clusters) (66%) of the active partitions contained <75 acres with ≥40 ft^2 / acre in pines ≥10 in. dbh.

Conversely, 163 (64%) clusters had ≥75 acres of stands with a minimum of 30 ft^2/ acre, of which 84 clusters (33.0%) had ≥120 acres and 79 clusters (31.1%) had 75-119 acres. Eighty eight clusters (34.6%) had <75 acres of habitat, and 3 clusters (1.2%) contained no stands with a minimum BA of 30 $ft.^2$/ acre.

Less than 25% of the active RCW clusters on Fort Benning have the potential to meet SMS as defined in the Recovery Plan, yet the Fort Benning RCW population continues to grow at the recommended rate annually (unpub. data, Fort Benning) (Section 6.10.2). Because coarse analyses suggest that RCWs on Fort Benning are able to survive and be successful in lower quality habitat than that described as the SMS, Fort Benning and the USFWS agreed to examine the specific foraging habitat use of the Fort Benning RCW population.

In order to determine how the fitness of RCW groups in the project area compared to the available habitat, FBCB personnel analyzed the breeding history of clusters that would be affected by Transformation relative to the total acreage and BA of all pine stands in each partition, acres and BA of suitable habitat using the SMS, and acres and BA meeting all SMS criteria except the minimum BA in pines ≥10 in. dbh. Group fitness did not show any obvious trends when compared against the SMS, primarily because only approximately 20% of the clusters analyzed met the SMS criteria. The data for the acres and BA meeting all SMS

requirements except allowing a minimum BA of 30 or 35 ft^2/ acre in pines ≥10 in. dbh. also did not show a strong trend, other than that groups with <50 acres of habitat were less productive than those with more habitat. The data for fitness showing the total acres of pine-dominated habitat, regardless of suitability, were the most revealing and showed a trend in decreased breeding success and group size as partitions had <50 acres total pine habitat or ≥200 acres of pine habitat (Table 5-1). The latter is most likely related to group density more than forage, as some clusters on the Installation are somewhat isolated and are less likely to contain PBGs.

The USFWS recognizes that individual RCW populations can become adapted to local environmental conditions that differ significantly from those defined as the SMS. The Recovery Plan provides an allowance for individual populations to develop population-specific guidelines that better reflect what birds are surviving in specific areas (USFWS 2003a). Additionally, further USFWS guidance (2005) recognizes that some sites may not currently, or ever, meet the SMS because of catastrophic events, past land use history or ecological reasons. In cases where birds have adapted to conditions that do not meet the SMS, making a "take" determination "based solely on the SMS may not always reflect the use of best scientific information available": there may be cases where a cluster does not meet the SMS as defined in the Recovery Plan, yet no Incidental Take Statement is issued (USFWS 2005). Proponents with a "take" that is questionable or who wish to develop population-specific guidelines must demonstrate, through sound science, that multiple generations of RCWs have been successful under the current site conditions. Demographic data must also show that RCW group fitness is not diminished as a result of insufficient habitat, and preferably establish a threshold where habitat quantity and/ or quality does begin to affect group fitness (R. Costa, USFWS, pers. comm.).

During informal consultation with USFWS a revised SMS was authorized based on ten years of demographic data provided by Fort Benning as described above. It is important to note that the revised SMS is a temporary allowance as Fort Benning continues its transition to a longleaf-dominated system. Using this revised standard, all SMS criteria as listed in the Recovery Plan (USFWS 2003a) and above must be met, except that the acceptable BA range for pines ≥10 in. dbh is expanded to include stands with an average BA of ≥30 ft^2/acre. The minimum acreage required is directly correlated to the average BAs of stands within the partition; partitions containing stands with BA of 40 ft^2/ acre would still require a minimum of

Table 6-1. Total pine acreage within active red-cockaded woodpecker (RCW) foraging habitat partitions as compared to group fitness.

	<50 acres *(3 clusters)*	<75 acres *(8 clusters)*	76-100 acres *(14 clusters)*	101-120 acres *(14 clusters)*	121-150 acres *(33 clusters)*	121-200 acres *(52 clusters)*	151-175 acres *(11 clusters)*	176-200 acres *(8 clusters)*	200+ acres *(28 clusters)*
# Nestlings	2.43	2.57	2.50	2.41	2.56	2.54	2.52	2.47	2.38
# Fledglings	1.92	1.97	2.17	2.01	2.07	2.04	2.00	1.96	1.84
# Adults	2.11	2.27	2.29	2.50	2.35	2.32	2.26	2.32	2.30

75 acres, however partitions with stands averaging 30 BA would require 100 acres to meet the minimum of 3,000 ft^2 total BA.

While Incidental Take is not issued until habitat is brought below SMS, recovery populations have a responsibility to manage toward the RS, and must ultimately meet RS in order to meet one of the recovery criteria. Because Fort Benning is a recovery population, foraging habitat impacts were also assessed using the RS, both for current suitability and the ability of each cluster to reach RS in the future. The RS is commonly referred to as a "desired future condition" of habitat for all increasing RCW populations (USFWS 2005).

The RS requires a minimum of either 120 acres or 200-300 acres of good quality foraging habitat (as defined below) depending on the site indices of soils within the foraging partition. For systems of high productivity (site index of 60 or more for the dominant pine species), the RCW Recovery Plan (USFWS 2003a) requires a minimum of 120 acres of good quality foraging habitat be provided for each group of RCWs. For sites with low productivity (site index below 60 for the dominant pine species), 200-300 acres of good quality foraging habitat are required for each RCW group. The majority of soils on Fort Benning have a site index ≥60 (DA 2001), therefore 120 acres was used for our RS analyses.

Good quality foraging habitat according to the RS is defined as follows (USFWS 2003a):

1. There must be a minimum of 18 pine stems ≥14 in. dbh per acre that are ≥ 60 years old. The minimum BA for these pines is 20 ft^2/ acre.
2. The BA for pines from 10-14 in. dbh must be from 0-40 ft^2/ acre.
3. The BA of pines <10 in. dbh must be <10 ft^2/ acre and <20 stems/ acre.
4. The minimum combined BA for categories 1 and 2 above is 40 ft^2/ acre.
5. Native herbaceous species must cover at least 40 % or more of the ground.
6. No hardwood midstory exists, or if present, is sparse and less than 7 ft. in height.
7. Canopy hardwoods are absent or less than 10% of the number of canopy trees in longleaf forests and less than 30% of the number of canopy trees in loblolly, shortleaf and other pine forests.
8. All habitat must be within 0.5 mile of the center of the cluster.
9. Foraging habitat must not be separated by more than 200 ft. of non-foraging habitat.

5.4.4 CLASSIFICATION OF HABITAT

Pine stands that met the revised SMS or RS overstory guidelines and had a sparse hardwood midstory, a moderately dense hardwood midstory that was low in height or a dense hardwood midstory that was low in height were considered "suitable" foraging habitat.

"Potentially suitable habitat" was described as stands that met the minimum requirements but exceeded maximum limits of pines in certain dbh classes, hardwood midstory density and overstory hardwood density height. These stands have the necessary pine BA and would meet the revised SMS or RS with midstory removal, prescribed burning and/ or thinning. Stands with suitable overstory characteristics containing a moderately dense or dense midstory that was moderate or tall in height were in this potentially suitable category. There are a few potentially suitable stands that FBLMB has indicated are not possible or practicable to be improved; these stands were included in the foraging habitat totals as potentially suitable habitat, however these were considered to be unsuitable habitat when determining "take."

All pine-dominated stands that did not fall into the suitable or potentially suitable pine categories were classified as "future potential habitat." These stands will require time to meet the revised SMS or RS pine density, size (dbh) and /or age requirements.

Areas that will not be suitable habitat for many years, if ever, and stands that are not managed by FBLMB were classified as "unsuitable" habitat. This designation included hardwood drainages that would not typically support a pine-dominated overstory regardless of management, cleared areas that have not been replanted in pines, upland hardwood stands that are not planned to be converted to pine, paved areas, open water and impact areas or other inaccessible stands.

Some foraging stands were inaccessible because of dudded impact areas, therefore no stand data were collected. These stands are listed in the foraging habitat tables for the applicable RCW partitions, but are specified as "inaccessible" and were not counted toward foraging habitat totals.

5.4.5 LOBLOLLY DECLINE RISK ANALYSES

A GIS model created for Fort Benning by Louisiana State University Agricultural Center (Eckhardt 2004b) was used to quantify the likelihood that pine stands remaining post-Transformation will show symptoms of decline (see Section 3.1.6.2 for decline information).

This model, the Loblolly Risk Analysis Map, divides all habitat on Fort Benning into 4 risk categories: minimal, low, moderate and high. These categories were taken from studies at other properties and were based on a variety of factors including slope and aspect. However, because the level of disturbance (such as military activity) on Fort Benning is substantially higher than on other lower-use properties studied such as national forests, the probability of stands showing decline symptoms at Fort Benning greatly exceeds that observed at the other properties; therefore, Dr. Eckhardt has indicated that areas falling into the "moderate" category on Fort Benning are at the same risk of decline as "high" risk areas on other properties. For the purpose of our analyses, moderate and high-risk areas were treated as "high risk" (L. Eckhardt, Auburn University, pers. comm.).

In order to determine the decline risk of foraging habitat remaining post-Transformation in each impacted RCW cluster, we calculated the acreage of pine habitat classified as loblolly, shortleaf or mixed pine that was suitable or "potentially suitable" by the revised SMS and was within "moderate" or "high" decline risk zones. Although slash pine stands are generally unhealthy across Fort Benning, this condition is caused by other factors, namely fusiform rust. Since the risk of this disease is not linked to the factors weighed in the loblolly risk map, slash pine was not included in the "high risk" acreage totals.

The proposed projects and training area uses that are most likely to increase an area's decline risk above its current classification are the Maneuver Areas (Alternatives A and B) and the Vehicle Recovery Area (Alternative B), since the risk of decline is elevated with any soil disturbance. This increased risk was captured in the foraging habitat analyses by assuming 100% loss of foraging habitat over time within the maneuver heavy use areas within the Maneuver Areas and in the entire Vehicle Recovery Area. Outside of these condensed areas, the extent and effect of an increased decline risk resulting from heavy maneuver exercises cannot be predicted. Training impacts outside of the maneuver heavy use areas will be carefully monitored by Fort Benning during the NEPA process and any unexpected habitat losses will be reported to USFWS.

For each cluster that had foraging habitat removed for a Transformation project, the acreage of potentially suitable and suitable habitat that was in a high risk area is presented, and it is noted if the project will increase the risk of decline.

5.4.6 CAVITY TREE IMPACTS

For each cluster, the cavity stage, shape and activity were recorded for all cavity trees being removed. Cavity trees within the construction limits of cantonment projects, roads and ranges were considered to be removed. Although trees within the maneuver heavy use areas and range beaten areas will not necessarily be cut, these were also analyzed as being "removed" because of the likelihood of tree mortality resulting from training impacts.

5.4.7 HARASSMENT

Chances of nest failure as a result of harassment increase as a factor of the distance of the nest tree from a proposed project, activity, nest stage (incubating eggs vs. nestlings), historic level of disturbance compared to increased level, the type of vehicles/ equipment used and the number of years the cavity tree has been the nest tree (USFWS 2006b (as pertaining to traffic disturbance)). In order to assess harassment impacts, all cavity trees within 200 ft. of proposed land clearing or disturbance were recorded. This includes proposed new or improved roads, vertical construction projects, range footprints, range "beaten areas," and maneuver heavy use areas. Other pertinent data recorded included the activity of each cavity tree, whether or not it hds been a nest tree and if so, how many years it had been the nest tree.

Impacts occurring at specific cavity trees. Cavity trees that would not be cut for project construction, contained ≥1 active, complete cavity and would be within 50 ft. of proposed construction limits were considered to have a harassment impact. Cavity trees that would not necessarily be cut but were in areas where 100% degradation is expected over time (e.g., maneuver heavy use areas and range beaten areas) were also considered to have a harassment impact.

No impacts (i.e. harassment) were analyzed for cavity trees within the Maneuver Areas outside of the "maneuver heavy use areas." Although vehicles will come within 200 ft. of cavity trees in these areas, training activity will adhere to the applicable Army RCW Guidelines.

5.4.8 DETERMINATION OF INCIDENTAL TAKE AT CLUSTER LEVEL

Cavity trees. As stated above, clusters were considered to be "taken" by cavity tree loss if cavity trees were removed, less than 4 suitable cavities remained and there was an insufficient number of suitable trees for artificial cavities to replace the lost cavities. Additionally, clusters

were considered "taken" if 4 suitable cavities remained, but were separated from each other by the proposed action to an extent that they were not likely to be used by resident RCWs.

Foraging habitat. Foraging habitat was totaled as described above and was assessed according to the SMS as defined in the Recovery Plan (USFWS 2003a) and the revised, population-specific SMS developed with USFWS. The SMS "take" standard requires a minimum of 3,000 ft^2 of pine BA in stems $\geq$10 in. dbh on at least 75 acres of good quality foraging habitat that is contiguous to the cluster. The revised SMS differs only by the inclusion of stands with a minimum of 30 ft^2/ acre in pines $\geq$ 10 in. dbh. with supporting demographic data. Minimum acreage required to meet 3,000 ft^2 of pine BA in stems $\geq$10 in. dbh varied depending on the average stand BAs within each partition, but was between 75 and 100 acres.

Clusters that did not meet the revised SMS criteria post-Transformation were considered to be "taken." Clusters that contained sufficient habitat using the revised standard, but did not meet the SMS as defined in the Recovery Plan, were further evaluated to assess group fitness and productivity. If demographic data showed a cluster had contained a PBG for 5 consecutive years, or at least the last 3 years in the case of newly activated recruitment clusters, that cluster was not considered to be taken at the cluster level. However, if a cluster had not been demographically stable for the last 5 years, a "take" determination was made, considering the configuration of habitat remaining, location and extent of foraging habitat loss and history of the cluster.

Harassment. Clusters were considered to be "taken" due to harassment impacts if, with the proposed action, there would be <4 trees with suitable cavities *not* subjected to harassment impacts as defined in Section 5.4.7. Additionally, harassment "takes" were expected in clusters where >4 suitable cavities remained, but remaining cavity trees were segregated as a result of the proposed action.

5.5 GROUP LEVEL ANALYSES

Retaining sufficient foraging habitat alone does not ensure the persistence of an RCW cluster. The continued occupation of a cluster not only depends on the amount of foraging habitat, but also depends on the aggregation of active clusters around it (Hooper and Lennartz 1995). Research has shown that the more aggregated RCW clusters are, the higher the probability of persistence, even with substantial foraging habitat loss (Crowder et al 1998,

Letcher et al. 1998). RCW groups in moderately dense to dense populations have been shown to be less sensitive (i.e. group size and productivity) to drastic loss in habitat than in sparser populations with seemingly more available foraging habitat (Hooper and Lennartz 1995). Therefore, when active RCW clusters are to be "taken" for a project, it is then necessary to assess the impact of that loss on the demographic stability of neighboring RCW groups. This is done by examining the aggregation of active RCW clusters on the landscape.

For the group density analyses in this document, clusters having ≥ 4.7 active clusters within 1.25 miles were considered healthy and were given a "dense" designation. Clusters with 2.6 to 4.6 active clusters within 1.25 miles were considered to have "moderate" density. Clusters with ≤2.5 active clusters within 1.25 miles were considered "sparse," and therefore more vulnerable to abandonment because of lack of emigration/ immigration (Conner and Rudolph 1991a).

A 1.25 mile radius buffer was drawn around the cluster center for every active cluster within 0.5 mile of a project's clearing limits, adjacent to a cluster 'taken' (direct or indirect) or affected by Transformation (some foraging habitat or cavity trees removed). For each cluster analyzed, the number of active clusters within 1.25 miles of its cluster center was calculated. All clusters with a cluster area (minimum convex polygon of all cavity trees and a 200 ft. buffer around them) within 1.25 miles of the target cluster's center were included in the cluster density totals. These totals did not include the subject cluster if it was "taken" by a Transformation project. However, "taken" clusters were still included in the pre-project density totals of their neighboring clusters. Post-project densities were calculated as above, but excluding "taken" clusters from the density totals. This process was completed for both Transformation Alternatives.

Clusters with ≥ 4.7 active groups within 1.25 miles post-project were considered to be unaffected by the associated project or suite of projects. Clusters whose densities were reduced from "dense" or "moderate" to "sparse" were considered to be affected and therefore vulnerable to abandonment as a result of the proposed project(s). Clusters that were "sparse" pre-Transformation were generally considered to be "taken," particularly if project-related habitat removals caused the subject cluster to become more isolated and thus more vulnerable to abandonment.

Incidental Take was issued for 8 RCW clusters adjacent to the DMPRC in 2004 (Fort Benning 2005, USFWS 2006c). Although no clusters have been abandoned yet as a result of the timber clearing and construction of the ranges, these clusters were not included in group density and neighborhood-level analyses (S. Tucker, USFWS, pers. comm.). The A-20 and K-15 Impact Area clusters were also not included in group density calculations since they are covered under an Incidental Take Statement (USFWS 2002).

5.6 NEIGHBORHOOD LEVEL ANALYSIS

Guidance set forth by the USFWS (USFWS and NMFS 1998) states that "when determining an action area, it must include the project site and all the areas surrounding the activity up to where the effects will no longer be felt by the listed species." The intent of the "neighborhood analysis" is to account for the potential negative impacts of a project on RCW demography through habitat loss or fragmentation at the neighborhood level.

A 2.57 mile buffer was drawn around every active RCW cluster impacted by the Transformation. This distance is the average successful dispersal distance based on 11 years of demographic monitoring by the FBCB (Michael Barron, FBCB, pers. comm.). The Neighborhood Analysis first looked at the density of RCW groups within a 1.25 mile radius of clusters that were not directly affected by projects, but were adjacent to clusters that were impacted. If the post-project analysis showed less than 2.5 groups within a 1.25-mile radius of the subject cluster, it was considered "taken". After subtracting all partitions "taken" at the Cluster, Group and Neighborhood Levels, the remaining clusters were analyzed for fragmentation and reduction of productivity and dispersal. The fragmentation and reduction of productivity and dispersal analyses were more subjective because there are no set criteria.

5.7 POPULATION LEVEL ANALYSIS

Per recent USFWS guidance (USFWS 2006e) all projects are to be analyzed at the population level, regardless of whether or not there is an Incidental Take at the partition level. The Population Level Analysis considers the ability of Fort Benning to meet its RCW population goal (351 potential breeding pairs (PBGs), 428 total managed clusters) post-Transformation.

5.8 RECOVERY UNIT LEVEL ANALYSIS (JEOPARDY-LEVEL ANALYSIS)

Jeopardy-level analysis is based on the Recovery Unit level (USFWS 2003a, USFWS 2006e). According to the 1998 USFWS Consultation Handbook (USFWS and NMFS 1998), when determining jeopardy, USFWS is to analyze the impact of the action in question on the species as a whole. To facilitate this analysis, Recovery Units can be identified in a species' Recovery Plan that will provide a smaller-scale definition of Jeopardy. According to the 2003 Recovery Plan (USFWS 2003a):

> "Given that actions that appreciably impair or preclude the capability of such a recovery unit from providing the survival and recovery functions identified for it in a recovery plan may therefore represent jeopardy to the species, the Consultation Handbook indicates the jeopardy standard may be applied to individual recovery units identified as necessary for survival and recovery of the species in an approved final recovery plan."

Each Recovery Unit described in a species' Recovery Plan has a defined role in the downlisting, delisting and 'recovery' of the species. If an action is determined to jeopardize the ability of that Recovery Unit to serve the function described for it in the species' Recovery Plan, that action could be found to jeopardize the recovery of the species.

For the Sandhills Recovery Unit, the Recovery Plan lists two Primary Core Populations (Fort Benning and North Carolina Sandhills East), 1 Secondary Core Population (South Carolina Sandhills) and 1 Essential Support (North Carolina Sandhills West). Therefore, when analyzing the proposed action on the Recovery Unit level, one would focus on the ability of Fort Benning to retain its function as one of the Primary Core Populations in the Sandhills Recovery Unit post-Transformation.

Per the USFWS (R. Costa, USFWS, pers. comm.), the Recovery Unit analysis will be conducted by the USFWS and based upon information provided in the Biological Assessment for the other 4 levels of analyses.

6 FEDERALLY PROTECTED SPECIES CONSIDERED

This Biological Assessment evaluates the potential impacts of the Fort Benning Transformation on species listed as Threatened or Endangered, or proposed for such listing, by the USFWS pursuant to Section 7 of the ESA, as amended (Table 6-1) that occur on Fort Benning or have been recorded in the surrounding region. These species are relict trillium, Michaux's sumac, purple bankclimber mussel, shiny-rayed pocketbook mussel, gulf moccasinshell mussel, oval pigtoe mussel, American alligator, wood stork, bald eagle and the red-cockaded woodpecker. There is no designated Critical Habitat for these species on Fort Benning.

Federal species of concern and State-listed species, including the gopher tortoise (*Gopherus polyphemus*), will be addressed in the Environmental Impact Statement for this project.

In determining the overall effect to Federally-listed species, the Installation considered direct, indirect and cumulative effects. The USFWS Consultation Handbook (USFWS and NMFS 1998) defines **direct effects** as "the direct or immediate effects of the project on the species or its habitat" (e.g., removal of a cavity tree or foraging habitat). **Indirect effects** are "caused by or result from the proposed action, are later in time, and are reasonably certain to occur" (e.g., delayed mortality of foraging habitat resulting from soil disturbance) (USFWS and NMFS 1998). Potential direct or indirect effects of projects (either alternative) are described below. Cumulative effects are assessed in Section 7.

6.1 RELICT TRILLIUM (ENDANGERED)

6.1.1 BIOLOGY

A perennial herbaceous member of the lily family, relict trillium is distinguished from other sessile-flowered trilliums by its decumbent or S-curved stems, distinctively shaped anthers and shape of its leaves. Greenish to brownish purple and yellow flowers appear in early spring and the fruit is an oval-shaped, berry-like capsule which matures in early summer. After the fruit matures, the plant dies back to a tuberous rhizome (Patrick et al. 1995, USFWS 1990).

Relict trillium is found in SC, GA and AL in mature, moist, undisturbed hardwood forests that are usually fire-suppressed and in alluvial sands to rocky clays with a high organic

Table 6-1. Federally-listed species potentially occurring in west-central, Georgia [1].

Scientific Name	Common Name	Federal Status	State Status
PLANTS			
Rhus michauxii	Michaux's sumac	E	E
Trillium reliquum	relict trillium	E	E
BIRDS			
Haliaeetus leucocephalus	bald eagle	T	E
Mycteria americana	wood stork	E	E
Picoides borealis	red-cockaded woodpecker	E	E
REPTILES			
Alligator mississippiensis	American alligator	T/SA	-
MUSSELS			
Elliptoideus sloatianus	purple bankclimber	E	E
Lampsilis subangulata	shiny-rayed pocketbook	E	E
Medionidus penicillatus	gulf moccasinshell	E	E
Pleurobema pyriforme	oval pigtoe	E	E

Key: C = Candidate
E = Endangered
T = Threatened
T/SA – Threatened/ Similarity of Appearance

[1] U.S. Fish and Wildlife Service. website. http://www.fws.govathens/engangered/counties.html Updated May 2004.

content in their upper layer. Relict trillium sites are threatened by logging, industrial forestry, road construction, agricultural site conversion and residential and industrial development. Many known sites are close to expanding urban areas. Stone quarrying has adversely impacted at least one population. Japanese honeysuckle (*Lonicera japonica*) and kudzu (*Pueraria montana var. lobata*) are encroaching on relict trillium at many known locations (USFWS 1990).

Some priority recovery goals described in the species' Recovery Plan (USFWS 1990) include: (1) determining habitat protection priorities and developing landowner agreements, (2) planning and implementing necessary management techniques, (3) defining the criteria for what constitutes a self-sustaining population and determining the size of area each population needs to be self-sustaining, (4) reestablishing populations within suitable habitat and, (5) maintaining a cultivated source of plants and providing for long-term seed storage.

6.1.2 STATUS WITHIN THE ACTION AREA

6.1.2.1 Status on Fort Benning

Status. There are 5 populations of relict trillium being monitored on Fort Benning (Figure 6-1). There are other small groups or subpopulations known to exist on Fort Benning, but no active monitoring is in place for these groups at this time.

Monitoring. The 5 monitored populations are designated as Baker Creek, Kendall Creek North, Kendall Creek South (all 3 in Training Compartment K6), Randall Creek North (Training Compartment O6) and Randall Creek South (Training Compartment O7). Monitoring for these populations is conducted during the peak of flowering, which generally occurs in March and April. Each population contains 5, one-square meter plots. Data collected at each plot include the age class, species and reproductive status of every *Trillium* sp. in the plot; an assessment of canopy cover; and any pertinent habitat condition information such as feral swine (*Sus scrofa*) damage, browsing by animals, signs of flooding, soil erosion or invasive plant species present. These plots are marked by two pieces of 0.5 inch reinforced bar extending approximately 2.5 ft. above the ground (Fort Benning 2004b).

Threats. Potential threats to relict trillium on the Installation include damage from feral swine, soil erosion, training impacts, damage during timber operations, encroachment of invasive plant species such as Japanese honeysuckle and kudzu, and damage from fire. Feral swine are a threat to relict trillium populations on Fort Benning and have been observed in Compartment K6,

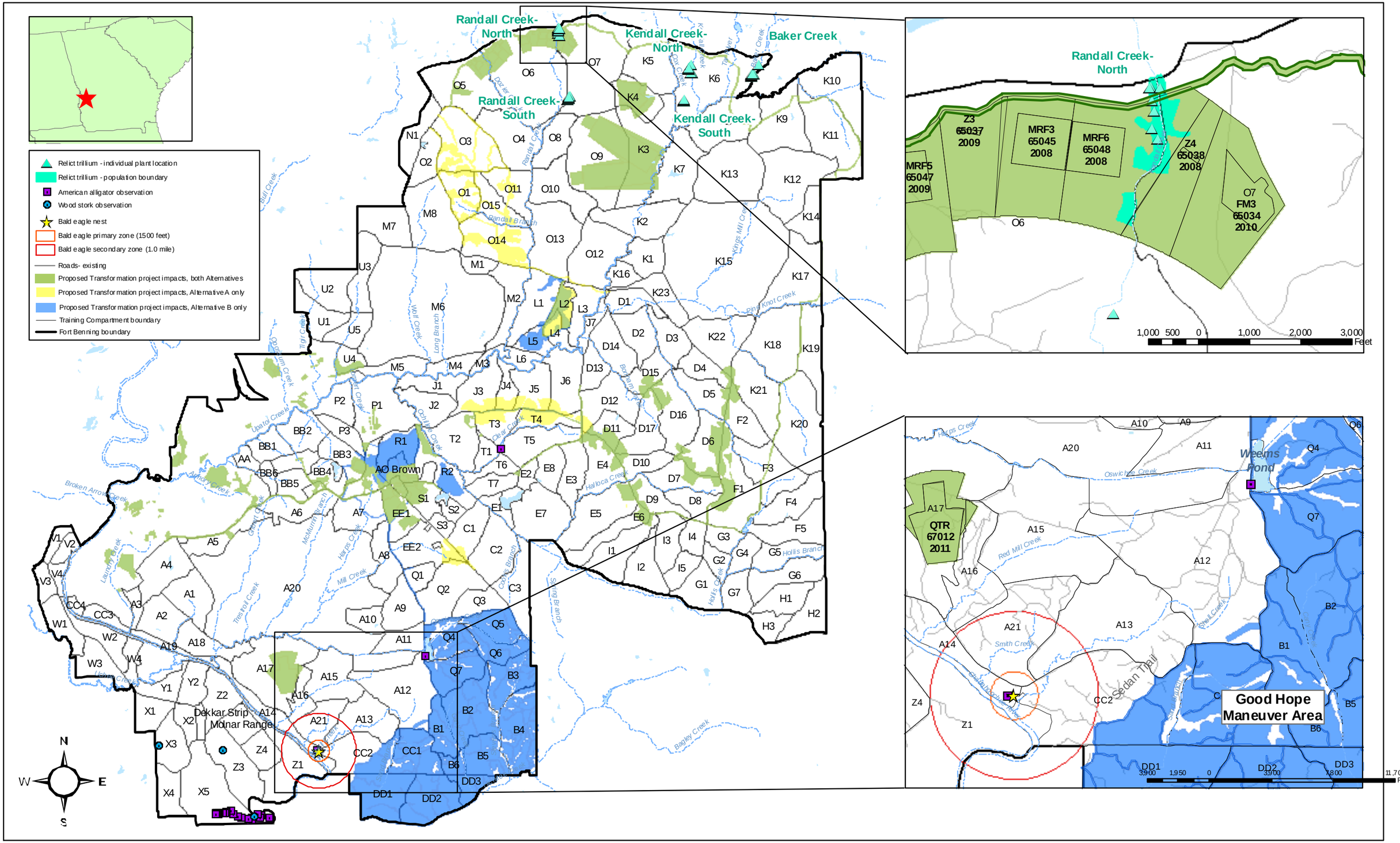


Figure 6-1. Known Federally-listed species locations on Fort Benning, including those found in 2006, and potential project impacts by the proposed Fort Benning Transformation, Alternatives A and B.

where 3 of the 5 trillium populations occur. To protect the trillium from swine damage, the Baker Creek, Kendall Creek South and the Kendall Creek North populations have been completely fenced. Feral swine damage is not currently considered to be a threat at the remaining locations, however data collected during annual monitoring will indicate if additional fencing is necessary.

Management and Protection. In order to protect plants from human disturbance, the 5 populations have been designated as Sensitive Areas and are marked by signs posted along population boundaries. The following additional management measures are in place to protect relict trillium from various types of disturbance (Fort Benning 2001):

- Fencing populations from feral swine where necessary
- Prohibiting timber harvesting within 200 ft. of the population boundary
- Prohibiting digging and vehicles within the sensitive area signs posted around each population
- Prohibiting prescribed burning within the boundaries of each population
- Controlling the feral swine population by trapping or shooting. There is currently no bag limit on feral swine on the Installation (M. Fuller, FBCB, pers. comm.).

6.1.2.2 Status Off-Post

Occurrences of relict trillium have been found by The Nature Conservancy on each of two private parcels adjacent to Fort Benning. Negotiations with the landowners for conservation easements as part of Fort Benning's Army Compatible Use Buffer (ACUB) Program are ongoing. Relict trillium occurrences have also been found in the greater Fort Benning area on private lands in Harris County GA, Lee County AL, and Tallapoosa County AL (TNC, personal communication).

6.1.3 SURVEY RESULTS

Five known populations and two known isolated individual plants were confirmed during the USFS surveys (Figures 5-1 and 6-1) (USFS 2006) (Appendix A). Two potentially new populations were also found by USFS in Training Compartments CC3 and P1 (USFS 2006), however these locations were inspected by FBCB personnel in March 2007 and were not found be relict trillium (R. Thornton, FBCB, pers. comm.).

Approximately 2,012 additional acres are scheduled to be surveyed for relict trillium in 2007 (see Section 5.1.3). The results of these surveys will be provided to USFWS, and if additional impacts are expected consultation will be reinitiated as necessary.

6.1.4 POTENTIAL PROJECT IMPACTS

Potential direct impacts to relict trillium include damage to the plants by timber harvesting, ground disturbance and/ or project construction. Under either alternative, the proposed new asphalt administrative road traversing the northeastern edge of the Installation will impact the Randall Creek North relict trillium population (Figure 6-1). This population also lies within the beaten areas for the proposed MRF6 (PN 65048) and Z6 (PN 65038) ranges. Ground and vegetation disturbance should be avoidable during construction and operation, however there could be direct mortality of the plants or indirect loss of canopy cover due to ordnance impacts. The loss of canopy cover could potentially impact plants, as it prefers shady habitat.

Plants that cannot be avoided during road construction may be relocated to a recipient site on Fort Benning or to a recipient site on GA DNR property in order to establish or enhance off-Post relict trillium populations (R. Thornton, FBCB, pers. comm.). Impacts from the proposed ranges are not expected to result in plant mortality, however if a need to relocate becomes apparent as ranges are designed or during subsequent range operation, plants will be relocated as described above.

Potential indirect effects include limitations on access and game management. The training schedules along with new and current range SDZs could inhibit Fort Benning Land Management Branch (FBLMB)/ FBCB monitoring and management at the trillium sites, such as applying herbicide in order to control competing invasive plants. Additionally, feral hogs are a constant threat to trillium populations. Some populations are fenced to prevent hog damage, but many are not. The current levels of authorized hunting and additional population control by FBCB personnel are barely enough to keep the hog population “in check” (R. Thornton, FBCB, pers. comm.). With access becoming more difficult, increasing feral hog populations and damage to unfenced trillium populations could become an issue.

An additional concern is that any land clearing/ construction disturbance increases the possibility of introducing invasive exotic species or aiding in the spread of such species. This could be detrimental to a trillium population (R. Thornton, FBCB, pers. comm.).

Dust, such as that dispersed by vehicle traffic on dirt or gravel roads, can be detrimental to flowering plants by coating foliage and inhibiting flower pollination. Since the proposed road that will impact the Randall Creek North population will be asphalt, dust should only be a risk during project construction. This risk will be minimized by adherence to construction Best Management Practices.

6.1.5 BIOLOGICAL DETERMINATION

May Affect, Likely to Adversely Affect

6.2 MICHAUX'S SUMAC (ENDANGERED)

6.2.1 BIOLOGY

Michaux's sumac is a low-growing, densely pubescent, rhizomatous shrub that can grow to 3 ft. tall. Each compound leaf has from 9 to 13 sessile, oval or oblong, toothed leaflets, with the terminal leaflet borne on a winged petiole approximately 0.75-inch long. Small greenish-yellow to white flowers are borne in dense, erect, terminal clusters in June and red, fleshy fruits, covered by short hairs and containing a single large seed, are borne on female plants August to October (USFWS 1993). This species is most easily identified during the peak growing season from June to September.

In general, this species occurs in sandy or rocky open woods, sometimes in association with circumneutral soils. It is dependent upon some form of disturbance to maintain the open character of its habitat. Historically, periodic fires provided that disturbance. Currently, Michaux's sumac survives in areas that are artificially disturbed, such as highway and railroad rights-of-way, edges of cultivated fields and other cleared areas (NatureServe 2006), in addition to regularly burned longleaf pine woodlands.

Major threats to Michaux's sumac are (1) fire suppression, (2) degradation of habitat by conversion to other uses including agriculture, silviculture, commercial and residential development, road construction and mechanized military training, (3) hybridization with other *Rhus* species, (4) geographic isolation of small populations, (5) fungal disease and (6) stem borers which attack plants. The species is shade intolerant and declines in vigor when its habitat becomes fire suppressed and a dense mid- or overstory develops (NatureServe 2006).

Michaux's sumac was listed as endangered in 1989. In the species Recovery Plan it is listed as extirpated in Muscogee County, GA (USFWS 1993). Two populations are currently known in Georgia, Elbert County - 154 miles to the northeast and Newton County - 90 miles to the northeast (USFWS 1993).

6.2.2 STATUS WITHIN THE ACTION AREA

Michaux's sumac was historically present in Muscogee County, however this population has since been extirpated (USFWS 2004b). There are currently no known occurrences on Fort Benning and there is no Installation management plan for this species.

6.2.3 SURVEY RESULTS

The USFS conducted a survey for Michaux's sumac within areas of suitable habitat within the threatened and endangered species survey area in 2006, but no plants were observed (USFS 2006).

Approximately 7,600 additional acres are scheduled to be surveyed for Michaux's sumac in 2007 (see Section 5.1.3). The results of these surveys will be provided to USFWS, and if impacts are expected, consultation will be reinitiated as necessary.

6.2.4 BIOLOGICAL DETERMINATION

No Effect

6.3 PURPLE BANKCLIMBER (THREATENED)

6.3.1 BIOLOGY

The purple bankclimber is a large, heavy shelled mussel up to 8 in. in length. The shell is iridescent and the nacre color is whitish near the center, becoming purple towards the margins (USFWS 2003b). In 1998, it was federally listed as Threatened in AL, Florida and GA (USFWS 2003b). It is found in the Apalachicola-Chattahoochee-Flint River Basin (ACF Basin) and in the Ochlockonee River. Channel maintenance, dredging and impoundments are a threat to the species (NatureServe 2006).

6.3.2 STATUS WITHIN THE ACTION AREA

There are no known occurrences on Fort Benning or the Action Area (Brim Box and Williams 2000). Agriculture, forestry, impoundments and siltation have impacted the Chattahoochee River and its tributaries, leading to unsuitable mussel habitat on Fort Benning (USFWS 2006d). Fort Benning plans to design bridges, culverts and fords for future road crossings for the prevention of further erosion or siltation. A NPDES permit and a Soil Erosion Control Plan will be developed for these projects.

One purple bankclimber was found in 2000 and again in 2001 in the Chattahoochee River northwest of the Installation and outside of the Action Area in Lee County, AL and Harris County, GA (USFWS 2006d).

6.3.3 SURVEY RESULTS

Surveys were conducted by the USFWS in May and June of 2006 at 27 pre-determined stream locations on Fort Benning (Figure 5-1). Only 2 native freshwater mussel species were found during the surveys, which were in Dozier and Cox Creeks. The purple bankclimber was not found (USFWS 2006d).

6.3.4 BIOLOGICAL DETERMINATION

No Effect

6.4 SHINY-RAYED POCKETBOOK (ENDANGERED)

6.4.1 BIOLOGY

This species is a medium-sized mussel up to 3.3 in. in length. The shell is subelliptical with a rounded posterior edge. It has a smooth and shiny shell, light yellowish brown in color, with bright emerald green rays across the length of the shell (USFWS 2003b). In 1998, it was federally listed as Endangered in AL, FL and GA (USFWS 2003b). It is found in the Chipola River and Uchee Creek in AL. Threats include agricultural and silvicultural runoff (NatureServe 2006).

6.4.2 STATUS WITHIN THE ACTION AREA

There are no known occurrences of shiny-rayed pocketbook within the Action Area, although it has been observed in Uchee Creek west of the Installation (Brim Box and Williams 2000). Agriculture, forestry, impoundments and siltation have impacted the Chattahoochee River and its tributaries, leading to unsuitable mussel habitat on Fort Benning and surrounding areas (USFWS 2006d). Fort Benning plans to design bridges, culverts and fords for future road crossings for the prevention of further erosion or siltation. A NPDES permit and a Soil Erosion Control Plan will be developed for these projects.

6.4.3 SURVEY RESULTS

Surveys were conducted by the USFWS in May and June of 2006 at 27 pre-determined stream locations on Fort Benning (Figure 5-1). Only 2 native freshwater mussel species were found during the surveys, which were in Dozier and Cox Creeks. The shiny-rayed pocketbook was not found (USFWS 2006d).

6.4.4 BIOLOGICAL DETERMINATION

No Effect

6.5 GULF MOCCASINSHELL (ENDANGERED)

6.5.1 BIOLOGY

This small mussel reaches a length of 2.2 in.. The shell is smooth and yellowish to greenish brown with fine, usually interrupted green rays. It is elongate-elliptical or rhomboidal in outline, inflated and has relatively thin valves (USFWS 2003b). In 1998, it was federally listed as Endangered in AL, FL and GA (USFWS 2003b). It is found in 24 subpopulations in 6 different watersheds, located in the Sawhatchee and Kirkland Creeks in the Chattahoochee River system; Whitewater, Little Pennahatchee, Swift, Muckalee, Kinchafoonee and Chickasawhatchee Creeks in the Flint River system; the Flint and Chipola Rivers; Big, Baker and Waddell's Mill Creeks in the Chipola River system and Econfina Creek (USFWS 2003b). Sedimentation and absence of its specific host fishes (blackbanded (*Percina nigrofasciata*) and brown darters (*Etheostoma edwini*)) are a threat to this species (NatureServe 2006).

6.5.2 STATUS WITHIN THE ACTION AREA

There are no known occurrences of gulf moccasinshell within the Action Area (Brim Box and Williams 2000). Agriculture, forestry, impoundments and siltation have impacted the Chattahoochee River and its tributaries, leading to unsuitable mussel habitat on Fort Benning and surrounding areas (USFWS 2006d). Fort Benning plans to design bridges, culverts and fords for future road crossings for the prevention of further erosion or siltation. A NPDES permit and a Soil Erosion Control Plan will be developed for these projects.

6.5.3 SURVEY RESULTS

Surveys were conducted by the USFWS in May and June of 2006 at 27 pre-determined stream locations on Fort Benning (Figure 5-1). Only 2 native freshwater mussel species were found during the surveys, which were in Dozier and Cox Creeks. The Gulf mocassinshell was not found.

6.5.4 BIOLOGICAL DETERMINATION

No Effect

6.6 OVAL PIGTOE (ENDANGERED)

6.6.1 BIOLOGY

The oval pigtoe is a small to medium-sized mussel up to 2.4 in. in length. The shell is suboviform, compressed and shiny smooth, yellowish, chestnut or dark brown in color, rayless, but with distinct growth lines (USFWS 2003b). In 1998, it was Federally-listed as Endangered in AL, FL and GA (USFWS 2003b). It occurs in the Chipola, Ochlockonee, Flint, Chattahoochee and Suwannee River systems and the ACF Basin. Threats include siltation, pollution and watershed development (NatureServe 2006).

6.6.2 STATUS WITHIN THE ACTION AREA

There are no known occurrences on Fort Benning or within the Action Area. Agriculture, forestry, impoundments and siltation have impacted the Chattahoochee River and its tributaries, leading to unsuitable mussel habitat on Fort Benning and surrounding areas (USFWS 2006d).

Fort Benning plans to design bridges, culverts and fords for future road crossings for the prevention of further erosion or siltation. A NPDES permit and a Soil Erosion Control Plan will be developed for these projects.

6.6.3 SURVEY RESULTS

Surveys were conducted by the USFWS in May and June of 2006 at 27 pre-determined stream locations on Fort Benning (Figure 5-1). Only 2 native freshwater mussel species were found during the surveys, which were in Dozier and Cox Creeks. The oval pigtoe was not found (USFWS 2006d).

6.6.4 BIOLOGICAL DETERMINATION

No Effect

6.7 AMERICAN ALLIGATOR (THREATENED/ SIMILARITY OF APPEARANCE)

6.7.1 BIOLOGY

The American alligator is a large, blackish crocodilian measuring up to 19 ft. in length. Hatchlings are 8-9 in. long and have bold yellowish crossbands that may persist inconspicuously into adulthood. The alligator differs from the American crocodile (*Crocodylus acutus*) in having a broader snout and from the spectacled caiman (*Caiman crocodilus*) in lacking a curved, bony, crosswise ridge in front of the eyes (NatureServe 2006).

In May to July, the American alligator lays a clutch of approximately 20-60 eggs in a mounded nest made of mud, rocks and debris. Eggs hatch in about 9 weeks. Females may protect the nest during incubation and help the hatchlings from their nest to water. Hatchlings may stay together in the vicinity of the nest and their mother for 1-3 years. Alligators are sexually mature within 6-7 years (NatureServe 2006).

The American alligator occurs from coastal North Carolina to the Florida Keys and west to southern Texas and Mexico. It occurs in marshes, ponds, lakes, rivers, swamps and bayous and lives in underground dens along the water during winter and drought periods. They are opportunistic feeders, eating vertebrates up to the size of a white-tailed deer (*Odocoileus virginianus*) (NatureServe 2006).

The alligator was first listed as endangered in 1967. In 1975, the American alligator was also listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Protective measures, including a ban on hunting, allowed the species to rebound, and in 1987, the alligator was announced to be biologically "recovered." However, it is still designated as Similarity of Appearance to a Threatened Taxon in the Entire Range under provisions of the ESA of 1973, as amended (USFWS 1987) due to its similarity to more rare species of crocodiles and caimans. USFWS regulates the legal trade of skins, or products made from them, in order to protect species that are similar to appearance but are illegal in the commercial trade (Fort Benning 2001). Threats to alligators include overharvesting and habitat loss due to recreation, development and agriculture (NatureServe 2006).

6.7.2 STATUS WITHIN THE ACTION AREA

6.7.2.1 Status on Fort Benning

The American alligator on Fort Benning occurs in the Chattahoochee River and its backwaters, sloughs and major creeks. In 1999, an alligator was seen in Kings Pond, Twilight Pond and Clear Creek Pond. The Chattahoochee River was not surveyed in 1999, but in 1998, 13 alligators were found in Compartment X5 in the backwaters of the Chattahoochee River (Fort Benning 2001). Alligators are now seen regularly in major bodies of water across the installation.

The ESMP for the alligator included a 5-year management plan, beginning in FY 2000. There are no set population recovery goals because the species is considered biologically fully recovered. Management goals include protection of alligator habitat, maintaining water levels in ponds used by alligators and a review of any RECs (FB 144-R) that may affect alligator habitat (Fort Benning 2001).

6.7.2.2 Status Off-Post

Since the species is considered to be biologically recovered, species impacts were not assesed off-Post.

6.7.3 SURVEY RESULTS

Specific surveys were not conducted by the USFS for the American alligator on Fort Benning due to the minimal amount of habitat located within the survey area. However, two

American alligators were seen in Averett's pond located in the northeastern area of Fort Benning near Upatoi Creek (USFS 2006). There have been additional observations, both formal and anecdotal, in Weems Pond between Compartments Q4 and A11 (Figure 6-1).

6.7.4 POTENTIAL PROJECT IMPACTS

Under Alternative B, one proposed tank trail improvement and heavy maneuver training in the Good Hope area could impact American alligator habitat in Weems Pond (Figure 6-1). Construction activities and increased traffic on tank trails could result in accidental death or injury, destruction of habitat or disruption of nesting and dispersal.

Because the alligator is listed in order to regulate trade to prevent illegal "take" of rarer species of crocodilians, the species is considered to be biologically recovered, and there is no import/ export aspect to the proposed action, potential project impacts to this species were not assessed (S. Tucker, USFWS, pers. comm.).

6.7.5 BIOLOGICAL DETERMINATION

Impacts not assessed

6.8 WOOD STORK (ENDANGERED)

6.8.1 BIOLOGY

The wood stork is a distinctive migratory, wetland bird found primarily in South America. It is the largest wading bird breeding in the U.S., standing 33 - 45 in. tall, and has a dark, featherless head and upper neck and white body plumage. It has a wingspread of 59-65 in., with iridescent black primary and secondary wing feathers and a black tail. During the early nesting season, adults have a pale salmon coloring under the wings, fluffy under-tail coverts and pink toes. The breeding range of the wood stork extends from the southeastern US through Mexico and South America. It nests in rookeries located in swamps and wetlands (USFWS 1996). The nearest nesting population to Fort Benning is in Thomas County, GA, approximately 115 miles southeast of Fort Benning (Fort Benning 2001).

The wood stork is a tactile feeder, capturing food by wading through water with its beak immersed and partially open (Kahl 1963a). Although it can feed visually, tactile feeding allows

it to forage in wetlands with concentrated prey, as well as in murky waters, without depending on sight. They most often feed on live prey, primarily fish, 1-10 in. in length.

Storks usually nest in bald cypress, blackgum or red mangrove trees (*Rhizophora mangle*) on islands surrounded by open water or in standing water. Colony locations are used year after year, depending on habitat conditions. Roost sites are structurally similar to nest sites, yet include a wider variety of conditions. Use of nest and roost sites often depends on availability of foraging areas.

In south FL, extensive wetlands and high concentrations of prey during the dry season have historically supported large breeding colonies of this species. However, the population has declined significantly since the 1960s as a result of water management practices in southern FL and degradation of the Everglades (Ogden 1994). These changes have focused attention on this species as a bio-indicator of the health of the Everglades and other shallow wetlands region-wide (NatureServe 2006).

Restoration of the Everglades and Big Cypress systems are crucial for the recovery of the wood stork (USFWS 1996). Population declines of the wood stork in south FL have been balanced to some extent by increased stork migration into central and northern FL, GA and SC (Rodgers 1996). The U.S. breeding population of wood storks was listed as endangered in 1984 (USFWS 1996). After breeding in FL, GA, NC and SC, populations move northward as far as NC and as far west as MS and AL (USFWS 1996).

6.8.2 STATUS WITHIN THE ACTION AREA

6.8.2.1 Status on Fort Benning

Wood storks on Fort Benning are dispersing (post-breeding) birds and have a highly variable duration of stay. Most observations occur near the backwaters of the Chattahoochee River in Training Compartments X5 and Z3 (Figure 6-1). In 2005, none were observed and in 2006, 3 were observed in Compartment X5 (R. Thornton, FBCB, pers. comm.).

Change in water levels conducted by the USACE on the Chattahoochee River influence the availability of forage for the wood stork, which makes management on Fort Benning very difficult. It is unlikely that wood storks will nest on Fort Benning due to the lack of seasonally drying wetlands that provide foraging habitat during the breeding season. There are several

areas on the Alabama side of the Installation that have potential wood stork nesting sites if the water levels can be controlled.

According to Fort Benning's Wood Stork ESMP (Fort Benning 2001), the main conservation goal is to maintain habitat for wood storks to use during post-breeding dispersal, along with increasing public awareness and monitoring foraging and roosting areas. Training exercises in potential roost areas are rare, but if a military unit wants to train or construction activity is planned within feeding habitat, a FB Form 144-R must be submitted detailing military activity and location. Activities affecting the wood stork and its habitat are monitored and restricted (Fort Benning 2001).

6.8.2.2 Status Off-Post

Suitable nesting habitat for wood storks does not exist off-Post within the Action Area because of habitat conditions and the previously mentioned fluctuating water levels of the Chattahoochee River.

6.8.3 SURVEY RESULTS

Wood stork surveys were conducted in 2006 by the USFS. No wood storks were observed during the survey (USFS 2006).

The proposed action will not require the removal of any suitable wood stork roosting or nesting habitat and is not expected to significantly alter migrating behavior.

6.8.4 BIOLOGICAL DETERMINATION

No Effect

6.9 BALD EAGLE (THREATENED)

6.9.1 BIOLOGY

The bald eagle is the second largest North American bird of prey, ranging from 28-38 in. in length, weighing 10-12 pounds, with a wingspan that can reach 66-96 in. (Buehler 2000). Both males and females have dark brown plumage with a pure white head and tail and a large yellow bill. Juveniles are dark brown with white mottles until adult plumage is obtained at age 5 or 6 (USFWS 1989).

The bald eagle is found throughout the lower 48 states, Alaska and Canada. It typically inhabits mature conifer forests close to clean bodies of water populated with fish, most often rivers, estuaries, coastlines or large lakes (NatureServe 2006). A significant amount of inland habitat has been created in the form of man-made reservoirs, providing wintering, nesting and foraging habitat. Bald eagles feed primarily on fish, when available, but may also eat other birds and mammals, including carrion (USFWS 1989).

Bald eagles usually nest in the tops of tall conifers located near water (USFWS 1989). The cone-shaped nest averages 6 ft. in diameter and 6 to 8 ft. in height. The breeding season varies throughout its range, but generally begins in the winter in the Southeast. They have a relatively low reproductive rate and a small clutch size, usually 1 to 2 eggs.

The bald eagle was first protected under the Eagle Protection Act of 1940, amended in 1972. It was first listed as Endangered in 1967 below the Mason-Dixon Line and subsequently received protection under the ESA of 1973. In 1978, it was Federally-listed as Endangered in 43 states and Threatened in 5 states. In 1995, it was down-listed to Threatened and currently is undergoing a de-listing review. Historically, the most dramatic population declines resulted from environmental contaminates, especially the pesticide DDT (USFWS 1989).

6.9.2 STATUS WITHIN THE ACTION AREA

6.9.2.1 Status on Fort Benning

A pair of bald eagles successfully fledged 2 nestlings in 2006 in Training Compartment A14, on the southern edge of Fort Benning near the Chattahoochee River (Figure 6-1). As of March 2007, a pair was nesting in the same tree, although the tree died in 2006. This nest has been active since 1997. Prior to 1997, a nest in Training Compartment CC2 was active. This nest has since deteriorated and is no longer present (R. Thornton, FBCB, pers. comm.). From 1994-2006, the breeding pair successfully produced at least 1 fledgling each year.

Fort Benning has a goal to increase the bald eagle population to at least 2 nesting pairs, with each pair producing at least 1 fledgling. Measures are taken to protect this species from human disturbance from 1 December to 31 May, or until all of the nestlings fledge. Activities are restricted within two protective zones around the nest tree according to the type of activity and the distance from the nest. Within the primary zone (0-1,500 ft. radially), all human activity is restricted except for authorized research and management activities. A 1,000 foot vertical and

horizontal "no fly zone" is applied for aircraft, and buoys and warning signs are placed on the Chattahoochee River. Within the secondary zone (1,501ft. to 1.0 mile radially), no new commercial or industrial sites, multistory buildings or housing developments can be constructed. Additionally, no new roads, trails or canals can be built that will facilitate access to the nest. In general, no major activities occur within the secondary zone during the nesting season. FBRD closes Compartments A-14 and CC-2 to hunting, fishing and other activities from 1 December to 31 May, with the exception that areas south of Sedan Trail in CC2 are available for training (Figure 6-1). Fort Benning also manages selected dominant live trees within 1.5 miles from the Chattahoochee River for future potential nesting sites (Fort Benning 2001).

6.9.2.2 Status Off-Post

No large bodies of water are off-Post within the Action Area, other than a small section of the Chattahoochee River that is <1 mile from the current nest tree on Fort Benning.

6.9.3 SURVEY RESULTS

Bald eagle surveys were conducted in 2006 by USFS biologists in the Transformation project area. No bald eagles or bald eagle nests were observed during the survey (USFS 2006).

6.9.4 POTENTIAL PROJECT IMPACTS

No Transformation projects are within the vicinity of any known bald eagle nests under Alternative A. Under Alternative B, heavy maneuver training within the Good Hope Maneuver Area will occur just outside (1.03 miles) of the 1 mile secondary zone. Since training will continue to be restricted to south of Sedan Trail, no bald eagle impacts are expected as a result of the proposed action. While parts of the Good Hope Maneuver Area are within 1.5 miles of the Chattahoochee River, this is not an area that is expected to be used as a future nesting site due to unsuitable habitat and the close vicinity to the existing nest (R. Thornton, FBCB, pers. comm.).

6.9.5 BIOLOGICAL DETERMINATION

No Effect

6.10 RED-COCKADED WOODPECKER (ENDANGERED)

6.10.1 BIOLOGY

The RCW is a small, non-migratory woodpecker endemic to mature, fire-maintained pine forests in the southeastern United States, where it was historically common. RCWs measure 7 to 8.5 in. long, have a black cap and nape, prominent white cheeks and a black-and-white, horizontally barred back. Adult males have red markings (cockades) behind the ear, but the cockades are difficult to see (USFWS 2003a).

RCWs are found in all southern and southeastern Coastal States from eastern Texas into southern Virginia, with small interior populations in southeastern Oklahoma, southern Arkansas (USFWS 2003a) and, until recently, south-central Kentucky (Mills et al. 2004). The largest populations are in the Coastal Plain forests of the Carolinas, Florida, GA, AL, Mississippi, Louisiana, eastern Texas, and in the Sandhills forests of the Carolinas (USFWS 2003a).

Ideal nesting habitat for RCWs includes open, mature southern pine forests dominated by longleaf pine, loblolly pine, pond pine (*P. serotina*), slash pine or other southern pine species greater than 60 years of age. Preferably, these stands have an open midstory and understory that is maintained by frequent fire. Potential foraging habitat is defined as open pine or pine/ hardwood stands 30 years of age or older (USFWS 2003a).

Nest/roost cavities are excavated into the heartwood of living pine trees that are typically over 60 years old. Older pines are necessary because they have sufficient heartwood to contain a cavity and because they are more likely to be infected with red-heart fungus (*Phellinus pini*), which significantly reduces the time required to construct a cavity (USFWS 2003a). The RCW excavates resin wells into the cambium around, above and below the cavity entrance, resulting in a resinous coating around the cavity.

An aggregate of cavity trees is called a cluster and may include 1 to 20+ cavity trees. A cluster is occupied by a group of RCWs; a group can be a solitary male or a non-breeding pair, but typically consists of a breeding male and female and often 1 or more helpers (typically male offspring from previous years). Helpers assist with cavity excavation and maintenance, incubation, feeding young and defending the group's territory. Nesting generally occurs from April through June, with some re-nesting attempts observed as late as July (Walters 1990, Jackson 1994).

Development of a dense understory may result in abandonment of cavity trees/clusters. Fire exclusion, conversion of forest lands to agricultural and other uses and logging have destroyed most of this species' habitat rangewide.

6.10.2 STATUS WITHIN THE ACTION AREA

6.10.2.1 Status on Fort Benning

Fort Benning's RCW population is dispersed over most of the Installation, with the exception that there are no active clusters located in the Alabama portion (Figure 6-2).

Background. In September 1994, the USFWS issued a Jeopardy BO (JBO) to Fort Benning which concluded that ongoing military training and related activities at Fort Benning "jeopardized" the continued existence of the Installation's RCW population. Since that time, intensive efforts have been underway to enlarge the RCW staff and to increase management activities needed to remove the jeopardy status (Fort Benning 2004b).

In September 2002, the Service issued another BO based on the review of the Installation's RCW ESMP. The Service concurred with the determinations of the ESMP, which in turn, terminated their former JBO. The 2002 BO requires ongoing management activities that are non-discretionary. However, these management actions are intended to minimize potential future impacts to RCWs rather than resolve actions that could jeopardize the species existence. Additionally, the 2002 BO for the ESMP (USFWS 2002) was the catalyst that allowed the Installation to adopt the 1996 Guidelines (DA 1996). Prior to the 2002 BO, the Installation was under the 1994 Army Guidelines, which were generally more restrictive for some training activities (Fort Benning 2004b).

Cluster Inspections and Management. Since 1994, RCW population demographics have been intensively studied, resulting in an extensive RCW population database. Fort Benning managed **308** clusters during the nesting season of 2006, which included all clusters on the Installation with the exception of inaccessible clusters in dudded impact areas (manageable clusters within impact areas are included in the 308 total). Note: the 308 managed clusters includes the 8 clusters that were considered to be "taken" by the DMPRC (USFWS 2004a, Fort Benning 2005, USFWS 2006c). Although "taken," these clusters will continue to be managed according to the Army RCW Guidelines (DA 1996, DA2006). Enough demographic data is

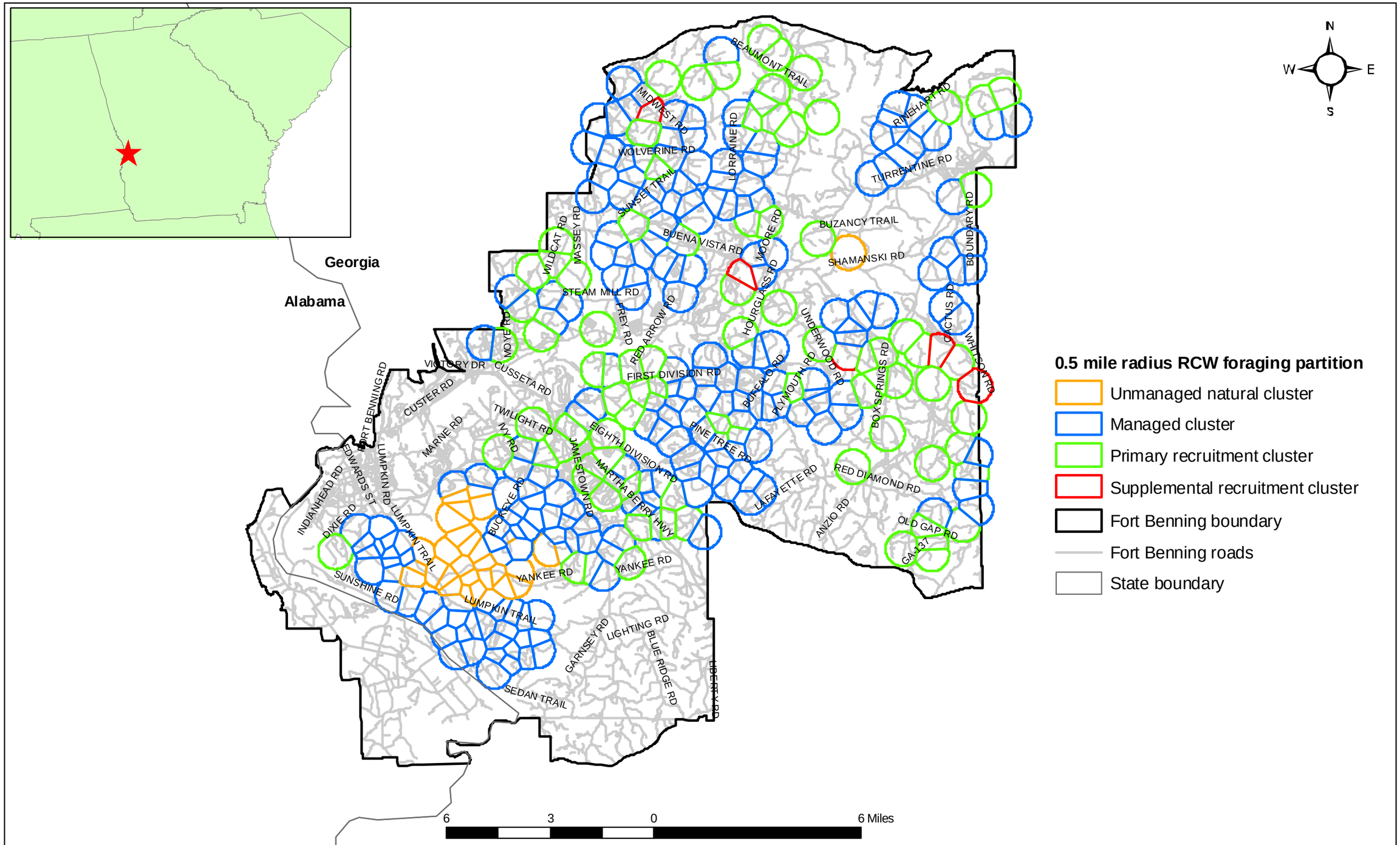


Figure 6-2. Distribution of red-cockaded woodpecker (RCW) clusters including unmanaged and managed natural RCW clusters and primary and supplemental RCW recruitment clusters, Fort Benning.

collected at each managed cluster to determine the presence or absence of a PBG; all managed clusters inhabited by a PBG can be counted toward the Installation's RCW population goal (DA 1996, DA 2006b). All managed clusters are inspected every spring (March- April) and recruitment clusters are inspected again in the fall (September-October). During cluster inspections, RCW biologists and technicians record comprehensive data about the cavity trees, habitat within the cluster area and overall management concerns. Data collected includes the activity status and suitability of all cavities, damage to cavity trees or surrounding habitat (including military training impacts), any cavity maintenance or provisioning needed, erosion issues and any habitat management needs within the cluster area (i.e. midstory control, invasive exotic species or timber prescription recommendations). Any new cavity or start trees found during nesting season are marked and entered into the database as appropriate (Fort Benning 2002, DA 1996).

Cavities are maintained or installed as needed in order to provide each managed cluster with at least 4 suitable cavities, per the 1996 Guidelines. Cluster areas are managed as needed to keep the cluster area free of midstory (hardwood or pine) mechanically and/ or chemically (Fort Benning 2002). Habitat problems outside of the cluster area, training impacts and/or erosion problems are communicated to the appropriate directorate for resolution.

Demographic Monitoring. Fort Benning also monitors and color-bands (bands) RCWs at 25% of all active clusters on the Installation (65 clusters); as the population increases, more clusters are added to maintain a 25% sample (Fort Benning 2002, DA 1996). The 1996 Guidelines also require monitoring recruitment clusters for 5 years after becoming active; however, Fort Benning currently monitors RCWs at all 86 recruitment clusters on the Installation, regardless of how long they have been active. RCWs at an additional 30 clusters have been monitored since 2003 as a minimization effort for the DMPRC (Fort Benning 2004b), resulting in a total of 59% (181) of all 308 managed clusters being monitored for potential banding. In 2006, 30 of the 181 total clusters monitored for potential banding were inactive, therefore Fort Benning could have banded birds in 57% of the groups in active managed clusters (151 of 266). Activities at clusters where banding occurs include banding all nestlings and adults, identifying previously banded adults, determining fledgling success and determining the sex of fledglings (Fort Benning 2002, DA 1996).

Recruitment Clusters. According to the 1996 Guidelines, installations are to add recruitment sites, within the limitations of available habitat, to achieve at least the optimum rate of population growth in order to meet individual population goals. Recruitment clusters created for this purpose are managed as Primary Recruitment Clusters (PRCs) and are subject to the same training restrictions and protection as natural/ preexisting RCW clusters (DA 1996). In 2006, Fort Benning had 81 clusters designated as PRCs, of which 60 were active in 2006. (Note: this total includes all protected clusters created for the purposes of attracting RCWs, although technically only those installed since the approval of the 1996 Guidelines on Fort Benning in 2002 (8 clusters) are defined as "PRCs"). Under the 2006 Guidelines, all clusters subject to training restrictions, including PRCs, will be referred to as "protected" clusters (DA 2006b).

Additionally, Supplemental Recruitment Clusters (SRC) are to be created, as available habitat allows, above and beyond the required number of PRCs. SRCs are not subject to any training restrictions and are "invisible to training" (trees are not painted), therefore they require an Incidental Take Statement. All SRCs were covered by Incidental Takes with the approval of the ESMP (USFWS 2002). This Incidental Take applies only to training impacts; no construction activities can be undertaken in these areas without additional consultation with the USFWS. In 2006, Fort Benning had 5 clusters designated as SRCs. Under the 2006 Guidelines, all clusters without training restrictions, including SRCs, will be referred to as "unprotected" clusters (DA 2006b).

When RCWs voluntarily move into a stand not previously designated as a recruitment site, the new cluster is designated as either a PRC or SRC depending on the military use of the area (DA 1996).

The Recovery Plan and 2006 Guidelines recommend a 5% average annual population growth in all RCW populations, to be achieved by providing a number of unoccupied recruitment clusters equal to 10% of the total number of active clusters (USFWS 2003a, DA 2006b). Fort Benning currently has 26 unoccupied recruitment clusters with 4 suitable cavities each, which is 9.8% of the number of active clusters on the Installation (FBCB unpub. data).

Clusters within dudded impact areas. As described in Section 2.6, the BO on the 2001 RCW ESMP provided an Incidental Take permit for 41 groups (29 known clusters and an estimated 12 unknown groups). RCW groups in 3 impact area clusters could be managed by Fort Benning and were not included in the Incidental Take Statement (USFWS 2002). As part of

the DMPRC Biological Assessment and BO, an additional 8 clusters were arranged to be managed within the A20 impact area (USFWS 2004a, USFWS 2006c). FBCB is able to access these clusters 4 days per year per an agreement with FBRD, including at least one visit during the nesting season to document breeding status. This addition resulted in 11 managed impact area clusters that can contribute to the Installation RCW population goal.

The remaining unmanaged clusters in dudded impact areas are accessed whenever possible to accomplish as much data collection and/or management as time allows.

Population Growth. The first comprehensive cluster inspections were from 1990-1992, although cavity trees have been marked with white paint since 1980 and have had metal numeric tags since 1982. The extent of information gathered was extremely limited by today's standards, but the 1990-1992 data revealed 171 active and 57 inactive clusters. When monitoring began in 1994, the RCW population at Fort Benning had 174 active clusters (Doresky et al. 2004). In August 2006, the number of managed clusters had increased to 308, consisting of 254 PBGs, 7 solitary RCWs, 5 captured clusters and 42 inactive clusters (FBCB unpub. data). These totals include the 8 clusters "taken" by the DMPRC, which in 2006 contained 7 PBGs and 1 solitary male.

For RCW recovery populations, the 2003 Recovery Plan recommends an annual increase of 5% in the total number of active clusters (USFWS 2003a). Additionally, according to the 1996 Guidelines, any installation discovering a 5% decline in the total number of active clusters must notify USFWS and reinitiate consultation (DA 1996). The 2006 Guidelines increase this threshold to a 10% decline in total active clusters either from the previous year or over a 5 year period (DA 2006b). In August 2006, the Fort Benning RCW population showed a 4.7% increase in active clusters and a 5.8% increase in the number of PBGs since 2005. Since 1996, the Fort Benning population has shown a steady increase and averages 4.6% increase in active clusters and 6.0% increase in the number of PBGs per year (FBCB unpub. data).

Surveys. Surveys for new RCW cavity trees on Fort Benning are scheduled so that 100% of potential RCW nesting habitat on the installation is surveyed every 10 years, or 10% of the installation is surveyed each year (M. Barron, FBCB, pers. comm.). In preparation for the Transformation, surveys in 2006 were targeted to the areas potentially impacted by proposed projects (see below, Section 6.10.3).

Additionally, prior to any timber harvest or significant land-disturbing activity, the project site and a 0.5 mile radius around it is surveyed for new cavity trees. As new RCW trees are marked, cluster buffers are adjusted according to their level of protection (natural cluster, PRC or SRC) (DA 1996).

Translocation. Fort Benning is a valued participant in the USFWS RCW Southern Range Translocation Cooperative (SRTC). Since 1998, it has donated 12-20 juvenile RCWs per year to supplement other RCW populations (M. Barron, FBCB and R. Costa, USFWS, pers. comm.). In 2006, Fort Benning donated 3 pairs of hatch-year RCWs to Shoal Creek Ranger District, Talladega National Forest, Alabama and 3 pairs and 3 hatch-year females to DeSoto Ranger District, DeSoto National Forest, Mississippi (Table 3-2). Prior to the establishment of the SRTC, Fort Benning also donated one bird to Daniel Boone National Forest, KY.

Role of Fort Benning in RCW Recovery. Fort Benning's RCWs population is designated as 1 of 13 Primary Core Recovery Populations by the USFWS (2003). Primary Core Populations by definition will contain at least 350 PBGs at recovery (USFWS 2003a). However, as part of the minimization for the Land Exchange, Fort Benning committed itself to supporting 1 additional PBG at recovery. The Fort Benning RCW population is part of the Sandhills Recovery Unit, which is a narrow band stretching from Fort Benning northeast to just north of the Fort Bragg Military Reservation in North Carolina (Figure 6-3). Recovery Units are distinguished by, and named for, the ecoregions they fall within. Ecoregions are classified by physiographic characteristics such as land formation, climate, air and sea currents and distribution of species. Since these factors are thought to have influenced genetic adaptations over time, it is thought that by preserving species such as the RCW in each of its natural ecoregions we will preserve as many genetic variations as possible. Maintaining populations in all ecoregions is crucial for the long-term viability of the species (USFWS 2003a).

While some core populations are comprised of RCW groups on multiple ownerships and locations within a geographic area, the nearest off-property RCW recovery population to Fort Benning is approximately 90 miles east northeast of Columbus at the Piedmont National Wildlife Refuge/ Oconee National Forest (USFWS 2003a). In the 12 years of monitoring at Fort Benning, only two dispersals have been documented from off-Post. One was from the Piedmont National Wildlife Refuge/ Oconee National Forest population and one was from Fort Gordon (approximately 170 miles) (M. Barron, FBCB, pers. comm.). In order to be considered a

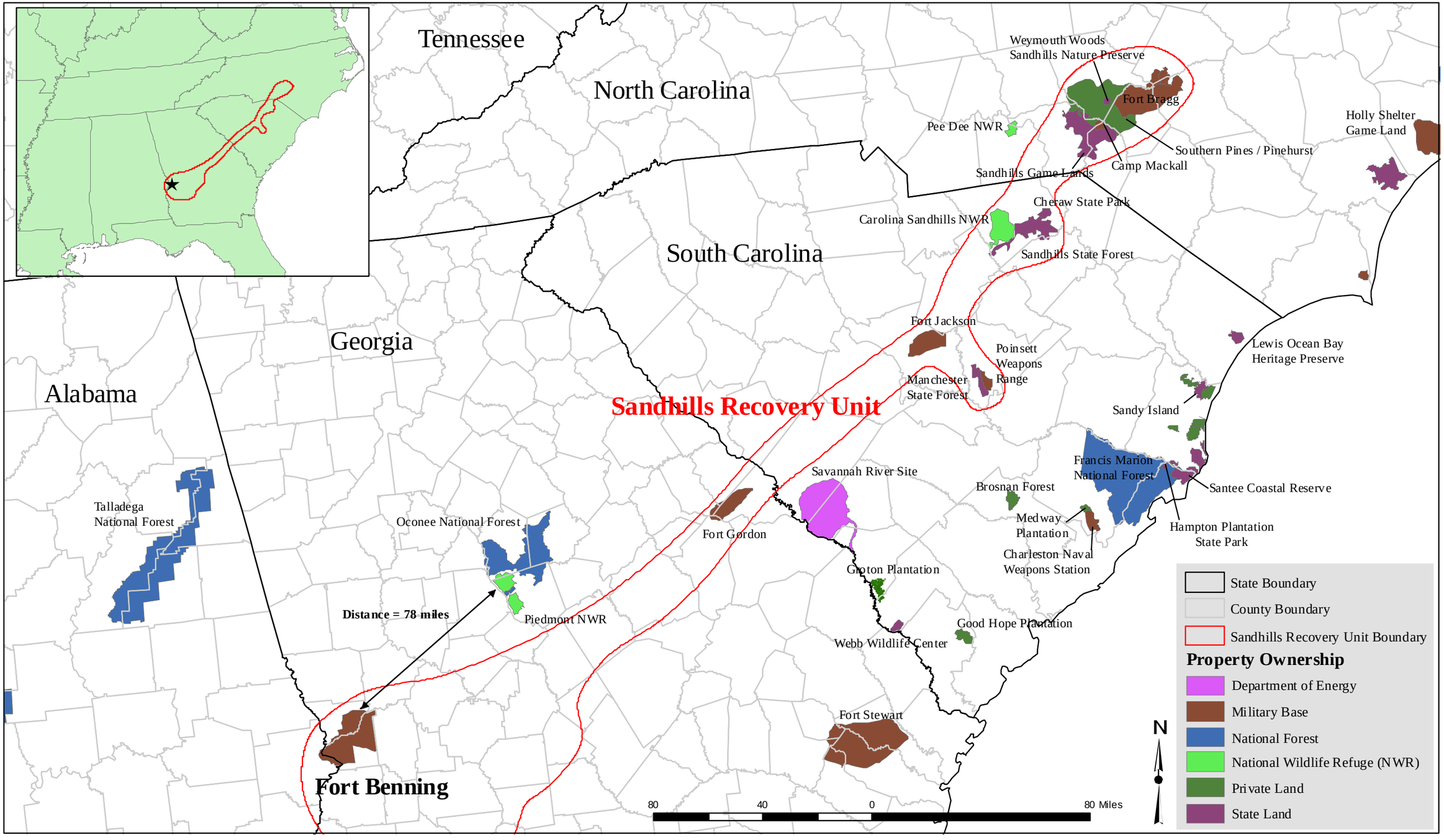


Figure 6-3. Location of red-cockaded woodpecker (RCW) populations within the Sandhills Recovery Unit (USFWS 2003). This map also shows the distance between the Piedmont National Wildlife Refuge RCW population and Fort Benning.

genetically connected population, 1-10 immigrants per generation (4 years for RCWs), (Reed et al. 1988), each way, are believed to be sufficient to prevent loss of genetic polymorphism and heterozygosity within subpopulations (Mills and Allendorf 1996, Walters et al. 2004). Birds that have moved must survive to breed. Because of the lack of significant exchange of genetic material between Fort Benning RCWs and clusters off the Installation, Fort Benning is the sole landowner contributing to the aptly named Fort Benning Primary Core Population. This is with the exception of Muscogee Technology Park (MTP), a 2,124 acre parcel adjacent to Fort Benning that was acquired by the Columbus Development Authority in a Land Exchange with Fort Benning that was finalized 9 March 2001. An Incidental Take was issued for 1 active RCW cluster on the MTP (Dr. J.H. Carter III and Associates, Inc. (JCA) and ICF Kaiser Engineers, Inc. 1998). This cluster was occupied by a breeding pair of RCWs in 2006, but because it is no longer Federally protected it is not considered as a reliable contributor to the Fort Benning population (JCA unpub. data). There are also 3 known active RCW clusters on a property 20-30 miles west of Fort Benning and anecdotal accounts of other clusters in the region.

6.10.2.2 Status Off-Post

The only known occurrence of an active RCW cluster within the off-Post Action Area is on the MTP, adjacent to the Installation on the northwestern corner. Although the majority of its foraging habitat was removed by winter 2005 (see Section 2.6), this cluster contained a PBG in 2006).

6.10.3 SURVEY RESULTS

During the RCW cavity tree survey, USFS personnel documented 99 cavity trees (Figure 5-1). FBCB personnel then evaluated each cavity and determined if they were of RCW origin. Of the 99 trees found, FBCB personnel tagged, painted and documented 9 new RCW cavity trees. Thirty-six of the cavity trees contained RCW substarts and were already known by FBCB personnel. Twenty five of the cavity trees had new substarts. According to FBCB procedure, all cavity trees with substarts were flagged and the activity of these trees will be monitored by FBCB personnel. Six cavity trees were known RCW cavity trees that had been deleted from management because the cavities were no longer suitable (approved by USFWS). Five cavities were determined to be non-RCW and 12 trees were not relocated by FBCB. Four trees contained

artificial cavities and are part of an existing SRC (tagged, but not painted) and 2 trees had starts drilled as part of training by FBCB personnel and are not RCW or managed starts.

One of the 9 cavity trees found during the USFS survey in Compartment A17 was found to represent a new cluster, Cluster A17-01. FBCB verified this tree in August 2006 and also found 3 cavity start trees nearby. FBCB personnel then determined that the RCW inhabiting the cavity trees was a solitary bird with its own territory (not part of a neighboring group), and supplemented the site with artificial cavities in November 2006 to provide a total of 4 suitable cavities (per the 1996 Guidelines). This brought the total number of manageable clusters on Fort Benning to **309**.

6.10.4 POTENTIAL PROJECT IMPACTS

Specific impacts of individual projects are listed under Section 6.10, and cumulative effects are assessed in Section 7. Potential direct or indirect effects of projects (either alternative) that were considered for analysis are listed below. The type of effect and, where applicable, Incidental Take, are indicated. Incidental Take of RCWs resulting from the proposed action may be in the form of harass, harm, kill, wound, or combinations thereof.

6.10.4.1 Loss of RCW cavity trees

Clearing and project construction (direct or indirect- harm). Some RCW cavity trees will be removed in order to construct cantonment projects, roads or ranges. There is also potential for cavity tree mortality due to unintentional impacts from soil erosion and/ or compaction from timber operations or within construction staging areas.

Operation and maintenance (indirect- harm). There is also potential for cavity tree mortality after project construction due to impacts from live fire (accounted for in range “beaten areas”), accidental damage to tree boles from vehicles and soil compaction or sedimentation from maneuver training exercises.

Cavity trees were considered lost where impact avoidance and adherence to Army RCW Guidelines were deemed unfeasible; these impacts are captured in Section 6.10.5. The risk of all other potential cavity tree impacts will be minimized by following Army RCW Guidelines and via measures described in Sections 8 and 9 (DA 1996, DA 2006b).

6.10.4.2 Loss of RCW foraging habitat

Clearing and project construction (direct- harm). Detrimental effects on certain RCW groups will be caused by clearing of foraging habitat (pine stands over 30 years old) within associated RCW foraging partitions or from mortality related to construction staging areas and/ or timber operations. In addition, large clear-cuts (≥25 acres) are known to negatively affect RCW fitness, dispersal and foraging behavior either through direct habitat loss or habitat fragmentation (Conner and Rudolph 1991a, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003a).

Operation and maintenance (indirect- harm). Foraging habitat within RCW partitions (pine stands over 30 years old) may experience mortality due to live fire and/or maneuver exercises, which could have a detrimental effect on the associated RCW groups.

The acreage of foraging habitat that was reasonably certain to be lost was subtracted from the affected clusters' foraging habitat totals in Section 6.10.5. All other potential foraging habitat impacts will be minimized via adherence to the Army RCW Guidelines (DA 1996, DA 2006b) and minimization measures described in Sections 8 and 9.

6.10.4.3 Noise and harassment

Clearing and project construction (direct- harass). The use of heavy equipment, increased traffic on infrequently used roads and an increase in human activity from timber clearing operations and project construction could have a detrimental "harassment" impact on RCW groups in the area (Delaney et al. 2002, Delaney et al. 2004, Hayden et al. 2002, Walters et al. 2005, Perkins 2006). This is a particular concern if active RCW cavity trees occur within 200 ft. of the activity, especially during the nesting season. Disturbance around cavity trees can cause RCWs to flush from their cavities and, if the disturbance continues or there is insufficient daylight, to open-roost. This leaves RCWs unprotected from environmental hazards such as inclement weather and predators. Disturbances can also result in increased or constant flushing while incubating eggs and reduced brooding and feeding of nestlings, which can lead to nest failure (Delaney et al. 2004, USFWS 2003a, USFWS 2006b, J. Walters, North Carolina State University, unpublished report). Clusters with active cavity trees within 50 feet of project construction limits or range beaten areas were assessed for harassment impacts, however, none were determined to be "taken" by this potential impact.

Operation and maintenance (direct- harass). In addition to the effects listed above, live fire, maneuvering, other training exercises and pedestrian and vehicular traffic in areas that are currently infrequently used could have a detrimental "harass" effect on local RCW groups. This is a particular concern for RCWs using cavity trees within 200 ft. of the activity, especially during the nesting season.

Over the past 30 years, several research projects have assessed the potential effects of military noise, primarily from large-caliber ranges and artillery simulators, on certain elements of RCW fitness (Jackson and Parris 1995, Doresky et al. 2001, Pater et al. 1999, Delaney et al. 2002, Hayden et al. 2002, J. Walters, North Carolina State University, unpublished report). Generally, the results of these works have demonstrated that noise events (particularly historic and constant) from military activities have little to no effect on RCW reproductive success. The majority of these studies, however, were on RCW groups that were located on or adjacent to established ranges that had likely become acclimated to disturbance. The effects of newly introduced noise and associated cumulative disturbances have yet to be definitively understood, particularly for large projects or disturbances. Delaney et al. (2004) found that RCWs did not flush from their nests when artillery simulators or 0.50 caliber blank fire were fired >500 ft. away. Of the 4 large caliber ranges proposed (MPMG3, QTR, SGR1 and SGR2), 1 inactive cavity tree is within 500 ft. of a range edge. The remaining cavity trees in this cluster (K02-01) will be removed for the proposed range (harm), therefore this was not considered a harassment impact.

Recent research suggests that military training (e.g., heavy maneuver training or light infantry) in the vicinity of RCW clusters may affect RCW behavior by causing more frequent flushing during incubation and/ or less frequent feeding of nestlings, which can cause a reduction in nest success or the number of young fledged; this disturbance, however, does not necessarily have a detrimental effect on overall population health or demography (Hayden 2002, Hayden et al. 2004; Delaney et al. 2004, Delaney et al. 2002, Perkins 2006).

Traffic on existing tank trails and roads, as well as certain training activities (Table 2-4), are allowed under the Army RCW Guidelines (DA 1996, DA 2006b); activities that adhere to these guidelines do not appear to cause long-term adverse effects on RCW demography (Beaty et al. 2004). Harassment impacts were assessed in areas where training or construction could not adhere to Army RCW Guidelines in the Cluster Level Analyses.

As described under Sections 4.3.2.1 and 4.3.2.2, most training courses to be conducted within the Maneuver Areas will be repeated between 11 and 24 times a year, with up to 50% of the training being conducted at night (Table 4-2). Because of the number of iterations necessary per year, it will not be feasible to restrict training activities within the maneuver heavy use areas during the nesting season. This disturbance will be neither historic nor constant; although birds may become acclimated over time, training could initially result in nest failures or cause birds to open-roost. Because of these risks, clusters with the majority of their active trees within the maneuver heavy use areas were considered "taken" in the form of harass (Section 6.10.5). Unless otherwise indicated, all other proposed construction and training activities will adhere to the applicable Army RCW Guidelines (DA 1996, DA 2006b).

6.10.4.4 Sediment loading

Construction of projects near RCW cavity trees or foraging habitat could cause sediment loading on tree roots, potentially causing tree mortality (indirect- harm). Additionally, the increased heavy maneuver training expected with Transformation could cause sediment loading on RCW cavity and forage tree roots or erosion exposing roots, potentially causing tree mortality.

Soil erosion minimization measures described in Section 8 will help to minimize the risk of this kind of impact.

6.10.4.5 Reduction of RCW cluster density

Any of the impacts listed may result in an Incidental Take of a RCW group. Such "take" can, in turn, indirectly affect surrounding RCW groups. As described in Sections 5.5 and 5.6, ., the distribution and density of RCW clusters on the landscape is a key factor in the overall stability and health of a RCW population. This potential impact is captured under the Group and Neighborhood Level Analyses as "takes" in the form of harm.

6.10.4.6 RCW habitat fragmentation

Also related to the density and distribution of RCW clusters is habitat contiguity (Conner and Rudolph 1991, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003a), which is important at the foraging partition-level as well as at the landscape-level. Areas

of unsuitable RCW habitat ≥200 ft. wide can inhibit an individual group's ability to utilize foraging habitat within its partition and may inhibit the ability of RCWs to disperse from their natal territory to vacant breeding niches. Territory isolation by habitat fragmentation decreases the likelihood of clusters being inhabited by PBGs because dispersing females often fail to locate solitary males or find the territories substandard. This problem is a function of the number and spatial arrangement of active clusters.

The largest-scale timber clearing for the proposed action will be for the two stationary gunnery ranges (SGR1 and SGR2), the QTR, the MPMG and the combined cantonment area development in Harmony Church. The potential fragmentation impacts of these and other proposed actions on RCW dispersal are analyzed under the Group and Neighborhood Level Analyses as "takes" in the form of harm, as well as in the Population Level Analyses.

6.10.4.7 Reduction of habitat quality/ population health

One of the purposes of the analyses at the Cluster, Group and Neighborhood Levels are to assess how the proposed action will indirectly affect the demographic health of the Fort Benning RCW population. Loss or degradation of foraging habitat can result in smaller clutch sizes, reduced fledging success and/ or reduced group size as substrate becomes insufficient.

6.10.4.8 Edge effect

Related to habitat fragmentation is a condition termed the "edge effect." As more forested areas are cleared, areas that were once forest interior will be on the edges of openings. In general, vegetation on the edge of clearings is considerably denser than vegetation in the adjacent forest interior. The increased sunlight and increased probability of disturbed soil cause stand edges to be more susceptible to encroachment from exotic species such as kudzu, Japanese honeysuckle and Chinese privet (*Ligustrum sinense*), as well as aggressive native early-successional plants. Such species typically do not carry fire well, and when burned, the edge is often burned less severely, resulting in limited plant mortality. This problem is exacerbated when the edge is a road, building or other urban development where prescribed fire is prohibited. The edge effect poses a problem to RCW management by increasing midstory density in foraging and nesting habitat.

An additional problem associated with forest edges or developed areas is increased cavity competition with kleptoparasites such as southern flying squirrels (*Glaucomys volans*), European starlings (*Sturnus vulgaris*), eastern bluebirds (*Sialia sialis*), red-headed woodpeckers (*Melanerpes erythrocephalus*) and red-bellied woodpeckers (*Melanerpes carolinus*). Large introduced forest gaps can also cause surrounding stands to become susceptible to wind damage, and have been noted to cause an increase in avian predators such as American kestrels (*Falco sparverius*) and northern harriers (*Circus cyaneus*) (Jackson and Parris 1995).

Impacts of this nature are indirect and are captured in the Population Level Analyses with fragmentation issues.

6.10.4.9 Disturbance and removal of groundcover

In areas with substantial ground disturbance, particularly in the Heavy Maneuver Areas and the Vehicle Recovery Area, there may be too little herbaceous groundcover, pine straw and/ or other vegetation to carry a fire. It is unknown what effect the absence of fire and limited remaining groundcover will have on arthropod abundance and, in turn, RCW forage. While hardwood midstory encroachment should not be a problem in heavy traffic areas, it may be in the "islands" of habitat that remain within the maneuver trail networks. This indirect effect is captured by considering the maneuver heavy use areas and Vehicle Recovery Area to be 100% lost over time in the Cluster Level Analyses.

6.10.4.10 Elimination of existing and planned RCW recruitment sites

Fort Benning does not have many areas that are currently suitable for additional recruitment sites. Because the locations of recruitment sites are primarily based on habitat conditions, the location of adjacent clusters and the overall population goal of the Installation, not all future recruitment sites have been mapped at this time. However, the RCW ESMP does establish a goal for each compartment in order for the Installation to meet recovery. Therefore, any Transformation projects removing pine habitat, regardless of whether or not it is currently within a RCW foraging partition, could restrict or prohibit the associated compartment from supporting the number of clusters designated in the ESMP (Fort Benning 2002), thereby inhibiting the Installation's ability to meet recovery. This potential indirect effect is assessed in the Population Level Analyses.

Although foraging habitat losses were not assessed for existing inactive clusters, cavity tree removals and impacts within 200 ft. were assessed in the Cluster and Population Level Analyses. Loss of recruitment sites and inactive clusters may cause Fort Benning to have fewer than the recommended number of available unoccupied clusters (10% of the number of active clusters) needed to achieve the desired 5% annual population growth (DA 1996, USFWS 2003a). This impact can be minimized to an extent by ensuring that recruitment clusters are installed wherever conditions are suitable, however, Fort Benning is limited in areas where new recruitment sites can be installed because of habitat conditions and other criteria, such as the location of new clusters in relation to existing active clusters (see Section 9.10.2).

6.10.4.11 Potential for delayed population growth and recovery

The Fort Benning RCW population recovery goal (USFWS 2003a) was determined by filling all suitable upland pine and pine-hardwood habitat with RCW recruitment clusters (i.e. reaching carrying capacity). Therefore, as occupied clusters and vacant recruitment clusters are eliminated, the amount of time necessary to recover the RCW on Fort Benning will be increased, perhaps by decades. This delay is discussed in the Population Level Analysis as an indirect effect of the proposed action.

6.10.4.12 Live-fire through foraging areas

Trees downrange of firing points and outside of range footprints will remain in their present structure and density (excluding support areas) to act as a buffer for the surrounding area. ,Over time, however these trees will incur some degree of mortality from fired munitions shearing and killing trees, either directly or from ricochets, since some impacts will occur in the area beyond the targets. As “buffer” trees die there will be less of a buffer, potentially allowing ordnance to travel further and thereby expanding the areas of impact. For the purposes of quantifying this potential tree mortality in the Biological Assessment and EIS, the areas expected by FBRD personnel to experience the most damage were delineated as “beaten areas” for each range. Since foraging habitat will be lost over time, this could result in an indirect “take” by harm.

Although not highly likely, “take” in the form of wound or kill could also result from live fire through foraging areas.

6.10.4.13 Access for timber management, RCW management, prescribed fire and wildfire control

The arrival of the new troops will result in a substantial increase in the number of field training exercises and ranges being active on any given day (see Section 4.3.5 Ranges). With existing ranges being used more often, new ranges becoming operational and increased activity and/ or concentration of Armored, Cavalry and Infantry units conducting FTXs, access by FBLMB and FBCB will be more limited in many areas and will require close coordination with FBRD. Management concerns include, but are not limited to, timber thinning, hardwood understory or midstory control, RCW cavity maintenance, installation of artificial RCW cavities, banding and monitoring of RCWs during the nesting season, collecting foraging habitat or timber cruise data, prescribed burning and response to wildfires. In the training areas, the main issues will be scheduling access to conduct the above identified management requirements to avoid conflict with active range SDZs and training exercises. In the cantonment areas, access for prescribed burning will be a challenge because of safety concerns due to smoke and lack of visibilty near new buildings and roads.

Fort Benning personnel are operating under the assumption that throughout the duration of the Transformation and beyond, they will still be able to access and manage all (remaining) currently managed RCW clusters according to 1996 and 2006 RCW Guidelines (DA 1996, DA 2006b) criteria (e.g. documenting breeding status, maintaining 4 suitable cavities and midstory control).

Plans to address potential scheduling problems are described in Sections 8 and 9.

6.10.4.14 Loss of RCW cavity trees due to wildfires

Related to the above-listed issues, the increased number and use of ranges may increase the number of wildfires from training exercises. Contributing to this potential problem are restricted access for FBLMB personnel responding to fires, potentially fewer prescribed burns in areas under SDZs and restricted preventative management by FBCB and FBLMB including raking around RCW cavity trees. Loss of cavity trees due to wildfire would be an indirect effect of the proposed action that could potentially “take” cavity trees or habitat (“harm” or “kill”).

The RCW ESMP and resulting BO allow for the annual loss of up to 5 active cavity trees as a result of training exercises (USFWS 2002), however to date, no active cavity trees have been lost due to training activities. For this reason, no additional cavity tree losses due to wildfires are expected from, or requested for, this action.

6.10.4.15 Effects of Minimization Efforts

As with any timber operations, extensive habitat management within RCW partitions such as thinning and hardwood midstory control has the potential to have a temporary "harass" impact on resident RCWs. However, research has shown that even sudden and extensive midstory removal and pine thinning does not typically result in cluster abandonment (Conner and Rudolph 1991b). All timber operations to improve RCW habitat as part of the proposed action will follow the standard timber operation protocols found in Section 8, which include efforts to minimize RCW impacts.

6.10.4.16 Impact to Minimization Efforts From Past Section 7 Consultation

The proposed action has the potential to interfere with minimization for past projects such as the DMPRC by "taking" clusters monitored as minimization. This potential indirect effect is assessed in Section 6.10.5.

6.10.4.17 Loss of Fort Benning as a RCW Donor Population

As described in Section 3, Fort Benning typically supplies up to 12 RCWs to the SRTC annually. This voluntary contribution has benefited numerous RCW populations. The proposed action has the potential to reduce the number of RCWs Fort Benning is able to donate annually. If this deficit is not covered by other RCW donor populations, it could indirectly impede the growth of other populations in the SRTC.

According to the Recovery Plan, in order for a recovery population to be eligible to donate birds for interpopulation translocation, one or more of the following criteria must be met:

- The population has reached the size for delisting, and the population trend is stable or increasing
- The population is within 75% or its population goal, at least 50 active clusters in size and the population trend is increasing at ≥3% annually

- The population is at least 100 active clusters in size and population trend is stable or increasing
- The population contains multiple properties and the donor property has attained its property goal

All translocations must be approved by the USFWS RCW Recovery Coordinator. Depending on the extent of habitat loss and fragmentation on Fort Benning from the proposed Transformation actions, together with USFWS, Fort Benning will determine the extent that the Installation should continue to participate in the SRTC. Some or all of the birds typically available for donation may be needed for intrapopulation translocation in order to help offset losses caused by the proposed action.

6.10.5 CLUSTER LEVEL ANALYSES

6.10.5.1 Pre- project cluster Status and Foraging Habitat, Project Impacts and Post- project Foraging Habitat Totals

6.10.5.1.1 Alternative A

RCW cavity trees and/ or foraging habitat will be impacted in 108 active and 4 inactive RCW clusters as a result of 2006-2013 Alternative A Transformation projects (Tables 6-2 and 6-3). In 2006, 102 of the active clusters contained PBGs, 4 had solitary males, 1 was captured and 1 was active with unknown status (Table 6-4).

FHAs were completed for 99 active clusters (project impacts to 9 active clusters were in non-contiguous habitat and FHAs were not conducted). Pre- project, 23 of the 99 analyzed active clusters did not meet the SMS and 97 clusters did not meet RS. Data for pre- project cluster status and foraging habitat are presented in Tables 6-2 - 6-3, Figures 6-4 – 6-11 and Appendices C, D, and E.

Impacts of projects are summarized below by the fiscal year of construction initiation. Projects which impact RCW partitions are presented for the 4 cantonment areas (Harmony Church, Kelley Hill, Main Post and Sand Hill), 2 range areas northeast (“North”) and southwest (“South”) of Hwy. 27-280, the Heavy Maneuver Area - North and Heavy Maneuver Corridor - South. Data for the following project impacts are presented in Tables 6-2 - 6-3, 6-5 - 6-12, Figures 6-7 - 6-12 and Appendices D and E.

Table 6-2. Red-cockaded woodpecker foraging habitat data using the Recovery Standard (RS) (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable Acreage	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
A06-01	0.00	0.00	0.00	0.00	187.75	7,816.74	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.18	8.28	0.00	0.00	0.00	0.00	0.00	0.00	187.57	7,808.46	**0.00**	**0.00**	**187.57**	Y	Y *
A07-01	0.00	0.00	2.01	92.46	184.34	5,334.10	**2.01**	**92.46**	0.00	0.00	0.00	0.00	0.04	1.16	0.00	0.00	0.00	0.00	2.01	92.46	184.30	5,332.94	**2.01**	**92.46**	**186.31**	Y	Y *
A17-01	0.00	0.00	84.65	4,475.19	37.64	1,832.54	**84.65**	**4,475.19**	0.00	0.00	55.19	2,936.94	32.40	1,622.79	2.33	96.54	0.00	0.00	29.46	1,538.25	2.91	113.21	**29.46**	**1,538.25**	**32.36**	Y	Y
A17-02	0.00	0.00	63.78	3,370.19	64.50	460.97	**63.78**	**3,370.19**	0.00	0.00	0.16	10.56	0.00	0.00	0.00	0.00	0.00	0.00	63.62	3,359.63	64.50	460.97	**63.62**	**3,359.63**	**128.12**	Y	Y
A17-03	0.00	0.00	51.37	2,671.24	66.05	3,518.79	**51.37**	**2,671.24**	0.00	0.00	48.56	2,525.12	60.56	3,244.26	2.81	146.12	0.00	0.00	0.00	0.00	5.49	274.53	**0.00**	**0.00**	**5.49**	Y	Y
A17-04	0.00	0.00	43.79	2,277.08	187.41	9,745.53	**43.79**	**2,277.08**	0.00	0.00	3.09	174.59	13.23	694.58	0.00	0.00	0.00	0.00	40.70	2,102.49	174.18	9,050.95	**40.70**	**2,102.49**	**214.89**	Y	Y *
A17-05	83.96	3,778.20	0.00	0.00	38.94	1,493.63	**83.96**	**3,778.20**	0.00	0.00	0.00	0.00	1.38	45.54	0.00	0.00	83.96	3,778.20	0.00	0.00	37.56	1,448.09	**83.96**	**3,778.20**	**121.52**	Y	Y
A17-07	71.64	3,223.80	0.00	0.00	17.30	876.20	**71.64**	**3,223.80**	6.10	274.50	0.00	0.00	7.26	421.17	0.00	0.00	65.54	2,949.30	0.00	0.00	10.04	455.03	**65.54**	**2,949.30**	**75.58**	Y	Y
A17-08	14.46	954.36	97.47	6,170.24	17.76	100.53	**111.93**	**7,124.60**	0.00	0.00	1.23	63.96	0.00	0.00	0.00	0.00	14.46	954.36	96.24	6,106.28	17.76	100.53	**110.70**	**7,060.64**	**128.46**	Y	Y
A17-13	0.00	0.00	80.89	4,206.28	24.45	1,222.50	**80.89**	**4,206.28**	0.00	0.00	2.92	151.84	0.00	0.00	0.00	0.00	0.00	0.00	77.97	4,054.44	24.45	1,222.50	**77.97**	**4,054.44**	**102.42**	Y	Y
A17-14	0.00	0.00	6.62	344.24	130.78	6,617.90	**6.62**	**344.24**	0.00	0.00	6.62	344.24	115.70	6,066.85	3.77	201.63	0.00	0.00	0.00	0.00	11.31	349.42	**0.00**	**0.00**	**11.31**	Y	Y
BB03-01R	0.00	0.00	8.87	428.29	213.01	5,387.04	**8.87**	**428.29**	0.00	0.00	0.00	0.00	17.75	449.64	52.92	1,616.71	0.00	0.00	8.87	428.29	142.34	3,320.69	**8.87**	**428.29**	**151.21**	Y	Y *
BB04-01R	0.00	0.00	24.50	1,123.16	157.74	5,898.95	**24.50**	**1,123.16**	0.00	0.00	0.00	0.00	28.91	1,152.42	0.00	0.00	0.00	0.00	24.50	1,123.16	128.83	4,746.53	**24.50**	**1,123.16**	**153.33**	Y	Y *
BB05-01R	0.00	0.00	0.00	0.00	278.99	10,215.95	**0.00**	**0.00**	0.00	0.00	0.00	0.00	30.68	1,387.05	0.00	0.00	0.00	0.00	0.00	0.00	248.31	8,828.90	**0.00**	**0.00**	**248.31**	Y	Y *
C01-02	0.00	0.00	63.84	2,912.67	112.29	3,497.12	**63.84**	**2,912.67**	0.00	0.00	15.18	729.54	99.81	3,316.61	1.17	42.51	0.00	0.00	48.66	2,183.13	11.31	138.00	**48.66**	**2,183.13**	**59.97**	Y	Y
C01-03	0.00	0.00	48.37	2,125.37	94.76	2,352.01	**48.37**	**2,125.37**	0.00	0.00	3.45	151.80	22.31	737.67	2.91	109.12	0.00	0.00	44.92	1,973.57	69.54	1,505.22	**44.92**	**1,973.57**	**114.46**	Y	Y
C02-02	8.04	321.60	0.23	11.50	139.91	4,372.07	**8.27**	**333.10**	0.00	0.00	0.12	6.00	11.61	409.77	0.00	0.00	8.04	321.60	0.11	5.50	128.30	3,962.30	**8.15**	**327.10**	**136.45**	Y	Y
D05-02R	0.00	0.00	0.00	0.00	161.89	5,699.16	**0.00**	**0.00**	0.00	0.00	0.00	0.00	13.54	353.87	0.00	0.00	0.00	0.00	0.00	0.00	148.35	5,345.29	**0.00**	**0.00**	**148.35**	Y	Y
D05-04R	0.00	0.00	0.00	0.00	303.33	10,749.59	**0.00**	**0.00**	0.00	0.00	0.00	0.00	90.85	3,276.80	5.38	219.71	0.00	0.00	0.00	0.00	207.10	7,253.08	**0.00**	**0.00**	**207.10**	Y	Y *
D08-01R	0.00	0.00	1.59	68.89	250.98	5,351.85	**1.59**	**68.89**	0.00	0.00	0.38	16.47	2.94	92.99	0.00	0.00	0.00	0.00	1.21	52.42	248.04	5,258.86	**1.21**	**52.42**	**249.25**	Y	Y *
D10-01	0.00	0.00	0.00	0.00	120.90	2,144.54	**0.00**	**0.00**	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	119.55	2,144.54	**0.00**	**0.00**	**119.55**	Y	Y
D11-01	0.00	0.00	0.41	20.71	142.08	3,548.18	**0.41**	**20.71**	0.00	0.00	0.00	0.00	81.60	1,867.90	0.00	0.00	0.00	0.00	0.41	20.71	60.48	1,680.28	**0.41**	**20.71**	**60.89**	Y	Y
D11-02	0.00	0.00	0.49	24.75	163.72	5,275.68	**0.49**	**24.75**	0.00	0.00	0.00	0.00	86.78	2,936.45	42.38	1,218.12	0.00	0.00	0.49	24.75	34.56	1,121.11	**0.49**	**24.75**	**35.05**	Y	Y
D15-01R	0.00	0.00	8.33	551.86	273.78	9,383.11	**8.33**	**551.86**	0.00	0.00	0.00	0.00	21.94	671.31	0.00	0.00	0.00	0.00	8.33	551.86	251.84	8,711.80	**8.33**	**551.86**	**260.17**	Y	Y *
D16-02	0.00	0.00	0.00	0.00	215.86	3,834.35	**0.00**	**0.00**	0.00	0.00	0.00	0.00	57.94	752.09	67.36	1,366.72	0.00	0.00	0.00	0.00	90.56	1,715.54	**0.00**	**0.00**	**90.56**	Y	Y
D17-04	0.00	0.00	34.52	1,483.69	157.66	3,931.68	**34.52**	**1,483.69**	0.00	0.00	0.00	0.00	11.89	340.46	0.00	0.00	0.00	0.00	34.52	1,483.69	145.77	3,591.22	**34.52**	**1,483.69**	**180.29**	Y	Y *
E02-01	1.64	79.54	0.00	0.00	230.80	3,703.58	**1.64**	**79.54**	0.00	0.00	0.00	0.00	9.93	104.45	0.00	0.00	1.64	79.54	0.00	0.00	220.87	3,599.13	**1.64**	**79.54**	**222.51**	Y	Y *
E03-01	0.00	0.00	0.00	0.00	202.35	8,959.51	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.01	176.52	0.00	0.00	0.00	0.00	0.00	0.00	198.34	8,782.99	**0.00**	**0.00**	**198.34**	Y	Y *
E04-01	5.39	242.55	6.06	575.70	155.63	4,962.18	**11.45**	**818.25**	0.18	8.10	6.06	575.70	82.21	2,756.16	1.28	37.32	5.21	234.45	0.00	0.00	72.14	2,168.70	**5.21**	**234.45**	**77.35**	Y	Y
E08-05R	54.85	2,676.58	25.39	1,104.47	95.20	1,174.62	**80.24**	**3,781.05**	2.45	118.83	0.53	23.06	1.66	13.82	0.00	0.00	52.40	2,557.75	24.86	1,081.41	93.54	1,160.80	**77.26**	**3,639.16**	**170.81**	Y	Y *
F02-01R	0.00	0.00	70.53	3,172.46	139.50	3,152.86	**70.53**	**3,172.46**	0.00	0.00	10.43	459.00	55.82	1,316.37	5.22	66.22	0.00	0.00	60.10	2,713.46	78.46	1,770.27	**60.10**	**2,713.46**	**138.56**	Y	Y
HCC-03R	0.00	0.00	36.29	1,799.74	189.15	6,534.76	**36.29**	**1,799.74**	0.00	0.00	32.46	1,602.51	91.24	2,856.08	0.00	0.00	0.00	0.00	3.83	197.23	97.91	3,678.68	**3.83**	**197.23**	**101.74**	Y	Y
HCC-08R	0.00	0.00	3.38	145.34	205.10	6,002.92	**3.38**	**145.34**	0.00	0.00	0.00	0.00	8.90	308.71	0.00	0.00	0.00	0.00	3.38	145.34	196.20	5,694.21	**3.38**	**145.34**	**199.59**	Y	Y *
HCC-10R	0.00	0.00	99.14	4,572.42	195.57	5,437.16	**99.14**	**4,572.42**	0.00	0.00	48.86	2,272.00	88.44	2,030.79	0.00	0.00	0.00	0.00	50.28	2,300.42	107.13	3,406.37	**50.28**	**2,300.42**	**157.41**	Y	Y *
HCC-11R	0.00	0.00	0.00	0.00	253.07	5,855.73	**0.00**	**0.00**	0.00	0.00	0.00	0.00	44.97	736.13	2.32	47.56	0.00	0.00	0.00	0.00	205.78	5,072.04	**0.00**	**0.00**	**205.78**	Y	Y *
J01-02R	0.00	0.00	22.67	1,116.26	213.50	2,781.60	**22.67**	**1,116.26**	0.00	0.00	0.00	0.00	4.95	0.00	0.00	0.00	0.00	0.00	22.67	1,116.26	208.55	2,781.60	**22.67**	**1,116.26**	**231.23**	Y	Y *
J03-01	0.00	0.00	82.23	3,378.49	100.24	2,059.75	**82.23**	**3,378.49**	0.00	0.00	56.72	2,329.49	39.17	931.66	7.62	283.37	0.00	0.00	24.77	1,016.75	54.19	876.97	**24.77**	**1,016.75**	**78.96**	Y	Y
J04-01	0.00	0.00	3.78	158.76	191.90	5,195.00	**3.78**	**158.76**	0.00	0.00	1.88	78.96	136.16	3,788.17	23.32	497.48	0.00	0.00	1.90	79.80	32.42	909.35	**1.90**	**79.80**	**34.32**	Y	Y
J05-01	0.00	0.00	0.00	0.00	236.76	6,681.51	**0.00**	**0.00**	0.00	0.00	0.00	0.00	175.44	5,627.70	16.39	486.03	0.00	0.00	0.00	0.00	44.93	567.78	**0.00**	**0.00**	**44.93**	Y	Y
J06-01	0.00	0.00	0.00	0.00	161.33	4,176.31	**0.00**	**0.00**	0.00	0.00	0.00	0.00	3.38	98.63	0.00	0.00	0.00	0.00	0.00	0.00	157.95	4,077.68	**0.00**	**0.00**	**157.95**	Y	Y *
J06-03	0.00	0.00	0.00	0.00	285.85	9,662.32	**0.00**	**0.00**	0.00	0.00	0.00	0.00	52.93	1,761.89	0.00	0.00	0.00	0.00	0.00	0.00	232.92	7,900.43	**0.00**	**0.00**	**232.92**	Y	Y *
K02-01	0.00	0.00	0.00	0.00	263.96	6,251.67	**0.00**	**0.00**	0.00	0.00	0.00	0.00	191.70	4,317.56	8.68	151.90	0.00	0.00	0.00	0.00	63.58	1,782.21	**0.00**	**0.00**	**63.58**	Y	Y
K08-03	35.65	1,515.13	0.00	0.00	91.68	2,036.45	**35.65**	**1,515.13**	3.13	133.03	0.00	0.00	3.72	101.73	0.00	0.00	32.52	1,382.10	0.00	0.00	87.96	1,934.72	**32.52**	**1,382.10**	**120.48**	Y	Y
K08-04	23.51	999.18	0.00	0.00	164.54	5,665.82	**23.51**	**999.18**	3.21	136.43	0.00	0.00	10.46	383.51	0.00	0.00	20.30	862.75	0.00	0.00	154.08	5,282.31	**20.30**	**862.75**	**174.38**	Y	Y *
K09-01	48.43	2,198.83	0.51	25.50	100.60	3,280.76	**48.94**	**2,224.33**	0.00	0.00	0.00	0.00	1.23	37.94	0.00	0.00	48.43	2,198.83	0.51	25.50	99.37	3,242.82	**48.94**	**2,224.33**	**148.31**	Y	Y
K09-03R	0.00	0.00	44.48	2,224.00	206.65	5,907.71	**44.48**	**2,224.00**	0.00	0.00	0.22	11.00	9.77	208.88	0.00	0.00	0.00	0.00	44.26	2,213.00	196.88	5,698.83	**44.26**	**2,213.00**	**241.14**	Y	Y *

* With time and management, these partitions have enough acreage to meet the RS foraging standard on Fort Benning

Table 6-2 (cont.). Red-cockaded woodpecker foraging habitat data using the Recovery Standard (RS) (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable Acreage	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
K11-02	0.00	0.00	84.19	3,532.46	238.03	6,452.51	**84.19**	**3,532.46**	0.00	0.00	0.00	0.00	2.58	78.01	0.00	0.00	0.00	0.00	84.19	3,532.46	235.45	6,374.50	**84.19**	**3,532.46**	**319.65**	**Y**	**Y ***
K11-03	0.00	0.00	0.00	0.00	153.96	4,016.71	**0.00**	**0.00**	0.00	0.00	0.00	0.00	8.39	175.54	0.00	0.00	0.00	0.00	0.00	0.00	145.57	3,841.17	**0.00**	**0.00**	**145.57**	**Y**	**Y**
K14-01R	0.00	0.00	0.00	0.00	211.89	5,118.97	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.95	196.71	0.00	0.00	0.00	0.00	0.00	0.00	206.94	4,922.26	**0.00**	**0.00**	**206.94**	**Y**	**Y ***
K17-02	0.00	0.00	0.00	0.00	163.84	6,726.71	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.63	128.14	0.00	0.00	0.00	0.00	0.00	0.00	159.21	6,598.57	**0.00**	**0.00**	**159.21**	**Y**	**Y ***
K17-05R	0.00	0.00	0.00	0.00	274.47	6,747.87	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.96	10.68	0.00	0.00	0.00	0.00	0.00	0.00	273.51	6,737.19	**0.00**	**0.00**	**273.51**	**Y**	**Y ***
K18-01	0.00	0.00	126.13	6,236.76	120.79	3,260.62	**126.13**	**6,236.76**	0.00	0.00	3.40	162.55	3.54	73.91	0.00	0.00	0.00	0.00	122.73	6,074.21	117.25	3,186.71	**122.73**	**6,074.21**	**239.98**	**N**	**N**
K18-02R	0.00	0.00	71.04	3,090.90	129.64	3,945.33	**71.04**	**3,090.90**	0.00	0.00	1.36	59.45	1.80	67.72	0.00	0.00	0.00	0.00	69.68	3,031.45	127.84	3,877.61	**69.68**	**3,031.45**	**197.52**	**Y**	**Y ***
K18-03R	0.00	0.00	19.05	771.53	167.03	3,755.91	**19.05**	**771.53**	0.00	0.00	1.72	69.66	1.90	41.13	0.00	0.00	0.00	0.00	17.33	701.87	165.13	3,714.78	**17.33**	**701.87**	**182.45**	**Y**	**Y ***
K21-02R	0.00	0.00	51.25	2,639.38	176.22	6,425.99	**51.25**	**2,639.38**	0.00	0.00	0.00	0.00	14.54	508.05	0.00	0.00	0.00	0.00	51.25	2,639.38	161.68	5,917.94	**51.25**	**2,639.38**	**212.93**	**Y**	**Y ***
L02-02R	0.00	0.00	4.86	303.75	193.26	6,020.19	**4.86**	**303.75**	0.00	0.00	3.55	221.88	132.81	4,433.55	4.75	179.20	0.00	0.00	0.00	0.00	57.01	1,489.31	**0.00**	**0.00**	**57.01**	**Y**	**Y**
L03-01	0.00	0.00	31.90	1,712.81	41.41	1,092.58	**31.90**	**1,712.81**	0.00	0.00	0.00	0.00	2.02	50.94	0.00	0.00	0.00	0.00	31.90	1,712.81	39.39	1,041.64	**31.90**	**1,712.81**	**71.28**	**Y**	**Y**
M08-04R	0.00	0.00	0.00	0.00	193.66	5,383.38	**0.00**	**0.00**	0.00	0.00	0.00	0.00	12.51	181.50	0.00	0.00	0.00	0.00	0.00	0.00	181.15	5,201.88	**0.00**	**0.00**	**181.15**	**Y**	**Y ***
M08-05R	0.00	0.00	15.98	1,014.73	240.79	8,252.53	**15.98**	**1,014.73**	0.00	0.00	0.00	0.00	10.42	157.13	0.00	0.00	0.00	0.00	15.98	1,014.73	230.37	8,095.40	**15.98**	**1,014.73**	**246.35**	**Y**	**Y ***
O01-01	0.00	0.00	23.01	1,081.47	137.13	4,057.69	**23.01**	**1,081.47**	0.00	0.00	8.60	404.20	31.60	976.46	0.00	0.00	0.00	0.00	14.41	677.27	105.53	3,081.23	**14.41**	**677.27**	**119.94**	**Y**	**Y**
O01-02	0.00	0.00	12.21	500.61	153.79	3,225.62	**12.21**	**500.61**	0.00	0.00	1.79	73.39	29.52	899.52	31.11	1,073.01	0.00	0.00	0.00	0.00	103.58	1,680.31	**0.00**	**0.00**	**103.58**	**Y**	**Y**
O01-03	0.00	0.00	5.25	248.26	149.42	5,440.92	**5.25**	**248.26**	0.00	0.00	0.00	0.00	57.37	2,240.22	4.83	217.35	0.00	0.00	5.25	248.26	87.22	2,983.35	**5.25**	**248.26**	**92.47**	**Y**	**Y**
O01-04R	0.00	0.00	0.45	34.31	173.64	5,915.02	**0.45**	**34.31**	0.00	0.00	0.00	0.00	44.07	1,148.19	3.29	46.87	0.00	0.00	0.45	34.31	126.28	4,719.96	**0.45**	**34.31**	**126.73**	**Y**	**Y**
O02-01R	0.00	0.00	101.58	4,490.54	123.07	2,684.05	**101.58**	**4,490.54**	0.00	0.00	0.00	0.00	4.46	128.81	0.00	0.00	0.00	0.00	101.58	4,490.54	118.61	2,555.24	**101.58**	**4,490.54**	**220.19**	**Y**	**Y ***
O03-01	0.00	0.00	1.20	57.60	140.09	4,575.10	**1.20**	**57.60**	0.00	0.00	0.53	25.44	85.86	2,804.65	21.79	561.00	0.00	0.00	0.67	32.16	32.44	1,209.45	**0.67**	**32.16**	**33.11**	**Y**	**Y**
O03-02	0.00	0.00	19.68	982.58	136.50	4,263.87	**19.68**	**982.58**	0.00	0.00	2.03	100.05	8.73	296.40	0.00	0.00	0.00	0.00	17.65	882.53	127.77	3,967.47	**17.65**	**882.53**	**145.42**	**Y**	**Y**
O03-03	0.00	0.00	22.59	1,174.68	153.86	2,131.33	**22.59**	**1,174.68**	0.00	0.00	1.82	94.64	10.94	117.38	0.00	0.00	0.00	0.00	20.77	1,080.04	142.92	2,013.95	**20.77**	**1,080.04**	**163.69**	**Y**	**Y ***
O03-04	0.00	0.00	0.00	0.00	174.57	3,387.08	**0.00**	**0.00**	0.00	0.00	0.00	0.00	16.21	241.13	0.00	0.00	0.00	0.00	0.00	0.00	158.36	3,145.95	**0.00**	**0.00**	**158.36**	**Y**	**Y ***
O03-05	27.25	1,512.38	0.00	0.00	247.11	7,395.40	**27.25**	**1,512.38**	0.00	0.00	0.00	0.00	4.26	130.08	0.00	0.00	27.25	1,512.38	0.00	0.00	242.85	7,265.32	**27.25**	**1,512.38**	**270.10**	**Y**	**Y ***
O03-06R	0.00	0.00	0.00	0.00	203.50	5,643.80	**0.00**	**0.00**	0.00	0.00	0.00	0.00	14.54	471.52	0.00	0.00	0.00	0.00	0.00	0.00	188.96	5,172.28	**0.00**	**0.00**	**188.96**	**Y**	**Y ***
O03-07	0.00	0.00	0.00	0.00	185.95	5,707.72	**0.00**	**0.00**	0.00	0.00	0.00	0.00	6.64	240.08	0.00	0.00	0.00	0.00	0.00	0.00	179.31	5,467.64	**0.00**	**0.00**	**179.31**	**Y**	**Y ***
O04-03	0.00	0.00	13.35	627.45	107.27	2,428.27	**13.35**	**627.45**	0.00	0.00	0.00	0.00	1.13	19.07	0.00	0.00	0.00	0.00	13.35	627.45	106.14	2,409.20	**13.35**	**627.45**	**119.49**	**Y**	**Y**
O05-01	0.00	0.00	144.91	7,361.08	125.87	4,980.21	**144.91**	**7,361.08**	0.00	0.00	0.00	0.00	16.49	842.01	0.00	0.00	0.00	0.00	144.91	7,361.08	109.38	4,138.20	**144.91**	**7,361.08**	**254.29**	**N**	**N**
O05-02	0.00	0.00	12.98	642.12	127.71	4,941.58	**12.98**	**642.12**	0.00	0.00	1.02	50.46	27.77	1,251.79	0.58	31.82	0.00	0.00	11.96	591.66	99.36	3,657.96	**11.96**	**591.66**	**111.32**	**Y**	**Y**
O05-03R	0.00	0.00	74.08	3,555.84	161.55	5,402.53	**74.08**	**3,555.84**	0.00	0.00	1.89	90.72	28.27	1,071.74	0.00	0.00	0.00	0.00	72.19	3,465.12	133.28	4,330.79	**72.19**	**3,465.12**	**205.47**	**Y**	**Y ***
O07-03R	0.00	0.00	0.00	0.00	252.72	7,658.20	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.48	8.64	0.00	0.00	0.00	0.00	0.00	0.00	252.24	7,649.56	**0.00**	**0.00**	**252.24**	**Y**	**Y ***
O08-03R	0.00	0.00	0.00	0.00	146.83	3,200.40	**0.00**	**0.00**	0.00	0.00	0.00	0.00	19.02	455.19	0.00	0.00	0.00	0.00	0.00	0.00	127.81	2,745.21	**0.00**	**0.00**	**127.81**	**Y**	**Y**
O09-02	0.00	0.00	44.39	2,152.92	148.87	4,065.02	**44.39**	**2,152.92**	0.00	0.00	0.00	0.00	13.28	338.64	0.00	0.00	0.00	0.00	44.39	2,152.92	135.59	3,726.38	**44.39**	**2,152.92**	**179.98**	**Y**	**Y ***
O09-04R	0.00	0.00	81.42	3,267.44	143.16	3,159.43	**81.42**	**3,267.44**	0.00	0.00	72.11	2,895.04	73.89	1,483.70	17.98	58.79	0.00	0.00	9.31	372.40	51.29	1,616.94	**9.31**	**372.40**	**60.60**	**Y**	**Y**
O09-05R	0.00	0.00	49.94	2,385.30	235.24	9,202.97	**49.94**	**2,385.30**	0.00	0.00	49.94	2,385.30	191.11	6,740.51	0.13	3.22	0.00	0.00	0.00	0.00	44.00	2,459.24	**0.00**	**0.00**	**44.00**	**Y**	**Y**
O10-01	0.00	0.00	0.00	0.00	227.30	5,196.40	**0.00**	**0.00**	0.00	0.00	0.00	0.00	1.63	46.20	0.00	0.00	0.00	0.00	0.00	0.00	225.67	5,150.21	**0.00**	**0.00**	**225.67**	**Y**	**Y ***
O11-01	0.00	0.00	19.63	1,648.92	143.16	4,339.35	**19.63**	**1,648.92**	0.00	0.00	0.00	0.00	28.38	358.16	0.00	0.00	0.00	0.00	19.63	1,648.92	114.78	3,981.19	**19.63**	**1,648.92**	**134.41**	**Y**	**Y**
O12-04R	0.00	0.00	0.00	0.00	149.28	2,817.71	**0.00**	**0.00**	0.00	0.00	0.00	0.00	5.44	126.84	0.00	0.00	0.00	0.00	0.00	0.00	143.84	2,690.87	**0.00**	**0.00**	**143.84**	**Y**	**Y**
O14-01	0.00	0.00	0.00	0.00	249.08	7,186.10	**0.00**	**0.00**	0.00	0.00	0.00	0.00	89.98	2,279.96	95.28	2,817.80	0.00	0.00	0.00	0.00	63.82	2,088.34	**0.00**	**0.00**	**63.82**	**Y**	**Y**
O14-02	0.00	0.00	35.81	1,862.12	76.01	1,675.49	**35.81**	**1,862.12**	0.00	0.00	20.25	1,053.00	37.61	615.11	1.59	56.70	0.00	0.00	15.56	809.12	36.81	1,003.68	**15.56**	**809.12**	**52.37**	**Y**	**Y**
O14-03R	0.00	0.00	59.75	2,778.09	187.05	5,081.30	**59.75**	**2,778.09**	0.00	0.00	56.60	2,631.42	112.37	3,551.88	27.08	588.54	0.00	0.00	0.61	25.31	50.13	1,062.24	**0.61**	**25.31**	**50.74**	**Y**	**Y**
O15-01	0.00	0.00	0.00	0.00	115.66	2,712.03	**0.00**	**0.00**	0.00	0.00	0.00	0.00	30.43	665.25	0.00	0.00	0.00	0.00	0.00	0.00	85.23	2,046.78	**0.00**	**0.00**	**85.23**	**Y**	**Y**
O15-02	0.00	0.00	0.00	0.00	139.99	4,285.17	**0.00**	**0.00**	0.00	0.00	0.00	0.00	8.95	242.98	0.00	0.00	0.00	0.00	0.00	0.00	131.04	4,042.19	**0.00**	**0.00**	**131.04**	**Y**	**Y**
O15-03	0.00	0.00	17.54	841.10	103.27	2,841.03	**17.54**	**841.10**	0.00	0.00	1.77	84.28	13.76	488.63	0.00	0.00	0.00	0.00	15.77	756.82	89.51	2,352.40	**15.77**	**756.82**	**105.28**	**Y**	**Y**
R02-01R	0.00	0.00	32.29	1,911.17	156.39	4,315.12	**32.29**	**1,911.17**	0.00	0.00	0.00	0.00	27.15	691.23	0.00	0.00	0.00	0.00	32.29	1,911.17	129.24	3,623.89	**32.29**	**1,911.17**	**161.53**	**Y**	**Y ***
SHC-02	0.00	0.00	36.51	1,569.93	208.27	7,359.73	**36.51**	**1,569.93**	0.00	0.00	0.10	4.30	26.53	1,021.98	0.00	0.00	0.00	0.00	36.41	1,565.63	181.74	6,337.75	**36.41**	**1,565.63**	**218.15**	**Y**	**Y ***
T01-01	0.00	0.00	0.00	0.00	145.17	4,374.35	**0.00**	**0.00**	0.00	0.00	0.00	0.00	2.65	73.13	0.00	0.00	0.00	0.00	0.00	0.00	142.52	4,301.22	**0.00**	**0.00**	**142.52**	**Y**	**Y**

* With time and management, these partitions have enough acreage to meet the RS foraging standard on Fort Benning

Table 6-2 (cont.). Red-cockaded woodpecker foraging habitat data using the Recovery Standard (RS) (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable Acreage	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
T02-01	0.00	0.00	0.00	0.00	183.68	4,060.03	**0.00**	**0.00**	0.00	0.00	0.00	0.00	14.76	140.69	0.00	0.00	0.00	0.00	0.00	0.00	168.92	3,919.34	**0.00**	**0.00**	**168.92**	**Y**	**Y ***
T03-02	0.00	0.00	68.29	2,868.18	132.19	4,285.04	**68.29**	**2,868.18**	0.00	0.00	17.25	724.50	76.89	2,418.62	0.00	0.00	0.00	0.00	51.04	2,143.68	55.30	1,866.42	**51.04**	**2,143.68**	**106.34**	**Y**	**Y**
T03-04R	0.00	0.00	2.46	100.86	174.45	5,407.13	**2.46**	**100.86**	0.00	0.00	2.46	100.86	129.29	4,091.87	0.71	25.92	0.00	0.00	0.00	0.00	44.45	1,289.35	**0.00**	**0.00**	**44.45**	**Y**	**Y**
T04-01	9.88	444.60	0.00	0.00	143.83	4,443.82	**9.88**	**444.60**	0.33	14.85	0.00	0.00	1.28	61.92	0.00	0.00	9.55	429.75	0.00	0.00	142.55	4,381.90	**9.55**	**429.75**	**152.10**	**Y**	**Y ***
T04-03R	0.00	0.00	17.81	810.36	81.31	2,880.73	**17.81**	**810.36**	0.00	0.00	5.72	260.26	50.66	1,887.89	0.00	0.00	0.00	0.00	12.09	550.10	30.65	992.84	**12.09**	**550.10**	**42.74**	**Y**	**Y**
T05-02	0.00	0.00	0.00	0.00	182.29	3,173.98	**0.00**	**0.00**	0.00	0.00	0.00	0.00	8.01	335.97	0.00	0.00	0.00	0.00	0.00	0.00	174.28	2,838.01	**0.00**	**0.00**	**174.28**	**Y**	**Y ***
U04-01	0.00	0.00	50.29	2,536.78	81.87	2,047.86	**50.29**	**2,536.78**	0.00	0.00	11.91	600.55	28.11	853.61	0.00	0.00	0.00	0.00	38.38	1,936.23	53.76	1,194.25	**38.38**	**1,936.23**	**92.14**	**Y**	**Y**

* With time and management, these partitions have enough acreage to meet the RS foraging standard on Fort Benning

Table 6-3. Red-cockaded woodpecker foraging habitat data using the Standard for Managed Stability (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals											
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?
A06-01	153.92	7,080.32	0.00	0.00	33.83	736.42	**153.92**	**7,080.32**	0.18	8.28	0.00	0.00	0.00	0.00	0.00	0.00	153.74	7,072.04	0.00	0.00	33.83	736.42	**153.74**	**7,072.04**	**187.57**	**N**
A07-01	35.57	1,313.76	0.00	0.00	150.78	4,112.80	**35.57**	**1,313.76**	0.00	0.00	0.00	0.00	0.04	1.16	0.00	0.00	35.57	1,313.76	0.00	0.00	150.74	4,111.64	**35.57**	**1,313.76**	**186.31**	**Y**
A17-01	84.65	4,475.19	37.64	1,832.54	0.00	0.00	**1,222.29**	**6,307.73**	55.19	2,936.94	32.40	1,622.79	0.00	0.00	2.33	96.54	29.46	1,538.25	2.91	113.21	0.00	0.00	**32.37**	**1,651.46**	**32.36**	**N**
A17-02	63.78	3,370.19	0.00	0.00	64.50	460.97	**63.78**	**3,370.19**	0.16	10.56	0.00	0.00	0.00	0.00	0.00	0.00	63.62	3,359.63	0.00	0.00	64.50	460.97	**63.62**	**3,359.63**	**128.12**	**Y**
A17-03	97.13	5,175.53	20.29	1,014.50	0.00	0.00	**117.42**	**6,190.03**	94.31	5,028.88	14.81	740.50	0.00	0.00	2.81	146.12	0.01	0.53	5.48	274.00	0.00	0.00	**5.49**	**274.53**	**5.49**	**N**
A17-04	155.95	7,987.49	71.56	4,033.36	3.69	1.76	**227.51**	**12,020.85**	16.32	869.17	0.00	0.00	0.00	0.00	0.00	0.00	139.63	7,118.32	71.56	4,033.36	3.69	1.76	**211.19**	**11,151.68**	**214.89**	**N**
A17-05	102.39	4,379.85	16.36	867.08	4.15	24.90	**118.75**	**5,246.93**	1.38	45.54	0.00	0.00	0.00	0.00	0.00	0.00	101.01	4,334.31	16.36	867.08	4.15	24.90	**117.37**	**5,201.39**	**121.52**	**N**
A17-07	71.64	3,223.80	17.30	876.20	0.00	0.00	**88.94**	**4,100.00**	6.10	274.50	7.26	421.17	0.00	0.00	0.00	0.00	65.54	2,949.30	10.04	455.03	0.00	0.00	**75.58**	**3,404.33**	**75.58**	**N**
A17-08	111.93	7,124.60	0.00	0.00	17.76	100.53	**111.93**	**7,124.60**	1.23	63.96	0.00	0.00	0.00	0.00	0.00	0.00	110.70	7,060.64	0.00	0.00	17.76	100.53	**110.70**	**7,060.64**	**128.46**	**N**
A17-13	80.89	4,206.28	24.45	1,222.50	0.00	0.00	**105.34**	**5,428.78**	2.92	151.84	0.00	0.00	0.00	0.00	0.00	0.00	77.97	4,054.44	24.45	1,222.50	0.00	0.00	**102.42**	**5,276.94**	**102.42**	**N**
A17-14	114.16	6,306.98	9.99	575.66	13.25	79.50	**124.15**	**6,882.64**	107.06	5,908.42	7.77	457.73	7.49	44.94	3.77	201.63	5.52	313.00	0.03	1.86	5.76	34.56	**5.55**	**314.86**	**11.31**	**N**
BB03-01R	27.62	1,020.86	50.29	2,169.33	143.97	2,625.14	**77.91**	**3,190.19**	0.00	0.00	0.00	0.00	17.75	449.64	52.92	1,616.71	27.62	1,020.86	16.70	804.57	106.89	1,923.55	**44.32**	**1,825.43**	**151.22**	**N**
BB04-01R	123.90	4,956.55	12.27	1,229.31	46.07	836.25	**136.17**	**6,185.86**	10.74	449.85	5.60	634.03	12.57	68.54	0.00	0.00	113.16	4,506.70	6.67	595.29	33.50	767.71	**119.83**	**5,101.99**	**153.33**	**N**
BB05-01R	113.25	4,706.03	102.12	4,015.93	63.62	1,493.99	**215.37**	**8,721.96**	22.31	1,134.57	3.40	149.22	4.97	103.26	0.00	0.00	90.94	3,571.46	98.72	3,866.71	58.65	1,390.73	**189.66**	**7,438.17**	**248.31**	**N**
C01-02	0.78	40.17	158.62	6,369.62	16.73	0.00	**159.40**	**6,409.79**	0.00	0.00	104.97	4,046.15	10.02	0.00	1.17	42.51	0.78	40.17	52.48	2,280.96	6.71	0.00	**53.26**	**2,321.13**	**59.97**	**N**
C01-03	8.02	300.75	88.61	3,555.63	46.50	621.00	**96.63**	**3,856.38**	5.11	191.63	18.02	679.48	2.63	18.36	2.91	109.12	0.00	0.00	70.59	2,876.15	43.87	602.64	**70.59**	**2,876.16**	**114.46**	**N**
C02-02	50.49	1,912.69	68.95	2,642.91	28.74	149.57	**119.44**	**4,555.60**	0.40	14.00	11.33	401.77	0.00	0.00	0.00	0.00	50.09	1,898.69	57.62	2,241.14	28.74	149.57	**107.71**	**4,139.83**	**136.45**	**N**
D05-02R	122.80	4,840.55	0.00	0.00	39.09	858.61	**122.80**	**4,840.55**	3.02	122.43	0.00	0.00	10.52	231.44	0.00	0.00	119.78	4,718.12	0.00	0.00	28.57	627.17	**119.78**	**4,718.12**	**148.35**	**N**
D05-04R	255.06	10,245.41	0.00	0.00	48.27	504.18	**255.06**	**10,245.41**	69.21	2,901.18	0.00	0.00	21.64	375.62	5.38	219.71	180.47	7,124.52	0.00	0.00	26.63	128.56	**180.47**	**7,124.52**	**207.10**	**N**
D08-01R	113.10	4,104.18	0.00	0.00	139.48	1,321.06	**113.10**	**4,104.18**	2.61	92.60	0.00	0.00	0.71	16.86	0.00	0.00	110.49	4,011.58	0.00	0.00	138.77	1,304.20	**110.49**	**4,011.58**	**249.25**	**N**
D10-01	44.24	1,472.00	0.00	0.00	76.66	672.54	**44.24**	**1,472.00**	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	44.24	1,472.00	0.00	0.00	75.31	672.54	**44.24**	**1,472.00**	**119.55**	**Y**
D11-01	93.02	3,472.58	0.00	0.00	49.47	96.31	**93.02**	**3,472.58**	49.23	1,836.64	0.00	0.00	32.37	31.26	0.00	0.00	43.79	1,635.94	0.00	0.00	17.10	65.05	**43.79**	**1,635.94**	**60.89**	**N**
D11-02	108.40	3,994.86	0.00	0.00	55.81	1,305.57	**108.40**	**3,994.86**	67.71	2,491.27	0.00	0.00	19.07	445.18	42.38	1,218.12	18.45	716.21	0.00	0.00	16.60	429.65	**18.45**	**716.21**	**35.05**	**N**
D15-01R	156.24	6,807.87	14.76	560.88	111.12	2,566.22	**171.00**	**7,368.75**	7.89	291.93	0.00	0.00	14.05	379.38	0.00	0.00	148.35	6,515.94	14.76	560.88	97.07	2,186.84	**163.11**	**7,076.82**	**260.17**	**N**
D16-02	15.33	534.92	0.00	0.00	200.53	3,299.43	**15.33**	**534.92**	0.00	0.00	0.00	0.00	57.94	752.09	67.36	1,366.72	0.00	0.00	0.00	0.00	90.56	1,715.54	**0.00**	**0.00**	**90.56**	**Y**
D17-04R	79.80	3,187.41	10.97	356.53	101.41	1,871.43	**90.77**	**3,543.94**	1.03	38.63	0.00	0.00	10.86	301.83	0.00	0.00	78.77	3,148.78	10.97	356.53	90.55	1,569.60	**89.74**	**3,505.31**	**180.29**	**N**
E02-01	90.53	2,867.93	17.09	515.56	124.82	399.63	**107.62**	**3,383.49**	3.13	97.03	0.00	0.00	6.80	7.42	0.00	0.00	87.40	2,770.90	17.09	515.56	118.02	392.21	**104.49**	**3,286.46**	**222.50**	**N**
E03-01	161.08	7,046.71	0.00	0.00	41.27	1,912.80	**161.08**	**7,046.71**	4.01	176.52	0.00	0.00	0.00	0.00	0.00	0.00	157.07	6,870.19	0.00	0.00	41.27	1,912.80	**157.07**	**6,870.19**	**198.34**	**N**
E04-01	114.82	4,504.91	0.00	0.00	52.26	1,275.52	**114.82**	**4,504.91**	69.86	2,751.26	0.00	0.00	18.59	588.70	1.28	37.32	44.41	1,734.95	0.00	0.00	32.94	668.20	**44.41**	**1,734.95**	**77.35**	**N**
E08-05R	104.71	4,852.66	0.00	0.00	70.74	103.01	**104.71**	**4,852.66**	3.37	155.71	0.00	0.00	1.27	0.00	0.00	0.00	101.34	4,696.95	0.00	0.00	69.47	103.01	**101.34**	**4,696.95**	**170.81**	**N**
F02-01R	85.24	3,739.60	0.00	0.00	124.79	2,585.72	**85.24**	**3,739.60**	20.14	838.62	0.00	0.00	46.11	936.75	5.22	66.22	65.10	2,900.98	0.00	0.00	73.46	1,582.75	**65.10**	**2,900.98**	**138.56**	**N**
HCC-03R	165.86	6,714.85	29.43	1,141.04	30.15	478.61	**195.29**	**7,855.89**	100.76	4,081.63	0.01	0.32	22.93	376.64	0.00	0.00	65.10	2,633.22	29.42	1,140.72	7.22	101.97	**94.52**	**3,773.94**	**101.75**	**N**
HCC-08R	58.75	1,962.19	51.97	1,634.98	97.76	2,551.09	**110.72**	**3,597.17**	8.74	308.71	0.00	0.00	0.16	0.00	0.00	0.00	50.01	1,653.48	51.97	1,634.98	97.60	2,551.09	**101.98**	**3,288.46**	**199.58**	**N**
HCC-10R	95.84	3,419.15	123.96	5,317.02	74.91	1,273.41	**219.80**	**8,736.17**	25.32	939.53	62.66	2,686.00	49.32	677.26	0.00	0.00	70.52	2,479.62	61.30	2,631.02	25.59	596.15	**131.82**	**5,110.64**	**157.41**	**N**
HCC-11R	11.83	385.98	0.00	0.00	241.24	5,469.75	**11.83**	**385.98**	0.75	29.28	0.00	0.00	44.22	706.85	2.32	47.56	11.08	356.70	0.00	0.00	194.70	4,715.34	**11.08**	**356.70**	**205.78**	**Y**
J01-02R	59.48	2,570.26	0.00	0.00	176.70	1,327.60	**59.48**	**2,570.26**	0.00	0.00	0.00	0.00	4.95	0.00	0.00	0.00	59.48	2,570.26	0.00	0.00	171.75	1,327.60	**59.48**	**2,570.26**	**231.23**	**Y**
J03-01	105.25	4,183.83	0.00	0.00	77.22	1,254.41	**105.25**	**4,183.83**	64.91	2,632.33	0.00	0.00	30.98	628.82	7.62	283.37	32.72	1,268.13	0.00	0.00	46.24	625.59	**32.72**	**1,268.13**	**78.96**	**N**
J04-01	85.90	3,187.22	11.41	432.19	98.37	1,734.35	**97.31**	**3,619.41**	63.86	2,399.86	7.91	298.21	66.27	1,169.06	23.32	497.48	22.04	787.36	3.50	133.98	8.78	67.81	**25.54**	**921.34**	**34.32**	**N**
J05-01	82.76	3,110.24	45.95	1,492.79	108.05	2,078.48	**128.71**	**4,603.03**	75.72	2,853.28	44.87	1,459.26	54.85	1,315.16	16.39	486.03	0.00	0.00	1.08	33.53	43.85	534.25	**1.08**	**33.53**	**44.93**	**N**
J06-01	104.22	3,674.76	0.00	0.00	57.10	501.55	**104.22**	**3,674.76**	1.69	67.50	0.00	0.00	1.69	31.13	0.00	0.00	102.53	3,607.26	0.00	0.00	55.41	470.42	**102.53**	**3,607.26**	**157.94**	**N**
J06-03	211.95	7,630.60	0.25	7.76	73.65	2,023.96	**212.20**	**7,638.36**	30.61	1,134.69	0.25	7.76	22.07	619.44	0.00	0.00	181.34	6,495.91	0.00	0.00	51.58	1,404.53	**181.34**	**6,495.91**	**232.92**	**N**
K02-01	0.00	0.00	10.03	315.11	253.93	5,936.56	**10.03**	**315.11**	0.00	0.00	2.78	86.18	188.92	4,231.38	8.68	151.90	0.00	0.00	7.25	228.93	56.33	1,553.28	**7.25**	**228.93**	**63.58**	**Y**
K08-03	98.31	3,551.58	0.00	0.00	29.02	0.00	**98.31**	**3,551.58**	6.26	234.76	0.00	0.00	0.59	0.00	0.00	0.00	92.05	3,316.82	0.00	0.00	28.43	0.00	**92.05**	**3,316.82**	**120.48**	**N**
K08-04	177.18	6,554.22	6.45	70.95	4.42	39.83	**183.63**	**6,625.17**	13.20	506.07	0.00	0.00	0.47	13.87	0.00	0.00	163.98	6,048.15	6.45	70.95	3.95	25.97	**170.43**	**6,119.10**	**174.38**	**N**
K09-01	89.57	3,793.89	0.51	25.50	59.46	1,685.70	**90.08**	**3,819.39**	0.52	16.99	0.00	0.00	0.71	20.95	0.00	0.00	89.05	3,776.90	0.51	25.50	58.75	1,664.75	**89.56**	**3,802.40**	**148.31**	**N**
K09-03R	147.03	5,245.87	44.48	2,224.00	59.62	661.84	**191.51**	**7,469.87**	5.08	172.15	0.22	11.00	4.69	36.73	0.00	0.00	141.95	5,073.72	44.26	2,213.00	54.93	625.11	**186.21**	**7,286.72**	**241.14**	**N**

This cluster is taken as a result of the Alternative A Transformation.

Table 6-3 (cont.). Red-cockaded woodpecker foraging habitat data using the Standard for Managed Stability (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals											
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?
K11-02	239.88	9,093.19	5.12	174.08	77.22	717.70	**245.00**	**9,267.27**	0.55	19.53	1.72	58.48	0.31	0.00	0.00	0.00	239.33	9,073.66	3.40	115.60	76.91	717.70	**242.73**	**9,189.26**	**319.64**	**N**
K11-03	40.17	1,426.04	2.16	73.44	111.63	2,517.23	**42.33**	**1,499.48**	2.55	90.53	0.07	2.38	5.77	82.63	0.00	0.00	37.62	1,335.51	2.09	71.06	105.86	2,434.60	**39.71**	**1,406.57**	**145.57**	**Y**
K14-01R	66.02	3,104.66	0.00	0.00	145.86	2,014.31	**66.02**	**3,104.66**	3.09	158.58	0.00	0.00	1.86	38.13	0.00	0.00	62.93	2,946.08	0.00	0.00	144.00	1,976.18	**62.93**	**2,946.08**	**206.93**	**Y**
K17-02	118.38	6,102.84	0.00	0.00	45.47	623.87	**118.38**	**6,102.84**	1.36	68.57	0.00	0.00	3.27	59.57	0.00	0.00	117.02	6,034.27	0.00	0.00	42.20	564.30	**117.02**	**6,034.27**	**159.22**	**N**
K17-05R	144.10	6,658.60	0.00	0.00	130.37	89.27	**144.10**	**6,658.60**	0.24	10.68	0.00	0.00	0.72	0.00	0.00	0.00	143.86	6,647.92	0.00	0.00	129.65	89.27	**143.86**	**6,647.92**	**273.51**	**N**
K18-01	121.71	6,052.18	24.82	1,539.75	100.39	1,905.45	**146.53**	**7,591.93**	2.98	145.00	0.42	17.54	3.54	73.91	0.00	0.00	118.73	5,907.18	24.40	1,522.21	96.85	1,831.54	**143.13**	**7,429.39**	**239.98**	**N**
K18-02R	138.32	5,357.23	16.69	665.48	45.67	1,013.52	**155.01**	**6,022.71**	1.94	78.98	1.22	48.19	0.00	0.00	0.00	0.00	136.38	5,278.25	15.47	617.29	45.67	1,013.52	**151.85**	**5,895.54**	**197.52**	**N**
K18-03R	0.00	0.00	19.05	771.53	167.03	3,755.91	**19.05**	**771.53**	0.00	0.00	1.72	69.66	1.90	41.13	0.00	0.00	0.00	0.00	17.33	701.87	165.13	3,714.78	**17.33**	**701.87**	**182.45**	**Y**
K21-02R	194.32	8,285.35	0.00	0.00	33.15	780.02	**194.32**	**8,285.35**	10.27	407.58	0.00	0.00	4.27	100.47	0.00	0.00	184.05	7,877.77	0.00	0.00	28.88	679.55	**184.05**	**7,877.77**	**212.93**	**N**
L02-02R	119.30	4,677.98	9.23	276.90	69.59	1,369.06	**128.53**	**4,954.88**	103.28	3,983.42	5.87	176.10	27.21	495.91	4.75	179.20	14.19	593.11	3.36	100.80	39.46	795.40	**17.55**	**693.91**	**57.01**	**N**
L03-01	40.87	1,930.86	8.93	401.32	23.51	473.21	**49.80**	**2,332.18**	0.10	4.83	0.07	2.63	1.85	43.48	0.00	0.00	40.77	1,926.03	8.86	398.69	21.66	429.74	**49.63**	**2,324.72**	**71.29**	**Y**
M08-04R	51.98	1,873.71	42.28	1,374.10	99.40	2,135.57	**94.26**	**3,247.81**	3.03	98.43	0.00	0.00	9.48	83.07	0.00	0.00	48.95	1,775.28	42.28	1,374.10	89.92	2,052.50	**91.23**	**3,149.38**	**181.15**	**N**
M08-05R	95.34	4,267.06	90.07	3,878.39	71.36	1,121.81	**185.41**	**8,145.45**	0.28	10.36	0.81	25.30	9.33	121.47	0.00	0.00	95.06	4,256.70	89.26	3,853.09	62.03	1,000.34	**184.32**	**8,109.79**	**246.35**	**N**
O01-01	112.03	4,157.79	28.63	944.79	19.48	36.58	**140.66**	**5,102.58**	30.70	1,169.40	5.76	190.08	3.74	21.18	0.00	0.00	81.33	2,988.39	22.87	754.71	15.74	15.40	**104.20**	**3,743.10**	**119.95**	**N**
O01-02	25.74	936.99	12.21	500.61	128.05	2,288.63	**37.95**	**1,437.60**	15.16	560.68	1.79	73.39	14.36	338.84	31.11	1,073.01	2.50	89.65	0.00	0.00	101.08	1,590.66	**2.50**	**89.65**	**103.58**	**Y**
O01-03	87.51	3,845.95	22.84	1,045.84	44.32	797.39	**110.35**	**4,891.79**	31.69	1,436.00	10.16	457.68	15.52	346.54	4.83	217.35	54.67	2,358.20	9.00	422.56	28.80	450.85	**63.67**	**2,780.76**	**92.47**	**N**
O01-04R	51.72	2,161.25	72.97	2,927.30	49.40	860.78	**124.69**	**5,088.55**	8.26	297.16	13.06	522.02	22.75	329.01	3.29	46.87	43.46	1,864.09	59.43	2,389.44	23.84	500.74	**102.89**	**4,253.53**	**126.74**	**N**
O02-01R	60.34	2,689.69	61.41	2,564.33	102.90	1,920.57	**121.75**	**5,254.02**	2.99	118.73	0.31	10.08	1.16	0.00	0.00	0.00	57.35	2,570.96	61.10	2,554.25	101.74	1,920.57	**118.45**	**5,125.21**	**220.18**	**N**
O03-01	49.58	2,005.34	33.19	1,206.05	58.52	1,421.31	**82.77**	**3,211.39**	22.15	897.01	28.05	987.15	36.19	945.93	21.79	561.00	23.53	932.83	3.90	175.50	5.68	133.28	**27.43**	**1,108.33**	**33.11**	**N**
O03-02	115.58	4,624.49	0.00	0.00	40.60	621.96	**115.58**	**4,624.49**	7.93	329.59	0.00	0.00	2.83	66.86	0.00	0.00	107.65	4,294.90	0.00	0.00	37.77	555.10	**107.65**	**4,294.90**	**145.42**	**N**
O03-03	46.33	2,078.11	0.00	0.00	130.12	1,227.90	**46.33**	**2,078.11**	3.15	143.19	0.00	0.00	9.61	68.83	0.00	0.00	43.18	1,934.92	0.00	0.00	120.51	1,159.07	**43.18**	**1,934.92**	**163.69**	**Y**
O03-04	30.96	1,072.71	6.77	270.80	136.84	2,043.57	**37.73**	**1,343.51**	2.07	72.06	0.00	0.00	14.14	169.07	0.00	0.00	28.89	1,000.65	6.77	270.80	122.70	1,874.50	**35.66**	**1,271.45**	**158.36**	**Y**
O03-05	155.72	6,563.73	44.45	1,711.34	74.19	632.71	**200.17**	**8,275.07**	2.93	113.58	0.00	0.00	1.33	16.50	0.00	0.00	152.79	6,450.15	44.45	1,711.34	72.86	616.21	**197.24**	**8,161.49**	**270.10**	**N**
O03-06R	76.46	2,526.45	0.00	0.00	127.04	3,117.35	**76.46**	**2,526.45**	9.19	313.69	0.00	0.00	5.35	157.83	0.00	0.00	67.27	2,212.76	0.00	0.00	121.69	2,959.52	**67.27**	**2,212.76**	**188.96**	**Y**
O03-07	124.66	5,138.75	0.00	0.00	61.29	568.97	**124.66**	**5,138.75**	6.47	240.08	0.00	0.00	0.17	0.00	0.00	0.00	118.19	4,898.67	0.00	0.00	61.12	568.97	**118.19**	**4,898.67**	**179.31**	**N**
O04-03	22.97	1,103.64	0.00	0.00	97.65	1,952.08	**22.97**	**1,103.64**	0.00	0.00	0.00	0.00	1.13	19.07	0.00	0.00	22.97	1,103.64	0.00	0.00	96.52	1,933.01	**22.97**	**1,103.64**	**119.49**	**Y**
O05-01	218.46	11,088.51	8.34	640.86	43.98	611.92	**226.80**	**11,729.37**	14.91	710.01	1.55	130.46	0.03	1.54	0.00	0.00	203.55	10,378.50	6.79	510.40	43.95	610.38	**210.34**	**10,888.90**	**254.29**	**N**
O05-02	98.79	4,191.52	10.20	456.87	31.70	935.31	**108.99**	**4,648.39**	10.35	467.60	1.68	157.92	16.76	676.74	0.58	31.82	88.44	3,723.92	8.47	294.25	14.41	231.45	**96.91**	**4,018.17**	**111.32**	**N**
O05-03R	180.31	7,686.14	11.40	454.18	43.92	818.05	**191.71**	**8,140.32**	25.58	1,028.11	1.84	63.92	2.74	70.43	0.00	0.00	154.73	6,658.03	9.56	390.26	41.18	747.62	**164.29**	**7,048.29**	**205.46**	**N**
O07-03R	70.64	2,822.41	62.89	2,072.15	119.19	2,763.64	**133.53**	**4,894.56**	0.00	0.00	0.00	0.00	0.48	8.64	0.00	0.00	70.64	2,822.41	62.89	2,072.15	118.71	2,755.00	**133.53**	**4,894.56**	**252.24**	**N**
O08-03R	0.00	0.00	9.14	279.13	137.69	2,921.27	**9.14**	**279.13**	0.00	0.00	1.31	39.30	17.71	415.89	0.00	0.00	0.00	0.00	7.83	239.83	119.98	2,505.38	**7.83**	**239.83**	**127.81**	**Y**
O09-02	77.15	3,320.16	0.00	0.00	116.11	2,897.78	**77.15**	**3,320.16**	0.00	0.00	0.00	0.00	13.28	338.64	0.00	0.00	77.15	3,320.16	0.00	0.00	102.83	2,559.14	**77.15**	**3,320.16**	**179.98**	**N**
O09-04R	118.37	4,750.67	53.69	1,674.92	52.52	1.28	**172.06**	**6,425.59**	78.44	3,107.44	41.76	1,271.30	25.80	0.00	17.98	58.79	39.77	1,637.54	10.16	350.52	10.67	1.28	**49.93**	**1,988.06**	**60.60**	**N**
O09-05R	183.45	8,833.70	57.63	1,988.24	44.10	766.33	**241.08**	**10,821.94**	145.47	6,543.64	57.16	1,972.03	38.42	610.14	0.13	3.22	37.93	2,288.36	0.47	16.21	5.60	154.67	**38.40**	**2,304.57**	**44.00**	**N**
O10-01	43.42	1,411.15	69.18	2,590.53	114.70	1,194.72	**112.60**	**4,001.68**	0.00	0.00	0.57	27.65	1.06	18.55	0.00	0.00	43.42	1,411.15	68.61	2,562.89	113.64	1,176.17	**112.03**	**3,974.04**	**225.67**	**N**
O11-01	68.54	3,864.21	22.43	878.26	71.82	1,245.80	**90.97**	**4,742.47**	5.29	232.52	2.85	121.44	20.24	4.20	0.00	0.00	63.25	3,631.69	19.58	756.82	51.58	1,241.60	**82.83**	**4,388.51**	**134.41**	**N**
O12-04R	8.66	281.35	0.00	0.00	140.62	2,536.36	**8.66**	**281.35**	0.00	0.00	0.00	0.00	5.44	126.84	0.00	0.00	8.66	281.35	0.00	0.00	135.18	2,409.52	**8.66**	**281.35**	**143.84**	**Y**
O14-01	120.29	4,439.69	0.00	0.00	128.79	2,746.41	**120.29**	**4,439.69**	32.14	1,258.47	0.00	0.00	57.84	1,021.49	95.28	2,817.80	49.63	1,761.86	0.00	0.00	14.19	326.48	**49.63**	**1,761.86**	**63.82**	**N**
O14-02	44.87	2,183.82	0.00	0.00	66.95	1,353.79	**44.87**	**2,183.82**	27.72	1,318.00	0.00	0.00	30.14	350.11	1.59	56.70	15.56	809.12	0.00	0.00	36.81	1,003.68	**15.56**	**809.12**	**52.37**	**Y**
O14-03R	162.39	6,921.17	0.00	0.00	84.41	938.22	**162.39**	**6,921.17**	131.65	5,624.09	0.00	0.00	37.32	559.21	27.08	588.54	20.24	882.44	0.00	0.00	30.51	205.11	**20.24**	**882.44**	**50.75**	**N**
O15-01	33.69	1,229.25	0.00	0.00	81.97	1,482.78	**33.69**	**1,229.25**	2.92	103.30	0.00	0.00	27.51	561.95	0.00	0.00	30.77	1,125.95	0.00	0.00	54.46	920.83	**30.77**	**1,125.95**	**85.23**	**Y**
O15-02	72.66	2,588.18	0.00	0.00	67.33	1,696.99	**72.66**	**2,588.18**	2.79	99.98	0.00	0.00	6.16	143.00	0.00	0.00	69.87	2,488.20	0.00	0.00	61.17	1,553.99	**69.87**	**2,488.20**	**131.03**	**Y**
O15-03	83.20	3,240.98	0.00	0.00	37.61	441.15	**83.20**	**3,240.98**	13.26	515.02	0.00	0.00	2.27	57.89	0.00	0.00	69.94	2,725.96	0.00	0.00	35.34	383.26	**69.94**	**2,725.96**	**105.28**	**N**
R02-01R	80.87	3,286.40	11.33	846.09	96.48	2,093.80	**92.20**	**4,132.49**	6.67	303.89	0.00	0.00	20.48	387.34	0.00	0.00	74.20	2,982.51	11.33	846.09	76.00	1,706.46	**85.53**	**3,828.60**	**161.53**	**N**
SHC-02	27.00	1,129.81	155.73	6,275.47	62.06	1,524.38	**182.73**	**7,405.28**	0.23	8.74	25.32	989.42	1.08	28.12	0.00	0.00	26.77	1,121.07	130.41	5,286.05	60.98	1,496.26	**157.18**	**6,407.12**	**218.15**	**N**
T01-01	84.53	2,842.16	18.87	584.97	41.77	947.22	**103.40**	**3,427.13**	1.87	58.27	0.00	0.00	0.78	14.86	0.00	0.00	82.66	2,783.89	18.87	584.97	40.99	932.36	**101.53**	**3,368.86**	**142.52**	**N**

This cluster is taken as a result of the Alternative A Transformation.

Table 6-3 (cont.). Red-cockaded woodpecker foraging habitat data using the Standard for Managed Stability (USFWS 2003) for all partitions impacted by Alternative A Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals											
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?
T02-01	28.51	1,040.62	0.00	0.00	155.17	3,019.41	**28.51**	**1,040.62**	2.76	100.74	0.00	0.00	12.00	39.95	0.00	0.00	25.75	939.88	0.00	0.00	143.17	2,979.46	**25.75**	**939.88**	**168.93**	**Y**
T03-02	149.60	5,622.26	16.43	690.06	34.45	840.90	**166.03**	**6,312.32**	53.12	2,026.28	6.57	275.94	34.45	840.90	0.00	0.00	96.48	3,595.98	9.86	414.12	0.00	0.00	**106.34**	**4,010.10**	**106.34**	**N**
T03-04R	118.87	4,496.33	0.00	0.00	58.04	1,011.66	**118.87**	**4,496.33**	98.55	3,727.82	0.00	0.00	33.20	464.91	0.71	25.92	19.61	742.59	0.00	0.00	24.84	546.75	**19.61**	**742.59**	**44.45**	**N**
T04-01	129.83	4,815.90	0.00	0.00	23.88	72.52	**129.83**	**4,815.90**	1.47	70.05	0.00	0.00	0.14	6.72	0.00	0.00	128.36	4,745.85	0.00	0.00	23.74	65.80	**128.36**	**4,745.85**	**152.10**	**N**
T04-03R	99.12	3,691.09	0.00	0.00	0.00	0.00	**99.12**	**3,691.09**	56.38	2,148.15	0.00	0.00	0.00	0.00	0.00	0.00	42.74	1,542.94	0.00	0.00	0.00	0.00	**42.74**	**1,542.94**	**42.74**	**N**
T05-02	62.61	2,120.44	8.86	394.27	110.82	659.27	**71.47**	**2,514.71**	3.37	129.49	4.64	206.48	0.00	0.00	0.00	0.00	59.24	1,990.95	4.22	187.79	110.82	659.27	**63.46**	**2,178.74**	**174.28**	**Y**
U04-01	71.18	3,401.68	14.89	560.15	46.09	622.81	**86.07**	**3,961.83**	25.59	1,115.05	0.00	0.00	14.43	339.11	0.00	0.00	45.59	2,286.63	14.89	560.15	31.66	283.70	**60.48**	**2,846.78**	**92.14**	**N**

This cluster is taken as a result of the Alternative A Transformation.

Table 6-4. Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative A, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
A06-01	PBG	PBG	PBG	PBG	PBG
A07-01	PBG	PBG	PBG	SOL	PBG
A15-03	PBG	PBG	PBG	PBG	PBG
A17-01	N/A	N/A	N/A	N/A	UNK
A17-02	PBG	PBG	PBG	PBG	PBG
A17-03	PBG	PBG	PBG	PBG	PBG
A17-04	CAP by A14-03	PBG	PBG	PBG	PBG
A17-05	PBG	PBG	PBG	PBG	PBG
A17-07	INA	PBG	PBG	PBG	PBG
A17-08	PBG	PBG	PBG	PBG	PBG
A17-13	PBG	PBG	PBG	PBG	PBG
A17-14	PBG	PBG	PBG	PBG	PBG
BB03-01R	PBG	PBG	PBG	PBG	SOL
BB04-01R	PBG	SOL	PBG	PBG	PBG
BB05-01R	PBG	PBG	PBG	PBG	PBG
C01-02	PBG	PBG	PBG	PBG	PBG
C01-03	PBG	PBG	PBG	PBG	PBG
C02-02	PBG	PBG	PBG	PBG	PBG
D05-02R	PBG	PBG	PBG	PBG	PBG
D05-04R	N/A	N/A	N/A	PBG	PBG
D06-01R	PBG	PBG	PBG	PBG	PBG
D08-01R	SOL	PBG	PBG	SOL	SOL
D10-01	PBG	PBG	PBG	PBG	PBG
D11-01	PBG	PBG	PBG	PBG	PBG
D11-02	PBG	PBG	PBG	PBG	PBG
D15-01R	INA	PBG	PBG	PBG	PBG
D16-02	PBG	PBG	PBG	PBG	PBG
D17-04R	PBG	PBG	PBG	PBG	PBG
E02-01	PBG	PBG	PBG	PBG	PBG
E03-01	PBG	PBG	PBG	PBG	PBG
E04-01	PBG	PBG	PBG	PBG	PBG
E08-05R	N/A	N/A	PBG	PBG	PBG
F01-02R	INA	INA	INA	INA	INA
F02-01R	INA	INA	INA	SOL	PBG
HCC-03R	SOL	PBG	PBG	PBG	PBG
HCC-08R	INA	INA	INA	SOL	SOL
HCC-10R	PBG	PBG	PBG	PBG	PBG
HCC-11R	CAP by A07-01	CAP by A07-01	CAP by A07-01	PBG	PBG

Table 6-4 (cont.). Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative A, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
J01-02R	PBG	INA	SOL	PBG	PBG
J02-02	INA	INA	PBG	PBG	PBG
J03-01	PBG	PBG	SOL	PBG	PBG
J04-01	PBG	PBG	PBG	PBG	PBG
J05-01	PBG	PBG	PBG	PBG	PBG
J06-01	PBG	PBG	PBG	PBG	PBG
J06-03	PBG	PBG	PBG	PBG	PBG
K02-01	PBG	PBG	PBG	PBG	PBG
K08-03	INA	CAP by K08-02	PBG	PBG	PBG
K08-04	PBG	PBG	PBG	PBG	PBG
K09-01	PBG	PBG	PBG	PBG	PBG
K09-03R	PBG	PBG	PBG	PBG	PBG
K10-01R	PBG	PBG	PBG	PBG	PBG
K11-02	PBG	PBG	PBG	PBG	PBG
K11-03	PBG	SOL	PBG	PBG	PBG
K14-01R	PBG	PBG	PBG	PBG	PBG
K17-01	PBG	PBG	PBG	PBG	PBG
K17-02	PBG	PBG	PBG	PBG	PBG
K17-05R	PBG	PBG	PBG	PBG	PBG
K18-01	PBG	PBG	PBG	PBG	PBG
K18-02R	PBG	PBG	PBG	PBG	PBG
K18-03R	N/A	N/A	N/A	N/A	PBG
K21-02R	PBG	PBG	PBG	INA	PBG
L02-01R	INA	INA	INA	INA	INA
L02-02R	INA	N/A	INA	INA	PBG
L03-01	PBG	PBG	PBG	PBG	PBG
M08-04R	PBG	PBG	PBG	PBG	PBG
M08-05R	PBG	PBG	PBG	PBG	PBG
O01-01	PBG	PBG	PBG	PBG	PBG
O01-02	PBG	PBG	PBG	PBG	PBG
O01-03	INA	PBG	PBG	PBG	PBG
O01-04R	PBG	PBG	PBG	PBG	PBG
O02-01R	PBG	PBG	PBG	PBG	PBG
O03-01	PBG	CAP by O01-03	INA	PBG	PBG
O03-02	PBG	PBG	PBG	PBG	PBG
O03-03	PBG	PBG	PBG	PBG	PBG
O03-04	PBG	PBG	PBG	PBG	PBG
O03-05	PBG	PBG	PBG	PBG	PBG

Table 6-4 (cont.). Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative A, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
O03-06R	PBG	PBG	PBG	PBG	PBG
O03-07	N/A	N/A	N/A	N/A	PBG
O04-03	PBG	PBG	PBG	PBG	PBG
O05-01	PBG	PBG	PBG	PBG	PBG
O05-02	PBG	PBG	PBG	PBG	PBG
O05-03R	PBG	PBG	PBG	PBG	PBG
O07-03R	PBG	INA	PBG	PBG	PBG
O08-03R	PBG	PBG	PBG	PBG	PBG
O09-02	PBG	PBG	PBG	PBG	PBG
O09-03R	CAP by O08-02	CAP by O08-01	INA	INA	CAP BY OO8-01
O09-04R	SOL	INA	INA	INA	PBG
O09-05R	INA	PBG	PBG	PBG	PBG
O10-01	PBG	PBG	PBG	PBG	PBG
O11-01	PBG	PBG	CAP by O13-01	PBG	PBG
O12-04R	PBG	PBG	PBG	PBG	PBG
O14-01	PBG	PBG	PBG	PBG	PBG
O14-02	PBG	PBG	PBG	PBG	PBG
O14-03R	PBG	PBG	PBG	PBG	PBG
O15-01	CAP by O15-02	CAP by O15-02	PBG	PBG	PBG
O15-02	PBG	PBG	PBG	PBG	PBG
O15-03	PBG	PBG	PBG	PBG	PBG
O15-04	PBG	PBG	PBG	PBG	PBG
Q02-05	INA	INA	INA	INA	INA
R01-03R	PBG	PBG	PBG	PBG	PBG
R02-01R	PBG	PBG	PBG	PBG	PBG
SHC-02	PBG	PBG	PBG	PBG	PBG
T01-01	PBG	PBG	PBG	PBG	PBG
T02-01	CAP by T01-01	INA	INA	INA	SOL
T02-02	PBG	PBG	CAP by J02-02	PBG	PBG
T03-02	PBG	PBG	PBG	PBG	PBG
T03-03	CAP by T03-02	INA	INA	INA	INA
T03-04R	N/A	N/A	CAP by T01-01	CAP by T01-01	PBG
T04-01	PBG	PBG	PBG	PBG	PBG
T04-03R	PBG	PBG	PBG	PBG	PBG
T05-02	PBG	PBG	PBG	PBG	PBG
U04-01R	SOL	PBG	PBG	PBG	PBG

PBG - potential breeding group **SOL** - solitary male **INA** - inactive **N/A** - group does not exist
CAP - captured (the cluster of cavity trees of 1 group is "captured" by an adjacent group)
UNK - active cluster found after breeding season 2006, unknown status

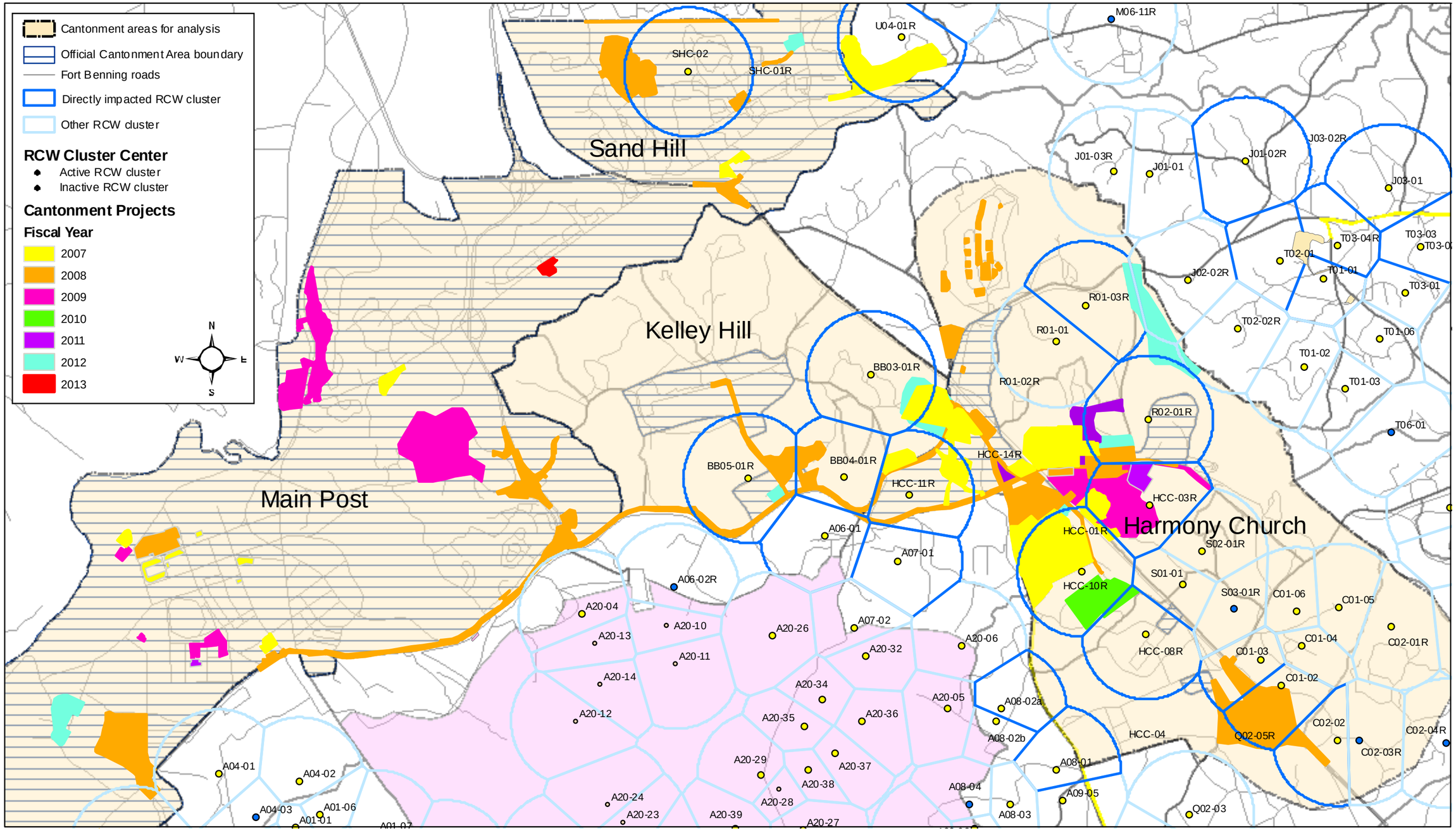


Figure 6-4. Fiscal years 2007-2013 construction activties for **Alternative A** Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Cantonment Area of Fort Benning.

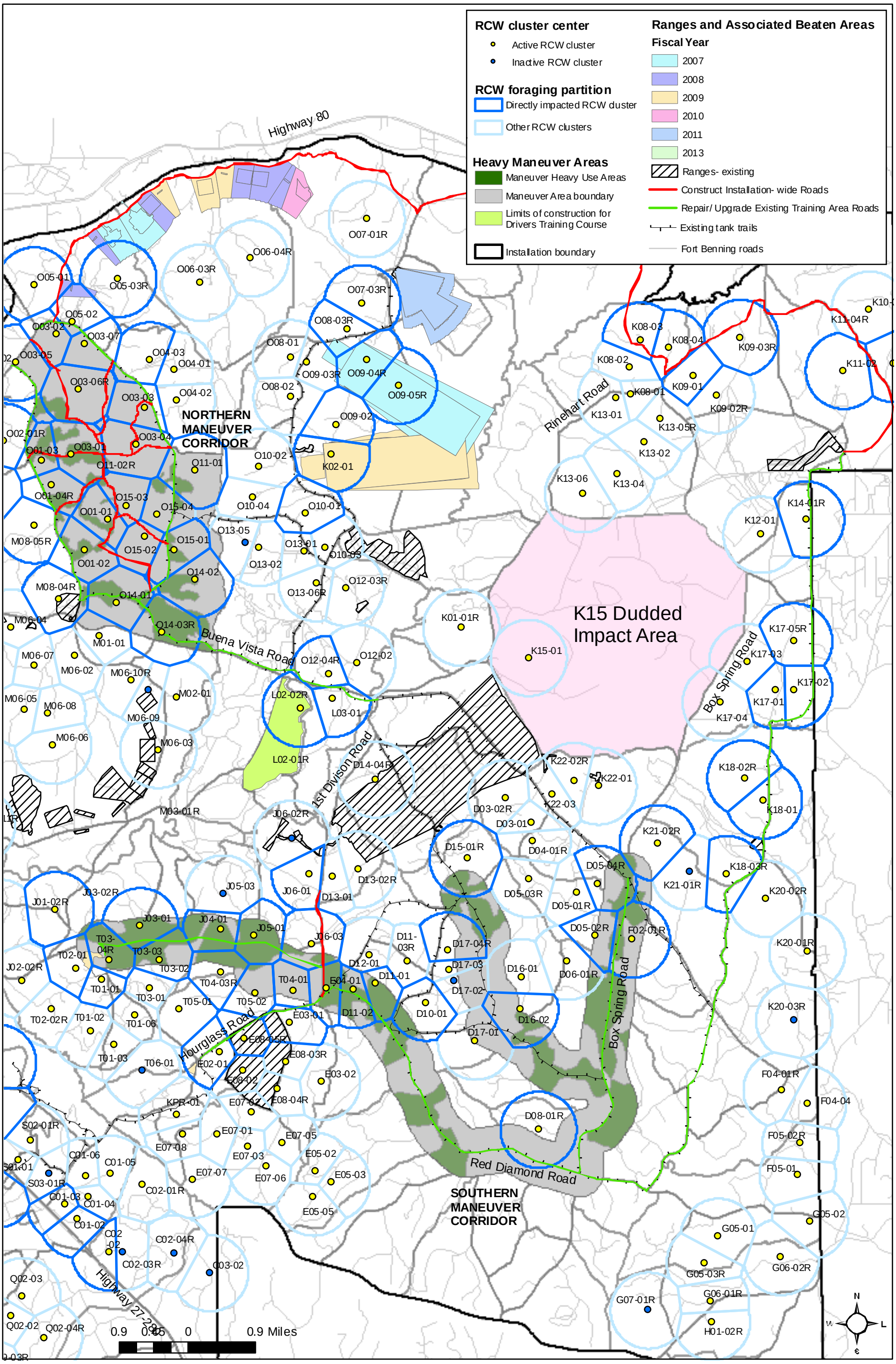


Figure 6-5. Fiscal years 2007-2013 construction activities for **Alternative A** Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Northern Ranges of Fort Benning.

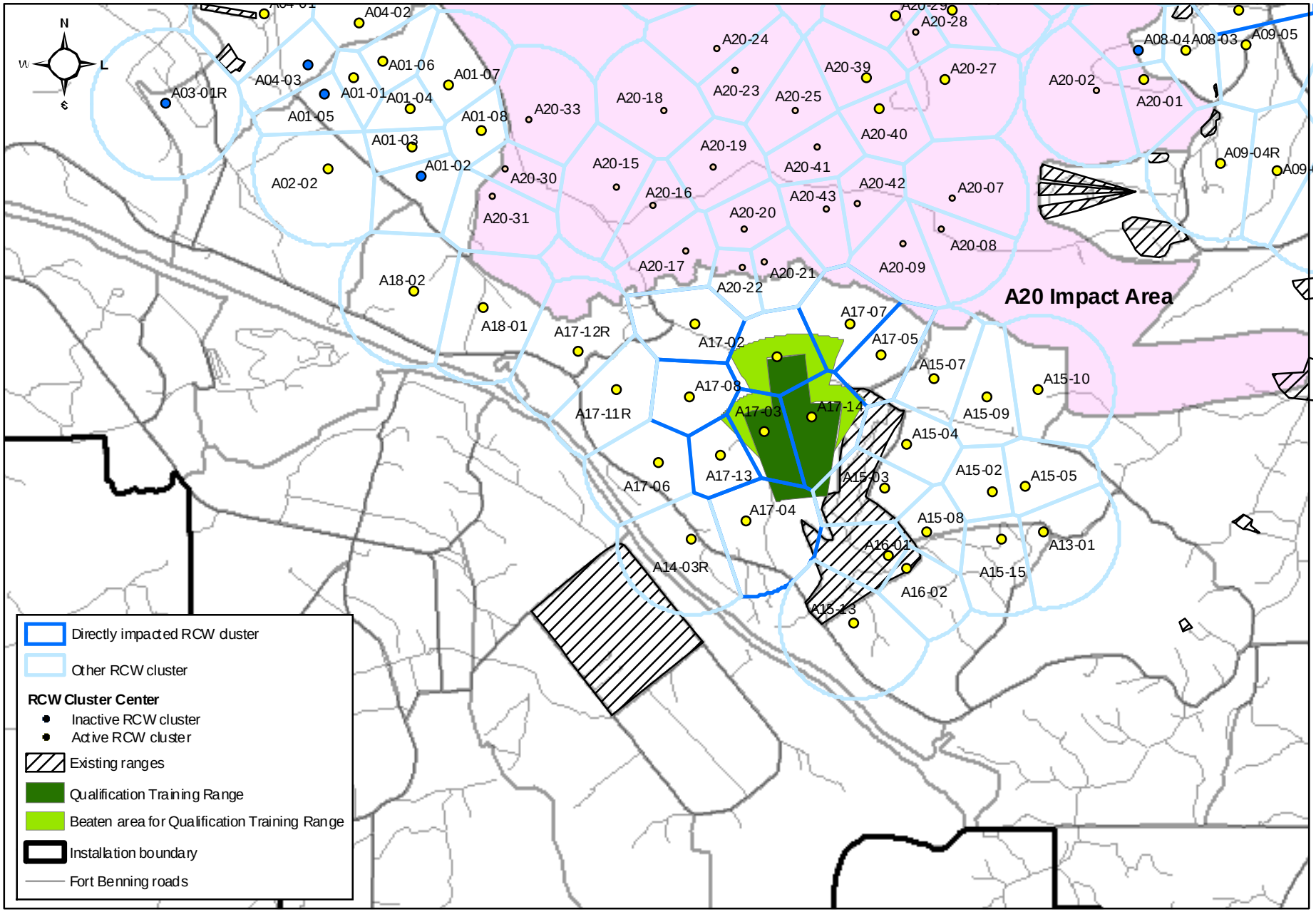
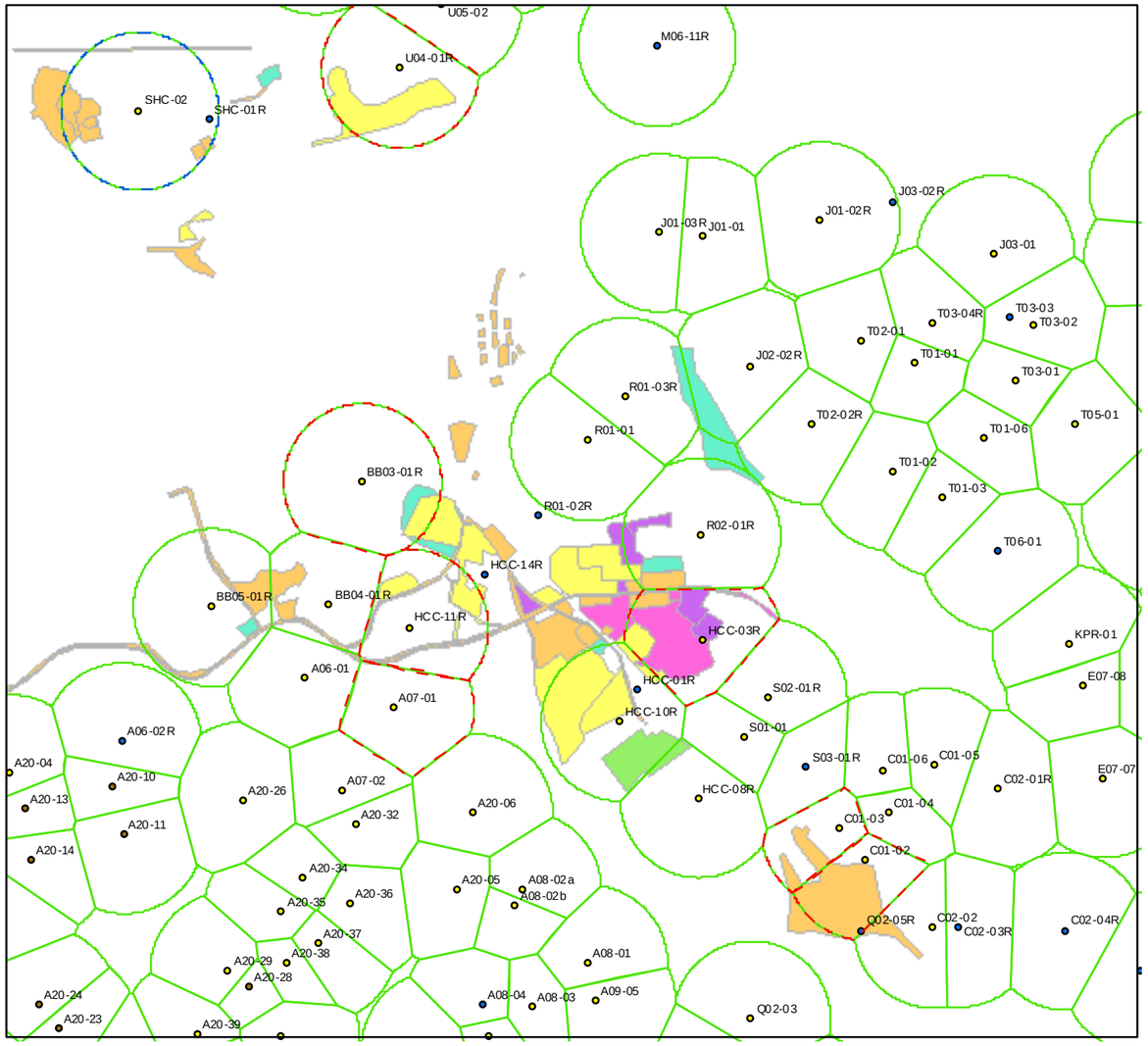


Figure 6-6. Fiscal year 2011 construction activities for the Alternative A Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Southern Ranges of Fort Benning.

0 0.3 0.6 1.2 1.8 2.4 Miles

PRE-PROJECT



POST-PROJECT

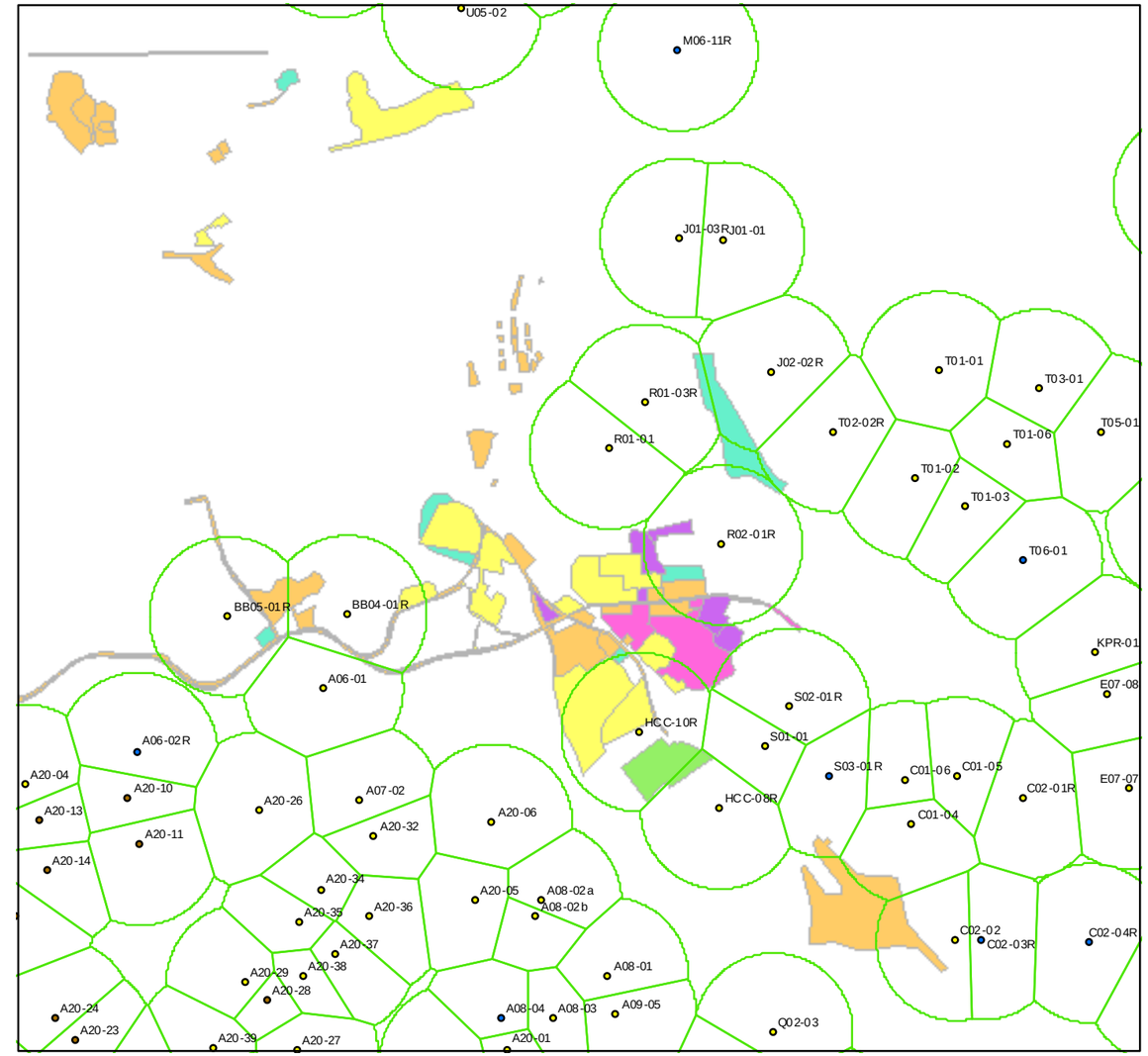
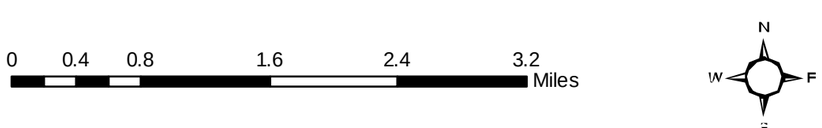


Figure 6-7. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of Cantonment projects (FY 2007-12), **Alternative A**, Fort Benning, Georgia.



Legend

RCW Cluster

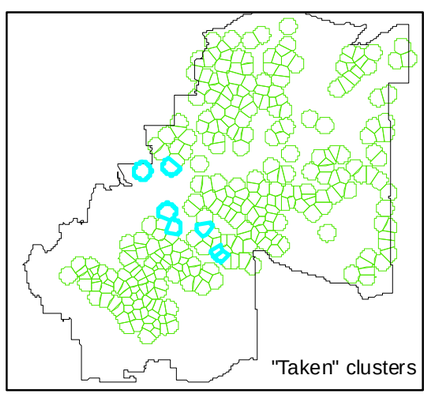
- Active
- Inactive
- Not monitored

RCW Foraging Partition

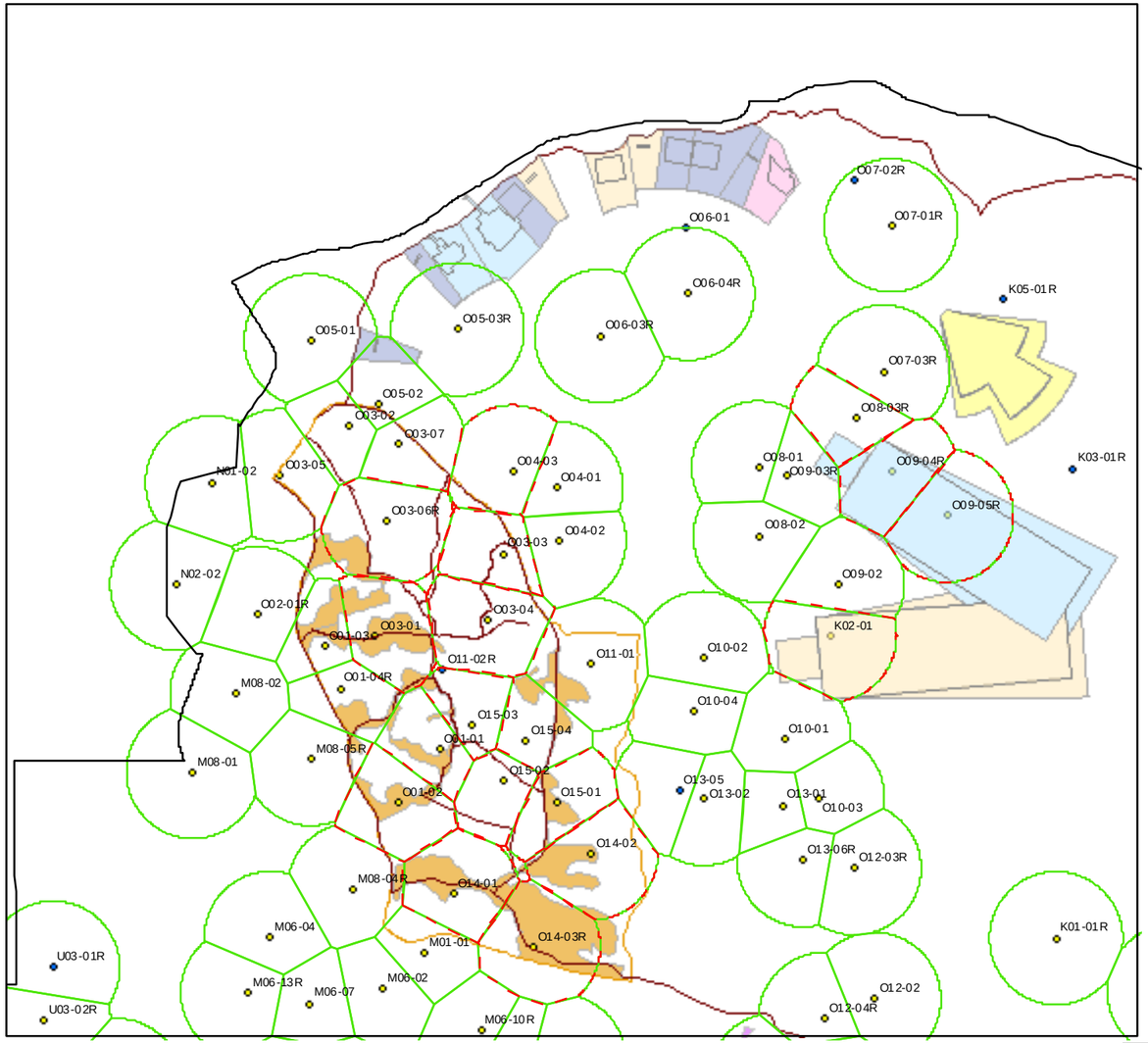
- Partitions "taken" by project
- Partitions "taken" by group impact
- RCW partition boundary

Cantonment Projects Fiscal Year

- 2007
- 2008
- 2009
- 2010
- 2011
- 2012



PRE-PROJECT



POST-PROJECT

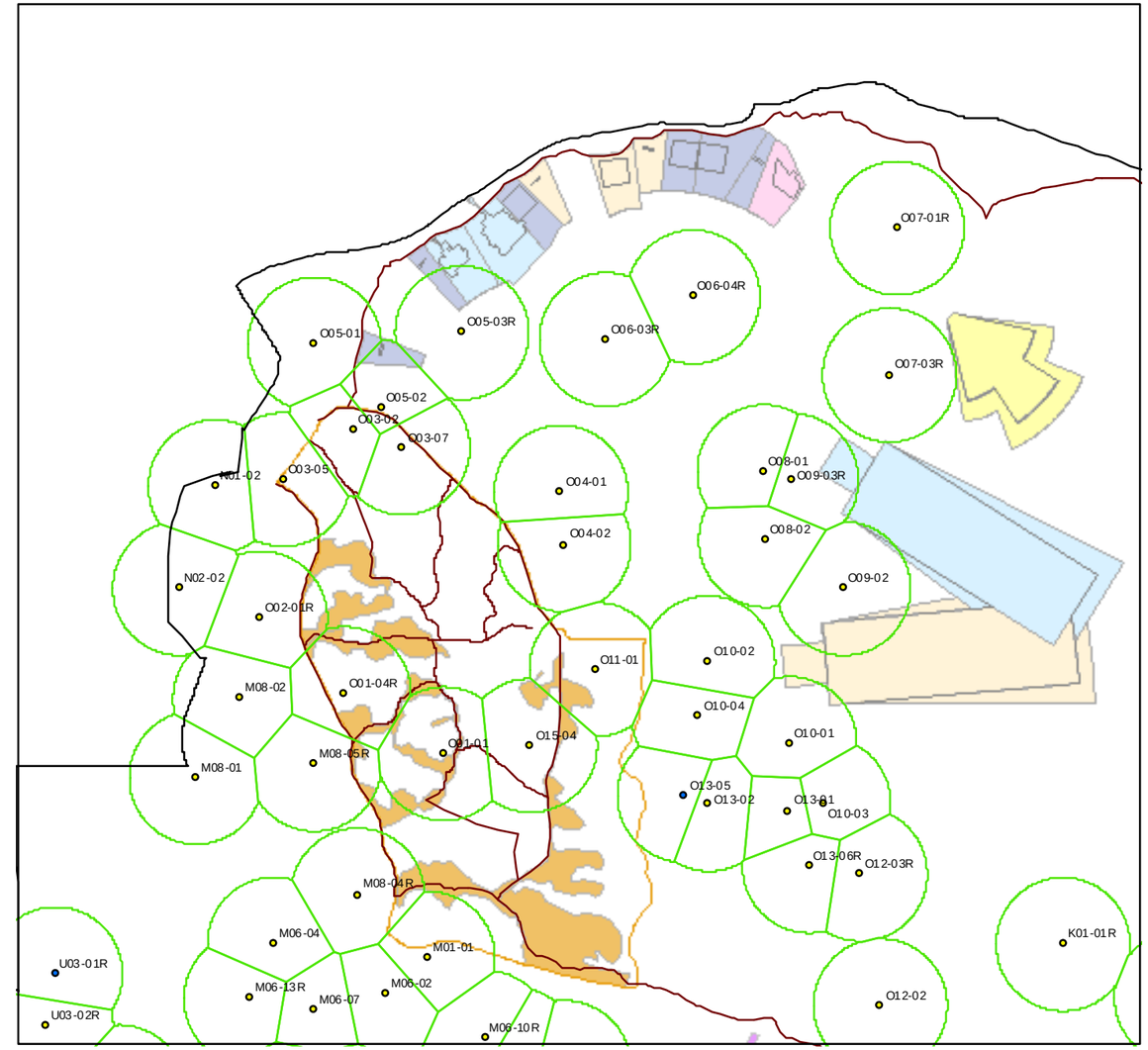
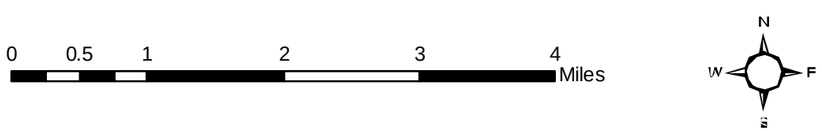


Figure 6-8. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of Installation Training Area Roads, Oscar Range Complex, Stationary Gunnery Ranges and the Maneuver Heavy Use Areas within the Heavy Maneuver Area- North, **Alternative A**, Fort Benning, Georgia.



Legend

RCW Cluster

- Active
- Inactive
- Installation Training Area Roads
- Heavy Maneuver Area boundary
- Fort Benning boundary

RCW Foraging Partition

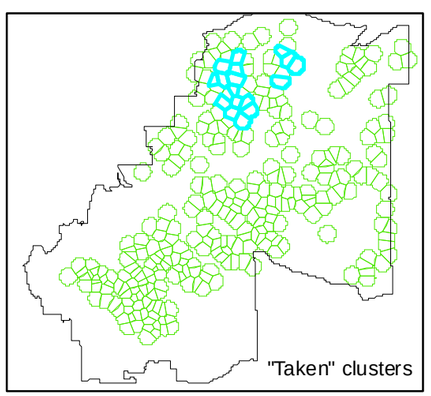
- Partitions "taken" by project
- RCW partition boundary

Heavy Maneuver Area - North

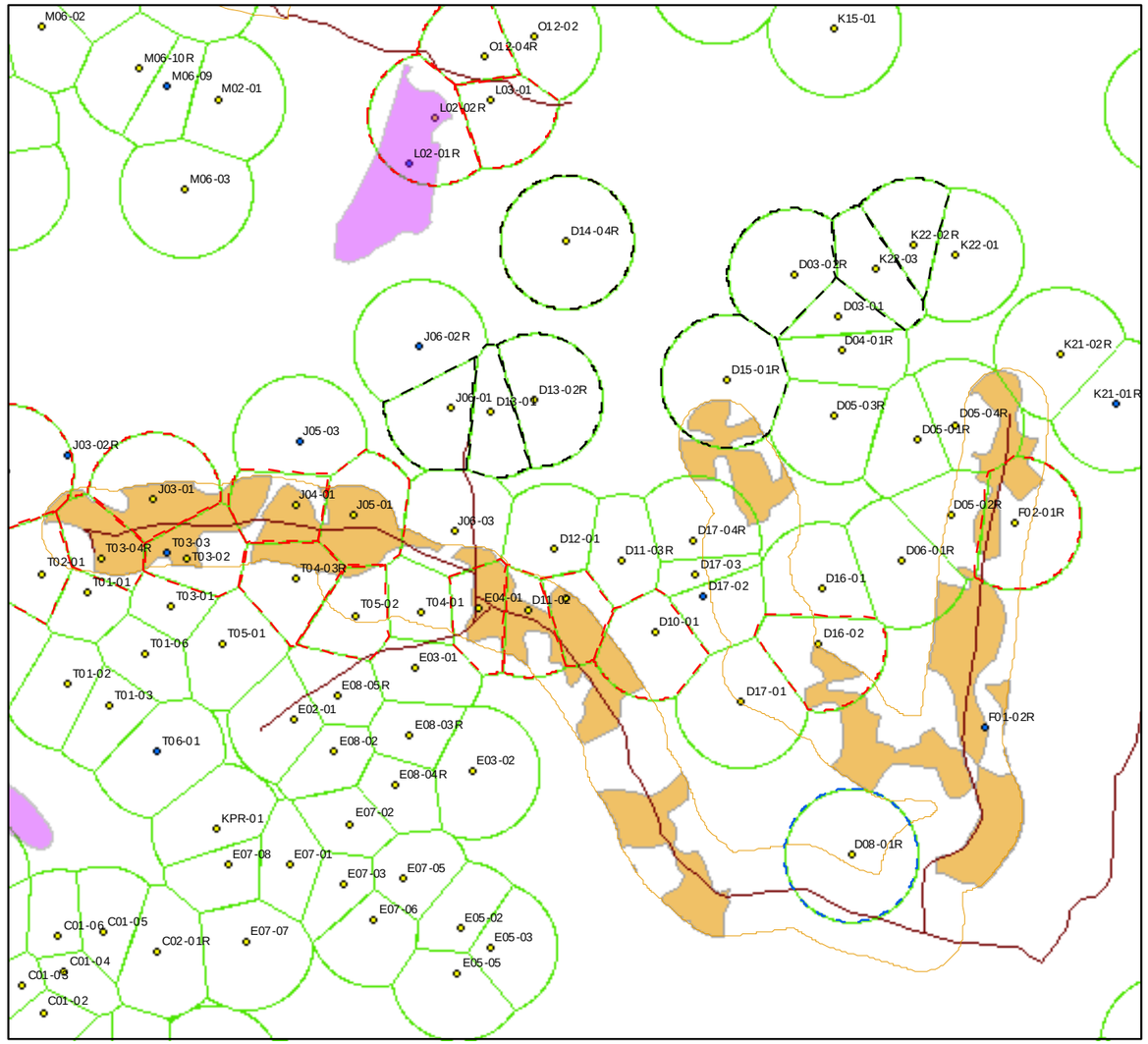
- Maneuver Heavy Use Area

Ranges and Associated Beaten Areas - Fiscal Year

- 2007
- 2008
- 2009
- 2010
- 2011



PRE-PROJECT



POST-PROJECT

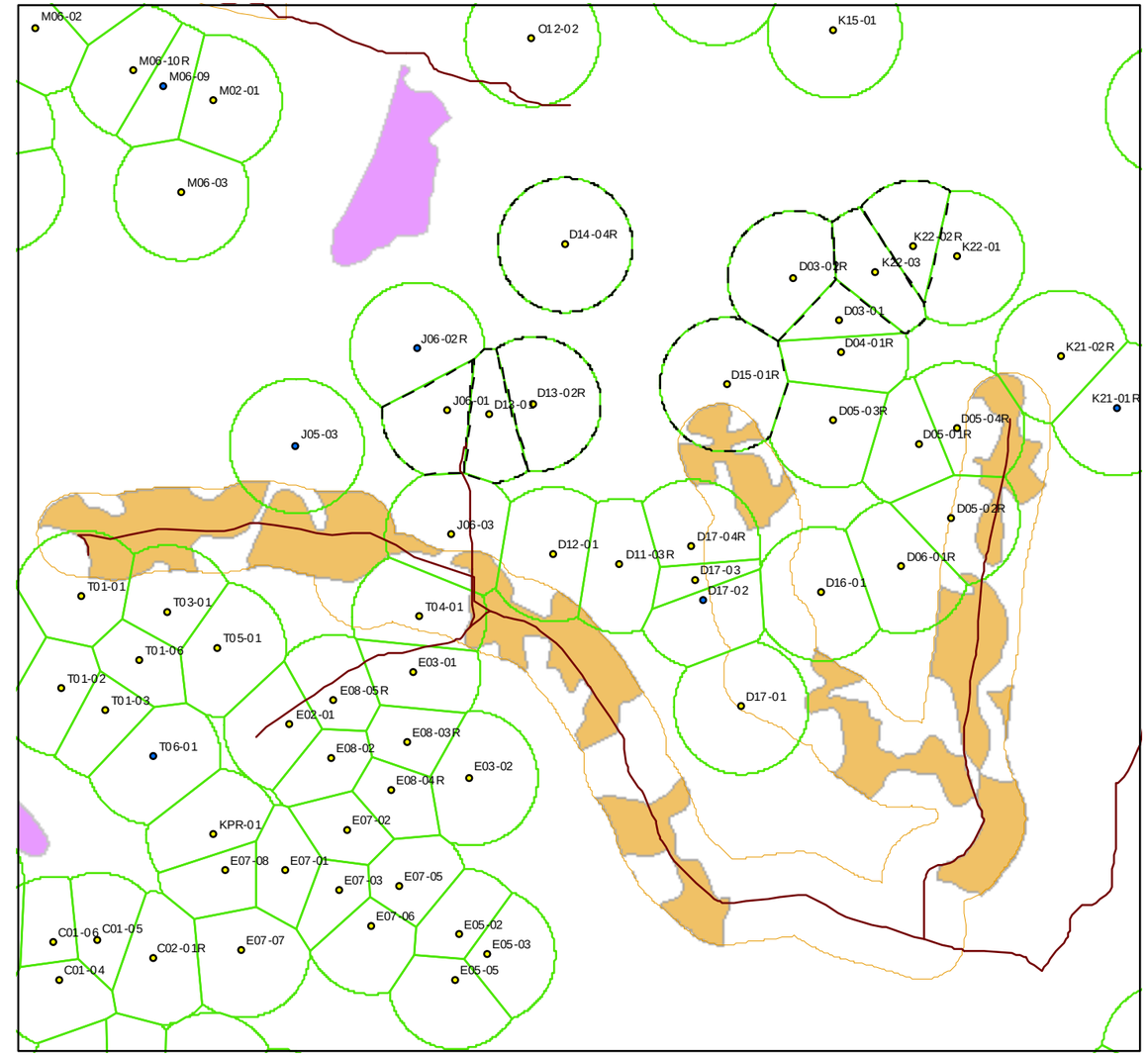
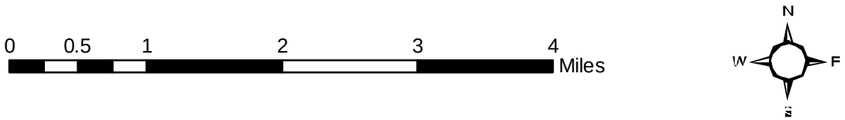


Figure 6-9. Pre- and post-project density of red-cockaded woodpecker (RCW) clusters as a result of Installation Training Area Roads, Drivers Training Course and the Maneuver Heavy Use Areas within the Heavy Maneuver Corridor-South, **Alternative A**, Fort Benning, Georgia.



Legend

RCW Cluster

- Active
- Inactive
- Installation Training Area Roads
- Heavy Maneuver Corridor Boundary

RCW Foraging Partition

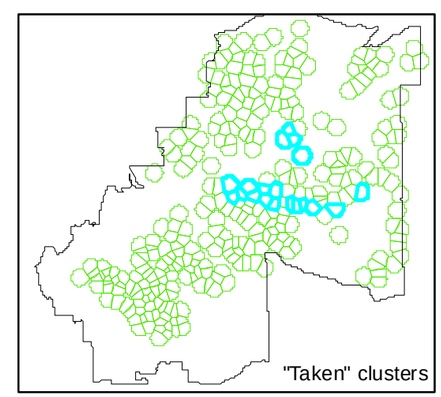
- Partitions "taken" by project
- Partitions "taken" by neighborhood impact
- Partitions "taken" by Digital Multi-Purpose Range Complex
- RCW partition boundary

Heavy Maneuver Corridor - South

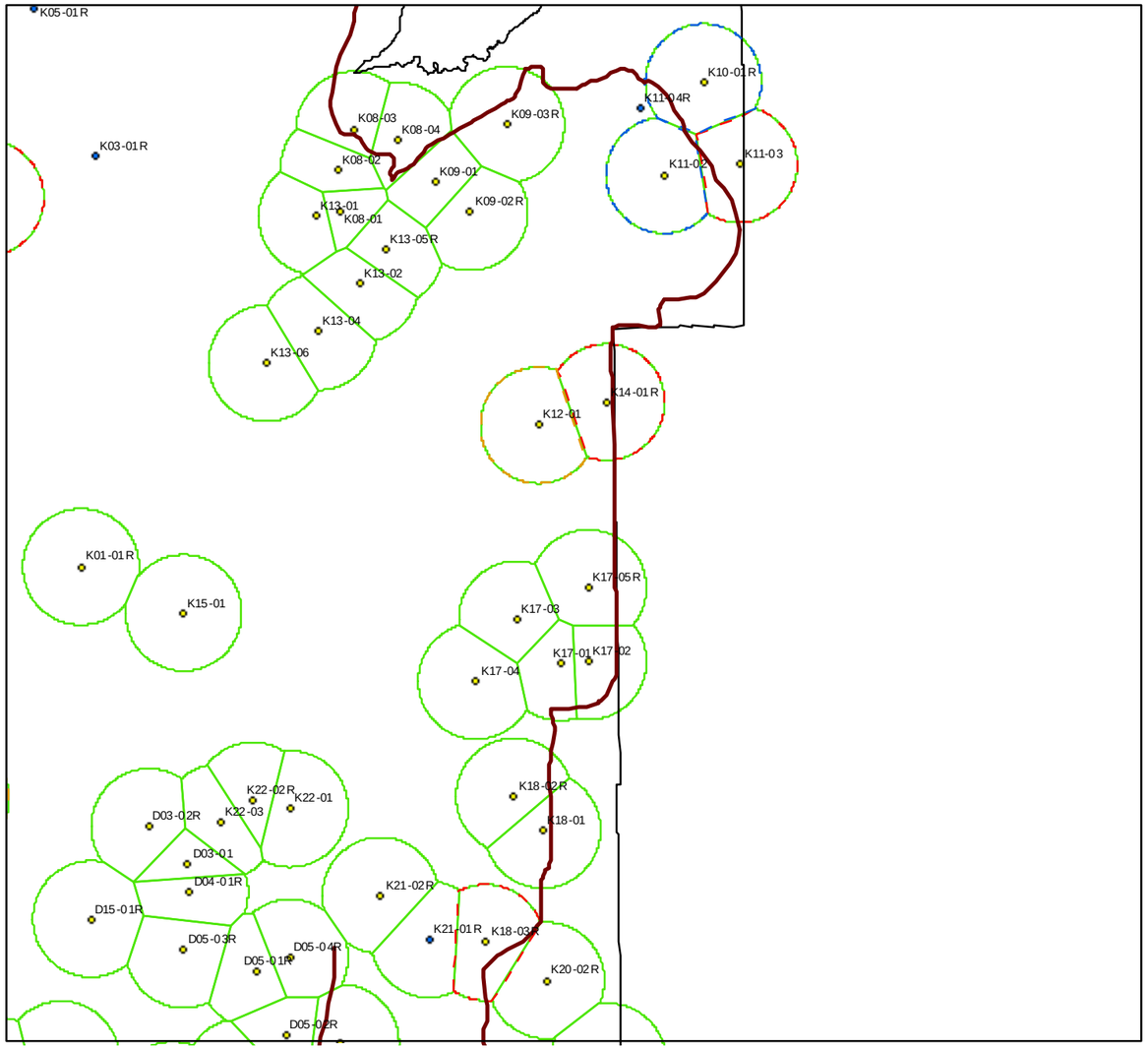
- Maneuver Heavy Use Area

Drivers Training Course

- Project Removals



PRE-PROJECT



POST-PROJECT

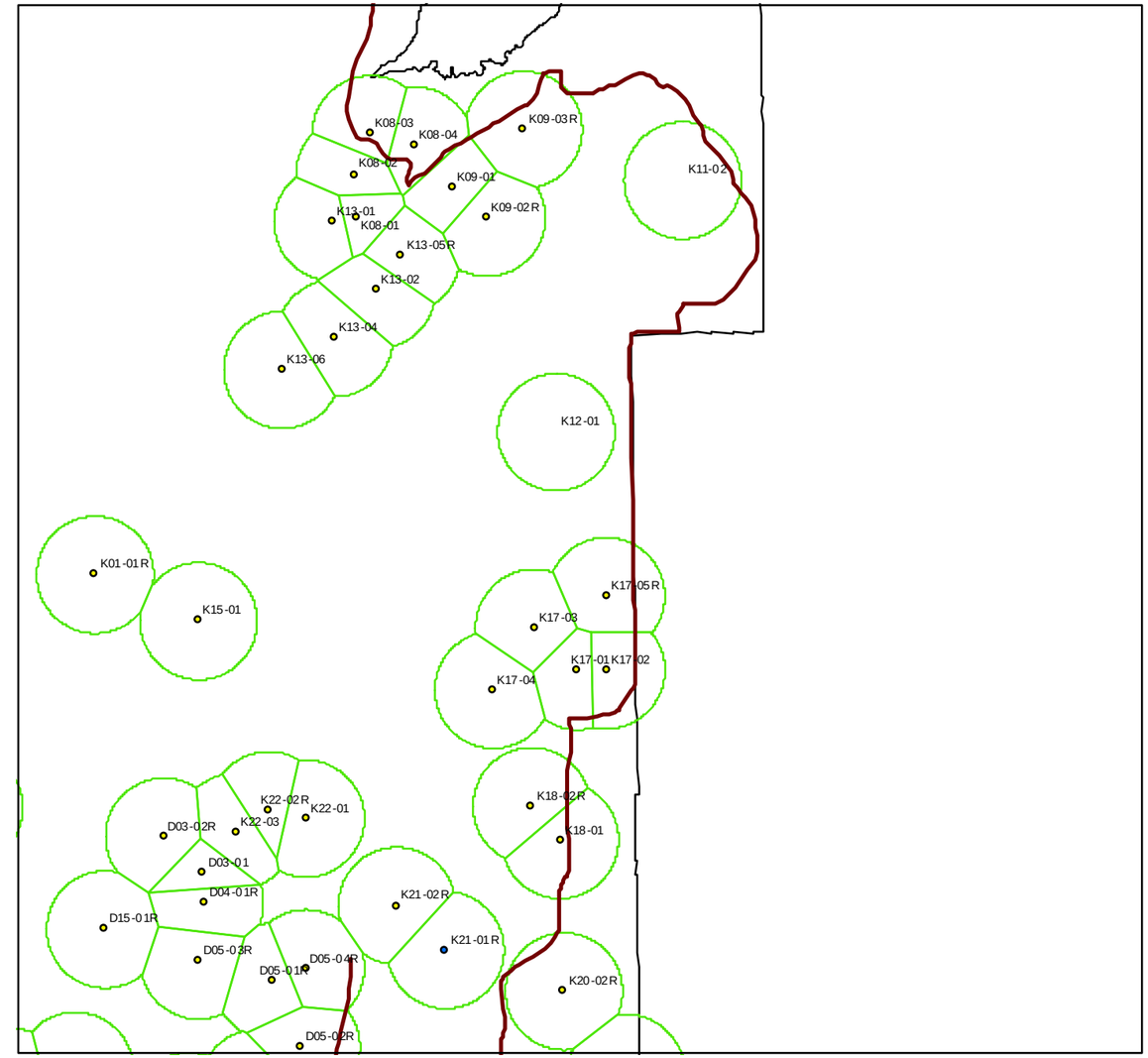
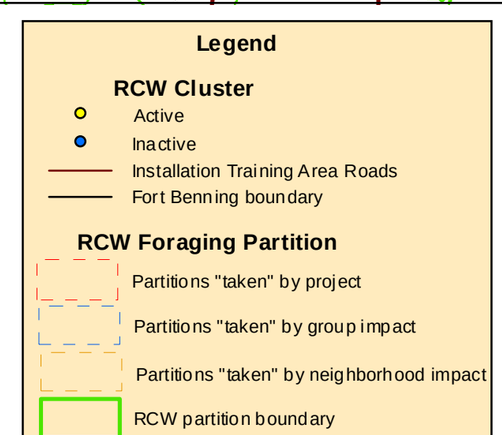
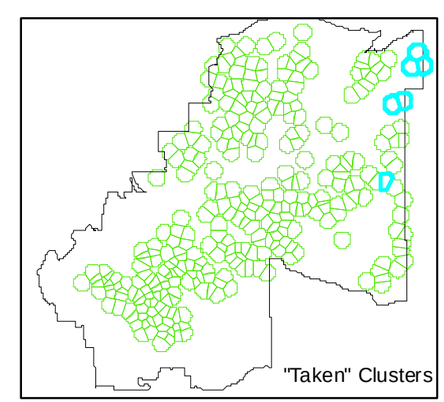
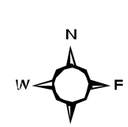


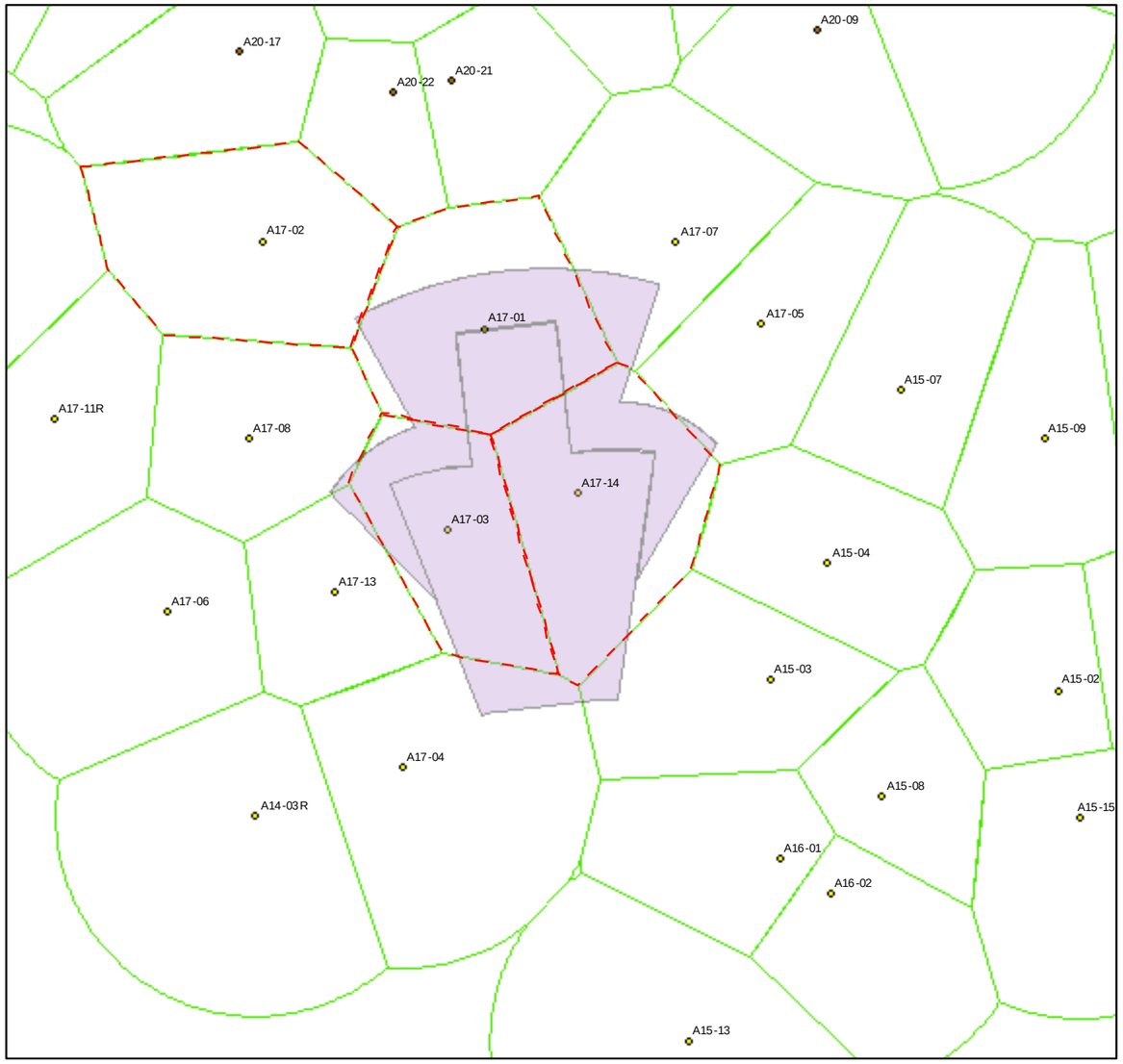
Figure 6-10. Pre- and post-project density of red-cockaded woodpecker (RCW) clusters as a result of Installation Training Area Roads, **Alternatives A and B**, Fort Benning, Georgia.







PRE-PROJECT



POST-PROJECT

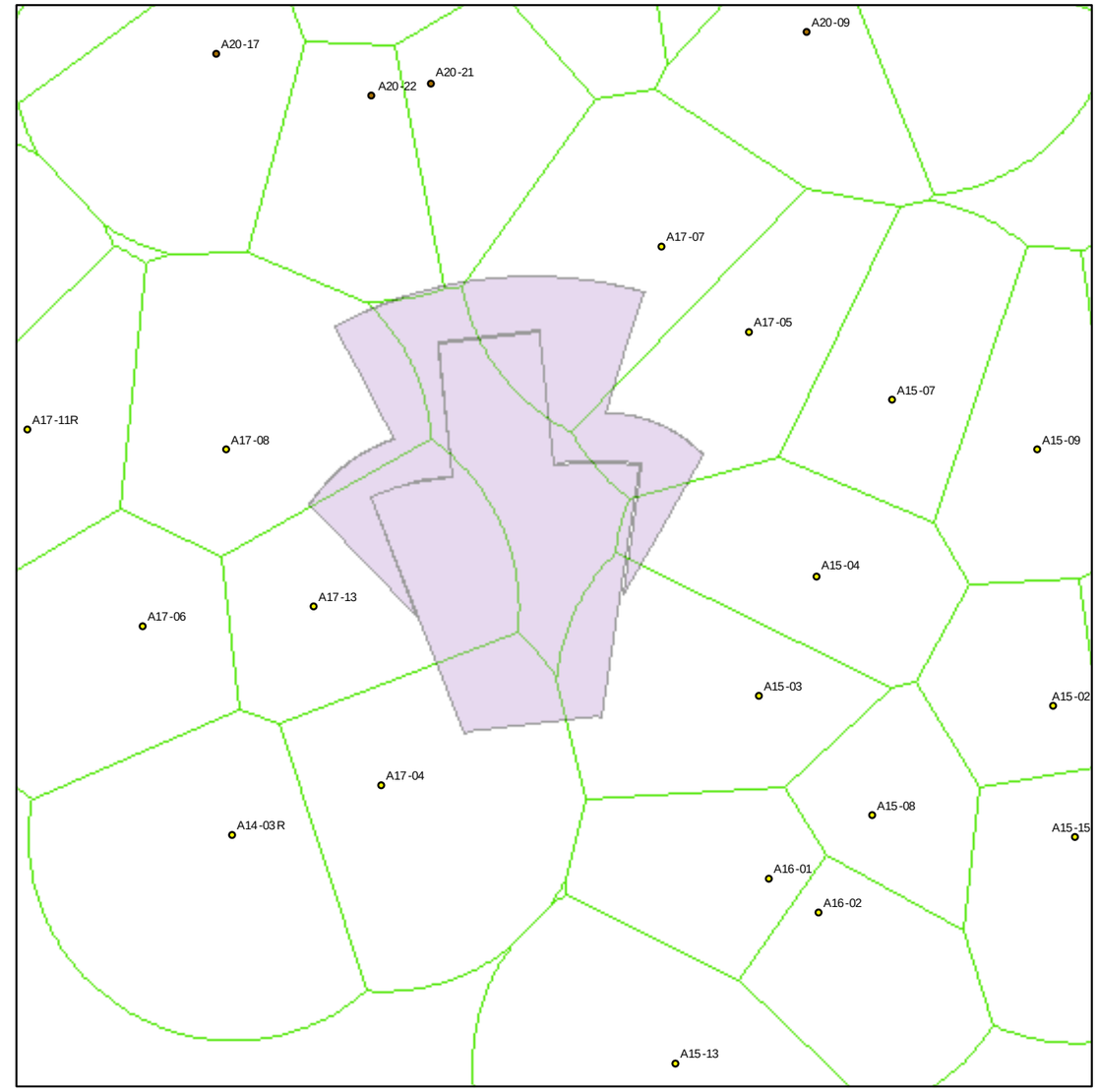
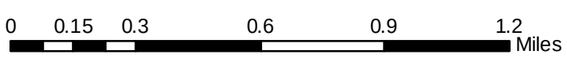
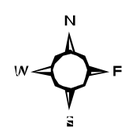


Figure 6-11. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of the Qualification Training Range and associated beaten areas for **Alternative A** at Fort Benning, Georgia.





Legend

RCW Foraging Partition

Partitions "taken" by project

RCW partition boundary

RCW Cluster

Active

Inactive

Not monitored

Ranges and Associated Beaten Areas

Project removals

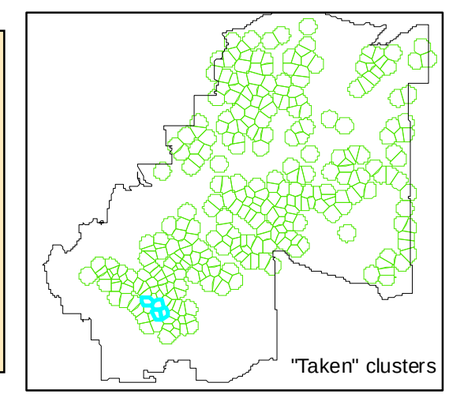


Table 6-5. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2007 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
64370	Trainee Barracks Complex 1, Borrow Area/ Pit	Harmony Church	BB03-01R	16.55	414.24	0.00	0.00	0.00	0.00	16.55	414.24	0	0	0	N	N
			HCC-11R	21.73	206.07	0.00	0.00	0.00	0.00	21.73	206.07	0	0	0	N	N
64370/65040	Trainee Barracks Complex 1	Harmony Church	HCC-10R	81.88	3013.99	0.24	8.16	56.42	2,419.43	25.22	586.40	0	0	1	Y	N
64459/65862	Training Support Brigade Complex (Phase 1 and 2)	Harmony Church	HCC-03R	14.66	550.79	12.22	550.79	0.00	0.00	2.44	0.00	0	0	0	N	N
			HCC-10R	7.85	294.47	6.82	283.03	0.00	0.00	1.03	11.44	0	0	0	N	N
65032	Fire and Movement Range (FM1)	Oscar Ranges	O05-03R	13.90	523.48	11.30	457.18	0.00	0.00	2.60	66.30	0	0	0	Y	Y
65056	IET Brigade Headquarters Building	Harmony Church	HCC-11R	6.18	99.69	0.00	0.00	0.00	0.00	6.18	99.69	0	0	0	N	N
65068-B	Trainee Barracks Complex 2	Sand Hill	U04-01R	40.02	1,454.16	25.59	1,115.05	0.00	0.00	14.43	339.11	0	0	0	Y	N
65382	Tank/Fighting Vehicle Stationary Gunnery Range (SGR1)	Northern Ranges	O08-03R	19.02	455.19	0.00	0.00	1.31	39.30	17.71	415.89	0	0	0	Y	Y
			O09-04R	146.00	4,378.74	78.44	3,107.44	41.76	1,271.30	25.80	0.00	7	-	-	-	-
			O09-05R	241.05	9,125.81	145.47	6,543.64	57.16	1,972.03	38.42	610.14	6	-	-	-	-
			TOTAL:	**608.84**	**20,516.63**	**280.08**	**12,065.29**	**156.65**	**5,702.06**	**172.11**	**2,749.28**	**13**	**0**	**1**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-6. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2008 using the Standard for Managed Stability (SMS)(USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
62956	Health Clinic Expansion - Winder	Sand Hill	SHC-02	0.39	9.24	0.00	0.00	0.00	0.00	0.39	9.24	0	0	0	N	N
64462/51256/ 67419	Reception Station Barracks & Processing Center	Sand Hill	SHC-02	24.86	968.72	0.00	0.00	24.85	968.54	0.01	0.18	0	0	0	N	N
65035	Rifle/Machinegun Zero Range-Z1	Oscar Ranges	O05-03R	14.28	570.93	14.28	570.93	0.00	0.00	0.00	0.00	0	0	0	N	N
65036	Rifle/Machinegun Zero Range-Z2	Oscar Ranges	O05-01	12.42	632.25	11.54	549.53	0.88	82.72	0.00	0.00	0	0	0	N	N
			O05-02	23.38	1,069.90	4.94	235.24	1.68	157.92	16.76	676.74	0	0	0	N	N
			O05-03R	1.98	68.05	0.00	0.00	1.84	63.92	0.14	4.13	0	0	0	N	N
65251	Unit Maintenance Activity Facility	Harmony Church	HCC-03R	3.70	122.10	3.70	122.10	0.00	0.00	0.00	0.00	0	0	0	N	N
65322	General Instruction Building Complex	Harmony Church	BB04-01R	21.53	836.16	3.36	133.59	5.60	634.03	12.57	68.54	0	0	0	N	N
			BB05-01R	15.60	802.67	11.94	663.62	3.09	139.05	0.57	0.00	0	0	0	N	N
			R02-01R	12.20	210.25	1.25	56.95	0.00	0.00	10.95	153.30	0	0	0	N	N
65439	Infrastructure Support	Installation-wide	BB05-01R	9.29	389.91	7.96	353.83	0.01	0.33	1.32	35.75	0	0	0	N	N
			SHC-02	1.38	48.32	0.23	8.74	0.47	20.88	0.68	18.70	0	0	0	N	N
65439	Road Improvements	Installation-wide	A06-01	0.18	8.28	0.18	8.28	0.00	0.00	0.00	0.00	0	0	0	N	N
			A07-01	0.04	1.16	0.00	0.00	0.00	0.00	0.04	1.16	0	0	0	N	N
			BB04-01R	7.38	316.26	7.38	316.26	0.00	0.00	0.00	0.00	0	0	0	N	N
			BB05-01R	5.79	194.48	2.41	117.13	0.30	9.84	3.08	67.51	0	0	0	N	N
			HCC-03R	1.09	29.88	0.40	17.40	0.00	0.00	0.69	12.48	0	0	0	N	N
			HCC-10R	4.17	157.55	1.76	59.84	2.41	97.71	0.00	0.00	0	0	0	N	N
			HCC-11R	17.06	430.37	0.75	29.28	0.00	0.00	16.31	401.09	0	0	1	Y	N
			R02-01R	1.37	29.96	0.00	0.00	0.00	0.00	1.37	29.96	0	0	0	N	N
65440	AT/FP Access Control Point	Harmony Church	C01-02	114.99	4,046.15	0.00	0.00	104.97	4,046.15	10.02	0.00	9	2	1	Y	Y
			C01-03	25.76	889.47	5.11	191.63	18.02	679.48	2.63	18.36	0	0	0	N	N
			C02-02	11.73	415.77	0.40	14.00	11.33	401.77	0.00	0.00	0	0	0	N	N
			TOTAL:	**330.57**	**12,247.83**	**77.59**	**3,448.35**	**175.45**	**7,302.34**	**77.53**	**1,497.14**	**9**	**2**	**2**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-7. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2009 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
n/a	Heavy Maneuver Corridor-South (Maneuver Heavy Use Area)	Northern Ranges	D05-02R	13.54	353.87	3.02	122.43	0.00	0.00	10.52	231.44	0	0	0	N	Y
			D05-04R	90.85	3,276.80	69.21	2,901.18	0.00	0.00	21.64	375.62	0	0	0	N	Y
			D10-01	1.35	0.00	0.00	0.00	0.00	0.00	1.35	0.00	0	0	0	Y	Y
			D11-01	81.60	1,867.90	49.23	1,836.64	0.00	0.00	32.37	31.26	7	1	1	Y	Y
			D11-02	86.78	2,936.45	67.71	2,491.27	0.00	0.00	19.07	445.18	7	0	0	Y	Y
			D15-01R	21.94	671.31	7.89	291.93	0.00	0.00	14.05	379.38	0	0	0	N	Y
			D16-02	57.94	752.09	0.00	0.00	0.00	0.00	57.94	752.09	1	1	2	Y	Y
			D17-04R	11.89	340.46	1.03	38.63	0.00	0.00	10.86	301.83	0	0	0	Y	Y
			E04-01	87.14	3,283.18	69.55	2,738.41	0.00	0.00	17.59	544.77	8	0	0	Y	Y
			F02-01R	65.55	1,753.36	19.84	825.66	0.00	0.00	45.71	927.70	0	0	0	N	Y
			J01-02R	4.95	0.00	0.00	0.00	0.00	0.00	4.95	0.00	0	0	0	N	N
			J03-01	95.89	3,261.15	64.91	2,632.33	0.00	0.00	30.98	628.82	12	0	0	Y	Y
			J04-01	137.59	3,852.59	63.55	2,389.32	7.85	295.69	66.19	1,167.58	10	0	0	Y	Y
			J05-01	175.44	5,627.70	75.72	2,853.28	44.87	1,459.26	54.85	1,315.16	11	0	0	Y	Y
			J06-03	38.58	1,240.33	19.55	710.19	0.25	7.76	18.78	522.38	0	0	0	N	Y
			K21-02R	14.54	508.05	10.27	407.58	0.00	0.00	4.27	100.47	0	0	0	N	Y
			T02-01	2.76	100.74	2.76	100.74	0.00	0.00	0.00	0.00	0	0	0	N	N
			T03-02	94.14	3,143.12	53.12	2,026.28	6.57	275.94	34.45	840.90	9	0	0	Y	Y
			T03-04R	125.89	4,079.58	98.55	3,727.82	0.00	0.00	27.34	351.76	4	0	0	Y	Y
			T04-03R	56.38	2,148.15	56.38	2,148.15	0.00	0.00	0.00	0.00	0	0	0	N	Y
			T05-02	6.79	285.21	2.15	78.73	4.64	206.48	0.00	0.00	0	0	0	N	Y
62207	Combined Arms Collective Training Facility, Phase II	Northern Ranges	E02-01R	5.71	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0	0	0	N	Y
			T01-01	2.65	73.13	1.87	58.27	0.00	0.00	0.78	14.86	0	1	1	Y	Y
			T02-01	12.00	39.95	0.00	0.00	0.00	0.00	12.00	39.95	0	0	0	N	Y
			T03-04R	5.50	105.43	0.00	0.00	0.00	0.00	5.50	105.43	0	0	0	N	Y
64797	Drivers Training Course	Northern Ranges	L02-02R	136.36	4,655.43	103.28	3,983.42	5.87	176.10	27.21	495.91	4	0	0	-	-
65061	Museum Operations Support Building	Harmony Church	HCC-03R	0.32	10.56	0.32	10.56	0.00	0.00	0.00	0.00	0	0	0	N	N
65252/48644	Centralized Wash Facility with Soaking Capability	Harmony Church	HCC-03R	70.00	2,725.24	69.45	2,717.02	0.01	0.32	0.54	7.90	2	0	2	Y	Y
			HCC-10R	1.11	46.07	1.11	46.07	0.00	0.00	0.00	0.00	0	0	0	N	N
65383	Tank/Fighting Vehicle Stationary Gunnery Range (SGR2)	Northern Ranges	K02-01	191.70	4,317.56	0.00	0.00	2.78	86.18	188.92	4,231.38	5	0	0	-	-
			O09-02	13.28	338.64	0.00	0.00	0.00	0.00	13.28	338.64	0	0	0	N	N
			O10-01	1.63	46.20	0.00	0.00	0.57	27.65	1.06	18.55	0	0	0	N	N

Table 6-7 (cont.). Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2009 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
65438	Vehicle Maintenance Instruction Facility	Harmony Church	HCC-03R	0.85	34.26	0.85	34.26	0.00	0.00	0.00	0.00	0	0	0	N	N
n/a	Heavy Maneuver Area-North (Maneuver Heavy Use Area)	Northern Ranges	M08-04R	9.94	123.06	2.57	80.96	0.00	0.00	7.37	42.10	0	0	0	N	N
			M08-05R	9.04	121.58	0.28	10.36	0.28	8.87	8.48	102.35	0	0	0	N	N
			O01-01	38.61	1,321.50	29.10	1,110.25	5.76	190.08	3.74	21.18	5	2	6	Y	Y
			O01-02	26.79	877.60	14.81	547.73	1.79	73.39	10.19	256.48	9	0	0	Y	Y
			O01-03	54.59	2,169.25	31.14	1,400.55	9.97	448.65	13.48	320.05	2	3	3	Y	Y
			O01-04R	39.07	982.93	7.47	264.31	10.59	427.02	21.01	291.60	0	0	0	Y	Y
			O02-01R	2.48	89.38	2.28	86.78	0.08	2.60	0.12	0.00	0	0	0	N	N
			O03-01	84.80	2,761.72	20.56	828.64	28.05	987.15	36.19	945.93	3	0	0	Y	Y
			O11-01	26.21	266.29	3.35	147.01	2.81	119.28	20.05	0.00	0	0	0	N	Y
			O14-01	89.98	2,279.96	32.14	1,258.47	0.00	0.00	57.84	1,021.49	1	0	1	Y	Y
			O14-02	57.86	1,668.11	27.72	1,318.00	0.00	0.00	30.14	350.11	5	2	2	Y	Y
			O14-03R	168.97	6,183.30	131.65	5,624.09	0.00	0.00	37.32	559.21	12	0	0	Y	Y
			O15-01	27.70	594.78	2.11	73.85	0.00	0.00	25.59	520.93	10	0	2	Y	Y
			O15-03	11.27	414.50	9.47	368.60	0.00	0.00	1.80	45.90	0	0	0	N	N
			TOTAL:	**2,359.95**	**71,728.47**	**1,222.97**	**48,289.77**	**132.74**	**4,792.42**	**1,001.23**	**18,646.29**	**127**	**10**	**20**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-8. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2010 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
65405	Equipment Concentration Site	Harmony Church	HCC-08R	8.90	308.71	8.74	308.71	0.00	0.00	0.16	0.00	0	0	0	N	N
			HCC-10R	41.73	773.91	15.39	542.43	3.27	152.06	23.07	79.42	0	0	0	N	N
65554	Construct Installation-wide Roads	Installation-wide	J06-01	3.38	98.63	1.69	67.50	0.00	0.00	1.69	31.13	0	0	0	N	N
			J06-03	10.13	373.97	7.76	304.05	0.00	0.00	2.37	69.92	0	0	1	N	N
			K08-03	6.85	234.76	6.26	234.76	0.00	0.00	0.59	0.00	0	1	1	Y	N
			K08-04	13.67	519.94	13.20	506.07	0.00	0.00	0.47	13.87	0	0	0	N	N
			K09-01	1.23	37.94	0.52	16.99	0.00	0.00	0.71	20.95	0	0	0	N	N
			K09-03R	9.99	219.88	5.08	172.15	0.22	11.00	4.69	36.73	0	0	0	N	N
			K11-02	2.58	78.01	0.55	19.53	1.72	58.48	0.31	0.00	0	0	0	N	N
			K11-03	8.39	175.54	2.55	90.53	0.07	2.38	5.77	82.63	0	0	0	N	N
			M08-05R	0.14	4.34	0.00	0.00	0.14	4.34	0.00	0.00	0	0	0	N	N
			O01-01	1.60	59.15	1.60	59.15	0.00	0.00	0.00	0.00	0	0	0	N	N
			O01-02	0.56	5.67	0.00	0.00	0.00	0.00	0.56	5.67	0	0	0	N	N
			O01-03	0.13	1.87	0.00	0.00	0.00	0.00	0.13	1.87	0	0	0	N	N
			O01-04R	0.71	24.85	0.71	24.85	0.00	0.00	0.00	0.00	0	0	0	N	N
			O03-01	1.59	68.37	1.59	68.37	0.00	0.00	0.00	0.00	5	1	0	Y	N
			O03-02	7.51	283.57	5.44	225.45	0.00	0.00	2.07	58.12	0	0	0	N	N
			O03-03	6.38	75.06	1.23	63.96	0.00	0.00	5.15	11.10	1	2	0	Y	N
			O03-04	14.38	194.87	1.53	52.35	0.00	0.00	12.85	142.52	0	2	8	Y	N
			O03-05	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0	0	0	N	N
			O03-06R	14.54	471.52	9.19	313.69	0.00	0.00	5.35	157.83	0	0	0	N	N
			O03-07	1.89	58.28	1.88	58.28	0.00	0.00	0.01	0.00	0	0	0	N	N
			O05-01	4.07	209.76	3.37	160.48	0.67	47.74	0.03	1.54	0	0	0	N	N
			O05-02	2.51	121.41	2.51	121.41	0.00	0.00	0.00	0.00	0	0	0	N	N
			O11-01	0.22	5.19	0.03	0.99	0.00	0.00	0.19	4.20	0	0	0	N	N
			O15-01	2.14	49.82	0.22	8.80	0.00	0.00	1.92	41.02	0	0	0	N	N
			O15-02	8.95	242.98	2.79	99.98	0.00	0.00	6.16	143.00	1	0	1	Y	N
			O15-03	4.26	158.41	3.79	146.42	0.00	0.00	0.47	11.99	0	0	0	N	N

Table 6-8 (cont.). Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2010 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
65557	Repair/ Upgrade Exising Training Area Roads	Installation-wide	D08-01R	3.32	109.46	2.61	92.60	0.00	0.00	0.71	16.86	0	0	0	N	N
			E02-01	4.22	104.45	3.13	97.03	0.00	0.00	1.09	7.42	0	0	0	N	N
			E03-01	4.01	176.52	4.01	176.52	0.00	0.00	0.00	0.00	0	0	0	N	N
			E04-01	1.31	56.78	0.31	12.85	0.00	0.00	1.00	43.93	0	2	0	Y	N
			E08-05R	4.64	155.71	3.37	155.71	0.00	0.00	1.27	0.00	0	0	0	N	N
			F02-01R	0.70	22.01	0.30	12.96	0.00	0.00	0.40	9.05	0	0	0	N	N
			J04-01	0.45	14.54	0.31	10.54	0.06	2.52	0.08	1.48	0	0	0	N	N
			J06-03	4.22	147.59	3.30	120.45	0.00	0.00	0.92	27.14	0	0	0	N	N
			K14-01R	4.95	196.71	3.09	158.58	0.00	0.00	1.86	38.13	0	0	2	Y	N
			K17-02	4.63	128.14	1.36	68.57	0.00	0.00	3.27	59.57	0	0	0	N	N
			K17-05R	0.96	10.68	0.24	10.68	0.00	0.00	0.72	0.00	0	0	0	N	N
			K18-01	6.94	236.45	2.98	145.00	0.42	17.54	3.54	73.91	0	0	2	Y	N
			K18-02R	3.16	127.17	1.94	78.98	1.22	48.19	0.00	0.00	0	0	0	N	N
			K18-03R	3.62	110.79	0.00	0.00	1.72	69.66	1.90	41.13	0	0	0	N	N
			L03-01	2.02	50.94	0.10	4.83	0.07	2.63	1.85	43.48	0	0	0	N	N
			M08-04R	2.57	58.44	0.46	17.47	0.00	0.00	2.11	40.97	0	0	0	N	N
			M08-05R	1.24	31.21	0.00	0.00	0.39	12.09	0.85	19.12	0	0	0	N	N
			O01-02	3.96	89.64	0.35	12.95	0.00	0.00	3.61	76.69	0	0	0	N	N
			O01-03	2.65	69.10	0.55	35.45	0.19	9.03	1.91	24.62	0	0	0	N	N
			O01-04R	4.29	140.41	0.08	8.00	2.47	95.00	1.74	37.41	0	0	0	N	N
			O02-01R	1.98	39.43	0.71	31.95	0.23	7.48	1.04	0.00	0	0	0	N	N
			O03-02	3.25	112.88	2.49	104.14	0.00	0.00	0.76	8.74	0	0	0	N	N
			O03-03	6.38	136.96	1.92	79.23	0.00	0.00	4.46	57.73	0	0	0	N	N
			O03-04	1.83	46.26	0.54	19.71	0.00	0.00	1.29	26.55	0	0	0	N	N
			O03-05	4.24	130.08	2.93	113.58	0.00	0.00	1.31	16.50	0	2	3	Y	N
			O03-07	4.75	181.80	4.59	181.80	0.00	0.00	0.16	0.00	0	0	0	N	N
			O04-03	1.13	19.07	0.00	0.00	0.00	0.00	1.13	19.07	0	0	0	N	N
			O05-02	2.90	110.95	2.90	110.95	0.00	0.00	0.00	0.00	0	1	1	Y	N
			O11-01	1.95	86.68	1.91	84.52	0.04	2.16	0.00	0.00	0	0	0	N	N
			O12-04R	5.44	126.84	0.00	0.00	0.00	0.00	5.44	126.84	0	0	0	N	N
			O15-01	0.59	20.65	0.59	20.65	0.00	0.00	0.00	0.00	0	1	0	Y	N
			T03-04R	0.36	7.72	0.00	0.00	0.00	0.00	0.36	7.72	0	0	0	N	N
			T04-01	1.61	76.77	1.47	70.05	0.00	0.00	0.14	6.72	0	0	0	N	N
			T05-02	1.22	50.76	1.22	50.76	0.00	0.00	0.00	0.00	0	0	0	N	N
			TOTAL:	**279.94**	**8,039.96**	**147.38**	**5,753.39**	**12.90**	**542.30**	**119.66**	**1,744.29**	**7**	**12**	**11**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-9. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2011 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
63799	3 ID BCT (Heavy) Complex	Harmony Church	HCC-03R	33.08	985.76	13.82	629.50	0.00	0.00	19.26	356.26	5	-	-	-	-
			R02-01R	0.67	17.09	0.00	0.00	0.00	0.00	0.67	17.09	0	0	0	N	N
65070	Multi-Purpose Machine Gun Range-MPMG3	Northern Ranges	O07-03R	0.48	8.64	0.00	0.00	0.00	0.00	0.48	8.64				Y	N
65248	Physical Fitness Center with Pool	Harmony Church	R02-01R	6.57	174.11	0.00	0.00	0.00	0.00	6.57	174.11	0	0	0	N	N
67012	Qualification Training Range and Beaten Area	Southern Range	A17-01	87.59	4,559.73	55.19	2,936.94	32.40	1,622.79	0.00	0.00	4	-	-	-	-
			A17-02	0.16	10.56	0.16	10.56	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-03	109.12	5,769.38	94.31	5,028.88	14.81	740.50	0.00	0.00	11	-	-	-	-
			A17-04	16.32	869.17	16.32	869.17	0.00	0.00	0.00	0.00	0	0	0	Y	N
			A17-05	1.38	45.54	1.38	45.54	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-07	13.36	695.67	6.10	274.50	7.26	421.17	0.00	0.00	0	0	0	N	N
			A17-08	1.23	63.96	1.23	63.96	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-13	2.92	151.84	2.92	151.84	0.00	0.00	0.00	0.00	0	0	0	Y	N
			A17-14	122.32	6,411.09	107.06	5,908.42	7.77	457.73	7.49	44.94	7	-	-	-	-
			TOTAL:	**395.20**	**19,762.54**	**298.49**	**15,919.31**	**62.24**	**3,242.19**	**34.47**	**601.04**	**27**	**0**	**0**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-10. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2012 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative A Transformation, Fort Benning.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
64460	DS/GS Vehicle Maintenance Facility	Harmony Church	R02-01R	6.34	259.82	5.42	246.94	0.00	0.00	0.92	12.88	0	0	0	N	N
64890	Battle Command Training Center	Harmony Church	BB03-01R	1.20	35.40	0.00	0.00	0.00	0.00	1.20	35.40	0	0	0	N	N
65065	Chapel	Harmony Church	HCC-10R	0.56	16.80	0.00	0.00	0.56	16.80	0.00	0.00	0	0	0	N	N
			TOTAL:	**8.10**	**312.02**	**5.42**	**246.94**	**0.56**	**16.80**	**2.12**	**48.28**	**0**	**0**	**0**		

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2007	65382	Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and Beaten Area	120mm & .50 Cal	O09-04R	4920	Y	-	-	-	ACT	2	2	
					4124A	Y	-	-	-	ACT	4	1	2006
					4125A	Y	-	-	-	ACT	4	2	
					4126A	Y	-	-	-	INA	4	1	
					4127A	Y	-	-	-	INA	4	1	
					4276A	Y	-	-	-	INA	4	1	
					4277A	Y	-	-	-	INA	3	1	
				O09-05R	5628	Y	-	-	-	ACT	1	1	
					4335A	Y	-	-	-	INA	4	2	
					4336A	Y	-	-	-	INA	4	1	
					4337A	Y	-	-	-	ACT	4	1	2005-2006
					4338A	Y	-	-	-	ACT	4	1	
					5601A	Y	-	-	-	INA	4	1	
2007	64370	Trainee Barracks Complex 1	...	HCC-10R	4431A	N	N	Y	N	ACT	4	1	
				Total number of trees impacted in 2007		**13**	**0**	**1**					
2008	65439	Road Improvements	...	HCC-11R	5384	N	N	Y	N	ACT	1	1	
2008	65440	AT/ FP Access Control Point	...	C01-02	0591	Y	-	-	-	INA	1	2	
					1660	Y	-	-	-	INA	1	2	
					2298	Y	-	-	-	ACT	1	2	
					2299	Y	-	-	-	INA	1	2	
					2855	Y	-	-	-	INA	1	2	
					2977	N	Y	-	N	INA	1	1	
					3940	Y	-	-	-	ACT	1	1	
					4183	N	Y	-	N	INA	1	1	
					4307	Y	-	-	-	ACT	1	1	2006
					4786	Y	-	-	-	ACT	1	1	
					5535	Y	-	-	-	ACT	1	1	
				Total number of trees impacted in 2008		**9**	**2**	**1**					

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	65252	Centralized Wash Facility with Soaking Capability	…	HCC-03R	4995	Y	-	-	-	ACT	1	1	
					5429	N	N	Y	N	ACT	1	1	2005-2006
					5430	N	N	Y	N	INA	2	2	
					4131A	Y	-	-	-	INA	4	1	
2009	65383	Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) and Beaten Area	120MM & .50 Cal	K02-01	1617	Y	-	-	-	INA	1	2	
					4773	Y	-	-	-	INA	1	2	
					3900A	Y	-	-	-	ACT	4	1	2002-2006
					3901A	Y	-	-	-	INA	4	1	
					4772A	Y	-	-	-	ACT	4	1	
2009	64797	Driver Training Course/ Vehicle Recovery Area	…	L02-02R	5133A	Y	-	-	-	ACT	3	1	2006
					5134A	Y	-	-	-	ACT	3	1	
					5135A	Y	-	-	-	ACT	4	1	
					5136A	Y	-	-	-	ACT	4	2	
2009	62207	Combined Arms Collective Training Facility Phase II (CACTF)	…	T01-01	0062	N	N	Y	N	ACT	1	2	2006
					3718	N	Y	-	N	INA	2	2	
2009	N/A	Heavy Maneuver Area - **North**	…	O01-01	2000	Y	-	-	Y	ACT	1	1	
					2310	Y	-	-	N	INA	1	2	
					2810	N	Y	-	N	INA	1	1	
					2811	Y	-	-	N	INA	1	2	
					3240	N	N	Y	N	INA	1	1	
					3262	N	N	Y	N	ACT	1	1	
					3642	N	N	Y	N	INA	2	2	
					3928	N	Y	-	Y	ACT	1	1	2006
					4842	Y	-	-	N	INA	1	2	
					5448	Y	-	-	Y	ACT	1	1	
					5449	N	N	Y	N	INA	1	1	
					3801A	N	N	Y	N	ACT	4	2	
					3802A	N	N	Y	N	ACT	4	2	
				O01-02	0787	Y	-	-	N	INA	1	2	
					2923	Y	-	-	N	INA	2	2	
					3392	Y	-	-	N	INA	1	2	
					5427	Y	-	-	Y	ACT	1	1	
					5636	Y	-	-	Y	ACT	1	1	
					4086A	Y	-	-	N	INA	4	1	
					4087A	Y	-	-	Y	ACT	4	1	
					4779A	Y	-	-	Y	ACT	4	1	2006
					4780A	Y	-	-	N	INA	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Heavy Maneuver Area - **North**	…	O01-03	0105	N	Y	-	Y	ACT	1	1	
					4993	N	N	Y	N	ACT	1	1	
					5028	N	Y	-	N	INA	1	2	
					5098	Y	-	-	Y	ACT	1	1	
					5381	Y	-	-	Y	ACT	1	1	2006
					3456A	N	Y	-	N	INA	4	1	
					3457A	N	N	Y	N	INA	4	1	
					4966A	N	N	Y	N	INA	4	1	
				O03-01	1741	Y	-	-	N	INA	1	2	
					2307	Y	-	-	N	INA	1	2	
					4030	Y	-	-	N	INA	1	2	
				O14-01	0312	Y	-	-	N	INA	1	2	
					2510	N	N	Y	N	INA	1	1	
				O14-02	2320	Y	-	-	N	INA	2	2	
					3236	Y	-	-	N	INA	1	2	
					3703	N	N	Y	N	INA	1	1	
					3715	N	Y	-	Y	ACT	1	2	
					3970	Y	-	-	Y	ACT	1	1	
					4507	N	Y	-	N	INA	2	2	
					4844	Y	-	-	N	INA	2	2	
					5424	N	N	Y	N	ACT	1	1	2005-2006
					3446A	Y	-	-	N	INA	4	1	
				O14-03R	4827	Y	-	-	Y	ACT	1	1	2006
					4862	Y	-	-	N	INA	2	2	
					5234	Y	-	-	N	INA	2	2	
					5237	Y	-	-	N	ACT	2	2	
					5423	Y	-	-	N	INA	1	1	
					4116A	Y	-	-	N	INA	4	1	
					4117A	Y	-	-	N	INA	4	1	
					4118A	Y	-	-	N	INA	4	2	
					4119A	Y	-	-	N	INA	4	2	
					4274A	Y	-	-	Y	ACT	4	2	
					4275A	Y	-	-	N	ACT	5	2	
					4759A	Y	-	-	N	INA	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Heavy Maneuver Area - **North**	…	O15-01	1996	Y	-	-	N	ACT	2	2	
					1997	Y	-	-	N	INA	2		
					4026	Y	-	-	N	INA	2	2	
					5554	Y	-	-	Y	ACT	1	1	
					5555	Y	-	-	N	ACT	2	2	
					5637	Y	-	-	N	ACT	2	1	
					5638	Y	-	-	Y	ACT	1	1	
					5639	Y	-	-	N	ACT	2	2	
					3615A	Y	-	-	Y	ACT	4	1	
					3616A	Y	-	-	Y	ACT	4	1	
					4372A	N	N	Y	N	INA	4	2	
					4373A	N	N	Y	N	INA	4	1	
2009	N/A	Heavy Maneuver Corridor - **South**	…	D11-01	0469	Y	-	-	N	INA	2	2	
					1855	Y	-	-	N	INA	1	1	
					2477	Y	-	-	N	INA	1	2	
					3380	Y	-	-	Y	ACT	1	1	2004-2006
					5464	Y	-	-	N	INA	1	1	
					5591	Y	-	-	Y	ACT	1	1	
					3967A	Y	-	-	N	INA	4	1	
					4237A	N	N	Y	N	INA	4	1	
					4238A	N	Y	-	Y	ACT	4	1	
				D11-02	4517	Y	-	-	Y	ACT	1	1	
					4918	Y	-	-	N	INA	1	2	
					5476	Y	-	-	Y	ACT	1	1	2006
					3852A	Y	-	-	N	INA	4	1	
					3853A	Y	-	-	N	INA	4	1	
					4239A	Y	-	-	N	INA	4	1	
					4240A	Y	-	-	N	INA	4	1	
				D16-02	2418	Y	-	-	N	INA	1	1	
					3450A	N	N	Y	N	INA	4	2	
					3451A	N	Y	-	N	INA	4	1	
					4576A	N	N	Y	N	INA	4	1	
				E04-01	0180	Y	-	-	Y	ACT	1	2	
					2804	Y	-	-	Y	ACT	1	1	
					3957	Y	-	-	Y	ACT	1	1	2006
					3958	Y	-	-	N	INA	2	2	
					4459	Y	-	-	Y	ACT	1	1	
					5108	Y	-	-	N	INA	2	1	
					5109	Y	-	-	N	INA	1	1	
					5185	Y	-	-	N	INA	2	2	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Heavy Maneuver Corridor - **South**	…	J03-01	0184	Y	-	-	N	INA	1	2	
					0543	Y	-	-	N	INA	1	2	
					1985	Y	-	-	N	INA	2	2	
					2268	Y	-	-	N	INA	2	2	
					4208	Y	-	-	N	INA	2	2	
					4326	Y	-	-	N	INA	1	2	
					4906	Y	-	-	Y	ACT	1	1	2006
					4907	Y	-	-	N	INA	2	2	
					4908	Y	-	-	N	INA	1	1	
					5041	Y	-	-	N	INA	2	2	
					4102A	Y	-	-	N	INA	4	1	
					4983A	Y	-	-	N	INA	4	1	
				J04-01	1586	Y	-	-	N	INA	1	1	
					2302	Y	-	-	N	INA	1	2	
					2765	Y	-	-	N	INA	2	2	
					2818	Y	-	-	N	INA	2	2	
					2820	Y	-	-	N	INA	1	1	
					4550	Y	-	-	Y	ACT	1	1	2004-2006
					4403A	Y	-	-	Y	ACT	4	1	
					4404A	Y	-	-	Y	ACT	4	1	
					5462A	Y	-	-	N	INA	4	1	
					5463A	Y	-	-	N	INA	4	1	
				J05-01	0189	Y	-	-	N	INA	1	2	
					1958	Y	-	-	N	INA	1	1	
					1959	Y	-	-	N	INA	1	2	
					1982	Y	-	-	N	INA	1	2	
					2266	Y	-	-	N	INA	1	1	
					3646	Y	-	-	N	INA	1	1	
					3652	Y	-	-	Y	ACT	1	1	
					4163	Y	-	-	N	INA	2	2	
					4497	Y	-	-	N	INA	2	1	
					4498	Y	-	-	N	INA	1	1	
					5493	Y	-	-	Y	ACT	1	2	2006
				T03-02	0713	Y	-	-	N	INA	1	2	
					1136	Y	-	-	N	INA	2	2	
					2095	Y	-	-	Y	ACT	1	1	
					2101	Y	-	-	N	INA	1	2	
					2176	Y	-	-	N	INA	1	2	
					3647	Y	-	-	N	INA	2	2	
					4205	Y	-	-	Y	ACT	1	1	
					5242	Y	-	-	N	INA	2	2	
					4982A	Y	-	-	Y	ACT	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Heavy Maneuver Corridor - **South**	…	T03-04R	5129A	Y	-	-	Y	ACT	1	1	
					5130A	Y	-	-	N	INA	1	1	
					5131A	Y	-	-	N	INA	1	1	
					5132A	Y	-	-	Y	ACT	1	1	
				Total number of trees impacted in 2009		**127**	**9**	**20**					
2010	65554	Construct Installation-wide Roads	…	E04-01	0180	N	N	Y	N	ACT	1	2	
					2804	N	N	Y	N	ACT	1	1	
					3957	N	N	Y	N	ACT	1	1	2006
					4459	N	N	Y	N	ACT	1	1	
					5109	Y	N	-	-	INA	1	1	
				J06-03	0013	N	N	Y	N	INA	1	2	
				K08-03	5407	N	Y	-	N	ACT	2	1	
					5440	N	N	Y	N	ACT	1	2	
				O03-01	0802	Y	N	-	-	INA	1	2	
					3716	N	Y	-	N	INA	1	1	
					4997	Y	N	-	-	INA	2	2	
					5106A	Y	N	-	-	ACT	3	1	2005-2006
					5107A	Y	N	-	-	ACT	3	1	
					5520A	Y	N	-	-	INA	3	2	
				O03-03	2903	N	Y	-	N	ACT	2	2	
					4172	N	Y	-	Y	ACT	1	2	
					4570	Y	N	-	-	ACT	1	1	2006
				O03-04	0768	N	N	Y	N	ACT	1	1	2006
					1193	N	N	Y	N	ACT	1	1	
					1741	N	Y	-	N	INA	1	1	
					4030	N	Y	-	N	INA	1	2	
					2794A	N	N	Y	N	ACT	4	1	
					2796A	N	N	Y	N	ACT	4	1	
					2797A	N	N	Y	N	ACT	4	2	
					2798A	N	N	Y	N	ACT	5	2	
					2799A	N	N	Y	N	ACT	5	2	
					2800A	N	N	Y	N	ACT	5	2	
				O15-02	1568	Y	N	-	-	INA	1	2	
					4677	N	N	Y	N	INA	2	2	
2010	65557	Repair/ Upgrade Existing Training Area Roads	…	E04-01	3958	N	Y	-	N	INA	2	2	
					5185	N	Y	-	N	INA	2	2	
				J05-01	4497	N	Y	-	N	INA	2	1	
				K14-01	4610A	N	N	Y	N	INA	4	1	
					5281A	N	N	Y	N	INA	4	2	
				K18-01	4232	N	N	Y	N	ACT	1	1	
					5212	N	N	Y	N	ACT	1	1	
				O03-05	2243	N	Y	-	N	INA	1	2	
					2608	N	Y	-	Y	ACT	1	2	
					2591A	N	N	Y	N	ACT	4	1	
					2720A	N	N	Y	N	ACT	5	2	
					2723A	N	N	Y	N	ACT	2	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-11. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2010	65557	Repair/ Upgrade Existing Training Area Roads	…	O05-02	1726	N	Y	-	N	INA	1	2	
					2262	N	N	Y	N	ACT	1	1	
				O14-01	2162	N	Y	-	N	INA	2	2	…
					2342	N	Y	-	N	INA	2	2	…
					2345	N	Y	-	N	INA	2	2	…
				O15-01	1997	N	Y	-	N	INA	2	2	…
				Total number of trees impacted in 2010		**8**	**14**	**23**					
2011	63799	3 ID Brigade Combat Team Complex	…	HCC-03R	4128A	Y	-	-	-	INA	4	1	…
					4129A	Y	-	-	-	INA	4	2	…
					4272A	Y	-	-	-				
					4273A	Y	-	-	-	INA	5	2	…
					5155	Y	-	-	-	INA	1	1	…
2011	67012	Qualification Training Range and Beaten Area	7.62mm & .50 Cal	A17-01	5618	Y	-	-	-	ACT	1	1	
					5619	Y	-	-	-	ACT	1	1	
					5616A	Y	-	-	-	INA	4	1	
					5617A	Y	-	-	-	INA	4	1	
				A17-03	1247	Y	-	-	-	INA	1	2	
					1694	Y	-	-	-	ACT	1	1	
					2192	Y	-	-	-	INA	1	1	
					4243	Y	-	-	-	ACT	1	1	
					4511	Y	-	-	-	ACT	1	1	
					4716	Y	-	-	-	INA	1	1	
					4853	Y	-	-	-	ACT	1	1	2006
					5071	Y	-	-	-	INA	2	2	
					5072	Y	-	-	-	ACT	2	2	
					5389	Y	-	-	-	INA	2	2	
					5390	Y	-	-	-	INA	2	2	
				A17-14	4236	Y	-	-	-	ACT	1	1	
					4246	Y	-	-	-	INA	1	2	
					4247	Y	-	-	-	ACT	1	1	
					4248	Y	-	-	-	ACT	1	1	2006
					4251A	Y	-	-	-	ACT	4	1	
					4252A	Y	-	-	-	ACT	4	1	
					4253A	Y	-	-	-	ACT	4	1	
				Total number of trees impacted in 2011		**27**	**0**	**0**					

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-12. Red-cockaded woodpecker cavity trees impacted within inactive clusters impacted by Fiscal Year 2007 - 2013 Alternative A Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Activity Status	Stage	Cavity Condition
2008	65440	AT/ FP Access Control Point	…	Q02-05	4405A	Y	N	N	INA	4	2
					4406A	Y	N	N	INA	4	2
					4407A	Y	N	N	INA	4	2
					4408A	Y	N	N	INA	4	2
				Total number of trees impacted in 2007		**4**	**0**	**0**			
2009	64797	Driver Training Course/ Vehicle Recovery Area	…	L02-01R	1292	Y	N	N	INA	3	2
					3154A	Y	N	N	INA	4	2
					3155A	Y	N	N	INA	4	2
					3156A	Y	N	N	INA	4	2
					3157A	Y	N	N	INA	4	2
2009	N/A	Heavy Maneuver Corridor - **South**	…	F01-02R	4632A	Y	N	N	INA	4	1
					4633A	Y	N	N	INA	4	1
					4634A	Y	N	N	INA	4	1
					4635A	Y	N	N	INA	4	1
				T03-03	1758	Y	N	N	INA	1	1
					3352	Y	N	N	INA	1	1
					3340A	Y	N	N	ACT	4	1
					3341A	Y	N	N	INA	4	1
				Total number of trees impacted in 2009		**13**	**0**	**0**			

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

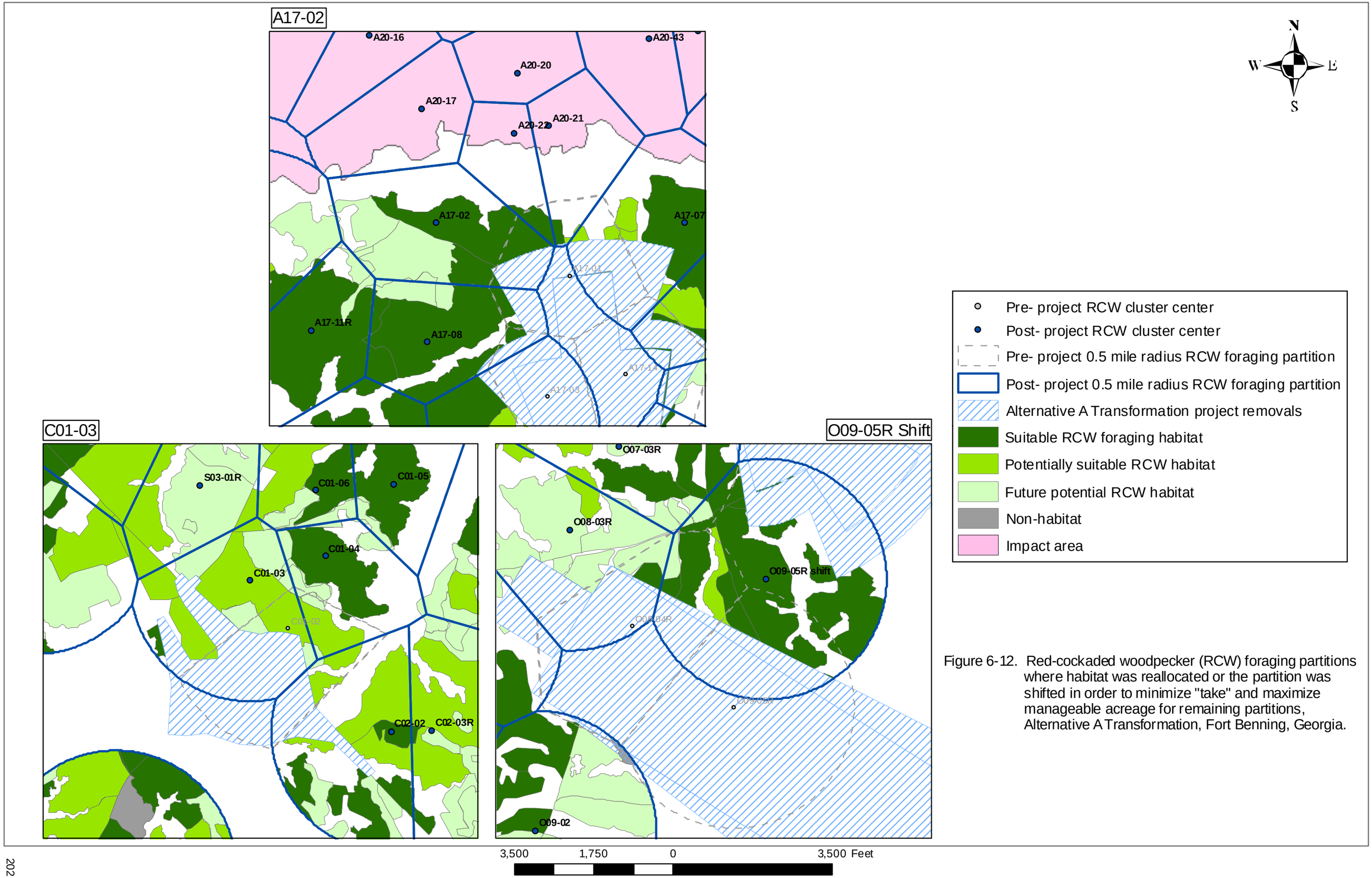


Figure 6-12. Red-cockaded woodpecker (RCW) foraging partitions where habitat was reallocated or the partition was shifted in order to minimize "take" and maximize manageable acreage for remaining partitions, Alternative A Transformation, Fort Benning, Georgia.

Post- project, 47 of the 108 active RCW clusters did not meet the SMS (Table 6-2) and will be directly "taken" by the Alternative A Transformation projects. Two clusters will be "taken" as a result of cavity tree removals. The percent of acreages (suitable and potentially suitable) subject to high risk loblolly decline within each post- project foraging habitat partition are presented below (Table 6-15). Ninety-seven clusters did not meet the RS post- project. Data for the following post- project discussion are presented in Tables 6-2 - 6-3, Tables 6-13 - 17, Figures 6-7 - 6-12 and Appendices D and E. See Sections 6.10.6 and 6.10.7 for Group and Neighborhood Level impacts.

None of the 11 clusters where home range follows are being conducted as a minimization effort for the DMPRC (in order to document direct and indirect impacts of range construction and operation) will be "taken" at the cluster level as a result of Alternative A. Seven of the clusters "taken" at the cluster level under Alternative A (D11-01, D11-02, E04-01, J03-01, L03-01, T04-03R and T05-02) are currently banded as a minimization effort for the DMPRC in order to document impacts (expected or unexpected) of the range on clusters within the RCW "neighborhood" (FBCB, unpub. data).

FB Cluster A06-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 7,080.32 ft^2 of pine BA on 153.92 acres of suitable habitat and 736.42 ft^2 of pine BA on 33.83 acres of future potential habitat. There was no potentially suitable habitat (Table 6-2).

The pre- project RS foraging habitat totals were 7,816.74 ft^2 of pine BA on 187.75 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-3).

The 2008 Road Improvements will remove 8.28 ft^2 of pine BA on 0.18 acre (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 7,072.04 ft^2 of pine BA on 153.74 acres of suitable habitat and 736.42 ft^2 of pine BA on 33.83 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13,

Table 6-13. Red-cockaded woodpecker (RCW) groups impacted directly or indirectly using the Standard for Managed Stability (USFWS 2003) for Fort Benning Transformation projects, Alternative A, Fort Benning, Georgia.

Impacted Cluster	Habitat Deficient	Total Acreage Removed by Project (Suitable/ Potentially Suitable)	# of Cavity Trees Removed[1]	Take by Cavity Tree Loss	Take by Habitat/ Forage Loss	Take by Harassment	Group Level Take[2]	Neighborhood Level Take[2, 3]
	Pre-Project							
A06-01	N	0.18	0	N	N	-	N	N
A07-01	Y	0.00	0	N	Y	-	N	N
A17-01	N	87.59	4 of 4	Y	Y	-	-	-
A17-02	Y	0.16	0	N	Y	-	-	-
A17-03	N	109.12	11 of 11	Y	Y	-	-	-
A17-04	N	16.32	0	N	N	-	N	N
A17-05	N	1.38	0	N	N	-	N	N
A17-07	N	13.36	0	N	N	-	N	N
A17-08	N	1.23	0	N	N	-	N	N
A17-13	N	2.92	0	N	N	-	N	N
A17-14	N	114.83	7 of 7	Y	Y	-	-	-
BB03-01R	N	0.00	0	N	Y[4]	-	-	-
BB04-01R	N	16.34	0	N	N	-	N	N
BB05-01R	N	25.71	0	N	N	-	N	N
C01-02	N	104.97	9 of 16	Y	Y	N	-	-
C01-03	N	23.13	0	N	Y	-	-	-
C02-02	N	11.73	0	N	N	-	N	N
D05-02R	N	3.02	0	N	N	-	N	N
D05-04R	N	69.21	0	N	N	-	N	N
D08-01R	N	2.61	0	N	N	-	Y	N
D10-01	Y	0.00	0	N	Y	-	-	-
D11-01	N	49.23	7 of 10	Y	Y	Y	-	-
D11-02	N	67.71	7 of 7	Y	Y	Y	-	-
D15-01R	N	7.89	0	N	N	-	N	N
D16-02	Y	0.00	2 of 7	N	Y	N	-	-
D17-04R	N	1.03	0	N	N	-	N	N
E02-01	N	3.13	0	N	N	-	N	N
E03-01	N	4.01	0	N	N	-	N	N
E04-01	N	69.86	8 of 8	Y	Y	Y	-	-
E08-05R	N	3.37	0	N	N	-	N	N
F02-01R	N	20.14	0	N	Y	-	-	-
HCC-03R	N	100.77	7 of 9	Y	N	-	-	-
HCC-08R	N	8.74	0	N	N	-	N	N
HCC-10R	N	87.98	0	N	N	-	N	N
HCC-11R	Y	0.75	0	N	Y	-	-	-
J01-02R	Y	0.00	0	N	Y	-	-	-
J03-01	N	64.91	12 of 12	Y	Y	Y	-	-
J04-01	N	71.77	10 of 10	Y	Y	Y	-	-
J05-01	N	120.59	11 of 11	Y	Y	Y	-	-
J06-01	N	1.69	0	N	N	-	N	N
J06-03	N	30.86	0	N	N	-	N	N
K02-01	Y	2.78	5 of 5	Y	Y	-	-	-
K08-03	N	6.26	0	N	N	N	N	N
K08-04	N	13.20	0	N	N	-	N	N
K09-01	N	0.52	0	N	N	-	N	N

Table 6-13 (cont.). Red-cockaded woodpecker (RCW) groups impacted directly or indirectly using the Standard for Managed Stability (USFWS 2003) for Fort Benning Transformation projects, Alternative A, Fort Benning, Georgia.

Impacted Cluster	Habitat Deficient	Total Acreage Removed by Project (Suitable/ Potentially Suitable)	# of Cavity Trees Removed[1]	Take by Cavity Tree Loss	Take by Habitat/ Forage Loss	Take by Harassment	Group Level Take[2]	Neighborhood Level Take[2, 3]
	Pre-Project							
K09-03R	N	5.33	0	N	N	-	N	N
K10-01	-	-	0	N	N	-	Y	-
K11-02	N	2.27	0	N	N	-	Y	-
K11-03	Y	2.62	0	N	Y	-	-	-
K14-01R	Y	3.09	0	N	Y	-	-	-
K17-02	N	1.36	0	N	N	-	N	N
K17-05R	N	0.24	0	N	N	-	N	N
K18-01	N	3.40	0	N	N	-	N	N
K18-02R	N	3.16	0	N	N	-	N	N
K18-03R	Y	1.72	0	N	Y	-	-	-
K21-02R	N	10.27	0	N	N	-	N	N
L02-02R	N	109.15	4 of 4	Y	Y	-	-	-
L03-01	Y	0.17	0	N	Y	-	-	-
M08-04R	N	3.03	0	N	N	-	N	N
M08-05R	N	1.09	0	N	N	-	N	N
O01-01	N	36.46	5 of 13	N	N	N	N	N
O01-02	Y	16.95	9 of 9	Y	Y	Y	-	-
O01-03	N	41.85	3 of 8	N	Y	N	-	-
O01-04R	N	21.32	0	N	N	N	N	N
O02-01R	N	3.30	0	N	N	-	N	N
O03-01	N	50.20	9 of 9	Y	Y	Y	-	-
O03-02	N	7.93	0	N	N	N	N	N
O03-03	Y	3.15	2 of 10	N	Y	N	-	-
O03-04	Y	2.07	0	N	Y	N	-	-
O03-05	N	2.93	0	N	N	N	N	N
O03-06R	Y	9.19	0	N	Y	N	-	-
O03-07R	N	6.47	0	N	N	N	N	N
O04-03	Y	0.00	0	N	Y	-	-	-
O05-01	N	16.46	0	N	N	-	N	N
O05-02	N	12.03	0	N	N	-	N	N
O05-03R	N	27.42	0	N	N	-	N	N
O07-03R	N	0.00	0	N	N	-	N	N
O08-03R	Y	1.31	0	N	Y	-	-	-
O09-02	N	0.00	0	N	N	-	N	N
O09-04R	N	120.20	7 of 7	Y	Y	-	-	-
O09-05R	N	202.63	6 of 6	Y	Y	-	-	-
O10-01	N	0.57	0	N	N	-	N	N
O11-01	N	8.14	0	N	N	N	N	N
O12-04R	Y	0.00	0	N	Y	-	-	-
O14-01	N	32.14	4 of 13	N	Y[4]	N	N	N
O14-02	Y	27.72	5 of 12	N	Y	Y	-	-
O14-03R	N	131.65	12 of 12	Y	Y	Y	-	-
O15-01	Y	2.92	10 of 13	Y	Y	Y	-	-
O15-02	Y	2.79	1 of 7	N	Y	N	-	-
O15-03	N	13.26	0	N	Y	N	-	-

Table 6-13 (cont.). Red-cockaded woodpecker (RCW) groups impacted directly or indirectly using the Standard for Managed Stability (USFWS 2003) for Fort Benning Transformation projects, Alternative A, Fort Benning, Georgia.

Impacted Cluster	Habitat Deficient	Total Acreage Removed by Project (Suitable/ Potentially Suitable)	# of Cavity Trees Removed[1]	Take by Cavity Tree Loss	Take by Habitat/ Forage Loss	Take by Harassment	Group Level Take[2]	Neighborhood Level Take[2, 3]
	Pre-Project							
R02-01R	N	6.67	0	N	N	-	N	N
SHC-02	N	25.55	0	N	N	-	Y	N
T01-01	N	1.87	0	N	N	N	N	N
T02-01	Y	2.76	0	N	Y	-	-	N
T03-02	N	59.69	9 of 9	Y	N	Y	N	N
T03-04R	N	98.55	4 of 4	Y	Y	Y	-	N
T04-01	N	1.47	0	N	N	-	N	N
T04-03R	N	56.38	0	N	Y	-	-	N
T05-02	Y	8.01	0	N	Y	-	-	N
U04-01	N	25.59	0	N	Y	-	-	N
CLUSTERS NOT IMPACTED BY TRANSFORMATION PROJECTS								
D14-04R	–	–	0	N	N	-	N	N[5]
K12-01	–	–	0	N	N	-	N	Y
		2,510.59	**191**	**21**	**47**	**13**	**4**	**1**

[1] Inactive clusters F01-02R, TO3-03, Q02-05 and L02-01R will have 100% cavity tree removal.

[2] If RCW cluster is "taken" by habitat loss or cavity tree loss, it was not considered at the group or neighborhood level.

[3] Additional takes due to Neighborhood impacts are conceivable due to habitat fragmentation, reduction of productivity and dispersal impairment.

[4] RCW cluster is "taken" due to noncontiguous habitat resulting from project impact.

[5] Cluster would be "taken" at the neighborhood level, however it was included in an incidental take statement for the DMPRC (USFWS 2004a).

RCW cluster could be "taken" by more than 1 type of impact

Table 6-14. The number of red-cockaded woodpecker clusters requiring Incidental Takes ("Take") by the fiscal year of construction initiation, Alternative A Transformation, Fort Benning, Georgia. This does not include group or neighborhood takes.

Fiscal Year "Taken"	Project Number (PN)	Project Resulting in "Take"	Clusters "Taken"
2007	PN 64370	Trainee Barracks Complex 1, Borrow Areas	BB03-01R HCC-11R
	PN 65382	Tank/ Fighting Stationary Gunnery Range 1	O08-03R O09-04R O09-05R
	PN 65068	Trainee Barracks Complex 2	U04-01R
2008	PN 65439	Road Improvements	A07-01
	PN 65440	AT/ FP Access Control Point	C01-02 C01-03
2009	n/a	Heavy Maneuver Corridor - South (Maneuver Heavy Use Area)	D10-01 D11-01 D11-02 D16-02 E04-01 F02-01R J01-02R J03-01 J04-01 J05-01 T03-02** T03-04R T04-03R T05-02
	PN 65252	Centralized Wash Facility with Soaking Capability	HCC-03R**
	PN 65383	Tank/ Fighting Stationary Gunnery Range 2	K02-01
	PN 64797	Drivers Training Course	L02-02R
	n/a	Heavy Maneuver Corridor - North (Maneuver Heavy Use Area)	O01-02 O01-03 O03-01 O14-01
	n/a	Heavy Maneuver Corridor - North (Maneuver Heavy Use Area)	O14-02

Table 6-14 (cont.). The number of red-cockaded woodpecker clusters requiring Incidental Takes ("Take") by the fiscal year of construction initiation, Alternative A Transformation, Fort Benning, Georgia. This does not include group or neighborhood takes.

Fiscal Year "Taken"	Project Number (PN)	Project Resulting in "Take"	Clusters "Taken"
2009 (cont.)	n/a	Heavy Maneuver Corridor - North (Maneuver Heavy Use Area)	O14-03R O15-01 O15-03
	PN 62207	Combined Arms Collective Training Facility, Phase II	T02-01
2010	PN 65554	Construct Installation- wide Roads, Paved	K11-03 O03-04 O03-06R O15-02
	PN 65557	Repair/ Upgrade Existing Training Area Roads	K14-01R K18-03R L03-01 O03-03 O04-03 O12-04R
2011	PN 67012	Qualification Training Range	A17-01 A17-02 A17-03 A17-14
			49

* When a cluster was impacted by 2 projects in the same fiscal year, the project that removed the most habitat was considered to result in "take".
** Cluster "taken" by cavity tree removal.

Table 6-15. Post- project suitable and potentially suitable foraging habitat using the Standard for Managed Stability (USFWS 2003) with a high risk of loblolly pine decline for red-cockaded woodpecker partitions impacted by Alternative A Transformation projects, Fort Benning, Georgia.

Cluster	Total Suitable and Potentially Suitable Acreage	Total High Risk Suitable and Potentially Suitable Acreage	Percent of Acres With High Risk Loblolly Pine Decline
A06-01	153.74	0.00	0.00%
A07-01	35.57	11.94	33.57%
A17-01	32.37	0.74	2.29%
A17-02	63.62	0.00	0.00%
A17-03	5.49	3.09	56.28%
A17-04	211.19	22.21	10.52%
A17-05	117.37	10.80	9.20%
A17-07	75.58	0.00	0.00%
A17-08	110.70	0.00	0.00%
A17-13	102.42	15.11	14.75%
A17-14	5.55	5.55	100.00%
BB03-01R	44.32	29.99	67.66%
BB04-01R	119.83	8.97	7.49%
BB05-01R	189.66	41.06	21.65%
C01-02	53.26	8.16	15.32%
C01-03	70.59	13.54	19.18%
C02-02	107.71	42.57	39.52%
D05-02R	119.78	24.29	20.28%
D05-04R	180.47	94.72	52.48%
D08-01R	110.49	63.25	57.25%
D10-01	44.24	27.54	62.25%
D11-01	43.79	7.95	18.16%
D11-02	18.45	18.45	100.00%
D15-01R	163.11	23.74	14.55%
D16-02	0.00	11.81	0.00%
D17-04R	89.74	0.00	0.00%
E02-01	104.49	6.83	6.54%
E03-01	157.07	25.10	15.98%
E04-01	44.41	20.84	46.93%
E08-05R	101.34	4.74	4.68%
F02-01R	65.10	20.24	31.09%
HCC-03R	94.52	62.55	66.17%
HCC-08R	101.98	69.53	68.18%
HCC-10R	131.82	52.97	40.18%
HCC-11R	11.08	1.06	9.56%
J01-02R	59.48	0.95	1.60%
J03-01	32.72	1.99	6.08%
J04-01	25.54	13.49	52.83%
J05-01	1.08	0.84	77.84%
J06-01	102.53	8.55	8.34%
J06-03	181.34	22.94	12.65%
K02-01	7.25	3.82	52.70%

Table 6-15 (cont'd). Post- project suitable and potentially suitable foraging habitat using the Standard for Managed Stability (USFWS 2003) with a high risk of loblolly pine decline for red-cockaded woodpecker partitions impacted by Alternative A Transformation projects, Fort Benning, Georgia.

Cluster	Total Suitable and Potentially Suitable Acreage	Total High Risk Suitable and Potentially Suitable Acreage	Percent of Acres With High Risk Loblolly Pine Decline
K08-03	92.05	24.37	26.47%
K08-04	170.43	56.45	33.12%
K09-01	89.56	0.17	0.19%
K09-03R	186.21	81.92	43.99%
K11-02	242.73	47.66	19.64%
K11-03	39.71	0.02	0.05%
K14-01R	62.93	0.00	0.00%
K17-02	117.02	0.00	0.00%
K17-05R	143.86	22.09	15.36%
K18-01	143.13	5.57	3.89%
K18-02R	151.85	21.83	14.38%
K18-03R	17.33	0.00	0.00%
K21-02R	184.05	3.73	2.03%
L02-02R	17.55	16.30	92.90%
L03-01	49.63	30.95	62.36%
M08-04R	91.23	45.64	50.03%
M08-05R	184.32	70.73	38.37%
O01-01	104.20	24.06	23.09%
O01-02	2.50	0.54	21.62%
O01-03	63.67	23.79	37.36%
O01-04R	102.89	17.57	17.08%
O02-01R	118.45	3.44	2.90%
O03-01	27.43	11.77	42.91%
O03-02	107.65	1.99	1.85%
O03-03	43.18	23.23	53.80%
O03-04	35.66	13.94	39.09%
O03-05	197.24	49.18	24.93%
O03-06R	67.27	20.12	29.91%
O03-07	118.19	50.18	42.46%
O04-03	22.97	1.06	4.61%
O05-01	210.34	45.53	21.65%
O05-02	96.91	2.21	2.28%
O05-03R	164.29	33.14	20.17%
O07-03R	133.53	114.01	85.38%
O08-03R	7.83	7.83	100.00%
O09-02	77.15	14.59	18.91%
O09-04R	49.93	21.20	42.46%
O09-05R	38.40	4.06	10.57%
O10-01	112.03	73.13	65.28%
O11-01	82.83	23.61	28.50%
O12-04R	8.66	4.69	54.16%
O14-01	49.63	16.63	33.51%
O14-02	15.56	0.22	1.41%
O14-03R	20.24	20.24	100.00%

Table 6-15 (cont'd). Post- project suitable and potentially suitable foraging habitat using the Standard for Managed Stability (USFWS 2003) with a high risk of loblolly pine decline for red-cockaded woodpecker partitions impacted by Alternative A Transformation projects, Fort Benning, Georgia.

Cluster	Total Suitable and Potentially Suitable Acreage	Total High Risk Suitable and Potentially Suitable Acreage	Percent of Acres With High Risk Loblolly Pine Decline
O15-01	30.77	5.30	17.22%
O15-02	69.87	0.18	0.26%
O15-03	69.94	25.35	36.25%
R02-01R	85.53	14.90	17.42%
SHC-02	157.18	79.21	50.40%
T01-01	101.53	1.73	1.70%
T02-01	25.75	24.51	95.17%
T03-02	106.34	9.00	8.46%
T03-04R	19.61	3.78	19.28%
T04-01	128.36	20.08	15.64%
T04-03R	42.74	4.75	11.11%
T05-02	63.46	0.18	0.28%
U04-01	60.48	17.83	29.48%

cluster is taken by Alternative A Transformation

Table 6-16. Post- project ability of red-cockaded woodpecker (RCW) clusters "taken" by Alternative A Transformation to meet the Recovery Standard (RS) (USFWS 2003) in the future, Fort Benning, Georgia.

Cannot meet	**May not meet**	**Can meet**
Partition with < 120 acres of manageable habitat	**Partition with 121-150 acres of manageable habitat**	**Partition with ≥ 150 acres of manageable habitat**
A17-01	A17-02*	A07-01
A17-03	C01-03*	BB03-01R
A17-14	D10-01	D08-01R
C01-02	F02-01R	HCC-11R
D11-01	K11-03	J01-02R
D11-02	O08-03R	J03-01*
D16-02	O12-04R	K14-01R
E04-01	O15-02	K18-03R
HCC-03R	O15-03	O03-03
J04-01		O03-04
J05-01		O03-06R
K02-01		O09-05R*
L02-02R		SHC-02
L03-01		T02-01
O01-02		T05-02
O01-03		
O03-01		
O04-03		
O09-04R		
O14-01		
O14-02		
O14-03R		
O15-01		
T03-02		
T03-04R		
T04-03R		
U04-01		

*assumes reallocation or partition shift

Table 6-17. Post- project ability of red-cockaded woodpecker (RCW) clusters not "taken" by Alternative A Transformation to meet the Recovery Standard (RS) (USFWS 2003) in the future, Fort Benning, Georgia.

Cannot meet	**May not meet**	**Can meet**
Partitions with < 120 acres of manageable habitat	**Partitions with 121-150 acres of manageable habitat**	**Partitions with ≥ 150 acres of manageable habitat**
A17-07	A17-05	A06-01
A17-13	A17-08	A17-04
K09-03R	C02-02	BB04-01R
KO9-03R	D05-02R	BB05-01R
O01-01	K08-03	D05-04R
O05-02	K09-01	D15-01R
	O01-04R	D17-04
	O03-02	E02-01
	O11-01	E03-01
	T01-01	E08-05R
		HCC-08R
		HCC-10R
		J06-01
		J06-03
		K08-04
		K11-02
		K17-02
		K17-05R
		K18-01 *
		K21-02R
		M08-04R
		M08-05R
		O02-01R
		O03-05
		O03-07
		O05-01R *
		O05-03R
		O07-03R
		O09-02R
		O10-01
		R02-01R
		T04-01

* currently meets RS

6-14 and Figure 6-7). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 7,808.46 ft^2 of pine BA on 187.57 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster A07-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,313.76 ft^2 of pine BA on 35.57 acres of suitable habitat and 4,112.80 ft^2 of pine BA on 150.78 acres of future potential habitat. There was no potentially suitable habitat (Table 6-2).

The pre- project RS foraging habitat totals were 92.46 ft^2 of pine BA on 2.01 acres of potentially suitable habitat and 5,334.10 ft^2 of pine BA on 184.34 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2008 Road Improvements will remove 1.16 ft^2 of pine BA on 0.04 acre (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 1,313.76 ft^2 of pine BA on 35.57 acres of suitable habitat and 4,111.64 ft^2 of pine BA on 150.74 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 33.57 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 92.46 ft^2 of pine BA on 2.01 acres of potentially suitable habitat and 5,332.94 ft^2 of pine BA on 184.30 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster A14-03: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2011 Qualification Training Range and Beaten Area will only impact non-contiguous foraging habitat and a foraging habitat analysis was not conducted.

FB Cluster A17-01: This cluster was found during the 2006 surveys after nesting season (USFS 2006) (Table 6-4) and 2 RCWs were seen. The cluster contained 4 cavity trees in various stages of completion and suitability in November 2006 (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove 4 of 4 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 4,475.19 ft^2 of pine BA on 84.65 acres of suitable habitat and 1,832.54 ft^2 of pine BA on 37.64 acres of potentially suitable habitat. There was no future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,475.19 ft^2 of pine BA on 84.65 acres of potentially suitable habitat and 1,832.54 ft^2 of pine BA on 37.64 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 4,559.73 ft^2 of pine BA on 87.59 acres (Table 6-9 and Figure 6-6).

As a result of project impacts, 96.54 ft^2 of pine BA on 2.33 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,538.25 ft^2 of pine BA on 29.46 acres of suitable habitat and 113.21 ft^2 of pine BA on 2.91 acres of potentially suitable habitat (Table 6-2). There was no future potential habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 2.29 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,538.25 ft^2 of pine BA on 29.46 acres of potentially suitable habitat and 113.21 ft^2 of pine BA on 2.91 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-6).

FB Cluster A17-02: This cluster had a PBG from 2002 to 2005 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,370.19 ft^2 of pine BA on 63.78 acres of suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat. There was no potentially suitable habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,370.19 ft^2 of pine BA on 63.78 acres of potentially suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 10.56 ft^2 of pine BA on 0.16 acre (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 3,359.63 ft^2 of pine BA on 63.62 acres of suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-11), however, reallocation and management of foraging habitat from neighboring "taken" partitions will enable A16-02 to meet SMS (Figure 6-12) (See Section 9). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 3,359.63 ft^2 of pine BA on 63.62 acres of potentially suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster A17-03: This cluster had a PBG from 2002 to 2005 (Table 6-4) and a PBG and a helper in 2006 (Table 6-4). The cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove 11 of 11 cavity trees, which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 5,175.53 ft^2 of pine BA on 97.13 acres of suitable habitat and 1,014.50 ft^2 of pine BA on 20.29 acres of potentially suitable habitat. There was no future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,671.24 ft^2 of pine BA on 51.37 acres of potentially suitable habitat and 3,518.79 ft^2 of pine BA on 66.05 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 5,769.38 ft^2 of pine BA on 109.12 acres (Table 6-9 and Figure 6-6).

As a result of project impacts, 146.12 ft^2 of pine BA on 2.81 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 0.53 ft^2 of pine BA on 0.01 acre of suitable habitat and 274.00 ft^2 of pine BA on 5.48 acres of potentially suitable habitat (Table 6-2). There was no future potential habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 56.28 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 274.53 ft^2 of pine BA on 5.49 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-6).

FB Cluster A17-04: This cluster was captured by FB Cluster A13-03 in 2002 and had a PBG from 2003 to 2006 (Table 6-4). This cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 7,987.49 ft^2 of pine BA on 155.95 acres of suitable habitat, 4,033.36 ft^2 of pine BA on 71.56 acres of potentially suitable habitat and 1.76 ft^2 of pine BA on 3.69 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,277.08 ft^2 of pine BA on 43.79 acres of potentially suitable habitat and 9,745.53 ft^2 of pine BA on 187.41 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 869.17 ft^2 of pine BA on 16.32 acres (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 7,118.32 ft^2 of pine BA on 139.63 acres of suitable habitat, 4,033.36 ft^2 of pine BA on 71.56 acres of potentially suitable habitat and 1.76 ft^2 of pine BA on 3.69 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 10.52 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,102.49 ft^2 of pine BA on 40.70 acres of potentially suitable habitat and 9,050.95 ft^2 of pine BA on 174.18 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster A17-05: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,379.85 ft^2 of pine BA on 102.39 acres of suitable habitat, 867.08 ft^2 of pine BA on 16.36 acres of potentially suitable habitat and 24.90 ft^2 of pine BA on 4.15 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,778.20 ft^2 of pine BA on 83.96 acres of suitable habitat and 1,493.63 ft^2 of pine BA on 38.94 acres of future potential habitat. There was no potentially suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 45.54 ft^2 of pine BA on 1.38 acres (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 4,334.31 ft^2 of pine BA on 101.01 acres of suitable habitat, 867.08 ft^2 of pine BA on 16.36 acres of potentially suitable habitat and 24.90 ft^2 of pine BA on 4.15 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 9.20 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,778.20 ft^2 of pine BA on 83.96 acres of suitable habitat and 1,448.09 ft^2 of pine BA on 37.56 acres of future potential habitat (Table 6-

3). There was no potentially suitable habitat. This partition may not meet RS in the future (Table 6-17).

FB Cluster A17-07: This cluster was inactive in 2002 and had a PBG between 2003 and 2006 (Table 6-4). It contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,223.80 ft^2 of pine BA on 71.64 acres of suitable habitat and 876.20 ft^2 of pine BA on 17.30 acres of potentially suitable habitat. There was no future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,223.80 ft^2 of pine BA on 71.64 acres of suitable habitat and 876.20 ft^2 of pine BA on 17.30 acres of future potential habitat. There was no potentially suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 695.67 ft^2 of pine BA on 13.36 acres (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 2,949.30 ft^2 of pine BA on 65.54 acres of suitable habitat and 455.03 ft^2 of pine BA on 10.04 acres of potentially suitable habitat (Table 6-2). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-11). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 2,949.30 ft^2 of pine BA on 65.54 acres of suitable habitat and 455.03 ft^2 of pine BA on 10.04 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This partition cannot meet RS in the future (Table 6-17).

FB Cluster A17-08: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 7,124.60 ft^2 of pine BA on 111.93 acres of suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat. There was no potentially suitable habitat (Table 6-2).

The pre- project RS foraging habitat totals were 954.36 ft^2 of pine BA on 14.46 acres of suitable habitat, 6,170.24 ft^2 of pine BA on 97.47 acres of potentially suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 63.96 ft^2 of pine BA on 1.23 acres (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 7,060.64 ft^2 of pine BA on 110.70 acres of suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-11). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 954.36 ft^2 of pine BA on 14.46 acres of suitable habitat, 6,106.28 ft^2 of pine BA on 96.24 acres of potentially suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-3). This partition may not meet RS in the future (Table 6-17).

FB Cluster A17-13: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,206.28 ft^2 of pine BA on 80.89 acres of suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of potentially suitable habitat. There was no future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,206.28 ft^2 of pine BA on 80.89 acres of potentially suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 151.84 ft^2 of pine BA on 2.92 acres (Table 6-9 and Figure 6-6).

The post- project SMS foraging habitat totals were 4,054.44 ft^2 of pine BA on 77.97 acres of suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of potentially suitable habitat (Table 6-2). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13

and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 14.75 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 4,054.44 ft^2 of pine BA on 77.97 acres of potentially suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-17).

FB Cluster A17-14: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove 7 of 7 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 6,306.98 ft^2 of pine BA on 114.16 acres of suitable habitat, 575.66 ft^2 of pine BA on 9.99 acres of potentially suitable habitat and 79.50 ft^2 of pine BA on 13.25 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 344.24 ft^2 of pine BA on 6.62 acres of potentially suitable habitat and 6,617.90 ft^2 of pine BA on 130.78 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2011 Qualification Training Range and Beaten Area will remove 6,411.09 ft^2 of pine BA on 122.32 acres (Table 6-9 and Figure 6-6).

As a result of project impacts, 201.63 ft^2 of pine BA on 3.77 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 313.00 ft^2 of pine BA on 5.52 acres of suitable habitat, 1.86 ft^2 of pine BA on 0.03 acre of potentially suitable habitat and 34.56 ft^2 of pine BA on 5.76 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-11). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 349.42 ft^2 of pine BA on 11.31 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-6).

FB Cluster BB03-01R: This cluster had a PBG from 2002 to 2005 and a solitary male in 2006 (Table 6-4). The cluster contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,020.86 ft^2 of pine BA on 27.62 acres of suitable habitat, 2,169.33 ft^2 of pine BA on 50.29 acres of potentially suitable habitat and 2,625.14 ft^2 of pine BA on 143.97 acres of future potential habitat (Table 6-2).

The pre- project RS habitat foraging totals were 428.29 ft^2 of pine BA on 8.87 acres of potentially suitable habitat and 5,387.04 ft^2 of pine BA on 213.01 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2007 Trainee Barracks Complex 1 Borrow Pit Area will remove 414.24 ft^2 of pine BA on 16.55 acres (Table 6-5 and Figure 6-4).

The 2012 Battle Command Training Center will remove 35.40 ft^2 of pine BA on 1.20 acres (Table 6-10 and Figure 6-4).

As a result of project impacts, 1,616.71 ft^2 of pine BA on 52.92 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,020.86 ft^2 of pine BA on 27.62 acres of suitable habitat, 804.57 ft^2 of pine BA on 16.70 acres of potentially suitable habitat and 1,923.55 ft^2 of pine BA on 106.89 acres of future potential habitat (Table 6-2 and Figure 6-7). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and 6-14). Loblolly pine that is at high risk of decline accounts for 67.66 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 428.29 ft^2 of pine BA on 8.87 acres of potentially suitable habitat and 3,320.69 ft^2 of pine BA on 142.34 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster BB04-01R: This cluster had a PBG in 2002, a solitary male in 2003 and a PBG in 2004 through and 2006 (Table 6-4). The cluster contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,956.55 ft^2 of pine BA on 123.90 acres of suitable habitat, 1,229.31 ft^2 of pine BA on 12.27 acres of potentially suitable habitat and 836.25 ft^2 of pine BA on 46.07 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,123.16 ft^2 of pine BA on 24.50 acres of potentially suitable habitat and 5,898.95 ft^2 of pine BA on 157.74 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2008 General Instruction Building Complex will remove 836.16 ft^2 of pine BA on 21.53 acres (Table 6-6 and Figure 6-4).

The 2008 Road Improvements will remove 316.26 ft^2 of pine BA on 7.38 acres (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 4,506.70 ft^2 of pine BA on 113.16 acres of suitable habitat, 595.29 ft^2 of pine BA on 6.67 acres of potentially suitable habitat and 767.71 ft^2 of pine BA on 33.50 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 7.49 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,123.16 ft^2 of pine BA on 24.50 acres of potentially suitable habitat and 4,746.53 ft^2 of pine BA on 128.83 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster BB05-01R: This cluster had a PBG from 2002 to 2005 and a PBG and a helper in 2006 (Table 6-4). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,706.03 ft^2 of pine BA on 113.25 acres of suitable habitat, 4,015.93 ft^2 of pine BA on 102.12 acres of potentially suitable habitat and 1,493.99 ft^2 of pine BA on 63.62 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 10,215.95 ft^2 of pine BA on 278.99 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-3).

The 2008 General Instruction Building Complex will remove 802.67 ft^2 of pine BA on 15.60 acres (Table 6-6 and Figure 6-4).

The 2008 Infrastructure Support project will remove 389.91 ft^2 of pine BA on 9.29 acres (Table 6-6 and Figure 6-4).

The 2008 Road Improvements will remove 194.48 ft^2 of pine BA on 5.79 acres (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 3,571.46 ft^2 of pine BA on 90.94 acres of suitable habitat, 3,866.71 ft^2 of pine BA on 98.72 acres of potentially suitable habitat and 1,390.73 ft^2 of pine BA on 58.65 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 21.65 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 8,828.90 ft^2 of pine BA on 248.31 of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster C01-02: This cluster had a PBG from 2002 to 2005 and a PBG and 2 helpers in 2006 (Table 6-4). The cluster contained 16 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2008 AT/ FP Access Control Point will remove 9 of 16 cavity trees and have impacts within 51 to 200 feet of 2 others (Table 6-11).

The pre- project SMS foraging habitat totals were 40.17 ft^2 of pine BA on 0.78 acres of suitable habitat, 6,369.62 ft^2 of pine BA on 158.62 acres of potentially suitable habitat and 0.0 ft^2 of pine BA on 16.73 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,912.67 ft^2 of pine BA on 63.84 acres of potentially suitable habitat and 3,497.12 ft^2 of pine BA on 112.29 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2008 AT/ FP Access Control Point will remove 4,046.15 ft^2 of pine BA on 114.99 acres (Table 6-6 and Figure 6-4).

As a result of project impacts, 42.51 ft^2 of pine BA on 1.17 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 40.17 ft^2 of pine BA on 0.78 acre of suitable habitat, 2,280.96 ft^2 of pine BA on 52.48 acres of potentially suitable habitat and 0.0 ft^2 of pine BA on 6.71 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation (Table 6-2, 6-13, 6-14 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 15.32 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,183.13 ft^2 of pine BA on 48.66 acres of potentially suitable habitat and 138.00 ft^2 of pine BA on 11.31 of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of cavity trees and foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster C01-03: This cluster had a PBG from 2002 to 2005 and a PBG and a helper in 2006 (Table 6-4). The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 300.75 ft^2 of pine BA on 8.02 acres of suitable habitat, 3,555.63 ft^2 of pine BA on 88.61 acres of potentially suitable habitat and 621.00 ft^2 of pine BA on 46.50 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,125.37 ft^2 of pine BA on 48.37 acres of potentially suitable habitat and 2.352.01 ft^2 of pine BA on 94.76 acres of future potential habitat. There was no suitable habitat (Table 6-3).

The 2008 AT/ FP Access Control Point will remove 889.47 ft^2 of pine BA on 25.76 acres (Table 6-6 and Figure 6-4).

As a result of project impacts, 109.12 ft^2 of pine BA on 2.91 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,876.15 ft^2 of pine BA on 70.59 acres of potentially suitable habitat and 602.64 ft^2 of pine BA on 43.87 acres of future potential habitat (Table 6-2). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-7), however, reallocation and management of foraging habitat from neighboring "taken" partitions will enable C01-03 to meet SMS (Figure 6-12) (See Section 9). Loblolly pine that is at high risk of decline accounts for 19.18 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,973.57 ft^2 of pine BA on 44.92 acres of potentially suitable habitat and 1,505.22 ft^2 of pine BA on 69.54 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster C02-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,912.69 ft^2 of pine BA on 50.49 acres of suitable habitat, 2,642.91 ft^2 of pine BA on 68.95 acres of potentially suitable habitat and 149.57 ft^2 of pine BA on 28.47 acres of future potential habitat (Table 6-2).

The pre- project RS habitat totals were 321.60 ft^2 of pine BA on 8.04 acres of suitable habitat, 11.50 ft^2 of pine BA on 0.23 acres of potentially suitable habitat and 4,372.07 ft^2 of pine BA on 139.91 acres of future potential habitat (Table 6-3).

The 2008 AT/ FP Access Control Point will remove 415.77 ft^2 of pine BA on 11.73 acres (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 1,898.69 ft^2 of pine BA on 50.09 acres of suitable habitat, 2,241.13 ft^2 of pine BA on 57.62 acres of potentially suitable habitat and 149.57 ft^2 of pine BA on 28.74 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 39.52 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 321.60 ft^2 of pine BA on 8.04 acres of suitable habitat, 5.50 ft^2 of pine BA on 0.11 acre of potentially suitable habitat and 3,962.30 ft^2 of pine BA on 128.30 acres of future potential habitat (Table 6-3). This partition may not meet RS in the future (Table 6-17).

FB Cluster D05-02R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,840.55 ft^2 of pine BA on 122.80 acres of suitable habitat and 858.61 ft^2 of pine BA on 39.09 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,699.16 ft^2 of pine BA on 161.89 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 353.87 ft^2 of pine BA on 13.54 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,718.12 ft^2 of pine BA on 119.78 acres of suitable habitat and 627.17 ft^2 of pine BA on 28.57 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Figure 6-9). Loblolly pine that is at high risk of decline accounts for 20.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,345.29 ft^2 of pine BA on 148.35 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-17).

FB Cluster D05-04R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 10,245.41 ft^2 of pine BA on 255.06 acres of suitable habitat and 504.18 ft^2 of pine BA on 48.27 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 10,749.59 ft^2 of pine BA on 303.33 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,276.80 ft^2 of pine BA on 90.85 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 219.71 ft^2 of pine BA on 5.38 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 7,124.52 $ft^2$of pine BA on 180.47 acres of suitable habitat and 128.56 ft^2 of pine BA on 26.63 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 52.48 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS habitat totals were 7,253.08 ft^2 of pine BA on 207.10 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster D06-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2009 Heavy Maneuver Corridor - South will only impact non- contiguous habitat, therefore a foraging habitat analysis was not conducted.

FB Cluster D08-01R: This cluster had a solitary male in 2002, a PBG in 2003 and 2004 and a solitary male in 2005 and 2006 (Table 6-4). The cluster contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,104.18 ft^2 of pine BA on 113.10 acres of suitable habitat and 1,321.06 ft^2 of pine BA on 139.48 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 68.89 ft^2 of pine BA on 1.59 acres of potentially suitable habitat and 5,351.85 ft^2 of pine BA on 250.98 acres on future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 109.46 ft^2 of pine BA on 3.32 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,011.58 ft^2 of pine BA on 110.49 acres of suitable habitat and 1,304.20 ft^2 of pine BA on 138.77 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

Cluster D08-01R has not consistently had a PBG for the last 5 years. Per USFWS guidance, clusters that meet the modified foraging habitat guidelines (established during Informal Consultation for this action), but are not demographically stable, could still require Incidental Take (See Section 4). However, because of the distance of the proposed road upgrade from the cluster center (approximately 0.35 mile), the relatively small amount of foraging habitat removed and the sufficient foraging habitat remaining post- project, this cluster is <u>not</u> expected to be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 57.25 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 52.42 ft^2 of pine BA on 1.21 acres of potentially suitable habitat and 5,258.86 ft^2 of pine BA on 248.04 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

<u>FB Cluster D10-01</u>: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,472.00 ft^2 of pine BA on 44.24 acres of suitable habitat and 672.54 ft^2 of pine BA on 76.66 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,144.54 ft^2 of pine BA on 120.90 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 0.0 ft^2 of pine BA on 1.35 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,472.00 ft^2 of pine BA on 44.24 acres of suitable habitat and 672.54 ft^2 of pine BA on 75.31 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 62.25 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,144.54 ft^2 of pine BA on 119.55 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster D11-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Corridor - South will result in impacts within 50 feet of 1 of 9 cavity trees and 51 to 200 feet of 1 other cavity tree (Table 6-11). In addition, 7 of 9 cavity trees will be subject to military training impacts, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11).

The pre- project SMS foraging habitat totals were 3,472.58 ft^2 of pine BA on 93.02 acres of suitable habitat and 96.31 ft^2 of pine BA on 49.47 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 20.71 ft^2 of pine BA on 0.41 acre of potentially suitable habitat and 3,548.18 ft^2 of pine BA on 142.08 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 1,867.90 ft^2 of pine BA on 81.60 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,635.94 ft^2 of pine BA on 43.79 acres of suitable habitat and 65.05 ft^2 of pine BA on 17.10 acres of future potential habitat. There was no potentially suitable habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and

Figure 6-9). Loblolly pine that is at high risk of decline accounts for 18.16 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 20.71 ft^2 of pine BA on 0.41 acre of potentially suitable habitat and 1,680.28 ft^2 of pine BA on 60.48 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

Cluster D11-01 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D11-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). Seven of 7 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 3,994.86 ft^2 of pine BA on 108.40 acres of suitable habitat and 1,305.57 ft^2 of pine BA on 55.81 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 24.75 ft^2 of pine BA on 0.49 acre of potentially suitable habitat and 5,275.68 ft^2 of pine BA on 163.72 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 2,936.45 ft^2 of pine BA on 86.78 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 1,218.12 ft^2 of pine BA on 42.38 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 716.21 ft^2 of pine BA on 18.45 acres of suitable habitat and 429.65 ft^2 of pine BA on 16.60 acres of future potential habitat (Table 6-2, 6-13 and 6-14). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2,

6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 24.75 ft^2 of pine BA on 0.49 acre of potentially suitable habitat and 1,121.11 ft^2 of pine BA on 34.56 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

Cluster D11-02 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D15-01R: This cluster had a PBG from 2002 to 2005 (Table 6-4). In 2006, this cluster had a PBG and a helper. The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 6,807.87 ft^2 of pine BA on 156.24 acres of suitable habitat, 560.88 ft^2 of pine BA on 14.76 acres of potentially suitable habitat and 2,566.22 ft^2 of pine BA on 111.12 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 551.86 ft^2 of pine BA on 8.33 acres of potentially suitable habitat and 9,383.11 ft^2 of pine BA on 273.78 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 671.31 ft^2 of pine BA on 21.94 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,515.94 ft^2 of pine BA on 148.35 acres of suitable habitat, 560.88 ft^2 of pine BA on 14.76 acres of potentially suitable habitat and 2,186.84 ft^2 of pine BA on 97.07 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 14.55 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 551.86 ft^2 of pine BA on 8.33 acres of potentially suitable habitat and 8,711.80 ft^2 of pine BA on 251.84 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

Cluster D15-01R was included in an Incidental Take Statement for the DMPRC (USFWS 2004a), however it was still inhabited by a PBG in 2006. FBCB personnel are currently conducting home range follows of this group as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D16-02: This cluster had a PBG from 2002 to 2006(Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Corridor - South will result in impacts within 50 feet of 1 of 7 cavity trees, 51 to 200 feet of 2 of 7 cavity trees and 1 of 7 cavity trees will be subject to military training impacts (Table 6-11).

The pre- project SMS foraging habitat totals were 534.92 ft^2 of pine BA on 15.33 acres of suitable habitat and 3,299.43 ft^2 of pine BA on 200.53 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,834.35 ft^2 of pine BA on 215.86 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 752.09 ft^2 of pine BA on 57.94 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 1,366.72 ft^2 of pine BA on 67.36 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS and RS foraging habitat totals were 1,715.54 ft^2 of pine BA on 90.56 acres of future potential habitat (Table 6-2 and Table 6-3). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). There is no loblolly pine at high risk of decline within this partition (Table 6-15). This partition cannot meet the RS in the future (Table 6-16).

FB Cluster D17-04R: This cluster had a PBG from 2002 to 2005 (Table 6-4) and a PBG and 2 helpers in 2006. The cluster contained 11 cavity trees in various stages of completion and

suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,187.41 ft^2 of pine BA on 79.80 acres of suitable habitat, 356.53 ft^2 of pine BA on 10.97 acres of potentially suitable habitat and 1,871.43 ft^2 of pine BA on 101.41 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,483.69 ft^2 of pine BA on 34.52 acres of potentially suitable habitat and 3,931.68 ft^2 of pine BA on 157.66 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 340.46 ft^2 of pine BA on 11.89 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,148.78 ft^2 of pine BA on 78.77 acres of suitable habitat, 356.53 ft^2 of pine BA on 10.97 acres of potentially suitable habitat and 1,569.60 ft^2 of pine BA on 90.55 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 1,483.69 ft^2 of pine BA on 34.52 acres of potentially suitable habitat and 3,591.22 ft^2 of pine BA on 145.77 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster E02-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,867.93 ft^2 of pine BA on 90.53 acres of suitable habitat, 515.56 ft^2 of pine BA on 17.09 acres of potentially suitable habitat and 399.63 ft^2 of pine BA on 124.82 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 79.54 ft^2 of pine BA on 1.64 acres of suitable habitat and 3,703.58 ft^2 of pine BA on 230.80 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 0.0 ft^2 of pine BA on 5.71 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 104.45 ft^2 of pine BA on 4.22 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,770.90 ft^2 of pine BA on 87.40 acres of suitable habitat, 515.36 ft^2 of pine BA on 17.09 acres of potentially suitable habitat and 392.21 ft^2 of pine BA on 118.02 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 6.54 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 79.54 ft^2 of pine BA on 1.64 acres of suitable habitat and 3,599.13 ft^2 of pine BA on 220.87 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster E03-01: This cluster had a PBG from 2002 to 2005 (Table 6-4) and a PBG and a helper in 2006. The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 7,046.71 ft^2 of pine BA on 161.08 acres of suitable habitat and 1,912.80 ft^2 of pine BA on 41.27 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 8,959.51 ft^2 of pine BA on 202.35 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 176.52 ft^2 of pine BA on 4.01 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,870.19 ft^2 of pine BA on 157.07 acres of suitable habitat and 1,912.80 ft^2 of pine BA on 41.27 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2,

6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 15.98 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 8,782.99 ft^2 of pine BA on 198.34 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster E04-01: This cluster had a PBG from 2002 to 2006 (Table 6-4)and contained 8 cavity trees in various stages of completion and suitability (Appendix C). Eight of 8 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13). In addition, the 2010 Construction of Installation-wide Roads will remove 1 of 8 cavity tree, have impacts within 51–200 feet of 4 others and the 2010 Repair/ Upgrade Existing Training Area Roads will have impacts within 50 feet of 2 of 8 cavity trees.

The pre- project SMS foraging habitat totals were 4,504.91 ft^2 of pine BA on 114.82 acres of suitable habitat and 1,275.52 ft^2 of pine BA on 52.26 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 242.55 ft^2 of pine BA on 5.39 acres of suitable habitat, 575.70 ft^2 of pine BA on 6.06 acres of potentially suitable habitat and 4,962.18 ft^2 of pine BA on 155.63 acres of future potential habitat (Table 6-3).

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,283.18 ft^2 of pine BA on 87.14 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 56.78 ft^2 of pine BA on 1.31 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 37.32 ft^2 of pine BA on 1.28 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,734.95 ft^2 of pine BA on 44.41 acres of suitable habitat and 668.20 ft^2 of pine BA on 32.94 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 46.93 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 234.45 ft^2 of pine BA on 5.21 acres of suitable habitat and 2,168.70 ft^2 of pine BA on 72.14 acres of future potential habitat. There was no potentially suitable habitat (Table 6-3). This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

Cluster E04-01 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster E08-05R: This cluster was inactive in 2002 and 2003 (Table 6-4) and a PBG from 2004 to 2006. This cluster contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,852.66 ft^2 of pine BA on 104.71 acres of suitable habitat and 103.01 ft^2 of pine BA on 70.74 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,676.58 ft^2 of pine BA on 54.85 acres of suitable habitat, 1,104.47 ft^2 of pine BA on 25.39 acres of potentially suitable habitat and 1,174.62 ft^2 of pine BA on 95.20 acres of future potential habitat (Table 6-3).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 155.71 ft^2 of pine BA on 4.64 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,696.95 ft^2 of pine BA on 101.34 acres of suitable habitat and 103.01 ft^2 of pine BA on 69.47 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 4.68 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,557.75 ft^2 of pine BA on 52.40 acres of suitable habitat, 1,081.41 ft^2 of pine BA on 24.86 acres of potentially suitable habitat and

1,160.80 of pine BA on 93.54 acres of future potential habitat (Table 6-3). This cluster can meet the RS in the future (Table 6-17).

FB Cluster F01-02R: This cluster has been inactive for the previous 5 years (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). Four of 4 inactive cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South (Table 6-12). .

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster F02-01R: This cluster was inactive between 2002 and 2004, had a solitary male in 2005 and a PBG in 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,739.60 ft^2 of pine BA on 85.24 acres of suitable habitat and 2,585.72 ft^2 of pine BA on 124.79 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,172.46 ft^2 of pine BA on 70.53 acres of potentially suitable habitat and 3,152.86 ft^2 of pine BA on 139.50 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 1,753.36 ft^2 of pine BA on 65.55 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 22.01 ft^2 of pine BA on 0.70 acre (Table 6-8 and Figure 6-5).

As a result of project impacts, 66.22 ft^2 of pine BA on 5.22 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,900.98 ft^2 of pine BA on 65.10 acres of suitable habitat and 1,582.75 ft^2 of pine BA on 73.46 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 31.09 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,713.46 ft^2 of pine BA on 60.10 acres of potentially suitable habitat and 1,770.27 ft^2 of pine BA on 78.46 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-16).

FB Cluster HCC-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2009 Centralized Wash Facility will remove 2 of 9 cavity trees and have impacts within 51 to 200 feet of 2 others. In addition, the 2011 3 ID Brigade Combat Team project will remove 5 of 9 cavity trees which could result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 6,714.85 ft^2 of pine BA on 165.86 acres of suitable habitat, 1,141.04 ft^2 of pine BA on 29.43 acres of potentially suitable habitat and 478.61 ft^2 of pine BA on 30.15 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,799.74 ft^2 of pine BA on 36.29 acres of potentially suitable habitat and 6,534.76 ft^2 of pine BA on 189.15 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Training Support Brigade Complex will remove 550.79 ft^2 of pine BA on 14.66 acres (Table 6-5 and Figure 6-4).

The 2008 Unit Maintenance Activity Facility will remove 122.10 ft^2 of pine BA on 3.70 acres (Table 6-6 and Figure 6-4).

The 2008 Road Improvements will remove 29.88 ft^2 of pine BA on 1.09 acres (Table 6-6 and Figure 6-4).

The 2009 Museum Operations Support Building will remove 10.56 ft^2 of pine BA on 0.32 acre (Table 6-7 and Figure 6-4).

The 2009 Centralized Wash Facility will remove 2,725.24 ft^2 of pine BA on 70.00 acres (Table 6-7 and Figure 6-4).

The 2009 Vehicle Maintenance Instruction Facility will remove 34.26 ft^2 of pine BA on 0.85 acre (Table 6-7 and Figure 6-4).

The 2011 3 ID Brigade Combat Team Complex will remove 985.76 ft^2 of pine BA on 33.08 acres (Table 6-9 and Figure 6-4).

The post- project SMS foraging habitat totals were 2,633.22 ft^2 of pine BA on 65.10 acres of suitable habitat, 1,140.72 ft^2 of pine BA on 29.42 acres of potentially suitable habitat and 101.97 ft^2 of pine BA on 7.22 acres of future potential habitat (Table 6-2, 6-13 and 6-14). According FBLMB, approximately 5.0 acres of potentially suitable habitat in this partition is not manageable and should be considered unsuitable foraging habitat. Although this cluster still meets the lowered foraging habitat requirements, the remaining foraging habitat is low quality and the configuration of habitat remaining is poor (Table 6-2 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 66.17 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 197.23 ft^2 of pine BA on 3.83 acres of potentially suitable habitat and 3,678.68 ft^2 of pine BA on 97.91 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss (Tables 6-2, 6-11, 6-13, 6-14 and Figure 6-4).

FB Cluster HCC-08R: This cluster contained a solitary male in 2005 and 2006 (Table 6-4, Figure 7-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,962.19 ft^2 of pine BA on 58.75 acres of suitable habitat, 1,634.98 ft^2 of pine BA on 51.97 acres of potentially suitable habitat and 2,551.09 ft^2 of pine BA on 97.76 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 145.34 ft^2 of pine BA on 3.38 acres of potentially suitable habitat and 6,002.92 ft^2 of pine BA on 205.10 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Equipment Concentration Site will remove 308.71 ft^2 of pine BA on 8.90 acres (Table 6-8 and Figure 6-4).

The post- project SMS foraging habitat totals were 1,653.48 ft^2 of pine BA on 50.01 acres of suitable habitat, 1,634.98 ft^2 of pine BA on 51.97 acres of potentially suitable habitat and 2,551.09 ft^2 of pine BA on 97.60 acres of future potential habitat (Table 6-2). This cluster has

not had a PBG since its activation in 2005. We do not expect this cluster to be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat because of the distance of the proposed project from the cluster area (approximately 0.26 miles), the sufficient amount of remaining suitable and potentially suitable habitat remaining post- project and the amount of future potential habitat adjacent to the cluster (73 acres of 105-year old loblolly pine averaging 29 ft^2 of pine BA/ acre) (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 68.18 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 145.34 ft^2 of pine BA on 3.38 acres of potentially suitable habitat and 5,694.21 ft^2 of pine BA on 196.20 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster HCC-10R: This cluster had a PBG from 2002 to 2005 (Table 6-4, Figure 7-4) and a PBG and a helper in 2006. The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2007 Trainee Barracks Complex 1 will have impacts within 51 to 200 feet of 1 of 4 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 3,419.14ft^2 of pine BA on 95.84 acres of suitable habitat, 5,317.02 ft^2 of pine BA on 123.96 acres of potentially suitable habitat and 1,273.41 ft^2 of pine BA on 74.91 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,572.42 ft^2 of pine BA on 99.14 acres of potentially suitable habitat and 5,437.16 ft^2 of pine BA on 195.57 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Trainee Barracks Complex 1 will remove 3,013.99 ft^2 of pine BA on 81.88 acres (Table 6-5 and Figure 6-4).

The 2007 Training Support Brigade Complex will remove 294.47 ft^2 of pine BA on 7.85 acres (Table 6-5 and Figure 6-4).

The 2008 Road Improvements will remove 157.55 ft^2 of pine BA on 4.17 acres (Table 6-6 and Figure 6-4).

The 2009 Centralized Wash Facility will remove 46.07 ft^2 of pine BA on 1.11 acres (Table 6-7 and Figure 6-4).

The 2010 Equipment Concentration Site will remove 773.91 ft^2 of pine BA on 41.73 acres (Table 6-8 and Figure 6-4).

The 2012 Chapel will remove 16.80 ft^2 of pine BA on 0.56 acre (Table 6-10).

The post- project SMS foraging habitat totals were 2,479.62 ft^2 of pine BA on 70.52 acres of suitable habitat, 2,631.02 ft^2 of pine BA on 61.30 acres of potentially suitable habitat and 596.15 ft^2 of pine BA on 25.59 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 40.18 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,300.42 ft^2 of pine BA on 50.28 acres of potentially suitable habitat and 3,406.37 ft^2 of pine BA on 107.13 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster HCC-11R: This cluster was captured by FB Cluster A06-01 from 2002 to 2004 and had a PBG in 2005 and 2006 (Table 6-4, Figure 7-4). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2008 Road Improvements will have impacts within 51 to 200 feet of 1 of 7 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 385.98 ft^2 of pine BA on 11.83 acres of suitable habitat and 5,469.75 ft^2 of pine BA on 241.24 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,855.73 ft^2 of pine BA on 253.07 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2007 Trainee Barracks Complex 1 Borrow Pit Area will remove 206.07 ft^2 of pine BA on 21.73 acres (Table 6-5 and Figure 6-4).

The 2007 IET Brigade Headquarters Building will remove 99.69 ft^2 of pine BA on 6.18 acres (Table 6-5 and Figure 6-4).

The 2008 Road Improvements will remove 430.37 ft^2 of pine BA on 17.06 acres (Table 6-6 and Figure 6-4).

As a result of project impacts, 47.56 ft^2 of pine BA on 2.32 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 356.70 ft^2 of pine BA on 11.08 acres of suitable habitat and 4,715.34 ft^2 of pine BA on 194.70 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 9.56 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,072.04 ft^2 of pine BA on 205.78 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster J01-02R: This cluster had a PBG in 2002, was inactive in 2003, had a solitary male in 2004 and a PBG in 2005 and 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,570.26 ft^2 of pine BA on 59.48 acres of suitable habitat and 1,327.60 ft^2 of pine BA on 176.70 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 1,116.26 ft^2 of pine BA on 22.67 acres of potentially suitable habitat and 2,781.60 ft^2 of pine BA on 213.50 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 0.0 ft^2 of pine BA on 4.95 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,570.26 ft^2 of pine BA on 59.48 acres of suitable habitat and 1,327.60 ft^2 of pine BA on 171.75 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 1.60 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,116.26 ft^2 of pine BA on 22.67 acres of potentially suitable habitat and 2,781.60 ft^2 of pine BA on 208.55 acres of future potential

habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster J02-02R: This cluster was inactive in 2002 and 2003 and had a PBG in 2004, 2005 and 2006 (Table 6-4). The cluster contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2012 Rail Car Storage/ Tracks for Deployment project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster J03-01: This cluster had a PBG in 2002 and 2003, a solitary male in 2004 and had a PBG in 2005 and 2006 (Table 6-4). The cluster contained 12 cavity trees in various stages of completion and suitability (Appendix C). Twelve of 12 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 4,183.83 ft^2 of pine BA on 105.25 acres of suitable habitat and 1,254.41 ft^2 of pine BA on 77.22 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,378.49 ft^2 of pine BA on 82.23 acres of potentially suitable habitat and 2,059.75 ft^2 of pine BA on 100.24 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,261.15 ft^2 of pine BA on 95.89 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 283.37 ft^2 of pine BA on 7.62 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,268.13 ft^2 of pine BA on 32.72 acres of suitable habitat and 625.59 ft^2 of pine BA on 46.24 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 6.08 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,016.75 ft^2 of pine BA on 24.77 acres of potentially suitable habitat and 876.97 ft^2 of pine BA on 54.19 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition can meet the RS in the future with reallocation of habitat from neighboring "taken" partitions (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

Cluster J03-01 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster J04-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). Ten of 10 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 3,187.22 ft^2 of pine BA on 85.90 acres of suitable habitat, 432.19 ft^2 of pine BA on 11.41 acres of potentially suitable habitat and 1,734.85 ft^2 of pine BA on 98.37 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 158.76 ft^2 of pine BA on 3.78 acres of potentially suitable habitat and 5,195.00 ft^2 of pine BA on 191.90 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,852.59 ft^2 of pine BA on 137.59 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 14.54 ft^2 of pine BA on 0.45 acre (Table 6-8 and Figure 6-5).

As a result of project impacts, 497.48 ft^2 of pine BA on 23.32 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 787.36 ft^2 of pine BA on 22.04 acres of suitable habitat, 133.98 ft^2 of pine BA on 3.50 acres of potentially suitable habitat and 67.81 ft^2 of pine BA on 8.78 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table

6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 52.83 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 79.80 ft^2 of pine BA on 1.90 acres of potentially suitable habitat and 909.35 ft^2 of pine BA on 35.42 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

FB Cluster J05-01: This cluster had a PBG from 2002 to 2006 (Table 6-4). The cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). Eleven of 11 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13). In addition, the 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 50 feet of 1 of 11 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 3,110.24 ft^2 of pine BA on 82.76 acres of suitable habitat, 1,492.79 ft^2 of pine BA on 45.95 acres of potentially suitable habitat and 2,078.48 ft^2 of pine BA on 108.05 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 6,681.51 ft^2 of pine BA on 236.76 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 5,627.70 ft^2 of pine BA on 175.44 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 486.03 ft^2 of pine BA on 16.39 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 33.53 ft^2 of pine BA on 1.08 acres of potentially suitable habitat and 534.25 ft^2 of pine BA on 43.85 acres of future potential habitat (Table 6-2). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 77.84 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 567.78 ft^2 of pine BA on 44.93 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-5).

FB Cluster J06-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,674.76 ft^2 of pine BA on 104.22 acres of suitable habitat and 501.55 ft^2 of pine BA on 57.10 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 4,176.31 ft^2 of pine BA on 161.33 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 98.63 ft^2 of pine BA on 3.38 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,607.26 ft^2 of pine BA on 102.53 acres of suitable habitat and 470.42 ft^2 of pine BA on 55.41 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 8.34 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 4,077.68 ft^2 of pine BA on 157.95 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

Cluster J06-01 was included in an Incidental Take Statement for the DMPRC (USFWS 2004a), however it was still inhabited by a PBG in 2006. FBCB personnel are currently conducting home range follows of this group as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster J06-03: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2010 Installation –wide Roads will have impacts 51 to 200 feet of 1 of 8 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 7,630.60 ft^2 of pine BA on 211.95 acres of suitable habitat, 7.76 ft^2 of pine BA on 0.25 acre of potentially suitable habitat and 2,023.96 ft^2 of pine BA on 73.65 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 9,662.32 ft^2 of pine BA on 285.85 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will 1,240.33 ft^2 of pine BA on 38.58 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 373.97 ft^2 of pine BA on 10.13 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 147.59 ft^2 of pine BA on 4.22 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,495.91 ft^2 of pine BA on 181.34 acres of suitable habitat and 1.404.53 ft^2 of pine BA on 51.58 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will <u>not</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 12.65 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 7,900.43 ft^2 of pine BA on 232.92 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K02-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) and beaten area will remove 5 of 5 cavity trees which will result in “take” of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 315.11 ft^2 of pine BA on 10.03 acres of potentially suitable habitat and 5,936.56 ft^2 of pine BA on 253.93 acres of future potential habitat (Table 6-2). There was no suitable habitat.

The pre- project RS foraging habitat totals were 6,251.67 ft^2 of pine BA on 263.96 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 4,317.56 ft^2 of pine BA on 191.70 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 151.90 ft^2 of pine BA on 8.68 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 228.93 ft^2 of pine BA on 7.25 acres of potentially suitable habitat and 1,553.28 ft^2 of pine BA on 56.33 acres of future potential habitat (Table 6-2). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 52.70 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,782.21 ft^2 of pine BA on 63.58 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster K08-03: This cluster was inactive in 2002, captured by FB Cluster K08-02 in 2003 and had a PBG in 2004 to 2006 (Table 6-4). The cluster contained 6 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2010 Installation –wide Roads will have impacts within 50 feet of 1 of 6 cavity trees and 51 to 200 feet of 1 other cavity tree (Table 6-11).

The pre- project SMS foraging habitat totals were 3,551.58 ft^2 of pine BA on 98.31 acres of suitable habitat and 0.0 ft^2 of pine BA on 29.02 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 1,515.13 ft^2 of pine BA on 35.65 acres of suitable habitat and 2,036.45 ft^2 of pine BA on 91.68 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 234.76 ft^2 of pine BA on 6.85 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,316.82 ft^2 of pine BA on 92.05 acres of suitable habitat and 0.0 ft^2 of pine BA on 28.43 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 26.47 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,382.10 ft^2 of pine BA on 32.52 acres of suitable habitat and 1,934.72 ft^2 of pine BA on 87.96 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This partition may not meet RS in the future (Table 6-17).

FB Cluster K08-04: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 6,554.22 ft^2 of pine BA on 177.18 acres of suitable habitat, 70.95 ft^2 of pine BA on 6.45 acres of potentially suitable habitat and 39.83 ft^2 of pine BA on 4.42 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 999.18 ft^2 of pine BA on 23.51 acres of suitable habitat and 5,665.82 ft^2 of pine BA on 164.54 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 519.94 ft^2 of pine BA on 13.67 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,048.15 ft^2 of pine BA on 163.98 acres of suitable habitat, 70.95 ft^2 of pine BA on 6.45 acres of potentially suitable habitat and 25.97 ft^2 of pine BA on 3.95 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-10).

Loblolly pine that is at high risk of decline accounts for 33.12 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 862.75 ft^2 of pine BA on 20.30 acres of suitable habitat and 5,282.31 ft^2 of pine BA on 154.08 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K09-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,793.89 ft^2 of pine BA on 89.57 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 1,685.70 ft^2 of pine BA on 59.46 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,198.83 ft^2 of pine BA on 48.43 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 3,280.76 ft^2 of pine BA on 100.60 acres of future potential habitat (Table 6-3).

The 2010 Construction of Installation-wide Roads project will remove 37.94 ft^2 of pine BA on 1.23 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,776.90 ft^2 of pine BA on 89.05 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 1,664.75 ft^2 of pine BA on 58.75 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 0.19 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,198.83 ft^2 of pine BA on 48.43 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 3,242.82 ft^2 of pine BA on 99.37 acres of future potential habitat (Table 6-3). This partition may not meet RS in the future (Table 6-17).

FB Cluster K09-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 5,245.87 ft^2 of pine BA on 147.03 acres of suitable habitat, 2,224.00 ft^2 of pine BA on 44.48 acres of potentially suitable habitat and 661.84 ft^2 of pine BA on 59.62 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,224.00 ft^2 of pine BA on 44.48 acres of potentially suitable habitat and 5,907.71 ft^2 of pine BA on 206.65 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 219.88 ft^2 of pine BA on 9.99 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 5,073.72 ft^2 of pine BA on 141.95 acres of suitable habitat, 2,213.00 ft^2 of pine BA on 44.26 acres of potentially suitable habitat and 625.11 ft^2 of pine BA on 54.93 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 43.99 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,2153.00 ft^2 of pine BA on 44.26 acres of potentially suitable habitat and 5,698.83 ft^2 of pine BA on 196.88 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K10-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2010 Construction of Installation-wide Roads project will only impact non- habitat and a foraging habitat analysis was not conducted.

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

FB Cluster K11-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 9,093.19 ft^2 of pine BA on 239.88 acres of suitable habitat, 174.08 ft^2 of pine BA on 5.12 acres of potentially suitable habitat and 717.70 ft^2 of pine BA on 77.22 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,532.46 ft^2 of pine BA on 84.19 acres of potentially suitable habitat and 6,452.51 ft^2 of pine BA on 238.03 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 78.01 ft^2 of pine BA on 2.58 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 9,073.66 ft^2 of pine BA on 239.33 acres of suitable habitat, 115.60 ft^2 of pine BA on 3.40 acres of potentially suitable habitat and 717.70 ft^2 of pine BA on 76.91 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 19.64 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,532.46 ft^2 of pine BA on 84.19 acres of potentially suitable habitat and 6,374.50 ft^2 of pine BA on 235.45 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

This cluster is expected to be "taken" at the group level (See Section 6.10.6).

FB Cluster K11-03: This cluster had a PBG in 2002, a solitary male in 2003 and PBGs from 2004 to 2006 (Table 6-4). The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,426.04 ft^2 of pine BA on 40.17 acres of suitable habitat, 73.44 ft^2 of pine BA on 2.16 acres of potentially habitat and 2,517.23 ft^2 of pine BA on 111.63 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,016.71 ft^2 of pine BA on 153.96 acres of future potential habitat (Table 6-3). There was no suitable or potentiality suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 175.54 ft^2 of pine BA on 8.39 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,335.51 ft^2 of pine BA on 37.62 acres of suitable habitat, 71.06 ft^2 of pine BA on 2.09 acres of potentially suitable habitat and 2,434.60 ft^2 of pine BA on 105.86 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 0.05 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,841.17 ft^2 of pine BA on 145.57 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-16).

FB Cluster K14-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 51 to 200 feet of 2 of 10 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 3,104.66 ft^2 of pine BA on 66.02 acres of suitable habitat and 2,014.31 ft^2 of pine BA on 145.86 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,118.97 ft^2 of pine BA on 211.89 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 196.71 ft^2 of pine BA on 4.95 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,946.08 ft^2 of pine BA on 62.93 acres of suitable habitat and 1,976.18 ft^2 of pine BA on 144.00 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-10). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 4,922.26 ft^2 of pine BA on 206.94 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster K17-01: This cluster had a PBG from 2002 to 2006 (Table 6-4). The cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2010 Repair and Upgrade Existing Training Area Roads project will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster K17-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 6,102.84 ft^2 of pine BA on 118.38 acres of suitable habitat and 623.87 ft^2 of pine BA on 45.47 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 6,726.71 ft^2 of pine BA on 163.84 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 128.14 ft^2 of pine BA on 4.63 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,034.27 ft^2 of pine BA on 117.02 acres of suitable habitat and 564.30 ft^2 of pine BA on 42.20 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-10). There is no loblolly pine at high risk of decline within this partition (Table 6-15).

The post- project RS foraging habitat totals were 6,598.57 ft^2 of pine BA on 159.21 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K17-05R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 6,658.60 ft^2 of pine BA on 144.10 acres of suitable habitat and 89.27 ft^2 of pine BA on 130.37 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 6,747.87 ft^2 of pine BA on 274.47 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 10.68 ft^2 of pine BA on 0.96 acre (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,647.92 ft^2 of pine BA on 143.86 acres of suitable habitat and 89.27 ft^2 of pine BA on 129.65 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 15.36 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 6,737.19 ft^2 of pine BA on 273.51 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K18-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 51 to 200 feet of 2 of 9 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 6,052.18 ft^2 of pine BA on 121.71 acres of suitable habitat, 1,539.75 ft^2 of pine BA on 24.82 acres of potentially suitable habitat and 1,905.45 ft^2 of pine BA on 100.39 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 6,236.76 ft^2 of pine BA on 126.13 acres of potentially suitable habitat and 3,260.62 ft^2 of pine BA on 120.79 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 236.45 ft^2 of pine BA on 6.94 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 5,907.18 ft^2 of pine BA on 118.73 acres of suitable habitat, 1,522.21 ft^2 of pine BA on 24.40 acres of potentially suitable habitat and 1,831.54 ft^2 of pine BA on 96.85 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 3.89 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 6,074.21 ft^2 of pine BA on 122.73 acres of potentially suitable habitat and 3,186.71 ft^2 of pine BA on 117.25 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster currently meets the RS (Table 6-17).

FB Cluster K18-02R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 5,357.23 ft^2 of pine BA on 138.32 acres of suitable habitat, 665.48 ft^2 of pine BA on 16.69 acres of potentially suitable habitat and 1,013.52 ft^2 of pine BA on 45.67 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,090.90 ft^2 of pine BA on 71.04 acres of potentially suitable habitat and 3,945.33 ft^2 of pine BA on 129.64 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 127.17 ft^2 of pine BA on 3.16 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 5,278.25 ft^2 of pine BA on 136.38 acres of suitable habitat, 617.29 ft^2 of pine BA on 15.47 acres of potentially suitable habitat and 1,013.52 ft^2 of pine BA on 45.67 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 14.38 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,031.45 ft^2 of pine BA on 69.68 acres of potentially suitable habitat and 3,877.61 ft^2 of pine BA on 127.84 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster K18-03R: This cluster was provisioned in 2006 and had a PBG in 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS and RS foraging habitat totals were 771.53 ft^2 of pine BA on 19.05 acres of potentially suitable habitat and 3,755.91 ft^2 of pine BA on 167.03 acres of future potential habitat (Table 6-2 and Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 110.79 ft^2 of pine BA on 3.62 acres (Table 6-8 and Figure 6-5).

The post- project SMS and RS foraging habitat totals were 701.87 ft^2 of pine BA on 17.33 acres of potentially suitable habitat and 3,714.78 ft^2 of pine BA on 165.13 acres of future potential habitat (Table 6-2 and Table 6-3). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-10). There is no loblolly pine at high risk of decline within this partition (Table 6-15). This cluster can meet the RS in the future (Table 6-16).

FB Cluster K21-02R: This cluster had a PBG from 2002 to 2004, was inactive in 2005 and had a PBG in 2006 (Table 6-4). The cluster contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 8,285.35 ft^2 of pine BA on 194.32 acres of suitable habitat and 780.02 ft^2 of pine BA on 33.15 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,639.38 ft^2 of pine BA on 51.25 acres of potentially suitable habitat and 6,425.99 ft^2 of pine BA on 176.22 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 508.05 ft^2 of pine BA on 14.54 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 7,877.77 ft^2 of pine BA on 184.05 acres of suitable habitat and 679.55 ft^2 of pine BA on 28.88 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster was inactive for 1 of the past 5 years and we do not expect this cluster to be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-10). Cluster K21-02R would meet the SMS as described in the Recovery Plan (USFWS 2003a), with 4,349.68 ft^2 of pine BA on 93.47 acres of suitable habitat using a minimum BA of 40 ft^2/ acre. Loblolly pine that is at high risk of decline accounts for 2.03 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,639.38 ft^2 of pine BA on 51.25 acres of potentially suitable habitat and 5,917.94 ft^2 of pine BA on 161.68 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster L02-01R: This cluster has been inactive for the past 5 years (Table 6-4). There are 5 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Driver Training Course/ Vehicle Recovery Area will remove 5 of 5 inactive cavity trees (Table 6-12).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster L02-02R: This was inactive between 2002 and 2005 and had a PBG in 2006 (Table 6-4). There are 4 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Driver Training Course/ Vehicle Recovery Area will remove 4 of 4 cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 4,677.98 ft^2 of pine BA on 119.30 acres of suitable habitat, 276.90 ft^2 of pine BA on 9.23 acres of potential suitable habitat and 1,369.06 ft^2 of pine BA on 69.59 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 303.75 ft^2 of pine BA on 4.86 acres of potentially suitable habitat and 6,020.19 ft^2 of pine BA on 193.26 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Driver Training Course removes 4,655.43 ft^2 of pine BA on 136.36 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 179.20 ft^2 of pine BA on 4.75 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 593.11 ft^2 of pine BA on 14.19 acres of suitable habitat, 100.80 ft^2 of pine BA on 3.36 acres of potential suitable habitat and 795.40 ft^2 of pine BA on 39.46 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 92.90 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,489.31 ft^2 of pine BA on 57.01 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster L03-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,930.86 ft^2 of pine BA on 40.87 acres of suitable habitat, 401.32 ft^2 of pine BA on 8.93 acres of potentially suitable habitat and 473.21 ft^2 of pine BA on 23.51 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,712.81 ft^2 of pine BA on 31.90 acres of potentially suitable habitat and 1,092.58 ft^2 of pine BA on 41.41 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 50.94 ft^2 of pine BA on 2.02 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,926.03 ft^2 of pine BA on 40.77 acres of suitable habitat, 398.69 ft^2 of pine BA on 8.86 acres of potentially suitable habitat and 429.74 ft^2 of pine BA on 21.66 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table

6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 62.36 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,712.81 ft^2 of pine BA on 31.90 acres of potentially suitable habitat and 1,041.64 ft^2 of pine BA on 39.39 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

Cluster L03-01 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster M08-04R: This cluster had a PBG from 2002 to 2006 (Table 6-4)and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,873.71 ft^2 of pine BA on 51.98 acres of suitable habitat, 1,374.10 ft^2 of pine BA on 42.28 acres of potentially suitable habitat and 2,135.57 ft^2 of pine BA on 99.40 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 5,383.38 ft^2 of pine BA on 193.66 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 123.06 ft^2 of pine BA on 9.94 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 58.44 ft^2 of pine BA on 2.57 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,775.28 ft^2 of pine BA on 48.95 acres of suitable habitat, 1,374.10 ft^2 of pine BA on 42.28 acres of potentially suitable habitat and 2,052.50 ft^2 of pine BA on 89.92 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 50.03 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,201.88 ft^2 of pine BA on 181.15 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster M08-05R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,267.06 ft^2 of pine BA on 95.34 acres of suitable habitat, 3,878.39 ft^2 of pine BA on 90.07 acres of potentially suitable habitat and 1,121.81 ft^2 of pine BA on 71.36 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,014.73 ft^2 of pine BA on 15.98 acres of potentially suitable habitat and 8,252.53 ft^2 of pine BA on 240.79 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 121.58 ft^2 of pine BA on 9.04 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 4.34 ft^2 of pine BA on 0.14 acre (Table 6-8) and Figure 6-5.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 31.21 ft^2 of pine BA on 1.24 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,256.70 ft^2 of pine BA on 95.06 acres of suitable habitat, 3853.09 ft^2 of pine BA on 89.26 acres of potentially suitable habitat and 1,000.34 ft^2 of pine BA on 62.03 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation projects (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 38.37 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,014.73 ft^2 of pine BA on 15.98 acres of potentially suitable habitat and 8,095.40 ft^2 of pine BA on 230.37 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O01-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Area - North will result in impacts within 50 feet of 2 of 13 cavity trees and 51 to 200 feet of 6 other cavity trees (Table 6-11). In addition, 5 of 13 cavity trees will be subject to military training impacts, which could result in the loss of 5 cavity trees; however, the remaining

8 cavity trees will be left in a functional configuration and will be far enough removed from the proposed maneuver training that this should not result in the take of this cluster.

The pre- project SMS foraging habitat totals were 4,157.79 ft^2 of pine BA on 112.03 acres of suitable habitat, 944.79 ft^2 of pine BA on 28.63 acres of potentially suitable habitat and 36.58 ft^2 of pine BA on 19.48 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,081.47 ft^2 of pine BA on 23.01 acres of potentially suitable habitat and 4,057.69 ft^2 of pine BA on 137.15 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 1,321.50 ft^2 of pine BA on 38.61 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 59.15 ft^2 of pine BA on 1.60 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,988.39 ft^2 of pine BA on 81.33 acres of suitable habitat, 754.71 ft^2 of pine BA on 22.87 acres of potentially suitable habitat and 15.40 ft^2 of pine BA on 15.74 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 23.09 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 677.27 ft^2 of pine BA on 14.41 acres of potentially suitable habitat and 3,081.23 ft^2 of pine BA on 105.53 acres of future potential habitat (Table 6-3). There was no suitable habitat. As a result of Alternative A Transformation projects, this cluster will never have enough acres to meet RS. This partition cannot meet the RS in the future (Table 6-17).

FB Cluster O01-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). Nine of 9 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Area - North which could result in “take” of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 936.99 ft^2 of pine BA on 25.74 acres of suitable habitat, 500.61 ft^2 of pine BA on 12.21 acres of potentially suitable habitat and 2,288.63 ft^2 of pine BA on 128.05 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 500.61 ft^2 of pine BA on 12.21 acres of potentially suitable habitat and 3,225.62 ft^2 of pine BA on 153.79 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 877.60 ft^2 of pine BA on 26.79 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 5.67 ft^2 of pine BA on 0.56 acre (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 89.64 ft^2 of pine BA on 3.96 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 1,073.01 ft^2 of pine BA on 31.11 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 89.65 ft^2 of pine BA on 2.50 acres of suitable habitat and 1,590.66 ft^2 of pine BA on 101.08 acres of future potential habitat. There was no potentially suitable habitat. This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 21.62 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,680.31 ft^2 of pine BA on 103.58 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, harassment impacts and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

<u>FB Cluster O01-03</u>: This cluster was inactive in 2002 and had a PBG from 2003 to 2006 (Table 6-4). The cluster contained 8 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Area - North will result in impacts within 50 feet of 3

of 8 cavity trees and 51 to 200 feet of 3 others (Table 6-11). In addition, 2 of 8 cavity trees will be subject to military training impacts (Table 6-11).

The pre- project SMS foraging habitat totals were 3,845.95 ft^2 of pine BA on 87.51 acres of suitable habitat, 1,045.84 ft^2 of pine BA on 22.84 acres of potentially suitable habitat and 797.39 ft^2 of pine BA on 44.32 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 248.26 ft^2 of pine BA on 5.25 acres of potentially suitable habitat and 5,440.92 ft^2 of pine BA on 149.42 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 2,169.25 ft^2 of pine BA on 54.59 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 1.87 ft^2 of pine BA on 0.13 acre (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 69.10 ft^2 of pine BA on 2.65 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 217.35 ft^2 of pine BA on 4.83 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,358.20 ft^2 of pine BA on 54.67 acres of suitable habitat, 422.56 ft^2 of pine BA on 9.00 acres of potentially suitable habitat and 450.85 ft^2 of pine BA on 28.80 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 37.36 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 248.26 ft^2 of pine BA on 5.25 acres of potentially suitable habitat and 2,983.35 ft^2 of pine BA on 87.22 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

FB Cluster O01-04R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,161.25 ft^2 of pine BA on 51.72 acres of suitable habitat, 2,927.30 ft^2 of pine BA on 72.97 acres of potentially suitable habitat and 860.78 ft^2 of pine BA on 49.40 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 34.31 ft^2 of pine BA on 0.45 acre of potentially suitable habitat and 5,914.02 ft^2 of pine BA on 173.64 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 982.93 ft^2 of pine BA on 39.07 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 24.85 ft^2 of pine BA on 0.71 acre (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 140.41 ft^2 of pine BA on 4.29 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 46.87 ft^2 of pine BA on 3.29 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,864.09 ft^2 of pine BA on 43.46 acres of suitable habitat, 2,389.44 ft^2 of pine BA on 59.43 acres of potentially suitable habitat and 500.74 ft^2 of pine BA on 23.84 acres of future potential habitat (Table 6-2). This cluster will <u>not</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 17.08 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 34.31 ft^2 of pine BA on 0.45 acre of potentially suitable habitat and 4,719.96 ft^2 of pine BA on 126.28 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-17).

<u>FB Cluster O02-01R</u>: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,689.69 ft^2 of pine BA on 60.34 acres of suitable habitat, 2,564.33 ft^2 of pine BA on 61.41 acres of potentially suitable habitat and 1,920.57 ft^2 of pine BA on 102.90 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,490.54 ft^2 of pine BA on 101.58 acres of potentially suitable habitat and 2,684.05 ft^2 of pine BA on 123.07 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 89.38 ft^2 of pine BA on 2.48 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 39.43 ft^2 of pine BA on 1.98 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,570.96 ft^2 of pine BA on 57.35 acres of suitable habitat, 2,554.25 ft^2 of pine BA on 61.10 acres of potentially suitable habitat and 1,920.57 ft^2 of pine BA on 101.74 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation projects (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 2.90 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 4,490.54 ft^2 of pine BA on 101.58 acres of potentially suitable habitat and 2,555.24 ft^2 of pine BA on 118.61 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O03-01: This cluster had a PBG 2002, was captured by FB Cluster O01-03 in 2003 and had a PBG between 2004 and 2006 (Table 6-4). The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). Three of 9 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Area – North. In addition, the 2010 Installation-wide Roads will remove 5 of 9 cavity trees and have impacts within 50 feet of 1 other cavity tree (Table 6-11 and 6-13). The combination of the these project impacts could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 2,005.34 ft^2 of pine BA on 49.58 acres of suitable habitat, 1,206.05 ft^2 of pine BA on 33.19 acres of potentially suitable habitat and 1,421.31 ft^2 of pine BA on 58.52 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 57.60 ft^2 of pine BA on 1.20 acres of potentially suitable habitat and 140.09 ft^2 of pine BA on 57.60 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 2,761.72 ft^2 of pine BA on 84.80 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 68.37 ft^2 of pine BA on 1.59 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 561.00 ft^2 of pine BA on 21.79 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 932.83 ft^2 of pine BA on 23.53 acres of suitable habitat, 175.50 ft^2 of pine BA on 3.90 acres of potentially suitable habitat and 133.28 ft^2 of pine BA on 5.68 acres of future potential habitat (Table 6-2). This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 42.91 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 32.16 ft^2 of pine BA on 0.67 acre of potentially suitable habitat and 1,209.45 ft^2 of pine BA on 32.44 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

This cluster <u>will</u> be taken at the cluster level by 2 Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-8).

<u>FB Cluster O03-02</u>: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,624.49 ft^2 of pine BA on 115.58 acres of suitable habitat and 621.96 ft^2 of pine BA on 40.60 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 982.58 ft^2 of pine BA on 19.68 acres of potentially suitable habitat and 4,263.87 ft^2 of pine BA on 136.50 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 283.57 ft^2 pine BA on 7.51 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 112.88 ft^2 of pine BA on 3.25 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,294.90 ft^2 of pine BA on 107.65 acres of suitable habitat and 555.10 ft^2 of pine BA on 37.77 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 1.85 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 882.53 ft^2 of pine BA on 17.65 acres of potentially suitable habitat and 3,967.47 ft^2 of pine BA on 127.77 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-17).

FB Cluster O03-03: This cluster had a PBG from 2002 to 2005 (Table 6-4). In 2006, this cluster had a PBG and a helper. The cluster contained 10 cavity trees in various stages of completion and suitability (Appendix C). The construction of the 2010 Installation-wide Roads will remove 1 of 10 cavity trees and have impacts within 50 feet of 2 other cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 2,078.11 ft^2 of pine BA on 46.33 acres of suitable habitat and 1,227.90 ft^2 of pine BA on 130.12 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 1,174.68 ft^2 of pine BA on 22.59 acres of potentially suitable habitat and 2,131.33 ft^2 of pine BA on 153.86 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 75.06 ft^2 pine BA on 6.38 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 136.96 ft^2 of pine BA on 6.38 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,934.92 ft^2 of pine BA on 43.18 acres of suitable habitat and 1,159.07 ft^2 of pine BA on 120.51 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 53.80 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,080.04 ft^2 of pine BA on 20.77 acres of potentially suitable habitat and 2,013.96 ft^2 of pine BA on 142.92 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster O03-04: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2010 Installation-wide Roads will have impacts within 50 feet of 2 cavity trees and 51 to 200 feet of 8 other cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 1,072.71 ft^2 of pine BA on 30.96 acres of suitable habitat, 270.80 ft^2 of pine BA on 6.77 acres of potentially suitable habitat and 2,043.57 ft^2 of pine BA on 136.84 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,387.08 ft^2 of pine BA on 174.57 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 194.87 ft^2 pine BA on 14.38 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 46.26 ft^2 of pine BA on 1.83 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,000.65 ft^2 of pine BA on 28.89 acres of suitable habitat, 270.80 ft^2 of pine BA on 6.77 acres of potentially suitable habitat and 1,874.50 ft^2 of pine BA on 122.70 acres of future potential habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table

6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 39.09 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,145.95 ft^2 of pine BA on 158.36 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster O03-05: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 50 feet of 2 cavity trees and within 51 to 200 feet of 3 other cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 6,563.73 ft^2 of pine BA on 155.72 acres of suitable habitat, 1,711.34 ft^2 of pine BA on 44.45 acres of potentially suitable habitat and 632.71 ft^2 of pine BA on 74.19 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,512.38 ft^2 of pine BA on 27.25 acres of suitable habitat and 7,395.40 ft^2 of pine BA on 247.11 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 0.0 ft^2 pine BA on 0.02 acre (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 130.08 ft^2 of pine BA on 4.24 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,450.15 ft^2 of pine BA on 152.79 acres of suitable habitat, 1,711.34 ft^2 of pine BA on 44.45 acres of potentially suitable habitat and 616.21 ft^2 of pine BA on 72.86 acres of future potential habitat (Table 6-2). This cluster will <u>not</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 24.93 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,512.38 ft^2 of pine BA on 27.25 acres of suitable habitat and 7,265.32 ft^2 of pine BA on 242.85 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O03-06R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,526.45 ft^2 of pine BA on 76.46 acres of suitable habitat and 3,117.35 ft^2 of pine BA on 127.04 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,643.80 ft^2 of pine BA on 203.50 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 471.52 ft^2 pine BA on 14.54 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,212.76 ft^2 of pine on 67.27 acres of suitable habitat and 2,959.52 ft^2 of pine BA on 121.69 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 29.91 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,172.28 ft^2 of pine BA on 188.96 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster O03-07: This cluster had a PBG in 2006 (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 5,138.75 ft^2 of pine BA on 124.66 acres of suitable habitat and 568.97 ft^2 of pine BA on 61.29 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,707.72 ft^2 of pine BA on 185.95 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 58.28 ft^2 pine BA on 1.89 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 181.80 ft^2 of pine BA on 4.75 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,898.67 ft^2 of pine BA on 118.19 acres of suitable habitat and 568.97 ft^2 of pine BA on 61.12 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by the Transformation projects (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 42.46 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,467.64 ft^2 of pine BA on 179.31 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O04-03: This cluster had a PBG from 2002 to 2004 (Table 6-4). In 2005 and 2006, this cluster was split and 2 PBGs occupied the new clusters (O04-03a and O04-03b). There are 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,103.64 ft^2 of pine BA on 22.97 acres of suitable habitat and 1,952.08 ft^2 of pine BA on 97.65 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 627.45 ft^2 of pine BA on 15.35 acres of potentially suitable habitat and 2,428.27 ft^2 of pine BA on 107.27 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 19.07 ft^2 of pine BA on 1.13 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,103.64 ft^2 of pine BA on 22.97 acres of suitable habitat and 1,933.01 ft^2 of pine BA on 96.52 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 4.61 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 627.45 ft^2 of pine BA on 15.35 acres of potentially suitable habitat and 2,409.20 ft^2 of pine BA on 106.13 acres of future potential habitat. (Table 6-3) There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

FB Cluster O05-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 20 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 11,088.51 ft^2 of pine BA on 218.46 acres of suitable habitat, 640.86 ft^2 of pine BA on 8.34 acres of potentially suitable habitat and 611.92 ft^2 of pine BA on 43.98 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 7,361.08 ft^2 of pine BA on 144.91 acres of potentially suitable habitat and 4,980.21 ft^2 of pine BA on 125.87 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 632.25 ft^2 of pine BA on 12.42 acres (Table 6-6 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 209.76 ft^2 pine BA on 4.07 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 10,378.50 ft^2 of pine BA on 203.55 acres of suitable habitat, 510.40 ft^2 of pine BA on 6.79 acres of potentially suitable habitat and 610.38 ft^2 of pine BA on 43.95 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation projects (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 21.65 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 7,361.08 ft^2 of pine BA on 144.91 acres of potentially suitable habitat and 4,138.20 ft^2 of pine BA on 109.38 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster currently meets the RS (Table 6-17).

FB Cluster O05-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/

Upgrade Existing Training Area Roads project will have impacts within 50 feet of 1 of 7 cavity trees and within 51 to 200 feet of 1 other cavity tree (Table 6-11).

The pre- project SMS foraging habitat totals were 4,191.52 ft^2 of pine BA on 98.79 acres of suitable habitat, 456.87 ft^2 of pine BA on 10.20 acres of potentially suitable habitat and 935.31 ft^2 of pine BA on 31.70 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 642.12 ft^2 of pine BA on 12.98 acres of potentially suitable habitat and 4,941.58 ft^2 of pine BA on 127.71 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 1,069.90 ft^2 of pine BA on 23.38 acres (Table 6-6 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 121.41 ft^2 pine BA on 2.51 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 110.95 ft^2 of pine BA on 2.90 acres (Table 6-8 and Figure 6-5).

As a result of project impacts, 31.82 ft^2 of pine BA on 0.58 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 3,723.92 ft^2 of pine BA on 88.44 acres of suitable habitat, 294.25 ft^2 of pine BA on 8.47 acres of potentially suitable habitat and 231.45 ft^2 of pine BA on 14.41 acres of future potential habitat (Table 6-2). This cluster will <u>not</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 2.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 591.66 ft^2 of pine BA on 11.96 acres of potentially suitable habitat and 3,657.96 ft^2 of pine BA on 99.36 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-17).

<u>FB Cluster O05-03R</u>: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 7,686.14 ft^2 of pine BA on 180.31 acres of suitable habitat, 454.18 ft^2 of pine BA on 11.40 acres of potentially suitable habitat and 818.05 ft^2 of pine BA on 43.92 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,555.84 ft^2 of pine BA on 74.08 acres of potentially suitable habitat and 5,402.53 ft^2 of pine BA on 161.55 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Fire and Movement Range (FM1) will remove 523.48 ft^2 of pine BA on 13.90 acres (Table 6-5 and Figure 6-5).

The 2008 Rifle/ Machinegun Zero Range – Z1 will remove 570.93 ft^2 of pine BA on 14.28 acres (Table 6-6 and Figure 6-5).

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 68.05 ft^2 of pine BA on 1.98 acres (Table 6-6 and Figure 6-5).

The post- project SMS foraging habitat totals were 6,658.03 ft^2 of pine BA on 154.73 acres of suitable habitat, 390.26 ft^2 of pine BA on 9.56 acres of potentially suitable habitat and 747.62 ft^2 of pine BA on 41.18 acres of future potential habitat (Table 6-2). This cluster will <u>not</u> be taken at the cluster level by the Alternative A Transformation projects (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 20.17 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,465.12 ft^2 of pine BA on 72.19 acres of potentially suitable habitat and 4,330.49 ft^2 of pine BA on 133.28 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

<u>FB Cluster O07-03R</u>: This cluster had a PBG in 2003, was inactive in 2004 and contained a PBG in 2004, 2005 and 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,822.41 ft^2 of pine BA on 70.64 acres of suitable habitat, 2,072.15 ft^2 of pine BA on 62.89 acres of potentially suitable habitat and 2,763.64 ft^2 of pine BA on 119.19 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 7,658.20 ft^2 of pine BA on 252.72 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2011 Multi-Purpose Machine Gun Range (MPMG3) will remove 8.64 ft^2 of pine BA on 0.48 acre (Table 6-9 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,822.41 ft^2 of pine BA on 70.64 acres of suitable habitat, 2,072.15 ft^2 of pine BA on 62.89 acres of potentially suitable habitat and 2,755.00 ft^2 of pine BA on 118.71 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 85.38 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 7,649.56 ft^2 of pine BA on 252.24 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O08-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals 279.13 ft^2 of pine BA on 9.14 acres of potentially suitable habitat and 2,921.27 ft^2 of pine BA on 137.69 acres of future potential habitat (Table 6-2). There was not suitable habitat.

The pre- project RS foraging habitat totals were 3,200.40 ft^2 of pine BA on 146.83 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 455.19 ft^2 of pine BA on 19.02 acres (Table 6-5 and Figure 6-5).

The post- project SMS foraging habitat totals were 239.83 ft^2 of pine BA on 7.83 acres of potentially suitable habitat and 2,505.38 ft^2 of pine BA on 119.98 acres of future potential habitat (Table 6-2). There was no suitable habitat. This cluster will be taken at the cluster level by the Alternative A Transformation (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,745.21 ft^2 of pine BA on 127.81 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster O09-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,320.16 ft^2 of pine BA on 77.15 acres of suitable habitat and 2,897.78 ft^2 of pine BA on 116.11 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,152.92 ft^2 of pine BA on 44.39 acres of potentially suitable habitat and 4,065.02 ft^2 of pine BA on 148.87 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 338.64 ft^2 of pine BA on 13.28 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,320.16 ft^2 of pine BA on 77.15 acres of suitable habitat and 2,559.14 ft^2 of pine BA on 102.83 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 18.91 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,152.92 ft^2 of pine BA on 44.39 acres of potentially suitable habitat and 3,726.38 ft^2 of pine BA on 135.59 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O09-03R: This cluster was inactive from 2002 to 2005 and was captured by another RCW group in 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range project will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster O09-04R: This cluster had a solitary male in 2002, was inactive from 2003 to 2005 and had a PBG in 2006 (Table 6-4, Figure 6-5). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and beaten area will remove 7 of 7 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 4,750.67 ft^2 of pine BA on 118.37 acres of suitable habitat, 1,674.92 ft^2 of pine BA on 53.69 acres of potentially suitable habitat and 1.28 ft^2 of pine BA on 52.52 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,267.44 ft^2 of pine BA on 81.42 acres of potentially suitable habitat and 3,159.43 ft^2 of pine BA on 143.16 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 4,378.74 ft^2 of pine BA on 146.00 acres (Table 6-5 and Figure 6-5).

As a result of project impacts, 58.79 ft^2 of pine BA on 17.98 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,637.54 ft^2 of pine BA on 39.77 acres of suitable habitat, 350.52 ft^2 of pine BA on 10.16 acres of potentially suitable habitat and 1.28 ft^2 of pine BA on 10.67 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 42.46 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 372.40 ft^2 of pine BA on 9.31 acres of potentially suitable habitat and 1,616.94 ft^2 of pine BA on 51.29 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster O09-05R: This cluster had a PBG from 2002 to 2006 (Table 6-4, Figure 6-5)) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and beaten area will remove 6 of 6 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 8,833.70 ft^2 of pine BA on 183.45 acres of suitable habitat, 1,988.24 ft^2 of pine BA on 57.63 acres of potentially suitable habitat and 766.33 ft^2 of pine BA on 44.10 acres of future potential habitat (Table 6-3).

The pre- project RS foraging habitat totals were 2,385.30 ft^2 of pine BA on 49.94 acres of potentially suitable habitat and 9,202.97 ft^2 of pine BA on 235.24 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 9,125.81 ft^2 of pine BA on 241.05 acres (Table 6-5 and Figure 6-5).

As a result of project impacts, 3.22 ft^2 of pine BA on 0.13 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,288.36 ft^2 of pine BA on 37.93 acres of suitable habitat, 16.21 ft^2 of pine BA on 0.47 acre of potentially suitable habitat and 154.67 ft^2 of pine BA on 5.60 acres of future potential habitat (Table 6-3). This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8), however, if the cluster is shifted to the north with installation of artificial cavity trees, and the foraging habitat from neighboring "taken" partitions is reallocated and managed, O09-05 can meet SMS (Figure 6-12) (See Section 9) (Table 6-17). Loblolly pine that is at high risk of decline accounts for 10.57 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,459.24 ft^2 of pine BA on 44.00 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition can meet the RS in the future if the partition is shifted with reallocation of habitat from neighboring "taken" partitions (Table 6-16).

This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster O10-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,411.15 ft^2 of pine BA on 43.42 acres of suitable habitat, 2,590.53 ft^2 of pine BA on 69.18 acres of potentially suitable habitat and 1,194.72 ft^2 of pine BA on 114.70 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 5,196.40 ft^2 of pine BA on 227.30 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 46.20 ft^2 of pine BA on 1.63 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,411.15 ft^2 of pine BA on 43.42 acres of suitable habitat, 2,562.89 ft^2 of pine BA on 68.61 acres of potentially suitable habitat and 1,176.17 ft^2 of pine BA on 113.64 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 65.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 5,150.21 ft^2 of pine BA on 225.67 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster O11-01: This cluster had a PBG from 2002, was captured by O15-01 and had a PBG in 2005 and 2006 (Table 6-4). The cluster contained 14 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,864.21 ft^2 of pine BA on 68.54 acres of suitable habitat, 878.26 ft^2 of pine BA on 22.43 acres of potentially suitable habitat and 1,245.80 ft^2 of pine BA on 71.82 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,648.92 ft^2 of pine BA on 19.63 acres of potentially suitable habitat and 4,339.35 ft^2 of pine BA on 143.16 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 266.29 ft^2 of pine BA on 26.21 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 5.19 ft^2 pine BA on 0.22 acre (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 86.68 ft^2 of pine BA on 1.95 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,631.69 ft^2 of pine BA on 63.25 acres of suitable habitat, 756.82 ft^2 of pine BA on 19.58 acres of potentially suitable habitat and 1,241.60 ft^2 of pine BA on 51.58 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 28.50 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,648.92 ft^2 of pine BA on 19.63 acres of potentially suitable habitat and 3,981.19 ft^2 of pine BA on 114.78 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-17).

FB Cluster O12-04R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 281.35 ft^2 of pine BA on 8.66 acres of suitable habitat and 2,536.36 ft^2 of pine BA on 140.62 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,817.71 ft^2 of pine BA on 149.28 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 126.84 ft^2 of pine BA on 5.44 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 281.35 ft^2 of pine BA on 8.66 acres of suitable habitat and 2,409.52 ft^2 of pine BA on 135.18 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk

of decline accounts for 54.16 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2.690.87 ft^2 of pine BA on 143.84 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster O14-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Area - North will have impacts within 51 to 200 feet of 1 of 13 cavity trees and 1 other cavity tree will be subject to military training impacts (Table 6-11). In addition, the 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 50 feet of 3 of 13 cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 4,439.69 ft^2 of pine BA on 120.29 acres of suitable habitat and 2,746.41 ft^2 of pine BA on 128.79 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat

The pre- project RS foraging habitat totals were 7,186.10 ft^2 of pine BA on 249.08 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 2,279.96 ft^2 of pine BA on 89.98 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 2,817.80 ft^2 of pine BA on 95.28 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,761.86 ft^2 of pine BA on 49.63 acres of suitable habitat and 326.48 ft^2 of pine BA on 14.19 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 33.51 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,088.34 ft^2 of pine BA on 63.82 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

FB Cluster O14-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). .The 2009 Heavy Maneuver Area - North will result in impacts within 50 feet of 2 of 12 cavity trees and 51 to 200 feet of 7 other cavity trees (Table 6-11). In addition, 5 of 12 cavity trees will be subject to military training impacts, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 2,183.82 ft^2 of pine BA on 44.87 acres of suitable habitat and 1,353.79 ft^2 of pine BA on 66.95 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 1,862.12 ft^2 of pine BA on 35.81 acres of potentially suitable habitat and 1,675.49 ft^2 of pine BA on 76.01 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 1,668.11 ft^2 of pine BA on 57.86 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 56.70 ft^2 of pine BA on 1.59 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS and RS foraging habitat totals were 809.12 ft^2 of pine BA on 15.56 acres of suitable habitat and 1,003.68 ft^2 of pine BA on 36.81 acres of future potential habitat (Table 6-2 and 6-3). There was no potentially suitable habitat. This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 1.41 % of the SMS post- project suitable acreage (Table 6-15). This partition cannot meet RS in the future (Table 6-16).

This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-8). Although 6 remaining cavity trees will not be impacted, these trees will be separated from each other by the proposed heavy maneuver use area. The cavity tree loss and harassment impacts could be minimized by installing artificial cavities, however the significant loss of foraging habitat would still result in a "take."

FB Cluster O14-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). Twelve of 12 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Area – North which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 6,921.17 ft^2 of pine BA on 162.39 acres of suitable habitat and 938.22 ft^2 of pine BA on 84.41 acres of future potential habitat (3). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,778.09 ft^2 of pine BA on 59.75 acres of potentially suitable habitat and 5,081.30 ft^2 of pine BA on 187.05 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 6,183.30 ft^2 of pine BA on 168.97 acres (Table 6-7 and Figure 6-5).

As a result of project impacts, 588.54 ft^2 of pine BA on 27.08 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 882.44 ft^2 of pine BA on 20.24 acres of suitable habitat and 205.11 ft^2 of pine BA on 30.51 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 25.31 ft^2 of pine BA on 0.61 acre of potentially suitable habitat and 1,062.24 ft^2 of pine BA on 50.13 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-8).

FB Cluster O15-01: This cluster was captured in 2002 and 2003 and had a PBG from 2004 to 2006 (Table 6-4). The cluster contained 13 cavity trees in various stages of completion and

suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 50 feet of 1 of 13 cavity trees (Table 6-11). In addition, 10 of 13 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Area – North which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13).

The pre- project SMS foraging habitat totals were 1,229.25 ft^2 of pine BA on 33.69 acres of suitable habitat and 1,482.78 ft^2 of pine BA on 81.97 acres of future potential habitat (Table 6-2). There is no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,712.03 ft^2 of pine BA on 115.66 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 594.78 ft^2 of pine BA on 27.70 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 49.82 ft^2 pine BA on 2.14 acres (Table 6-8 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 20.65 ft^2 of pine BA on 0.59 acre (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,125.95 ft^2 of pine BA on 30.77 acres of suitable habitat and 920.83 ft^2 of pine BA on 54.46 acres of future potential habitat (Table 6-2). There is no potentially suitable habitat. This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 17.22 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,046.78 ft^2 of pine BA on 85.23 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet RS in the future (Table 6-16).

This cluster <u>will</u> be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Table 6-2, 6-13, 6-14 and Figure 6-8).

<u>FB Cluster O15-02</u>: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). Construction of the

2010 Installation-wide Roads will remove 1 of 7 cavity trees and will have impacts within 51 to 200 feet of 1 of 7cavity trees (Table 6-11).

The pre- project SMS foraging habitat totals were 2,588.16 ft^2 of pine BA on 72.66 acres of suitable habitat and 1,696.99 ft^2 of pine BA on 67.33 acres of future potential habitat (Table 6-2). There is no potentially suitable habitat.

The pre- project RS foraging habitat totals were 4,285.17 ft^2 of pine BA on 139.99 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 242.98 ft^2 pine BA on 8.95 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,488.20 ft^2 of pine BA on 69.87 acres of suitable habitat and 1,553.99 ft^2 of pine BA on 61.17 acres of future potential habitat (Table 6-2). There is no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 0.26 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 4,042.19 ft^2 of pine BA on 131.04 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster O15-03: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,240.98 ft^2 of pine BA on 83.20 acres of suitable habitat and 441.15 ft^2 of pine BA on 37.61 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 841.10 ft^2 of pine BA on 17.54 acres of potentially suitable habitat and 2,841.03 ft^2 of pine BA on 103.27 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Area – North (Maneuver Heavy Use Areas) will remove 414.50 ft^2 of pine BA on 11.27 acres (Table 6-7 and Figure 6-5).

The 2010 Construction of Installation-wide Roads project will remove 158.41 ft^2 pine BA on 4.26 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,725.96 ft^2 of pine BA on 69.94 acres of suitable habitat and 383.26 ft^2 of pine BA on 35.34 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will be taken at the cluster level by the Transformation projects (Table 6-2, 6-13, 6-14 and Figure 6-8). Loblolly pine that is at high risk of decline accounts for 36.25 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 756.82 ft^2 of pine BA on 15.77 acres of potentially suitable habitat and 2,352.40 ft^2 of pine BA on 89.51 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition may not meet RS in the future (Table 6-16).

FB Cluster O15-04: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2009 Heavy Maneuver Area - North will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster Q02-05R: This cluster has been inactive for the past 5 years (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). The 2008 AT/ FP Access Control Point will remove 4 of 4 inactive cavity trees (Table 6-12).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster R01-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 14 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2012 Rail Car Storage/ Tracks for Deployment project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster R02-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,286.40 ft^2 of pine BA on 80.87 acres of suitable habitat, 846.09 ft^2 of pine BA on 11.33 acres of potentially suitable habitat and 2,093.80 ft^2 of pine BA on 96.48 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,911.17 ft^2 of pine BA on 32.29 acres of potentially suitable habitat and 4,315.12 ft^2 of pine BA on 156.39 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2008 General Instruction Building Complex will remove 210.25 ft^2 of pine BA on 12.20 acres (Table 6-6 and Figure 6-4).

The 2008 Road Improvements will remove 29.96 ft^2 of pine BA on 1.37 acres (Table 6-6 and Figure 6-4).

The 2011 3 ID Brigade Combat Team Complex will remove 17.09 ft^2 of pine BA on 0.67 acres (Table 6-9 and Figure 6-4).

The 2011 Physical Fitness Center with Pool will remove 174.11 ft^2 of pine BA on 6.57 acres (Table 6-9 and Figure 6-4).

The 2012 DS/ GS Vehicle maintenance Facility will remove 259.82 ft^2 of pine BA on 6.34 acres (Table 6-10 and Figure 6-4).

The post- project SMS foraging habitat totals were 2,982.51 ft^2 of pine BA on 74.20 acres of suitable habitat, 846.09 ft^2 of pine BA on 11.33 acres of potentially suitable habitat and 1,706.46 ft^2 of pine BA on 76.00 acres of future potential habitat (Table 6-2). This cluster will <u>not</u> be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 17.42 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,911.17 ft^2 of pine BA on 32.29 acres of potentially suitable habitat and 3,623.89 ft^2 of pine BA on 129.24 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster SHC-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 14 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,129.81 ft^2 of pine BA on 27.00 acres of suitable habitat, 6,275.47 ft^2 of pine BA on 155.73 acres of potentially suitable habitat and 1,524.38 ft^2 of pine BA on 62.06 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 1,569.93 ft^2 of pine BA on 36.51 acres of potentially suitable habitat and 7,359.73 ft^2 of pine BA on 208.27 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2008 Health Clinic Expansion – Winder will remove 9.24 ft^2 of pine BA on 0.39 acre (Table 6-6 and Figure 6-4).

The 2008 Reception Station Barracks and Processing Center will remove 968.72 ft^2 of pine BA on 24.86 (Table 6-6 and Figure 6-4).

The 2008 Infrastructure Support will remove 48.32 ft^2 of pine BA on 1.38 (Table 6-6 and Figure 6-4).

The post- project SMS foraging habitat totals were 1,121.07 ft^2 of pine BA on 26.77 acres of suitable habitat, 5,286.05ft^2 of pine BA on 130.41 acres of potentially suitable habitat and 1,496.26 ft^2 of pine BA on 60.98 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 50.40 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,565.63 ft^2 of pine BA on 36.41 acres of potentially suitable habitat and 6,337.75 ft^2 of pine BA on 181.74 acres of future potential habitat (Table 6-3). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-17).

This cluster is expected to be "taken" at the group level (See Section 6.10.6).

FB Cluster T01-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2009 Combined Arms Collective Training Facility Phase II will have impacts within 50 feet of 1 of 10 cavity trees and 51 to 200 feet of 1 other (Table 6-11).

The pre- project SMS foraging habitat totals were 2,842.16 ft^2 of pine BA on 84.53 acres of suitable habitat, 584.97 ft^2 of pine BA on 18.87 acres of potentially suitable habitat and 947.22 ft^2 of pine BA on 41.77 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 4,347.35 ft^2 of pine BA on 145.17 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 73.13 ft^2 of pine BA on 2.65 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 2,783.89 ft^2 of pine BA on 82.66 acres of suitable habitat, 584.97 ft^2 of pine BA on 18.87 acres of potentially suitable habitat and 932.36 ft^2 of pine BA on 40.99 acres of future potential habitat (Table 6-2). This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 1.70 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 4,301.22 ft^2 of pine BA on 142.52 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition may not meet RS in the future (Table 6-17).

FB Cluster T02-01: This cluster was captured in 2002, was inactive in 2003, 2004 and 2005 and contained a solitary male in 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 1,040.62 ft^2 of pine BA on 28.51 acres of suitable habitat and 3,019.41 ft^2 of pine BA on 155.17 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 4,060.03 ft^2 of pine BA on 183.68 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 100.74 ft^2 of pine BA on 2.76 acres (Table 6-7 and Figure 6-5).

The 2009 Combined Arms Collective Training facility, Phase II will remove 39.95 ft^2 of pine BA on 12.00 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 939.88 ft^2 of pine BA on 25.75 acres of suitable habitat and 2,979.46 ft^2 of pine BA on 143.17 acres of future potential habitat (Table 6-2). There was not potentially suitable habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 95.17 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 3,919.34 ft^2 of pine BA on 168.92 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster T02-02: This cluster had a PBG in 2002 and 2003, was captured in 2004 and had a PBG in 2005 and 2006 (Table 6-4). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The 2012 Rail Car Storage/ Tracks for Deployment project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster T03-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). Nine of 9 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13)..

The pre- project SMS foraging habitat totals were 5,622.26 ft^2 of pine BA on 149.60 acres of suitable habitat, 690.06 ft^2 of pine BA on 16.43 acres of potentially suitable habitat and 840.90 ft^2 of pine BA on 34.45 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,868.18 ft^2 of pine BA on 68.29 acres of potentially suitable habitat and 4,285.04 ft^2 of pine BA on 132.19 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,143.12 ft^2 of pine BA on 94.14 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 3,595.98 ft^2 of pine BA on 96.48 acres of suitable habitat and 414.12 ft^2 of pine BA on 9.86 acres of potentially suitable habitat (Table 6-2). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 7 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 8.46 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

This cluster will be taken at the cluster level by Alternative A Transformation projects due to cavity tree loss and harassment (Table 6-2, 6-13, 6-14 and Figure 6-5).

The post- project RS foraging habitat totals were 2,143.68 ft^2 of pine BA on 51.04 acres of potentially suitable habitat and 1,866.42 ft^2 of pine BA on 55.30 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-16).

FB Cluster T03-03: This cluster was captured in 2002 and has been inactive for the past 4 years (Table 6-4) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). Four of 4 inactive cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South (Table 6-12).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster T03-04R: This cluster was captured by FB Cluster T01-01 in 2004 and 2005 and had a PBG in 2006 (Table 6-4). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). Four of 4 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-11 and 6-13)..

The pre- project SMS foraging habitat totals were 4,286.09 ft^2 of pine BA on 113.11 acres of suitable habitat and 1,011.66 ft^2 of pine BA on 51.05 acres of future potential habitat. There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 100.86 ft^2 of pine BA on 2.46 acres of potentially suitable habitat and 5,196.89 ft^2 of pine BA on 161.70 acres of future potential habitat. There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 4,079.58 ft^2 of pine BA on 125.89 acres (Table 6-7 and Figure 6-5).

The 2009 Combined Arms Collective Training facility, Phase II will remove 105.43 ft^2 of pine BA on 5.50 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 7.72 ft^2 of pine BA on 0.36 acre (Table 6-8 and Figure 6-5).

As a result of project impacts, 25.92 ft^2 of pine BA on 0.71 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 4,129.15 ft^2 of pine BA on 108.98 acres of suitable habitat and 885.23 ft^2 of pine BA on 44.55 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 19.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 75.44 ft^2 of pine BA on 1.84 acres of potentially suitable habitat and 4,938.94 of pine BA on 151.69 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-16).

FB Cluster T04-01: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 4,815.90 ft^2 of pine BA on 129.83 acres of suitable habitat and 72.52 ft^2 of pine BA on 23.88 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 444.60 ft^2 of pine BA on 9.88 acres of suitable habitat and 4,443.82 ft^2 of pine BA on 143.83 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 76.77 ft^2 of pine BA on 1.61 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 4,745.85 ft^2 of pine BA on 128.36 acres of suitable habitat and 65.80 ft^2 of pine BA on 23.74 acres of future potential habitat (Table 6-2). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 15.64 % of the SMS post-project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 429.75 ft^2 of pine BA on 9.55 acres of suitable habitat and 4,381.90 ft^2 of pine BA on 142.55 acres of future potential habitat (Table 6-3). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-17).

FB Cluster T04-03R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,691.09 ft^2 of pine BA on 99.12 acres of suitable habitat (Table 6-2). There was no potentially suitable of future potential habitat.

The pre- project RS foraging habitat totals were 810.36 ft^2 of pine BA on 17.81 acres of potentially suitable habitat and 2,880.73 ft^2 of pine BA on 81.31 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 2,148.15 ft^2 of pine BA on 56.38 acres (Table 6-7 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,542.94 ft^2 of pine BA on 42.74 acres of suitable habitat (Table 6-2). There was no potentially suitable or future potential habitat. This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 11.11 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 550.10 ft^2 of pine BA on 12.09 acres of potentially suitable habitat and 992.84 ft^2 of pine BA on 30.65 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

Cluster T04-03R is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster T05-02: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 2,120.44 ft^2 of pine BA on 62.61 acres of suitable habitat, 394.27 ft^2 of pine BA on 8.86 acres of potentially suitable habitat and 659.27 ft^2 of pine BA on 110.82 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 3,173.98 ft^2 of pine BA on 182.29 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 285.21 ft^2 of pine BA on 6.79 acres (Table 6-7 and Figure 6-5).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 50.76 ft^2 of pine BA on 1.22 acres (Table 6-8 and Figure 6-5).

The post- project SMS foraging habitat totals were 1,990.95 ft^2 of pine BA on 59.24 acres of suitable habitat, 187.79 ft^2 of pine BA on 4.22 acres of potentially suitable habitat and 659.27 ft^2 of pine BA on 110.82 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-9). Loblolly pine that is at high risk of decline accounts for 0.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 2,838.01 ft^2 of pine BA on 174.28 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-16).

Cluster T05-02 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster U04-01R: This cluster had a PBG from 2002 to 2006 (Table 6-4) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative A Transformation projects.

The pre- project SMS foraging habitat totals were 3,401.68 ft^2 of pine BA on 71.18 acres of suitable habitat, 560.15 ft^2 of pine BA on 14.89 acres of potentially suitable habitat and 622.81 ft^2 of pine BA on 46.09 acres of future potential habitat (Table 6-2).

The pre- project RS foraging habitat totals were 2,536.78 ft^2 of pine BA on 50.29 acres of potentially suitable habitat and 2,047.86 ft^2 of pine BA on 81.87 acres of future potential habitat (Table 6-3). There was no suitable habitat.

The 2007 Trainee Barracks Complex 2 will remove 1,454.16 ft^2 of pine BA on 40.02 acres (Table 6-5 and Figure 6-4).

The post- project SMS foraging habitat totals were 2,286.63 ft^2 of pine BA on 45.59 acres of suitable habitat, 560.15 ft^2 of pine BA on 14.89 acres of potentially suitable habitat and 283.70 ft^2 of pine BA on 31.66 acres of future potential habitat (Table 6-2). This cluster will be taken at the cluster level by Alternative A Transformation projects due to loss of foraging habitat (Table 6-2, 6-13, 6-14 and Figure 6-7). Loblolly pine that is at high risk of decline accounts for 29.48 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 1,936.23 ft^2 of pine BA on 38.38 acres of potentially suitable habitat and 1,194.25 ft^2 of pine BA on 53.76 acres of future potential habitat (Table 6-3). There was no suitable habitat. This partition cannot meet RS in the future (Table 6-16).

6.10.5.1.2 Alternative B

RCW cavity trees and/ or foraging habitat will be impacted in 88 active and 3 inactive RCW clusters as a result of 2006-2013 Alternative B Transformation projects (Tables 6-18 and 6-19 and Figures 6-13 - 15). In 2006, 82 of the active clusters contained PBGs, 4 contained solitary males, 1 was a captured site and 1 was active with unknown status (Table 6-20).

FHAs were completed for 80 active clusters (project impacts to 8 active clusters were in non-contiguous habitat and FHAs were not conducted). Pre- project, 14 of the 80 analyzed active clusters did not meet the SMS and 78 clusters did not meet RS. Data for pre- project cluster status and foraging habitat are presented in Tables 6-19, Figures 6-10 – 6-19 and Appendices F and G.

Impacts of projects are summarized below by the fiscal year of construction initiation. Projects which impact RCW partitions are presented for the 4 cantonment areas (Harmony

Table 6-18. Red-cockaded woodpecker foraging habitat data using the Recovery Standard (RS) (USFWS 2003) for all partitions impacted by Alternative B Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
A06-01	0.00	0.00	0.00	0.00	187.75	7,816.74	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.18	8.28	0.00	0.00	0.00	0.00	0.00	0.00	187.57	7,808.46	**0.00**	**0.00**	**187.57**	**Y**	**Y***
A07-01	0.00	0.00	2.01	92.46	184.34	5,334.10	**2.01**	**92.46**	0.00	0.00	0.00	0.00	5.09	153.50	0.00	0.00	0.00	0.00	2.01	92.46	179.25	5,180.60	**2.01**	**92.46**	**181.26**	**Y**	**Y***
A08-01	0.00	0.00	0.00	0.00	186.18	6,703.98	**0.00**	**0.00**	0.00	0.00	0.00	0.00	5.04	161.43	0.00	0.00	0.00	0.00	0.00	0.00	181.14	6,542.55	**0.00**	**0.00**	**181.14**	**Y**	**Y***
A08-02a	0.00	0.00	6.85	294.55	91.04	3,233.50	**6.85**	**294.55**	0.00	0.00	1.10	47.30	0.71	24.85	0.00	0.00	0.00	0.00	5.75	247.25	90.33	3,208.65	**5.75**	**247.25**	**96.08**	**Y**	**Y**
A09-03R	0.00	0.00	0.00	0.00	128.04	3,936.48	**0.00**	**0.00**	0.00	0.00	0.00	0.00	6.11	198.37	0.00	0.00	0.00	0.00	0.00	0.00	121.93	3,738.11	**0.00**	**0.00**	**121.93**	**Y**	**Y**
A09-05	0.00	0.00	0.00	0.00	180.65	6,007.53	**0.00**	**0.00**	0.00	0.00	0.00	0.00	6.67	224.21	0.00	0.00	0.00	0.00	0.00	0.00	173.98	5,783.32	**0.00**	**0.00**	**173.98**	**Y**	**Y***
A17-01	0.00	0.00	84.65	4,475.19	37.64	1,832.54	**84.65**	**4,475.19**	0.00	0.00	55.19	2,936.94	32.40	1,622.79	2.33	96.54	0.00	0.00	29.46	1,538.25	2.91	113.21	**29.46**	**1,538.25**	**32.36**	**Y**	**Y**
A17-02	0.00	0.00	63.78	3,370.19	64.50	460.97	**63.78**	**3,370.19**	0.00	0.00	0.16	10.56	0.00	0.00	0.00	0.00	0.00	0.00	63.62	3,359.63	64.50	460.97	**63.62**	**3,359.63**	**128.12**	**Y**	**Y**
A17-03	0.00	0.00	51.37	2,671.24	66.05	3,518.79	**51.37**	**2,671.24**	0.00	0.00	48.56	2,525.12	60.56	3,244.26	2.81	146.12	0.00	0.00	0.00	0.00	5.49	274.53	**0.00**	**0.00**	**5.49**	**Y**	**Y**
A17-04	0.00	0.00	43.79	2,277.08	187.41	9,745.53	**43.79**	**2,277.08**	0.00	0.00	3.09	174.59	13.23	694.58	0.00	0.00	0.00	0.00	40.70	2,102.49	174.18	9,050.95	**40.70**	**2,102.49**	**214.89**	**Y**	**Y***
A17-05	83.96	3,778.20	0.00	0.00	38.94	1,493.63	**83.96**	**3,778.20**	0.00	0.00	0.00	0.00	1.38	45.54	0.00	0.00	83.96	3,778.20	0.00	0.00	37.56	1,448.09	**83.96**	**3,778.20**	**121.52**	**Y**	**Y**
A17-07	71.64	3,223.80	0.00	0.00	17.30	876.20	**71.64**	**3,223.80**	6.10	274.50	0.00	0.00	7.26	421.17	0.00	0.00	65.54	2,949.30	0.00	0.00	10.04	455.03	**65.54**	**2,949.30**	**75.58**	**Y**	**Y**
A17-08	14.46	954.36	97.47	6,170.24	17.76	100.53	**111.93**	**7,124.60**	0.00	0.00	1.23	63.96	0.00	0.00	0.00	0.00	14.46	954.36	96.24	6,106.28	17.76	100.53	**110.70**	**7,060.64**	**128.46**	**Y**	**Y**
A17-13	0.00	0.00	80.89	4,206.28	24.45	1,222.50	**80.89**	**4,206.28**	0.00	0.00	2.92	151.84	0.00	0.00	0.00	0.00	0.00	0.00	77.97	4,054.44	24.45	1,222.50	**77.97**	**4,054.44**	**102.42**	**Y**	**Y**
A17-14	0.00	0.00	6.62	344.24	130.78	6,617.90	**6.62**	**344.24**	0.00	0.00	6.62	344.24	115.70	6,066.85	3.77	201.63	0.00	0.00	0.00	0.00	11.31	349.42	**0.00**	**0.00**	**11.31**	**Y**	**Y**
A20-06	0.00	0.00	0.00	0.00	174.10	5,909.04	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.54	18.36	0.00	0.00	0.00	0.00	0.00	0.00	173.56	5,890.68	**0.00**	**0.00**	**173.56**	**Y**	**Y***
BB03-01R	0.00	0.00	8.87	428.29	213.01	5,387.04	**8.87**	**428.29**	0.00	0.00	0.00	0.00	19.95	491.69	52.92	1,616.71	0.00	0.00	8.87	428.29	140.14	3,278.64	**8.87**	**428.29**	**149.01**	**Y**	**Y**
BB04-01R	0.00	0.00	24.50	1,123.16	157.74	5,898.95	**24.50**	**1,123.16**	0.00	0.00	0.00	0.00	30.13	1,166.45	0.00	0.00	0.00	0.00	24.50	1,123.16	127.61	4,732.50	**24.50**	**1,123.16**	**152.11**	**Y**	**Y***
BB05-01R	0.00	0.00	0.00	0.00	278.99	10,215.95	**0.00**	**0.00**	0.00	0.00	0.00	0.00	30.68	1,387.05	0.00	0.00	0.00	0.00	0.00	0.00	248.31	8,828.90	**0.00**	**0.00**	**248.31**	**Y**	**Y***
D05-02R	0.00	0.00	0.00	0.00	161.89	5,699.16	**0.00**	**0.00**	0.00	0.00	0.00	0.00	13.54	353.87	0.00	0.00	0.00	0.00	0.00	0.00	148.35	5,345.29	**0.00**	**0.00**	**148.35**	**Y**	**Y**
D05-04R	0.00	0.00	0.00	0.00	303.33	10,749.59	**0.00**	**0.00**	0.00	0.00	0.00	0.00	90.85	3,276.80	5.38	219.71	0.00	0.00	0.00	0.00	207.10	7,253.08	**0.00**	**0.00**	**207.10**	**Y**	**Y***
D08-01R	0.00	0.00	1.59	68.89	250.98	5,351.85	**1.59**	**68.89**	0.00	0.00	0.38	16.47	2.94	92.99	0.00	0.00	0.00	0.00	1.21	52.42	248.04	5,258.86	**1.21**	**52.42**	**249.25**	**Y**	**Y***
D10-01	0.00	0.00	0.00	0.00	120.90	2,144.54	**0.00**	**0.00**	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	119.55	2,144.54	**0.00**	**0.00**	**119.55**	**Y**	**Y**
D11-01	0.00	0.00	0.41	20.71	142.08	3,548.18	**0.41**	**20.71**	0.00	0.00	0.00	0.00	81.60	1,867.90	0.00	0.00	0.00	0.00	0.41	20.71	60.48	1,680.28	**0.41**	**20.71**	**60.89**	**Y**	**Y**
D11-02	0.00	0.00	0.49	24.75	163.72	5,275.68	**0.49**	**24.75**	0.00	0.00	0.00	0.00	84.56	2,879.66	42.38	1,218.12	0.00	0.00	0.49	24.75	36.78	1,177.90	**0.49**	**24.75**	**37.27**	**Y**	**Y**
D15-01R	0.00	0.00	8.33	551.86	273.78	9,383.11	**8.33**	**551.86**	0.00	0.00	0.00	0.00	21.94	671.31	0.00	0.00	0.00	0.00	8.33	551.86	251.84	8,711.80	**8.33**	**551.86**	**260.17**	**Y**	**Y***
D16-02	0.00	0.00	0.00	0.00	215.86	3,834.35	**0.00**	**0.00**	0.00	0.00	0.00	0.00	57.94	752.09	67.36	1,366.72	0.00	0.00	0.00	0.00	90.56	1,715.54	**0.00**	**0.00**	**90.56**	**Y**	**Y**
D17-04R	0.00	0.00	34.52	1,483.69	157.66	3,931.68	**34.52**	**1,483.69**	0.00	0.00	0.00	0.00	11.89	340.46	0.00	0.00	0.00	0.00	34.52	1,483.69	145.77	3,591.22	**34.52**	**1,483.69**	**180.29**	**Y**	**Y***
E02-01	1.64	79.54	0.00	0.00	230.80	3,703.58	**1.64**	**79.54**	0.00	0.00	0.00	0.00	9.93	104.45	0.00	0.00	1.64	79.54	0.00	0.00	220.87	3,599.13	**1.64**	**79.54**	**222.51**	**Y**	**Y***
E03-01	0.00	0.00	0.00	0.00	202.35	8,959.51	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.01	176.52	0.00	0.00	0.00	0.00	0.00	0.00	198.34	8,782.99	**0.00**	**0.00**	**198.34**	**Y**	**Y***
E04-01	5.39	242.55	6.06	575.70	155.63	4,962.18	**11.45**	**818.25**	0.18	8.10	1.67	158.65	43.97	1,621.07	0.00	0.00	5.21	234.45	4.39	417.05	111.66	3,341.11	**9.60**	**651.50**	**121.26**	**Y**	**Y**
E08-05R	54.85	2,676.58	25.39	1,104.47	95.20	1,174.62	**80.24**	**3,781.05**	2.45	118.83	0.53	23.06	1.66	13.82	0.00	0.00	52.40	2,557.75	24.86	1,081.41	93.54	1,160.80	**77.26**	**3,639.16**	**170.81**	**Y**	**Y***
F02-01R	0.00	0.00	70.53	3,172.46	139.50	3,152.86	**70.53**	**3,172.46**	0.00	0.00	10.43	459.00	55.82	1,316.37	5.22	66.22	0.00	0.00	60.10	2,713.46	78.46	1,770.27	**60.10**	**2,713.46**	**138.56**	**Y**	**Y**
HCC-03R	0.00	0.00	36.29	1,799.74	189.15	6,534.76	**36.29**	**1,799.74**	0.00	0.00	32.46	1,602.51	93.40	2,925.20	0.45	14.40	0.00	0.00	3.83	197.23	95.30	3,595.16	**3.83**	**197.23**	**99.13**	**Y**	**Y**
HCC-08R	0.00	0.00	3.38	145.34	205.10	6,002.92	**3.38**	**145.34**	0.00	0.00	0.00	0.00	8.90	308.71	0.00	0.00	0.00	0.00	3.38	145.34	196.20	5,694.21	**3.38**	**145.34**	**199.59**	**Y**	**Y***
HCC-10R	0.00	0.00	99.14	4,572.42	195.57	5,437.16	**99.14**	**4,572.42**	0.00	0.00	55.16	2,562.78	93.63	2,189.99	0.00	0.00	0.00	0.00	43.98	2,009.64	101.94	3,247.17	**43.98**	**2,009.64**	**145.92**	**Y**	**Y**
HCC-11R	0.00	0.00	0.00	0.00	253.07	5,855.73	**0.00**	**0.00**	0.00	0.00	0.00	0.00	51.20	879.81	2.32	47.56	0.00	0.00	0.00	0.00	199.55	4,928.36	**0.00**	**0.00**	**199.55**	**Y**	**Y***
J03-01	0.00	0.00	82.23	3,378.49	92.42	1,858.11	**82.23**	**3,378.49**	0.00	0.00	2.03	83.23	0.98	21.53	0.00	0.00	0.00	0.00	80.20	3,295.26	91.44	1,836.58	**80.20**	**3,295.26**	**171.64**	**Y**	**Y***
J04-01	0.00	0.00	3.78	158.76	191.90	5,195.00	**3.78**	**158.76**	0.00	0.00	0.11	4.62	5.72	139.04	0.00	0.00	0.00	0.00	3.67	154.14	186.18	5,055.96	**3.67**	**154.14**	**189.85**	**Y**	**Y***
J05-01	0.00	0.00	0.00	0.00	236.76	6,681.51	**0.00**	**0.00**	0.00	0.00	0.00	0.00	6.04	200.13	0.00	0.00	0.00	0.00	0.00	0.00	230.72	6,481.38	**0.00**	**0.00**	**230.72**	**Y**	**Y***
J06-01	0.00	0.00	0.00	0.00	161.33	4,176.31	**0.00**	**0.00**	0.00	0.00	0.00	0.00	3.38	98.63	0.00	0.00	0.00	0.00	0.00	0.00	157.95	4,077.68	**0.00**	**0.00**	**157.95**	**Y**	**Y***
J06-03	0.00	0.00	0.00	0.00	285.85	9,662.32	**0.00**	**0.00**	0.00	0.00	0.00	0.00	15.10	478.79	0.00	0.00	0.00	0.00	0.00	0.00	270.75	9,183.53	**0.00**	**0.00**	**270.75**	**Y**	**Y***
K02-01	0.00	0.00	0.00	0.00	263.96	6,251.67	**0.00**	**0.00**	0.00	0.00	0.00	0.00	191.70	4,317.56	8.68	151.90	0.00	0.00	0.00	0.00	63.58	1,782.21	**0.00**	**0.00**	**63.58**	**Y**	**Y**
K08-03	35.65	1,515.13	0.00	0.00	91.68	2,036.45	**35.65**	**1,515.13**	3.13	133.03	0.00	0.00	3.72	101.73	0.00	0.00	32.52	1,382.10	0.00	0.00	87.96	1,934.72	**32.52**	**1,382.10**	**120.48**	**Y**	**Y**
K08-04	23.51	999.18	0.00	0.00	164.54	5,665.82	**23.51**	**999.18**	3.21	136.43	0.00	0.00	10.46	383.51	0.00	0.00	20.30	862.75	0.00	0.00	154.08	5,282.31	**20.30**	**862.75**	**174.38**	**Y**	**Y***
K09-01	48.43	2,198.83	0.51	25.50	100.60	3,280.76	**48.94**	**2,224.33**	0.00	0.00	0.00	0.00	1.23	37.94	0.00	0.00	48.43	2,198.83	0.51	25.50	99.37	3,242.82	**48.94**	**2,224.33**	**148.31**	**Y**	**Y**

* With time and management, these partitions have enough acreage to meet the RS foraging standard on Fort Benning.

Table 6-18 (cont.). Red-cockaded woodpecker foraging habitat data using the Recovery Standard (RS) (USFWS 2003) for all partitions impacted by Alternative B Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
K09-03R	0.00	0.00	44.48	2,224.00	206.65	5,907.71	**44.48**	**2,224.00**	0.00	0.00	0.22	11.00	9.77	208.88	0.00	0.00	0.00	0.00	44.26	2,213.00	196.88	5,698.83	**44.26**	**2,213.00**	**241.14**	**Y**	**Y***
K11-02	0.00	0.00	84.19	3,532.46	238.03	6,452.51	**84.19**	**3,532.46**	0.00	0.00	0.00	0.00	2.58	78.01	0.00	0.00	0.00	0.00	84.19	3,532.46	235.45	6,374.50	**84.19**	**3,532.46**	**319.65**	**Y**	**Y***
K11-03	0.00	0.00	0.00	0.00	153.96	4,016.71	**0.00**	**0.00**	0.00	0.00	0.00	0.00	8.39	175.54	0.00	0.00	0.00	0.00	0.00	0.00	145.57	3,841.17	**0.00**	**0.00**	**145.57**	**Y**	**Y**
K14-01R	0.00	0.00	0.00	0.00	211.89	5,118.97	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.95	196.71	0.00	0.00	0.00	0.00	0.00	0.00	206.94	4,922.26	**0.00**	**0.00**	**206.94**	**Y**	**Y***
K17-02	0.00	0.00	0.00	0.00	163.84	6,726.71	**0.00**	**0.00**	0.00	0.00	0.00	0.00	4.63	128.14	0.00	0.00	0.00	0.00	0.00	0.00	159.21	6,598.57	**0.00**	**0.00**	**159.21**	**Y**	**Y***
K17-05R	0.00	0.00	0.00	0.00	274.47	6,747.87	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.96	10.68	0.00	0.00	0.00	0.00	0.00	0.00	273.51	6,737.19	**0.00**	**0.00**	**273.51**	**Y**	**Y***
K18-01	0.00	0.00	126.13	6,236.76	120.79	3,260.62	**126.13**	**6,236.76**	0.00	0.00	3.40	162.55	3.54	73.91	0.00	0.00	0.00	0.00	122.73	6,074.21	117.25	3,186.71	**122.73**	**6,074.21**	**239.98**	**N**	**N**
K18-02R	0.00	0.00	71.04	3,090.90	129.64	3,945.33	**71.04**	**3,090.90**	0.00	0.00	1.36	59.45	1.80	67.72	0.00	0.00	0.00	0.00	69.68	3,031.45	127.84	3,877.61	**69.68**	**3,031.45**	**197.52**	**Y**	**Y***
K18-03R	0.00	0.00	19.05	771.53	167.03	3,755.91	**19.05**	**771.53**	0.00	0.00	1.72	69.66	1.90	41.13	0.00	0.00	0.00	0.00	17.33	701.87	165.13	3,714.78	**17.33**	**701.87**	**182.45**	**Y**	**Y***
K21-02R	0.00	0.00	51.25	2,639.38	176.22	6,425.99	**51.25**	**2,639.38**	0.00	0.00	0.00	0.00	14.54	508.05	0.00	0.00	0.00	0.00	51.25	2,639.38	161.68	5,917.94	**51.25**	**2,639.38**	**212.93**	**Y**	**Y***
L02-02R	0.00	0.00	4.86	303.75	193.26	6,020.19	**4.86**	**303.75**	0.00	0.00	0.00	0.00	113.81	3,849.61	10.57	250.42	0.00	0.00	4.86	303.75	68.88	1,920.16	**4.86**	**303.75**	**73.74**	**Y**	**Y**
O03-02	0.00	0.00	19.68	982.58	136.50	4,263.87	**19.68**	**982.58**	0.00	0.00	1.06	52.44	0.00	0.00	0.00	0.00	0.00	0.00	18.62	930.14	136.50	4,263.87	**18.62**	**930.14**	**155.12**	**Y**	**Y***
O05-01	0.00	0.00	144.91	7,361.08	125.87	4,980.21	**144.91**	**7,361.08**	0.00	0.00	0.00	0.00	16.49	842.01	0.00	0.00	0.00	0.00	144.91	7,361.08	109.38	4,138.20	**144.91**	**7,361.08**	**254.29**	**N**	**N**
O05-02	0.00	0.00	12.98	642.12	127.71	4,941.58	**12.98**	**642.12**	0.00	0.00	1.02	50.46	24.87	1,140.85	0.58	31.82	0.00	0.00	11.96	591.66	102.26	3,768.91	**11.96**	**591.66**	**114.22**	**Y**	**Y**
O05-03R	0.00	0.00	74.08	3,555.84	161.55	5,402.53	**74.08**	**3,555.84**	0.00	0.00	1.89	90.72	28.27	1,071.74	0.00	0.00	0.00	0.00	72.19	3,465.12	133.28	4,330.79	**72.19**	**3,465.12**	**205.47**	**Y**	**Y***
O07-03R	0.00	0.00	0.00	0.00	252.72	7,658.20	**0.00**	**0.00**	0.00	0.00	0.00	0.00	0.48	8.64	0.00	0.00	0.00	0.00	0.00	0.00	252.24	7,649.56	**0.00**	**0.00**	**252.24**	**Y**	**Y***
O08-03R	0.00	0.00	0.00	0.00	146.83	3,200.40	**0.00**	**0.00**	0.00	0.00	0.00	0.00	19.02	455.19	0.00	0.00	0.00	0.00	0.00	0.00	127.81	2,745.21	**0.00**	**0.00**	**127.81**	**Y**	**Y**
O09-02	0.00	0.00	44.39	2,152.92	148.87	4,065.02	**44.39**	**2,152.92**	0.00	0.00	0.00	0.00	13.28	338.64	0.00	0.00	0.00	0.00	44.39	2,152.92	135.59	3,726.38	**44.39**	**2,152.92**	**179.98**	**Y**	**Y***
O09-04R	0.00	0.00	81.42	3,267.44	143.16	3,159.43	**81.42**	**3,267.44**	0.00	0.00	72.11	2,895.04	73.89	1,483.70	17.98	58.79	0.00	0.00	9.31	372.40	51.29	1,616.94	**9.31**	**372.40**	**60.60**	**Y**	**Y**
O09-05R	0.00	0.00	49.94	2,385.30	235.24	9,202.97	**49.94**	**2,385.30**	0.00	0.00	49.94	2,385.30	191.11	6,740.51	0.13	3.22	0.00	0.00	0.00	0.00	44.00	2,459.24	**0.00**	**0.00**	**44.00**	**Y**	**Y**
O10-01	0.00	0.00	0.00	0.00	227.30	5,196.40	**0.00**	**0.00**	0.00	0.00	0.00	0.00	1.63	46.20	0.00	0.00	0.00	0.00	0.00	0.00	225.67	5,150.21	**0.00**	**0.00**	**225.67**	**Y**	**Y***
Q02-02	0.00	0.00	0.00	0.00	157.64	5,808.89	**0.00**	**0.00**	0.00	0.00	0.00	0.00	6.52	215.89	0.00	0.00	0.00	0.00	0.00	0.00	151.12	5,593.00	**0.00**	**0.00**	**151.12**	**Y**	**Y***
Q02-04R	0.00	0.00	0.00	0.00	231.62	5,865.42	**0.00**	**0.00**	0.00	0.00	0.00	0.00	10.25	432.07	0.00	0.00	0.00	0.00	0.00	0.00	221.37	5,433.35	**0.00**	**0.00**	**221.37**	**Y**	**Y***
R01-01	0.00	0.00	23.72	1,336.55	145.73	4,020.84	**23.72**	**1,336.55**	0.00	0.00	23.71	1,335.95	133.95	3,936.60	0.00	0.00	0.00	0.00	0.01	0.60	11.78	84.24	**0.01**	**0.60**	**11.79**	**Y**	**Y**
R01-03R	0.00	0.00	0.00	0.00	68.27	1,429.07	**0.00**	**0.00**	0.00	0.00	0.00	0.00	40.85	851.62	0.00	0.00	0.00	0.00	0.00	0.00	27.42	577.45	**0.00**	**0.00**	**27.42**	**Y**	**Y**
R02-01R	0.00	0.00	32.29	1,911.17	156.39	4,315.12	**32.29**	**1,911.17**	0.00	0.00	6.43	266.20	41.30	1,196.17	0.00	0.00	0.00	0.00	25.86	1,644.97	115.09	3,118.95	**25.86**	**1,644.97**	**140.95**	**Y**	**Y**
SHC-02	0.00	0.00	36.51	1,569.93	208.27	7,359.73	**36.51**	**1,569.93**	0.00	0.00	0.10	4.30	26.53	1,021.98	0.00	0.00	0.00	0.00	36.41	1,565.63	181.74	6,337.75	**36.41**	**1,565.63**	**218.15**	**Y**	**Y***
T01-01	0.00	0.00	0.00	0.00	145.17	4,374.35	**0.00**	**0.00**	0.00	0.00	0.00	0.00	2.65	73.13	0.00	0.00	0.00	0.00	0.00	0.00	142.52	4,301.22	**0.00**	**0.00**	**142.52**	**Y**	**Y**
T02-01	0.00	0.00	0.00	0.00	183.21	4,047.25	**0.00**	**0.00**	0.00	0.00	0.00	0.00	12.00	39.95	0.00	0.00	0.00	0.00	0.00	0.00	171.21	4,007.30	**0.00**	**0.00**	**171.21**	**Y**	**Y***
T03-02	0.00	0.00	68.29	2,868.18	132.19	4,285.04	**68.29**	**2,868.18**	0.00	0.00	0.08	3.36	3.82	113.16	0.00	0.00	0.00	0.00	68.21	2,864.82	128.37	4,171.88	**68.21**	**2,864.82**	**196.58**	**Y**	**Y***
T03-04R	0.00	0.00	2.46	100.86	161.70	5,196.89	**2.46**	**100.86**	0.00	0.00	0.62	25.42	10.01	257.95	0.00	0.00	0.00	0.00	1.84	75.44	151.69	4,938.94	**1.84**	**75.44**	**153.53**	**Y**	**Y***
T04-01	9.88	444.60	0.00	0.00	143.83	4,443.82	**9.88**	**444.60**	0.33	14.85	0.00	0.00	1.28	61.92	0.00	0.00	9.55	429.75	0.00	0.00	142.55	4,381.90	**9.55**	**429.75**	**152.10**	**Y**	**Y***
T05-02	0.00	0.00	0.00	0.00	182.29	3,173.98	**0.00**	**0.00**	0.00	0.00	0.00	0.00	1.22	50.76	0.00	0.00	0.00	0.00	0.00	0.00	181.07	3,123.22	**0.00**	**0.00**	**181.07**	**Y**	**Y***
U04-01	0.00	0.00	50.29	2,536.78	81.87	2,047.86	**50.29**	**2,536.78**	0.00	0.00	11.91	600.55	28.11	853.61	0.00	0.00	0.00	0.00	38.38	1,936.23	53.76	1,194.25	**38.38**	**1,936.23**	**92.14**	**Y**	**Y**

* With time and management, these partitions have enough acreage to meet the RS foraging standard on Fort Benning.

Table 6-19. Red-cockaded woodpecker foraging habitat data using the Standard for Managed Stability (USFWS 2003) for all partitions impacted by Alternative B Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
A06-01	153.92	7,080.32	0.00	0.00	33.83	736.42	**153.92**	**7,080.32**	0.18	8.28	0.00	0.00	0.00	0.00	0.00	0.00	153.74	7,072.04	0.00	0.00	33.83	736.42	**153.74**	**7,072.04**	**187.57**	**N**	**N**
A07-01	35.57	1,313.76	0.00	0.00	150.78	4,112.80	**35.57**	**1,313.76**	1.47	49.98	0.00	0.00	3.62	103.52	0.00	0.00	34.10	1,263.78	0.00	0.00	147.16	4,009.28	**34.10**	**1,263.78**	**181.26**	**Y**	**Y**
A08-01	113.12	4,621.44	45.41	1,706.76	27.65	375.78	**158.53**	**6,328.20**	0.36	14.10	3.33	125.49	1.35	21.84	0.00	0.00	112.76	4,607.34	42.08	1,581.27	26.30	353.94	**154.84**	**6,188.61**	**181.14**	**N**	**N**
A08-02a	91.04	3,233.50	6.85	294.55	0.00	0.00	**97.89**	**3,528.05**	0.71	24.85	1.10	47.30	0.00	0.00	0.00	0.00	90.33	3,208.65	5.75	247.25	0.00	0.00	**96.08**	**3,455.90**	**96.08**	**N**	**N**
A09-03R	11.57	408.84	108.08	3,527.64	8.39	0.00	**119.65**	**3,936.48**	1.49	54.63	4.12	143.74	0.50	0.00	0.00	0.00	10.08	354.21	103.96	3,383.90	7.89	0.00	**114.04**	**3,738.11**	**121.93**	**N**	**N**
A09-05	115.77	4,357.84	13.81	419.31	51.07	1,230.38	**129.58**	**4,777.15**	5.27	202.36	0.22	6.60	1.18	15.25	0.00	0.00	110.50	4,155.48	13.59	412.71	49.89	1,215.13	**124.09**	**4,568.19**	**173.98**	**N**	**N**
A17-01	84.65	4,475.19	37.64	1,832.54	0.00	0.00	**1,222.29**	**6,307.73**	55.19	2,936.94	32.40	1,622.79	0.00	0.00	2.33	96.54	29.46	1,538.25	2.91	113.21	0.00	0.00	**32.37**	**1,651.46**	**32.36**	**Y**	**Y**
A17-02	63.78	3,370.19	0.00	0.00	64.50	460.97	**63.78**	**3,370.19**	0.16	10.56	0.00	0.00	0.00	0.00	0.00	0.00	63.62	3,359.63	0.00	0.00	64.50	460.97	**63.62**	**3,359.63**	**128.12**	**Y**	**Y**
A17-03	97.13	5,175.53	20.29	1,014.50	0.00	0.00	**117.42**	**6,190.03**	94.31	5,028.88	14.81	740.50	0.00	0.00	2.81	146.12	0.01	0.53	5.48	274.00	0.00	0.00	**5.49**	**274.53**	**5.49**	**N**	**Y**
A17-04	155.95	7,987.49	71.56	4,033.36	3.69	1.76	**227.51**	**12,020.85**	16.32	869.17	0.00	0.00	0.00	0.00	0.00	0.00	139.63	7,118.32	71.56	4,033.36	3.69	1.76	**211.19**	**11,151.68**	**214.89**	**N**	**N**
A17-05	102.39	4,379.85	16.36	867.08	4.15	24.90	**118.75**	**5,246.93**	1.38	45.54	0.00	0.00	0.00	0.00	0.00	0.00	101.01	4,334.31	16.36	867.08	4.15	24.90	**117.37**	**5,201.39**	**121.52**	**N**	**N**
A17-07	71.64	3,223.80	17.30	876.20	0.00	0.00	**88.94**	**4,100.00**	6.10	274.50	7.26	421.17	0.00	0.00	0.00	0.00	65.54	2,949.30	10.04	455.03	0.00	0.00	**75.58**	**3,404.33**	**75.58**	**N**	**N**
A17-08	111.93	7,124.60	0.00	0.00	17.76	100.53	**111.93**	**7,124.60**	1.23	63.96	0.00	0.00	0.00	0.00	0.00	0.00	110.70	7,060.64	0.00	0.00	17.76	100.53	**110.70**	**7,060.64**	**128.46**	**N**	**N**
A17-13	80.89	4,206.28	24.45	1,222.50	0.00	0.00	**105.34**	**5,428.78**	2.92	151.84	0.00	0.00	0.00	0.00	0.00	0.00	77.97	4,054.44	24.45	1,222.50	0.00	0.00	**102.42**	**5,276.94**	**102.42**	**N**	**N**
A17-14	114.16	6,306.98	9.99	575.66	13.25	79.50	**124.15**	**6,882.64**	107.06	5,908.42	7.77	457.73	7.49	44.94	3.77	201.63	5.52	313.00	0.03	1.86	5.76	34.56	**5.55**	**314.86**	**11.31**	**N**	**Y**
A20-06	123.20	4,495.90	0.00	0.00	50.90	1,413.14	**123.20**	**4,495.90**	0.54	18.36	0.00	0.00	0.00	0.00	0.00	0.00	122.66	4,477.54	0.00	0.00	50.90	1,413.14	**122.66**	**4,477.54**	**173.56**	**N**	**N**
BB03-01R	27.62	1,020.86	50.29	2,169.33	143.97	2,625.14	**77.91**	**3,190.19**	0.00	0.00	0.00	0.00	19.95	491.69	52.92	1,616.71	27.62	1,020.86	16.70	804.57	104.69	1,881.50	**44.32**	**1,825.43**	**149.02**	**N**	**Y**
BB04-01R	123.90	4,956.55	12.27	1,229.31	46.07	836.25	**136.17**	**6,185.86**	10.74	449.85	5.60	634.03	13.79	82.57	0.00	0.00	113.16	4,506.70	6.67	595.29	32.28	753.68	**119.83**	**5,101.99**	**152.11**	**N**	**N**
BB05-01R	113.25	4,706.03	102.12	4,015.93	63.62	1,493.99	**215.37**	**8,721.96**	22.31	1,134.57	3.40	149.22	4.97	103.26	0.00	0.00	90.94	3,571.46	98.72	3,866.71	58.65	1,390.73	**189.66**	**7,438.17**	**248.31**	**N**	**N**
D05-02R	122.80	4,840.55	0.00	0.00	39.09	858.61	**122.80**	**4,840.55**	3.02	122.43	0.00	0.00	10.52	231.44	0.00	0.00	119.78	4,718.12	0.00	0.00	28.57	627.17	**119.78**	**4,718.12**	**148.35**	**N**	**N**
D05-04R	255.06	10,245.41	0.00	0.00	48.27	504.18	**255.06**	**10,245.41**	69.21	2,901.18	0.00	0.00	21.64	375.62	5.38	219.71	180.47	7,124.52	0.00	0.00	26.63	128.56	**180.47**	**7,124.52**	**207.10**	**N**	**N**
D08-01R	113.10	4,104.18	0.00	0.00	139.48	1,321.06	**113.10**	**4,104.18**	2.61	92.60	0.00	0.00	0.71	16.86	0.00	0.00	110.49	4,011.58	0.00	0.00	138.77	1,304.20	**110.49**	**4,011.58**	**249.25**	**N**	**N**
D10-01	44.24	1,472.00	0.00	0.00	76.66	672.54	**44.24**	**1,472.00**	0.00	0.00	0.00	0.00	1.35	0.00	0.00	0.00	44.24	1,472.00	0.00	0.00	75.31	672.54	**44.24**	**1,472.00**	**119.55**	**Y**	**Y**
D11-01	93.02	3,472.58	0.00	0.00	49.47	96.31	**93.02**	**3,472.58**	49.23	1,836.64	0.00	0.00	32.37	31.26	0.00	0.00	43.79	1,635.94	0.00	0.00	17.10	65.05	**43.79**	**1,635.94**	**60.89**	**N**	**Y**
D11-02	108.40	3,994.86	0.00	0.00	55.81	1,305.57	**108.40**	**3,994.86**	67.71	2,491.27	0.00	0.00	16.85	388.39	42.38	1,218.12	18.45	716.21	0.00	0.00	18.82	486.44	**18.45**	**716.21**	**37.27**	**N**	**Y**
D15-01R	156.24	6,807.87	14.76	560.88	111.12	2,566.22	**171.00**	**7,368.75**	7.89	291.93	0.00	0.00	14.05	379.38	0.00	0.00	148.35	6,515.94	14.76	560.88	97.07	2,186.84	**163.11**	**7,076.82**	**260.17**	**N**	**N**
D16-02	15.33	534.92	0.00	0.00	200.53	3,299.43	**15.33**	**534.92**	0.00	0.00	0.00	0.00	57.94	752.09	67.36	1,366.72	0.00	0.00	0.00	0.00	90.56	1,715.54	**0.00**	**0.00**	**90.56**	**Y**	**Y**
D17-04R	79.80	3,187.41	10.97	356.53	101.41	1,871.43	**90.77**	**3,543.94**	1.03	38.63	0.00	0.00	10.86	301.83	0.00	0.00	78.77	3,148.78	10.97	356.53	90.55	1,569.60	**89.74**	**3,505.31**	**180.29**	**N**	**N**
E02-01	90.53	2,867.93	17.09	515.56	124.82	399.63	**107.62**	**3,383.49**	3.13	97.03	0.00	0.00	6.80	7.42	0.00	0.00	87.40	2,770.90	17.09	515.56	118.02	392.21	**104.49**	**3,286.46**	**222.50**	**N**	**N**
E03-01	161.08	7,046.71	0.00	0.00	41.27	1,912.80	**161.08**	**7,046.71**	4.01	176.52	0.00	0.00	0.00	0.00	0.00	0.00	157.07	6,870.19	0.00	0.00	41.27	1,912.80	**157.07**	**6,870.19**	**198.34**	**N**	**N**
E04-01	114.82	4,504.91	0.00	0.00	52.26	1,275.52	**114.82**	**4,504.91**	38.40	1,484.33	0.00	0.00	7.42	303.49	0.00	0.00	76.42	3,020.58	0.00	0.00	44.84	972.03	**76.42**	**3,020.58**	**121.26**	**N**	**N**
E08-05R	104.71	4,852.66	0.00	0.00	70.74	103.01	**104.71**	**4,852.66**	3.37	155.71	0.00	0.00	1.27	0.00	0.00	0.00	101.34	4,696.95	0.00	0.00	69.47	103.01	**101.34**	**4,696.95**	**170.81**	**N**	**N**
F02-01R	85.24	3,739.60	0.00	0.00	124.79	2,585.72	**85.24**	**3,739.60**	20.14	838.62	0.00	0.00	46.11	936.75	5.22	66.22	65.10	2,900.98	0.00	0.00	73.46	1,582.75	**65.10**	**2,900.98**	**138.56**	**N**	**Y**
HCC-03R	165.86	6,714.85	29.43	1,141.04	30.15	478.61	**195.29**	**7,855.89**	100.76	4,081.63	2.17	69.44	22.93	376.64	0.45	14.40	65.10	2,633.22	26.81	1,057.20	7.22	101.97	**91.91**	**3,690.42**	**99.14**	**N**	**N**
HCC-08R	58.75	1,962.19	51.97	1,634.98	97.76	2,551.09	**110.72**	**3,597.17**	8.74	308.71	0.00	0.00	0.16	0.00	0.00	0.00	50.01	1,653.48	51.97	1,634.98	97.60	2,551.09	**101.98**	**3,288.46**	**199.58**	**N**	**N**
HCC-10R	95.84	3,419.15	123.96	5,317.02	74.91	1,273.41	**219.80**	**8,736.17**	27.78	1,025.35	68.96	2,976.78	52.05	750.64	0.00	0.00	68.06	2,393.80	55.00	2,340.24	22.86	522.77	**123.06**	**4,734.04**	**145.92**	**N**	**N**
HCC-11R	11.83	385.98	0.00	0.00	241.24	5,469.75	**11.83**	**385.98**	0.75	29.28	0.00	0.00	50.45	850.53	2.32	47.56	11.08	356.70	0.00	0.00	188.47	4,571.66	**11.08**	**356.70**	**199.55**	**Y**	**Y**
J03-01	98.92	3,982.19	0.00	0.00	75.73	1,254.41	**98.92**	**3,982.19**	2.11	86.31	0.00	0.00	0.90	18.45	0.00	0.00	96.81	3,895.88	0.00	0.00	74.83	1,235.96	**96.81**	**3,895.88**	**171.64**	**N**	**N**
J04-01	85.90	3,187.22	11.41	432.19	98.37	1,734.35	**97.31**	**3,619.41**	2.06	74.58	0.11	4.62	3.66	64.46	0.00	0.00	83.84	3,112.64	11.30	427.57	94.71	1,669.89	**95.14**	**3,540.21**	**189.85**	**N**	**N**
J05-01	82.76	3,110.24	45.95	1,492.79	108.05	2,078.48	**128.71**	**4,603.03**	3.40	127.20	1.26	39.12	1.38	33.81	0.00	0.00	79.36	2,983.04	44.69	1,453.67	106.67	2,044.67	**124.05**	**4,436.71**	**230.72**	**N**	**N**
J06-01	104.22	3,674.76	0.00	0.00	57.10	501.55	**104.22**	**3,674.76**	1.69	67.50	0.00	0.00	1.69	31.13	0.00	0.00	102.53	3,607.26	0.00	0.00	55.41	470.42	**102.53**	**3,607.26**	**157.94**	**N**	**N**
J06-03	211.95	7,630.60	0.25	7.76	73.65	2,023.96	**212.20**	**7,638.36**	11.80	381.44	0.00	0.00	3.30	97.35	0.00	0.00	200.15	7,249.16	0.25	7.76	70.35	1,926.61	**200.40**	**7,256.92**	**270.75**	**N**	**N**
K02-01	0.00	0.00	10.03	315.11	253.93	5,936.56	**10.03**	**315.11**	0.00	0.00	2.78	86.18	188.92	4,231.38	8.68	151.90	0.00	0.00	7.25	228.93	56.33	1,553.28	**7.25**	**228.93**	**63.58**	**Y**	**Y**
K08-03	98.31	3,551.58	0.00	0.00	29.02	0.00	**98.31**	**3,551.58**	6.26	234.76	0.00	0.00	0.59	0.00	0.00	0.00	92.05	3,316.82	0.00	0.00	28.43	0.00	**92.05**	**3,316.82**	**120.48**	**N**	**N**
K08-04	177.18	6,554.22	6.45	70.95	4.42	39.83	**183.63**	**6,625.17**	13.20	506.07	0.00	0.00	0.47	13.87	0.00	0.00	163.98	6,048.15	6.45	70.95	3.95	25.97	**170.43**	**6,119.10**	**174.38**	**N**	**N**
K09-01	89.57	3,793.89	0.51	25.50	59.46	1,685.70	**90.08**	**3,819.39**	0.52	16.99	0.00	0.00	0.71	20.95	0.00	0.00	89.05	3,776.90	0.51	25.50	58.75	1,664.75	**89.56**	**3,802.40**	**148.31**	**N**	**N**

This cluster is taken as a result of the Alternative B Transformation.

Table 6-19 (cont.). Red-cockaded woodpecker foraging habitat data using the Standard for Managed Stability (USFWS 2003) for all partitions impacted by Alternative B Transformation projects on Fort Benning.

	Pre- project Foraging Habitat Totals								Project Removals						Post- project Foraging Habitat Totals												
Cluster	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Suitable + Potentially Suitable Acreage	Suitable + Potentially Suitable BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Non-contiguous Habitat Acreage	Non-contiguous Habitat BA	Suitable Acreage	Suitable BA	Potentially Suitable Acreage	Potentially Suitable BA	Future Potential Acreage	Future Potential BA	Total Suitable + Potentially Suitable Acreage	Total Suitable + Potentially Suitable BA	Total Manageable Acres	Deficient Pre-project?	Deficient Post-project?
K09-03R	147.03	5,245.87	44.48	2,224.00	59.62	661.84	**191.51**	**7,469.87**	5.08	172.15	0.22	11.00	4.69	36.73	0.00	0.00	141.95	5,073.72	44.26	2,213.00	54.93	625.11	**186.21**	**7,286.72**	**241.14**	**N**	**N**
K11-02	239.88	9,093.19	5.12	174.08	77.22	717.70	**245.00**	**9,267.27**	0.55	19.53	1.72	58.48	0.31	0.00	0.00	0.00	239.33	9,073.66	3.40	115.60	76.91	717.70	**242.73**	**9,189.26**	**319.64**	**N**	**N**
K11-03	40.17	1,426.04	2.16	73.44	111.63	2,517.23	**42.33**	**1,499.48**	2.55	90.53	0.07	2.38	5.77	82.63	0.00	0.00	37.62	1,335.51	2.09	71.06	105.86	2,434.60	**39.71**	**1,406.57**	**145.57**	**Y**	**Y**
K14-01R	66.02	3,104.66	0.00	0.00	145.86	2,014.31	**66.02**	**3,104.66**	3.09	158.58	0.00	0.00	1.86	38.13	0.00	0.00	62.93	2,946.08	0.00	0.00	144.00	1,976.18	**62.93**	**2,946.08**	**206.93**	**Y**	**Y**
K17-02	118.38	6,102.84	0.00	0.00	45.47	623.87	**118.38**	**6,102.84**	1.36	68.57	0.00	0.00	3.27	59.57	0.00	0.00	117.02	6,034.27	0.00	0.00	42.20	564.30	**117.02**	**6,034.27**	**159.22**	**N**	**N**
K17-05R	144.10	6,658.60	0.00	0.00	130.37	89.27	**144.10**	**6,658.60**	0.24	10.68	0.00	0.00	0.72	0.00	0.00	0.00	143.86	6,647.92	0.00	0.00	129.65	89.27	**143.86**	**6,647.92**	**273.51**	**N**	**N**
K18-01	121.71	6,052.18	24.82	1,539.75	100.39	1,905.45	**146.53**	**7,591.93**	2.98	145.00	0.42	17.54	3.54	73.91	0.00	0.00	118.73	5,907.18	24.40	1,522.21	96.85	1,831.54	**143.13**	**7,429.39**	**239.98**	**N**	**N**
K18-02R	138.32	5,357.23	16.69	665.48	45.67	1,013.52	**155.01**	**6,022.71**	1.94	78.98	1.22	48.19	0.00	0.00	0.00	0.00	136.38	5,278.25	15.47	617.29	45.67	1,013.52	**151.85**	**5,895.54**	**197.52**	**N**	**N**
K18-03R	0.00	0.00	19.05	771.53	167.03	3,755.91	**19.05**	**771.53**	0.00	0.00	1.72	69.66	1.90	41.13	0.00	0.00	0.00	0.00	17.33	701.87	165.13	3,714.78	**17.33**	**701.87**	**182.45**	**Y**	**Y**
K21-02R	194.32	8,285.35	0.00	0.00	33.15	780.02	**194.32**	**8,285.35**	10.27	407.58	0.00	0.00	4.27	100.47	0.00	0.00	184.05	7,877.77	0.00	0.00	28.88	679.55	**184.05**	**7,877.77**	**212.93**	**N**	**N**
L02-02R	119.30	4,677.98	9.23	276.90	69.59	1,369.06	**128.53**	**4,954.88**	89.36	3,380.61	2.64	79.20	21.81	389.80	10.57	250.42	28.32	1,236.38	6.59	197.70	38.83	789.83	**34.91**	**1,434.08**	**73.74**	**N**	**Y**
O03-02	115.58	4,624.49	0.00	0.00	40.60	621.96	**115.58**	**4,624.49**	1.06	52.44	0.00	0.00	0.00	0.00	0.00	0.00	114.52	4,572.05	0.00	0.00	40.60	621.96	**114.52**	**4,572.05**	**155.12**	**N**	**N**
O05-01	218.46	11,088.51	8.34	640.86	43.98	611.92	**226.80**	**11,729.37**	14.91	710.01	1.55	130.46	0.03	1.54	0.00	0.00	203.55	10,378.50	6.79	510.40	43.95	610.38	**210.34**	**10,888.90**	**254.29**	**N**	**N**
O05-02	98.79	4,191.52	10.20	456.87	31.70	935.31	**108.99**	**4,648.39**	7.45	356.65	1.68	157.92	16.76	676.74	0.58	31.82	91.34	3,834.87	8.47	294.25	14.41	231.45	**99.81**	**4,129.12**	**114.22**	**N**	**N**
O05-03R	180.31	7,686.14	11.40	454.18	43.92	818.05	**191.71**	**8,140.32**	25.58	1,028.11	1.84	63.92	2.74	70.43	0.00	0.00	154.73	6,658.03	9.56	390.26	41.18	747.62	**164.29**	**7,048.29**	**205.46**	**N**	**N**
O07-03R	70.64	2,822.41	62.89	2,072.15	119.19	2,763.64	**133.53**	**4,894.56**	0.00	0.00	0.00	0.00	0.48	8.64	0.00	0.00	70.64	2,822.41	62.89	2,072.15	118.71	2,755.00	**133.53**	**4,894.56**	**252.24**	**N**	**N**
O08-03R	0.00	0.00	9.14	279.13	137.69	2,921.27	**9.14**	**279.13**	0.00	0.00	1.31	39.30	17.71	415.89	0.00	0.00	0.00	0.00	7.83	239.83	119.98	2,505.38	**7.83**	**239.83**	**127.81**	**Y**	**Y**
O09-02	77.15	3,320.16	0.00	0.00	116.11	2,897.78	**77.15**	**3,320.16**	0.00	0.00	0.00	0.00	13.28	338.64	0.00	0.00	77.15	3,320.16	0.00	0.00	102.83	2,559.14	**77.15**	**3,320.16**	**179.98**	**N**	**N**
O09-04R	118.37	4,750.67	53.69	1,674.92	52.52	1.28	**172.06**	**6,425.59**	78.44	3,107.44	41.76	1,271.30	25.80	0.00	17.98	58.79	39.77	1,637.54	10.16	350.52	10.67	1.28	**49.93**	**1,988.06**	**60.60**	**N**	**Y**
O09-05R	183.45	8,833.70	57.63	1,988.24	44.10	766.33	**241.08**	**10,821.94**	145.47	6,543.64	57.16	1,972.03	38.42	610.14	0.13	3.22	37.93	2,288.36	0.47	16.21	5.60	154.67	**38.40**	**2,304.57**	**44.00**	**N**	**Y**
O10-01	43.42	1,411.15	69.18	2,590.53	114.70	1,194.72	**112.60**	**4,001.68**	0.00	0.00	0.57	27.65	1.06	18.55	0.00	0.00	43.42	1,411.15	68.61	2,562.89	113.64	1,176.17	**112.03**	**3,974.04**	**225.67**	**N**	**N**
Q02-02	62.85	2,364.38	88.21	3,336.99	6.58	107.52	**151.06**	**5,701.37**	1.60	61.61	4.92	154.28	0.00	0.00	0.00	0.00	61.25	2,302.77	83.29	3,182.71	6.58	107.52	**144.54**	**5,485.48**	**151.12**	**N**	**N**
Q02-04R	96.01	3,493.76	52.80	2,263.46	82.81	108.20	**148.81**	**5,757.22**	0.99	41.58	9.16	390.49	0.10	0.00	0.00	0.00	95.02	3,452.18	43.64	1,872.97	82.71	108.20	**138.66**	**5,325.15**	**221.37**	**N**	**N**
R01-01	48.48	2,182.36	34.79	1,321.06	86.18	1,853.97	**83.27**	**3,503.42**	47.04	2,138.86	34.79	1,321.06	75.83	1,812.63	0.00	0.00	1.44	43.50	0.00	0.00	10.35	41.34	**1.44**	**43.50**	**11.79**	**N**	**Y**
R01-03R	0.00	0.00	27.68	871.78	40.59	557.29	**27.68**	**871.78**	0.00	0.00	24.72	780.02	16.13	71.60	0.00	0.00	0.00	0.00	2.96	91.76	24.46	485.69	**2.96**	**91.76**	**27.42**	**Y**	**Y**
R02-01R	80.87	3,286.40	11.33	846.09	96.48	2,093.80	**92.20**	**4,132.49**	24.58	925.97	1.80	126.00	21.35	410.40	0.00	0.00	56.29	2,360.43	9.53	720.09	75.13	1,683.40	**65.82**	**3,080.52**	**140.95**	**N**	**Y**
SHC-02	27.00	1,129.81	155.73	6,275.47	62.06	1,524.38	**182.73**	**7,405.28**	0.23	8.74	25.32	989.42	1.08	28.12	0.00	0.00	26.77	1,121.07	130.41	5,286.05	60.98	1,496.26	**157.18**	**6,407.12**	**218.15**	**N**	**N**
T01-01	84.53	2,842.16	18.87	584.97	41.77	947.22	**103.40**	**3,427.13**	1.87	58.27	0.00	0.00	0.78	14.86	0.00	0.00	82.66	2,783.89	18.87	584.97	40.99	932.36	**101.53**	**3,368.86**	**142.52**	**N**	**N**
T02-01	28.16	1,027.84	0.00	0.00	155.05	3,019.41	**28.16**	**1,027.84**	0.00	0.00	0.00	0.00	12.00	39.95	0.00	0.00	28.16	1,027.84	0.00	0.00	143.05	2,979.46	**28.16**	**1,027.84**	**171.21**	**Y**	**Y**
T03-02	149.60	5,622.26	16.43	690.06	34.45	840.90	**166.03**	**6,312.32**	1.55	53.00	0.08	3.36	2.27	60.16	0.00	0.00	148.05	5,569.26	16.35	686.70	32.18	780.74	**164.40**	**6,255.96**	**196.58**	**N**	**N**
T03-04R	113.11	4,286.09	0.00	0.00	51.05	1,011.66	**113.11**	**4,286.09**	4.13	156.94	0.00	0.00	6.50	126.43	0.00	0.00	108.98	4,129.15	0.00	0.00	44.55	885.23	**108.98**	**4,129.15**	**153.53**	**N**	**N**
T04-01	129.83	4,815.90	0.00	0.00	23.88	72.52	**129.83**	**4,815.90**	1.47	70.05	0.00	0.00	0.14	6.72	0.00	0.00	128.36	4,745.85	0.00	0.00	23.74	65.80	**128.36**	**4,745.85**	**152.10**	**N**	**N**
T05-02	62.61	2,120.44	8.86	394.27	110.82	659.27	**71.47**	**2,514.71**	1.22	50.76	0.00	0.00	0.00	0.00	0.00	0.00	61.39	2,069.68	8.86	394.27	110.82	659.27	**70.25**	**2,463.95**	**181.07**	**Y**	**Y**
U04-01	71.18	3,401.68	14.89	560.15	46.09	622.81	**86.07**	**3,961.83**	25.59	1,115.05	0.00	0.00	14.43	339.11	0.00	0.00	45.59	2,286.63	14.89	560.15	31.66	283.70	**60.48**	**2,846.78**	**92.14**	**N**	**Y**

This cluster is taken as a result of the Alternative B Transformation.

Table 6-20. Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative B, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
A06-01	PBG	PBG	PBG	PBG	PBG
A07-01	PBG	PBG	PBG	SOL	PBG
A08-01	PBG	PBG	PBG	PBG	PBG
A08-02a	PBG	PBG	PBG	PBG	PBG
A09-03R	PBG	PBG	PBG	PBG	PBG
A09-05	PBG	PBG	PBG	PBG	PBG
A15-03	PBG	PBG	PBG	PBG	PBG
A17-01	N/A	N/A	N/A	N/A	UNK
A17-02	PBG	PBG	PBG	PBG	PBG
A17-03	PBG	PBG	PBG	PBG	PBG
A17-04	CAP by A14-03	PBG	PBG	PBG	PBG
A17-05	PBG	PBG	PBG	PBG	PBG
A17-07	INA	PBG	PBG	PBG	PBG
A17-08	PBG	PBG	PBG	PBG	PBG
A17-13	PBG	PBG	PBG	PBG	PBG
A17-14	PBG	PBG	PBG	PBG	PBG
A20-06	PBG	PBG	PBG	PBG	PBG
BB03-01R	PBG	PBG	PBG	PBG	SOL
BB04-01R	PBG	SOL	PBG	PBG	PBG
BB05-01R	PBG	PBG	PBG	PBG	PBG
D05-02R	PBG	PBG	PBG	PBG	PBG
D05-04R	N/A	N/A	N/A	PBG	PBG
D06-01R	PBG	PBG	PBG	PBG	PBG
D08-01R	SOL	PBG	PBG	SOL	SOL
D10-01	PBG	PBG	PBG	PBG	PBG
D11-01	PBG	PBG	PBG	PBG	PBG
D11-02	PBG	PBG	PBG	PBG	PBG
D15-01R	INA	PBG	PBG	PBG	PBG
D16-02	PBG	PBG	PBG	PBG	PBG
D17-04R	PBG	PBG	PBG	PBG	PBG
E02-01	PBG	PBG	PBG	PBG	PBG
E03-01	PBG	PBG	PBG	PBG	PBG
E04-01	PBG	PBG	PBG	PBG	PBG
E08-05R	N/A	N/A	PBG	PBG	PBG
F01-02R	INA	INA	INA	INA	INA
F02-01R	INA	INA	INA	SOL	PBG
HCC-03R	SOL	PBG	PBG	PBG	PBG
HCC-08R	INA	INA	INA	SOL	SOL

Table 6-20 (cont.). Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative B, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
HCC-10R	PBG	PBG	PBG	PBG	PBG
HCC-11R	CAP by A07-01	CAP by A07-01	CAP by A07-01	PBG	PBG
J02-02	INA	INA	PBG	PBG	PBG
J03-01	PBG	PBG	SOL	PBG	PBG
J04-01	PBG	PBG	PBG	PBG	PBG
J05-01	PBG	PBG	PBG	PBG	PBG
J06-01	PBG	PBG	PBG	PBG	PBG
J06-03	PBG	PBG	PBG	PBG	PBG
K02-01	PBG	PBG	PBG	PBG	PBG
K08-03	INA	CAP by K08-02	PBG	PBG	PBG
K08-04	PBG	PBG	PBG	PBG	PBG
K09-01	PBG	PBG	PBG	PBG	PBG
K09-03R	PBG	PBG	PBG	PBG	PBG
K10-01R	PBG	PBG	PBG	PBG	PBG
K11-02	PBG	PBG	PBG	PBG	PBG
K11-03	PBG	SOL	PBG	PBG	PBG
K14-01R	PBG	PBG	PBG	PBG	PBG
K17-01	PBG	PBG	PBG	PBG	PBG
K17-02	PBG	PBG	PBG	PBG	PBG
K17-05R	PBG	PBG	PBG	PBG	PBG
K18-01	PBG	PBG	PBG	PBG	PBG
K18-02R	PBG	PBG	PBG	PBG	PBG
K18-03R	N/A	N/A	N/A	N/A	PBG
K21-02R	PBG	PBG	PBG	INA	PBG
L02-01R	INA	INA	INA	INA	INA
L02-02R	INA	N/A	INA	INA	PBG
O03-02	PBG	PBG	PBG	PBG	PBG
O05-01	PBG	PBG	PBG	PBG	PBG
O05-02	PBG	PBG	PBG	PBG	PBG
O05-03R	PBG	PBG	PBG	PBG	PBG
O07-03R	PBG	INA	PBG	PBG	PBG
O08-03R	PBG	PBG	PBG	PBG	PBG
O09-02	PBG	PBG	PBG	PBG	PBG
O09-03R	CAP by O08-02	CAP by O08-01	INA	INA	CAP BY OO8-01
O09-04R	SOL	INA	INA	INA	PBG
O09-05R	INA	PBG	PBG	PBG	PBG
O10-01	PBG	PBG	PBG	PBG	PBG
Q02-02	PBG	PBG	PBG	PBG	PBG

Table 6-20 (cont.). Activity status of impacted red-cockaded woodpecker (RCW) clusters from 2002-2006, Alternative B, Fort Benning, Georgia.

	2002	2003	2004	2005	2006
Q02-04R	INA	PBG	PBG	PBG	PBG
R01-01	PBG	PBG	PBG	PBG	PBG
R01-02R	INA	INA	INA	INA	INA
R01-03R	PBG	PBG	PBG	PBG	PBG
R02-01R	PBG	PBG	PBG	PBG	PBG
S02-01R	PBG	PBG	PBG	PBG	PBG
SHC-02	PBG	PBG	PBG	PBG	PBG
T01-01	PBG	PBG	PBG	PBG	PBG
T02-01	CAP by T01-01	INA	INA	INA	SOL
T02-02	PBG	PBG	CAP by J02-02	PBG	PBG
T03-02	PBG	PBG	PBG	PBG	PBG
T03-04R	N/A	N/A	CAP by T01-01	CAP by T01-01	PBG
T04-01	PBG	PBG	PBG	PBG	PBG
T05-02	PBG	PBG	PBG	PBG	PBG
U04-01R	SOL	PBG	PBG	PBG	PBG

PBG - potential breeding group **SOL** - solitary male **INA** - inactive **N/A** - group does not exist
CAP - captured (the cluster of cavity trees of 1 group is "captured" by an adjacent group)
UNK - active cluster found after breeding season 2006, unknown status

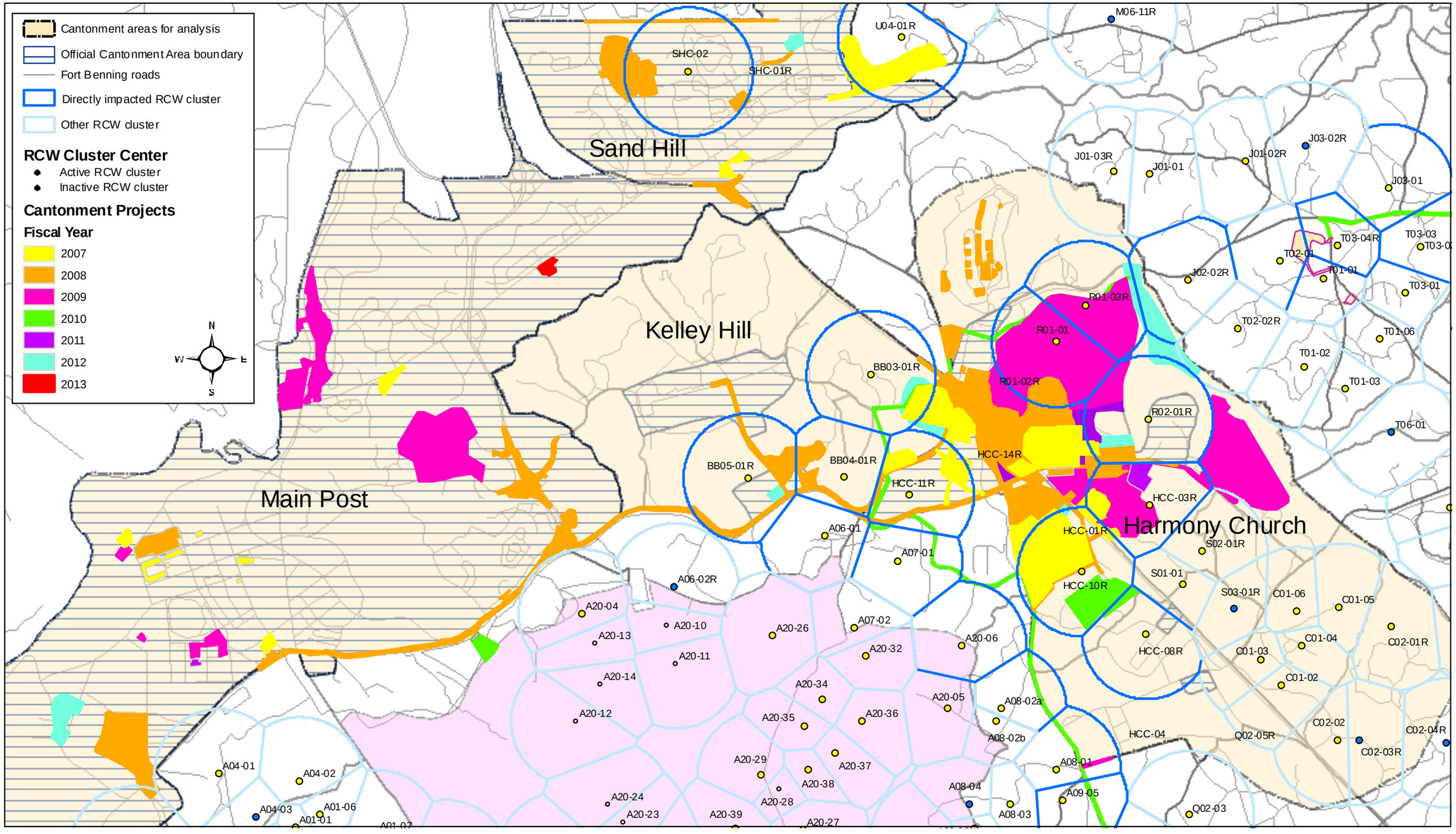


Figure 6-13. Fiscal years 2007-2013 construction activties for Alternative B Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Cantonment Areas of Fort Benning.

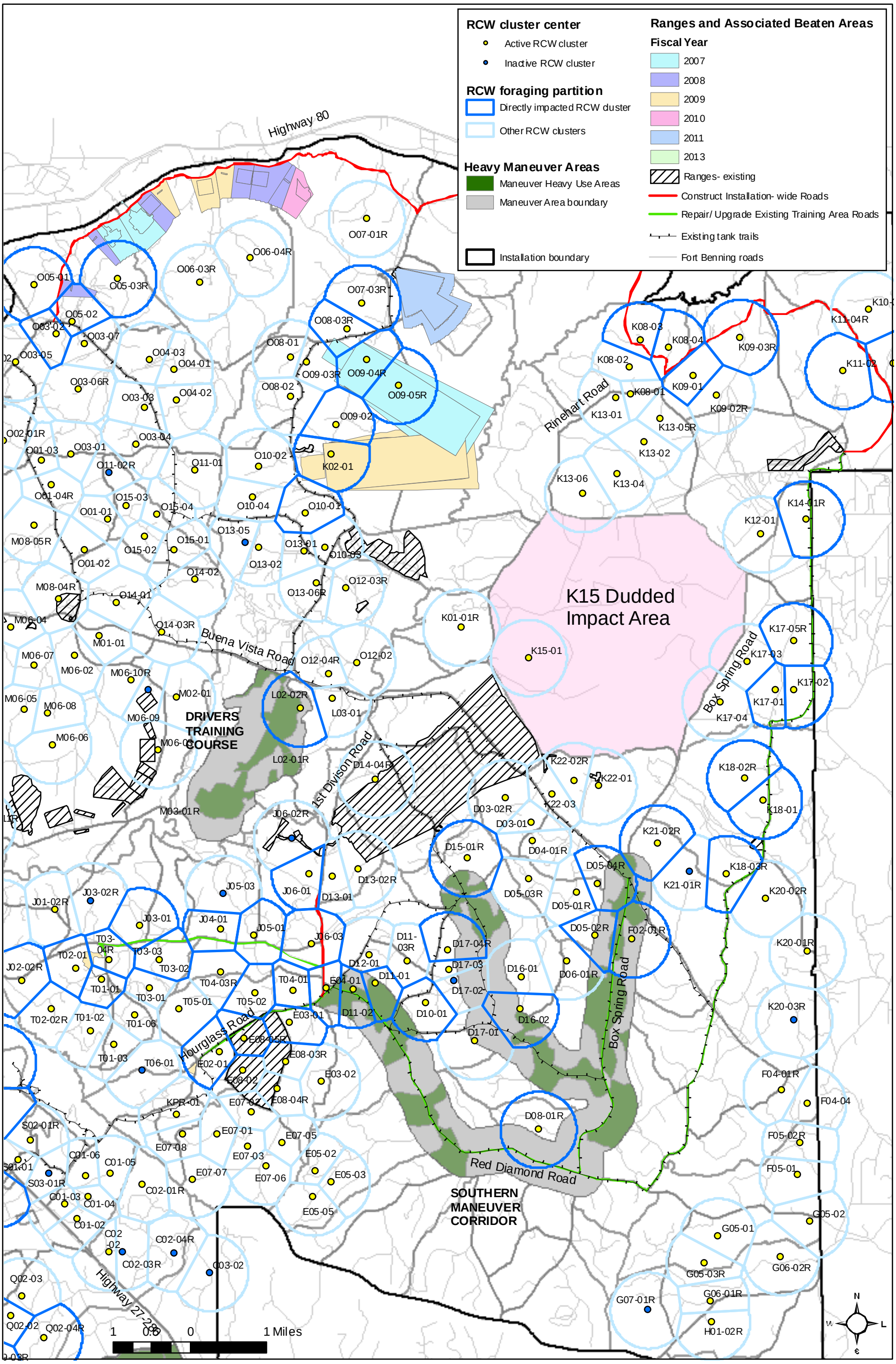


Figure 6-14. Fiscal years 2007-2013 construction activities for **Alternative B** Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Northern Ranges of Fort Benning.

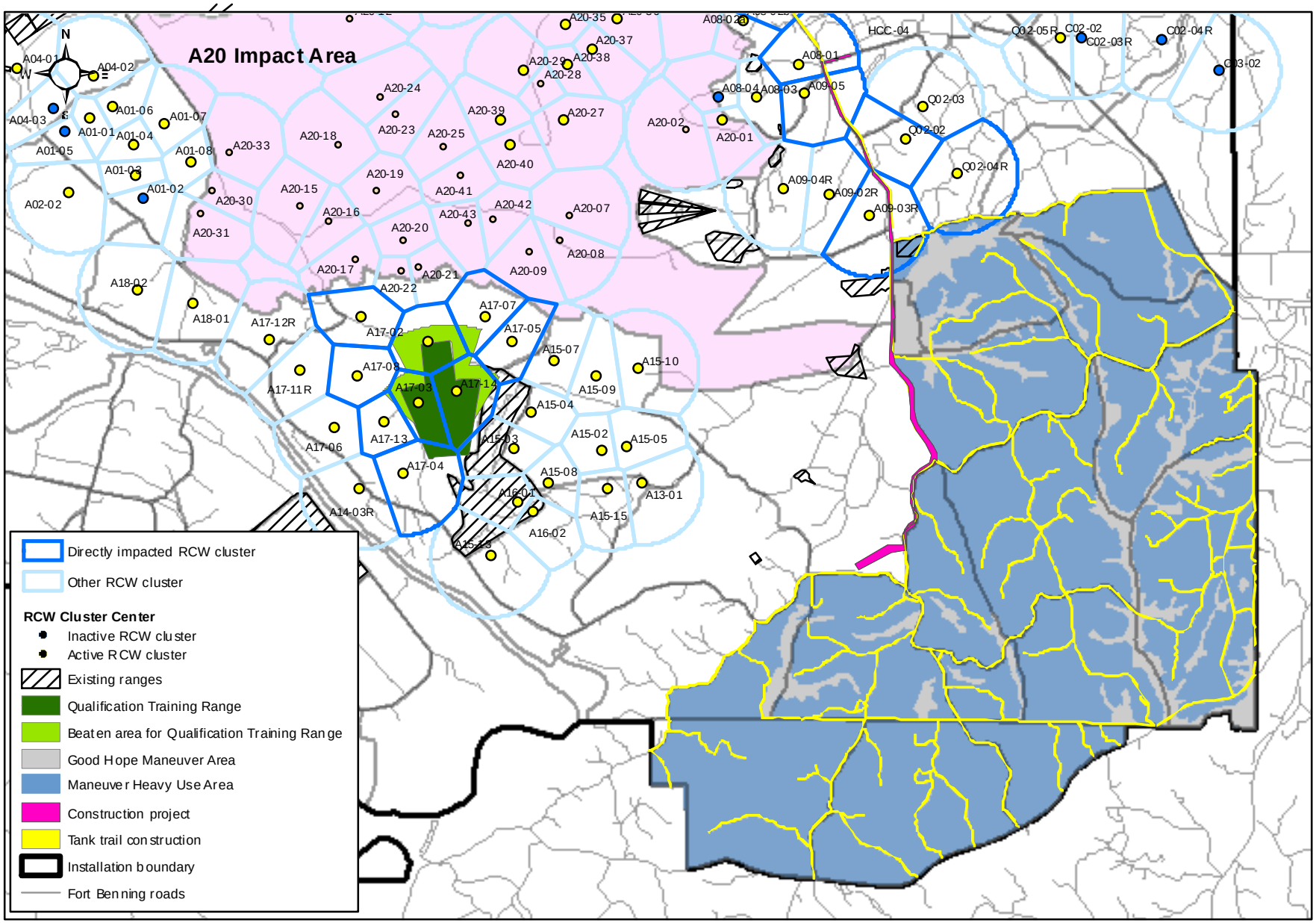
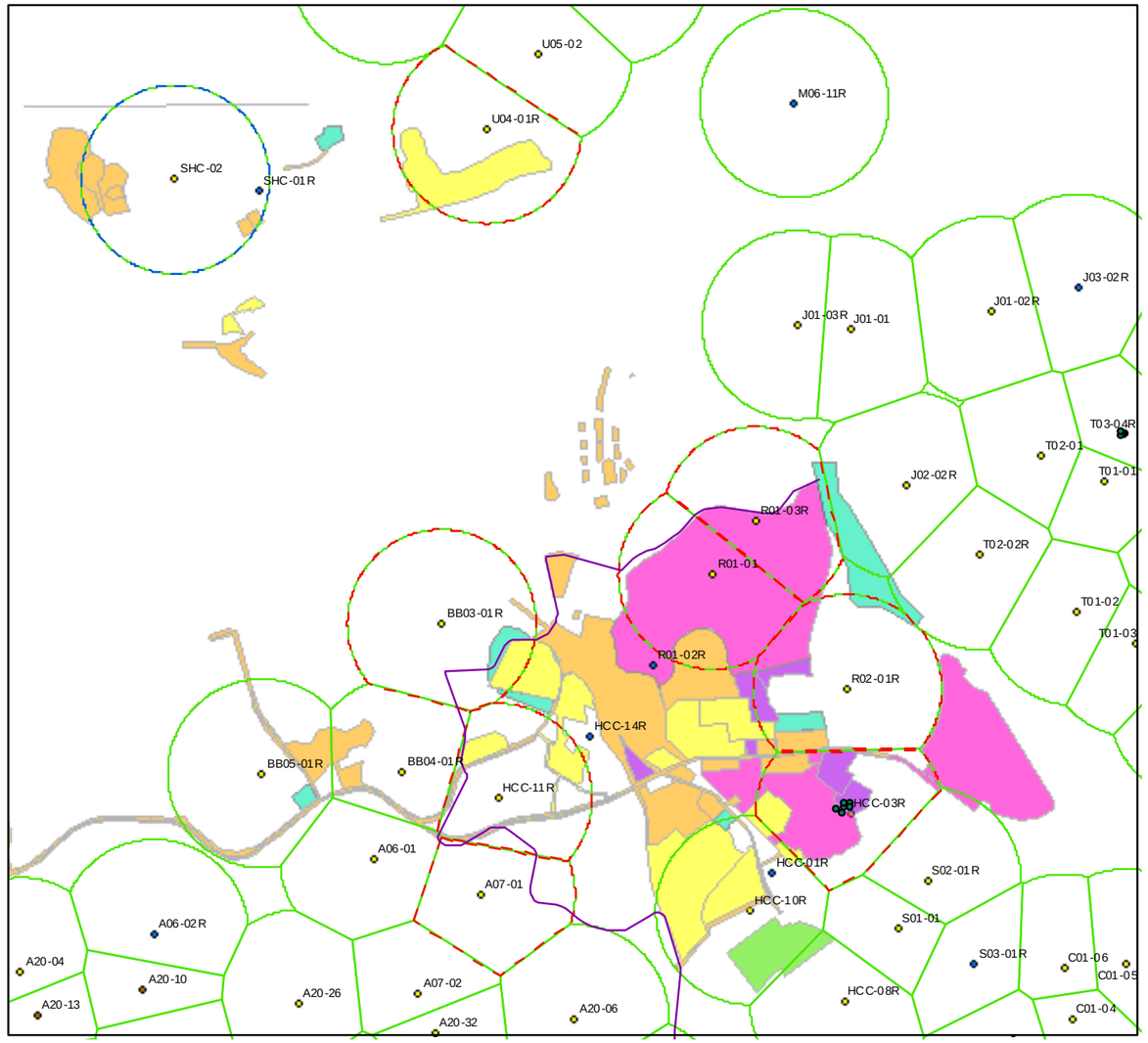


Figure 6-15. Fiscal year 2011 construction activities for **Alternative B** Transformation projects located within red-cockaded woodpecker (RCW) clusters in the Southern Ranges of Fort Benning.

0 0.375 0.75 1.5 2.25 3 Miles

PRE-PROJECT



POST-PROJECT

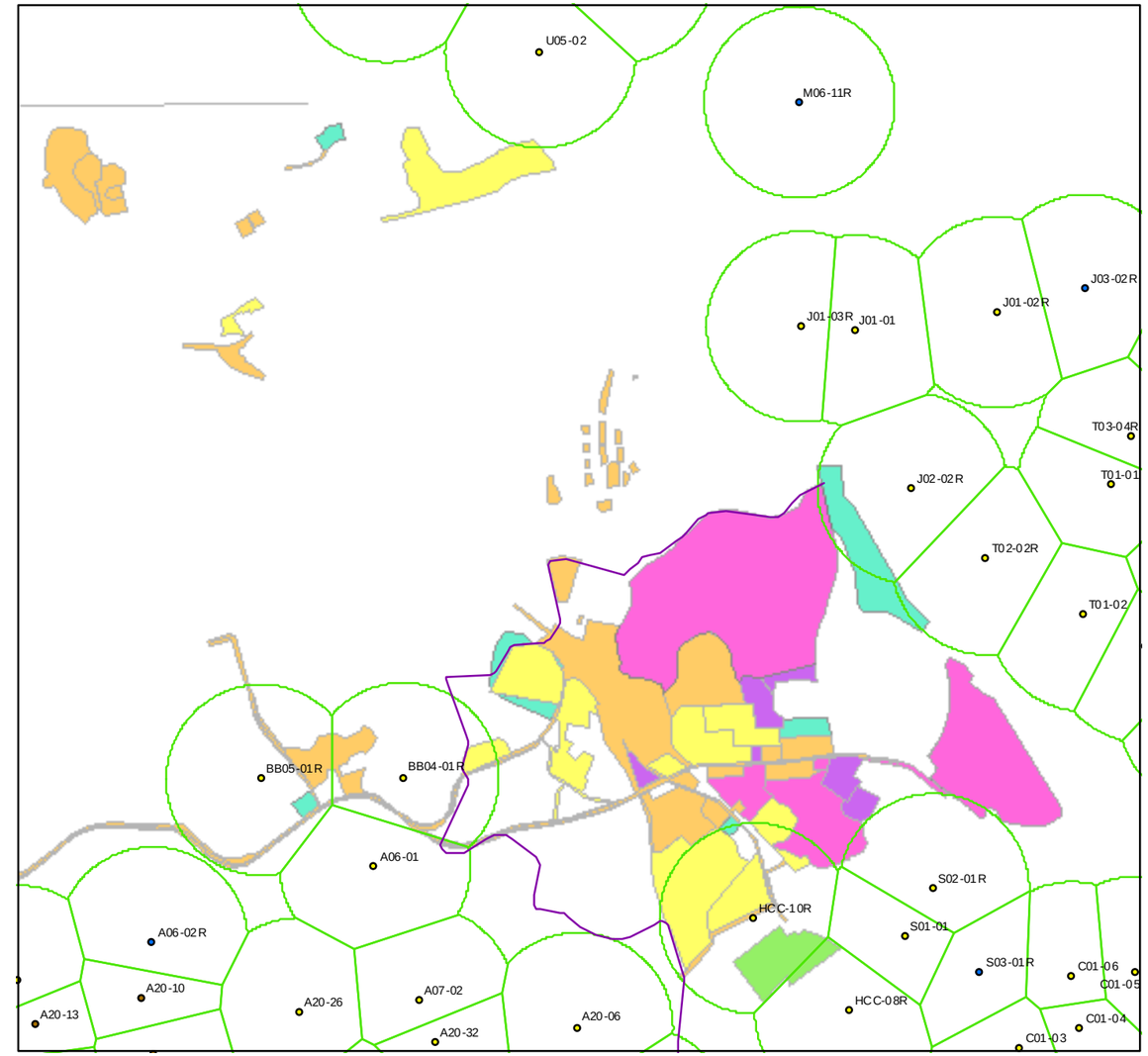
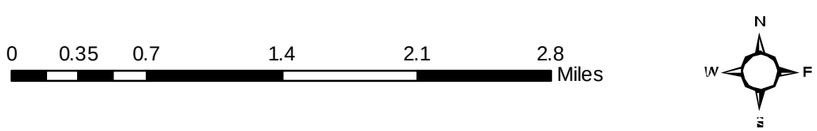


Figure 6-16. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of Transformation projects (FY 2007-12), **Alternative B**, Fort Benning, Georgia.

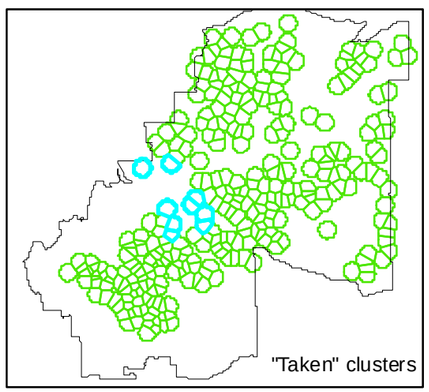


Legend

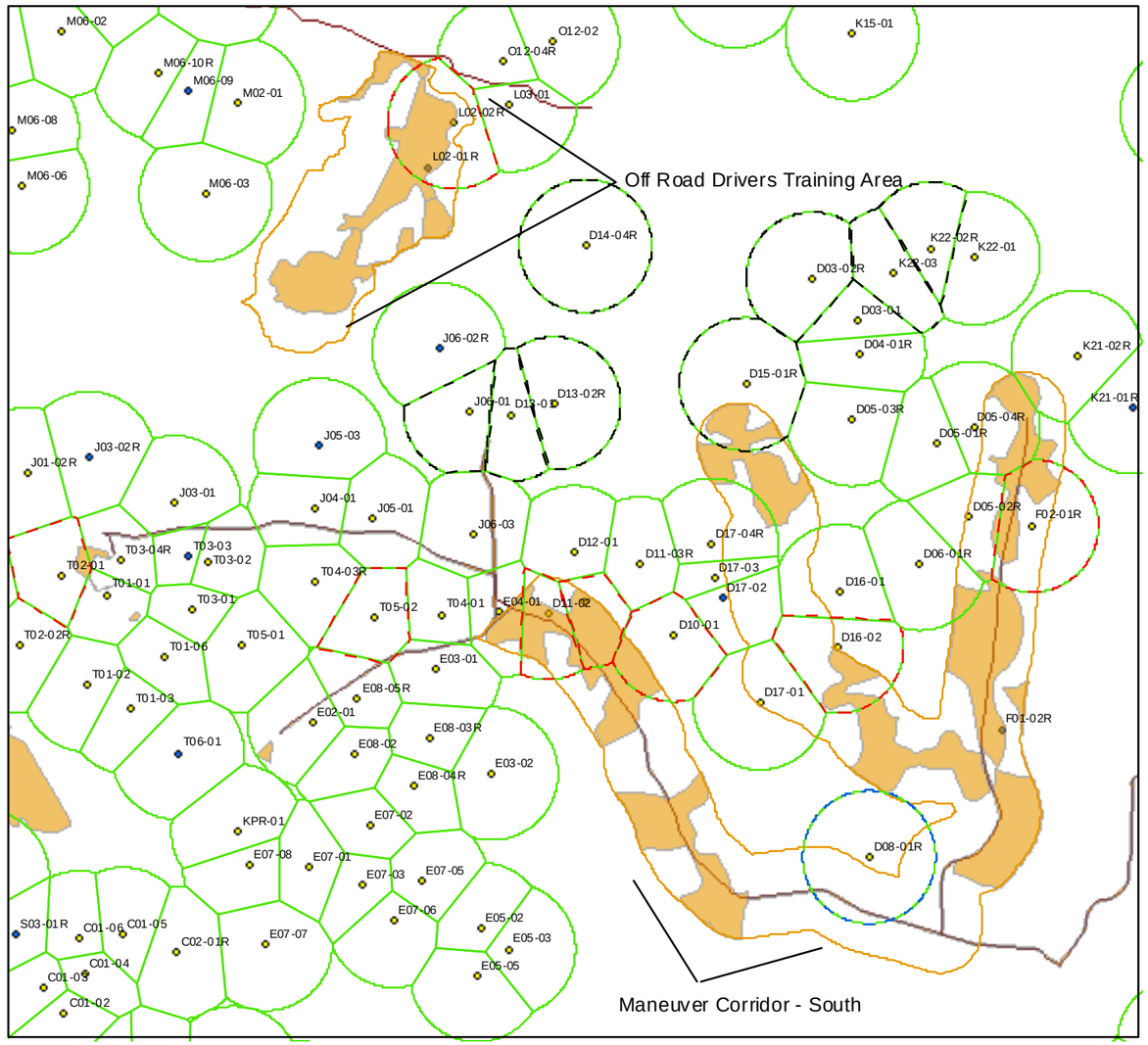
RCW Cluster
- Active
- Inactive
- Not monitored
- Tank Trails

RCW Foraging Partition
- Partitions "taken" by project
- Partitions "taken" by group impact
- RCW partition boundary

Transformation Projects Fiscal Year
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012



PRE-PROJECT



POST-PROJECT

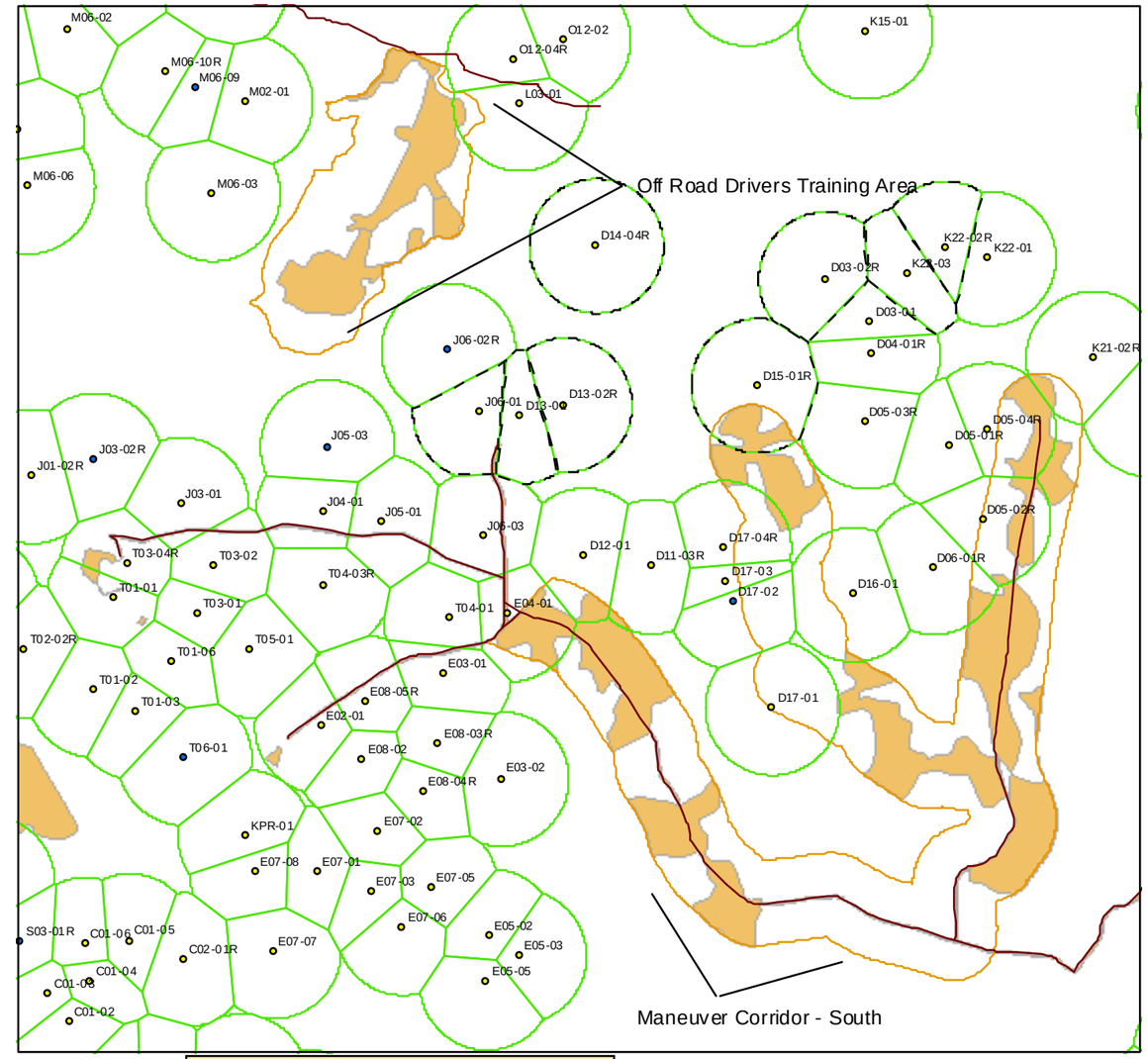


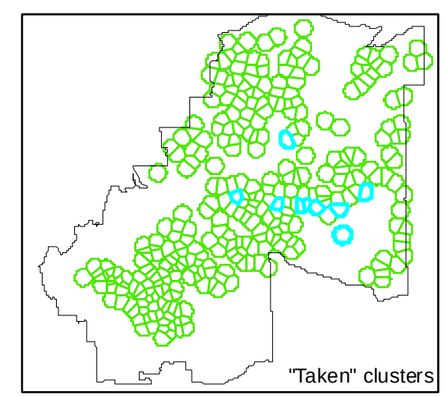
Figure 6-17. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters and post-project density of RCW clusters as a result of Installation Training Area Roads and the Maneuver Heavy Use Areas within the Heavy Maneuver Corridor-South, **Alternative B**, Fort Benning, Georgia.

Legend

RCW Cluster
- Active
- Inactive
- Installation Training Area Roads
- Heavy Maneuver Corridor boundary

RCW Foraging Partition
- Partitions "taken" by project
- Partitions "taken" by group impact
- Partitions "taken" by Digital Multi-Purpose Range Complex
- RCW partition boundary

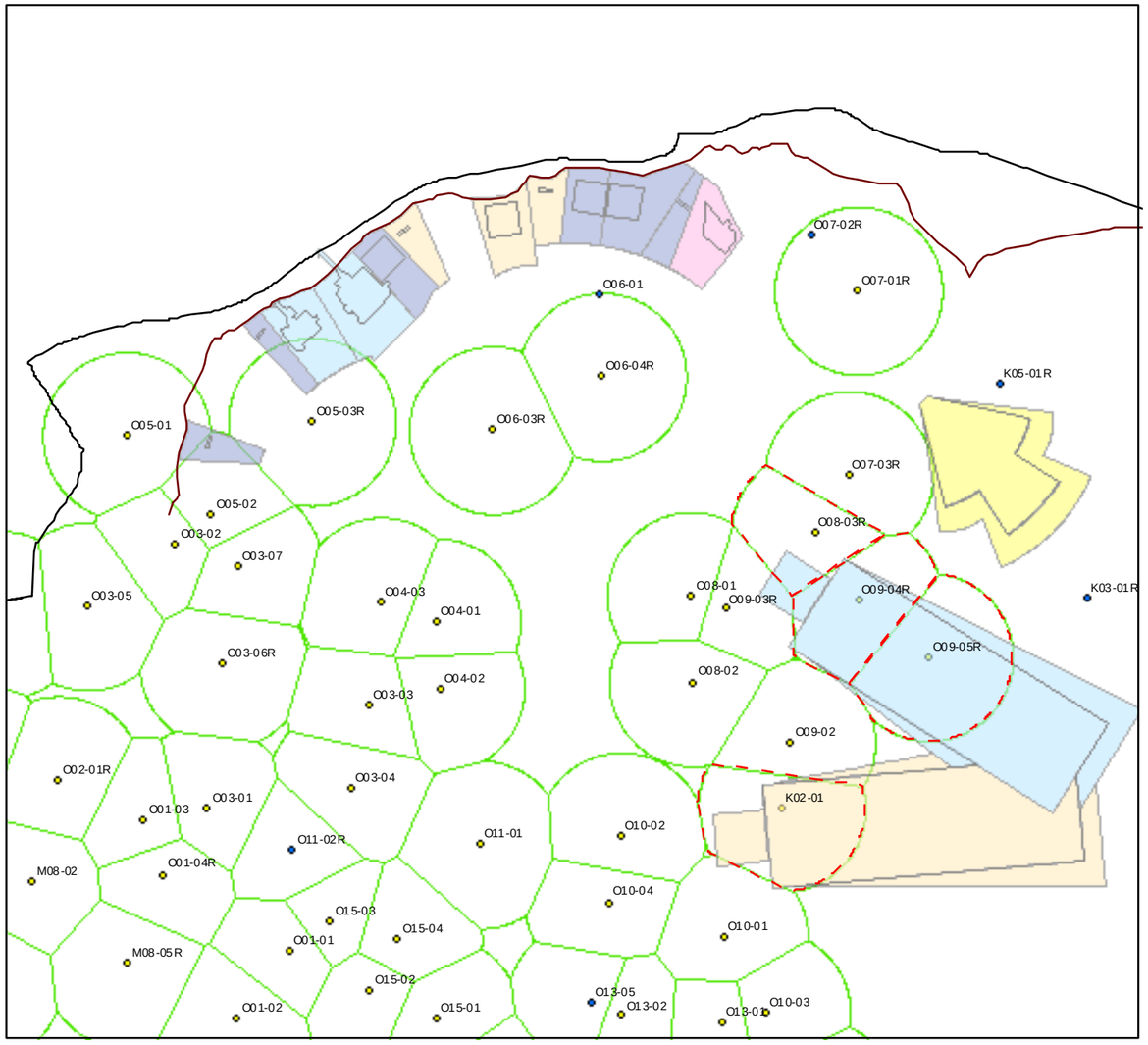
Maneuver Heavy Use Areas
- Project Removals



0 0.5 1 2 3 4 Miles

N W E S

PRE-PROJECT



POST-PROJECT

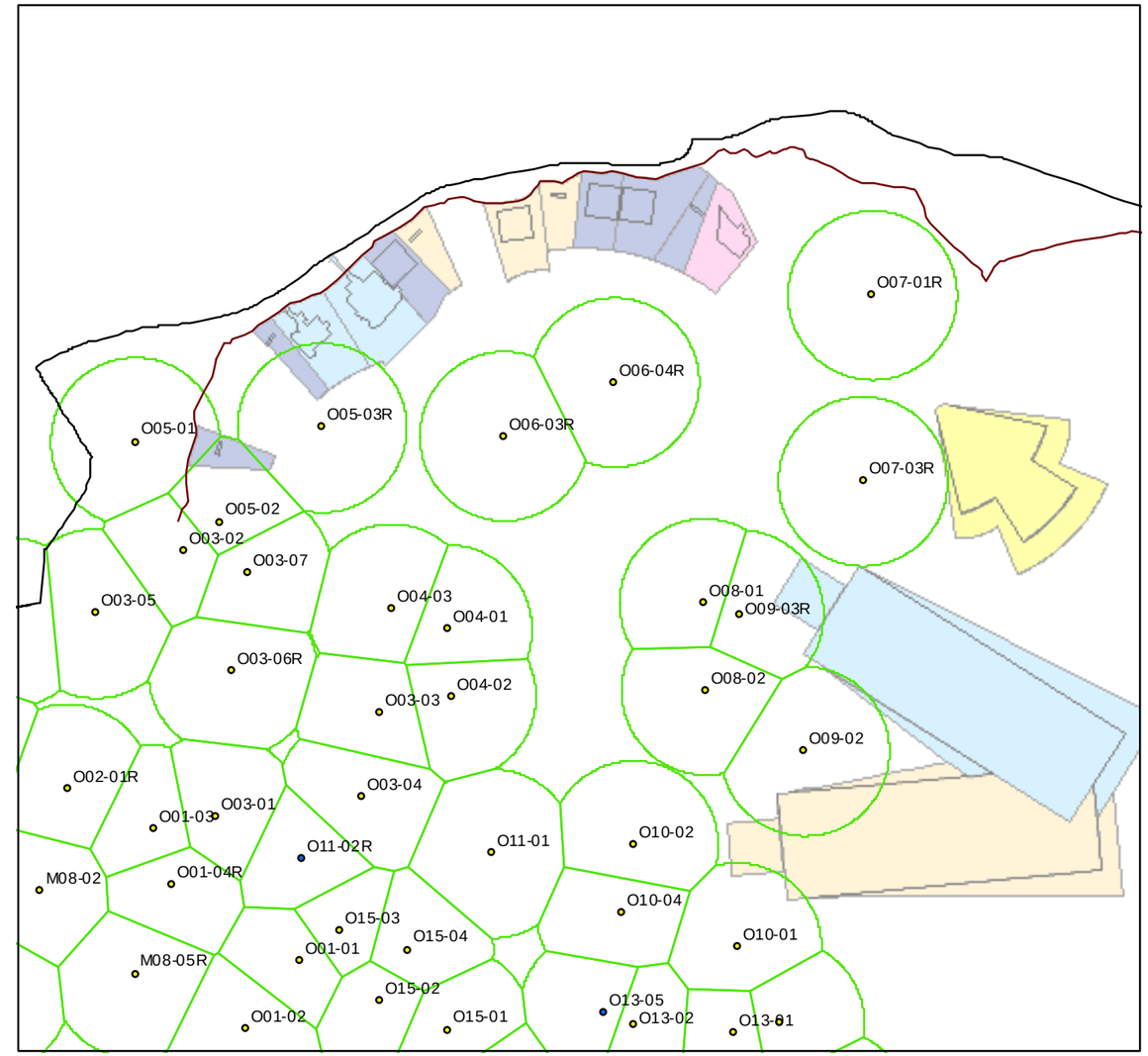
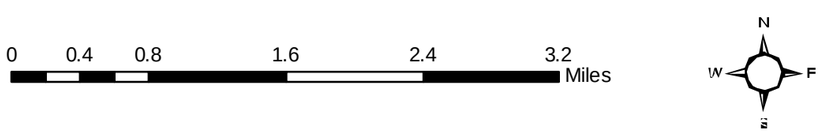


Figure 6-18. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of Installation Training Area Roads, Oscar Range Complex and Stationary Gunnery Ranges Alternative B, Fort Benning, Georgia.



Legend

RCW Cluster

- Active
- Inactive
- Installation Training Area Roads
- Fort Benning boundary

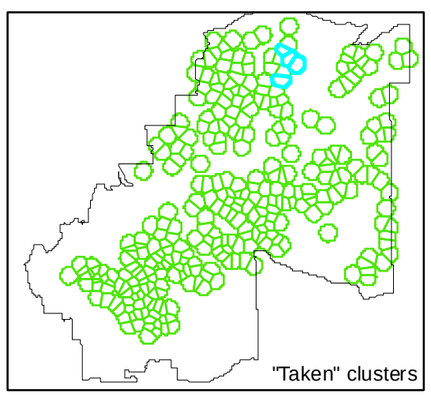
RCW Foraging Partition

- Partitions "taken" by project
- RCW partition boundary

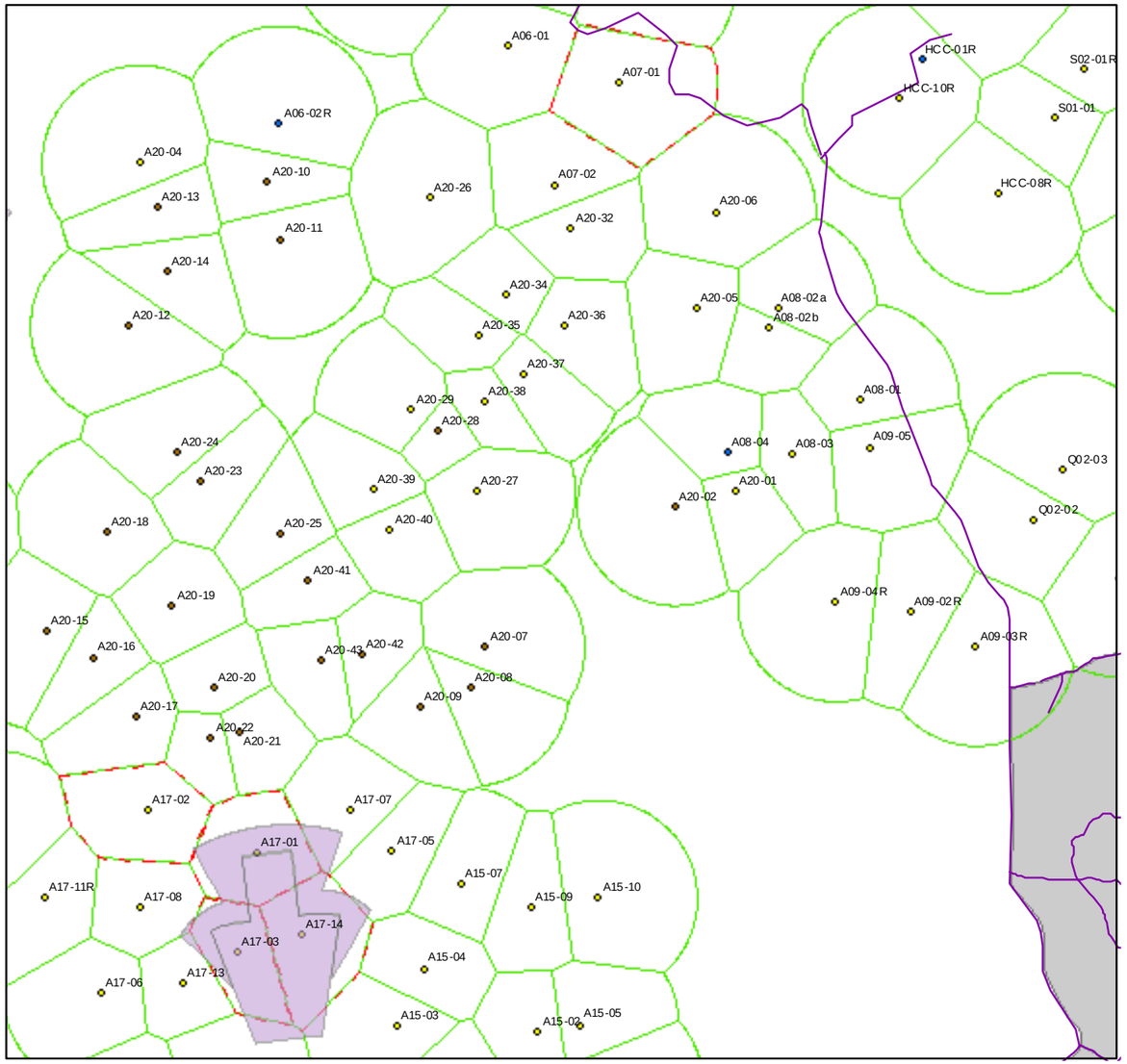
Ranges and Associated Beaten Areas

Fiscal Year

- 2007
- 2008
- 2009
- 2010
- 2011



PRE-PROJECT



POST-PROJECT

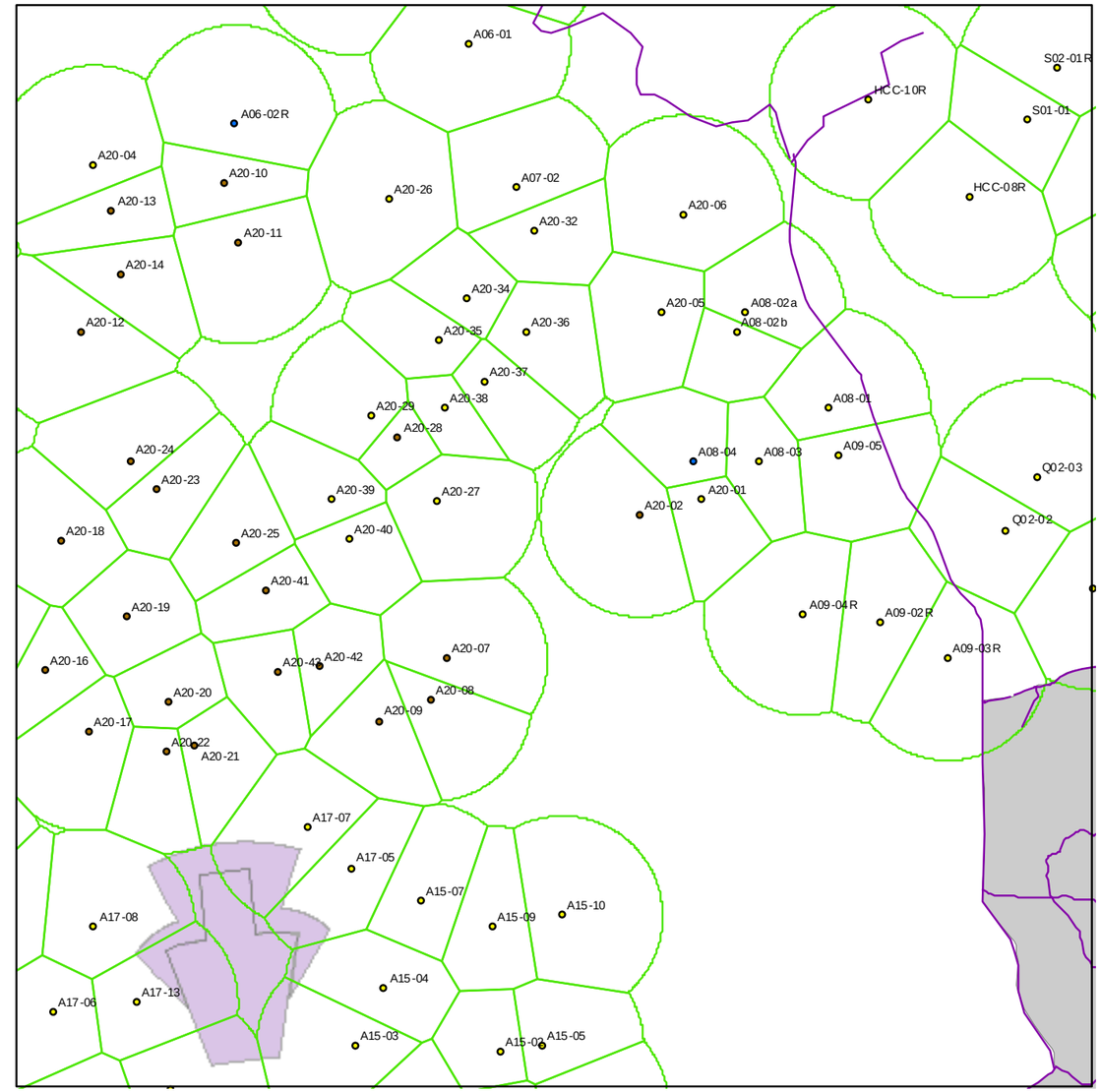
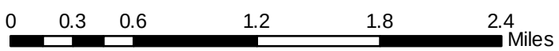
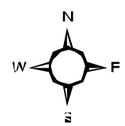
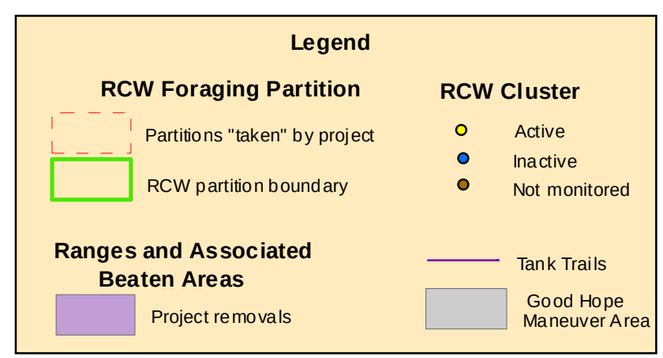
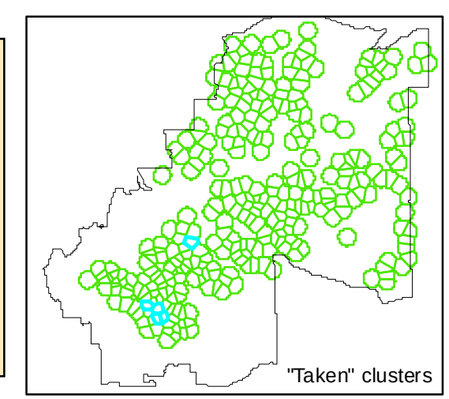


Figure 6-19. Pre- and post- project density of red-cockaded woodpecker (RCW) clusters as a result of the Qualification Training Range, associated beaten area, Good Hope Maneuver Area and Tank Trails for **Alternative B** at Fort Benning, Georgia.









Church, Kelley Hill, Main Post and Sand Hill), 2 range areas northeast ("North") and southwest ("South") of Hwy. 27 - 280, Heavy Maneuver Area – North, the Heavy Maneuver Corridor – South and the Good Hope Maneuver Area. Data for the following project impacts discussion are presented in Tables 6-18, 6-19, 6-21 – 6-28, Figures 6-10 and 6-16 - 6-20 and Appendices D, E and F.

Twenty-six of the 88 active RCW clusters did not meet the SMS post- project and will be directly "taken" by the Alternative B Transformation projects. One cluster will be "taken" as a result of cavity tree removal. Percent of acreages (suitable and potentially suitable) subject to high risk loblolly decline within each post- project foraging habitat partition are presented below and in Table 6-31. Seventy-eight clusters did not meet the RS post- project. Data for the following project impacts discussion are presented in Tables 6-2 and 6-29 - 6-33, Figures 6-10 and 6-16 - 6-20 and Appendices D, E and F. See Sections 6.10.6 and 6.10.7 for Group and Neighborhood Level impacts.

None of the 11 clusters where home range follows are being conducted as a minimization effort for the DMPRC (in order to document direct and indirect impacts of range construction and operation) will be "taken" at the cluster level as a result of Alternative B. Three of the clusters "taken" at the cluster level under Alternative B (D11-01, D11-02 and T05-02) are currently banded as a minimization effort for the DMPRC in order to document impacts (expected or unexpected) of the range on clusters within the RCW "neighborhood" (FBCB, unpub. data).

FB Cluster A06-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,080.32 ft^2 of pine BA on 153.92 acres of suitable habitat and 736.42 ft^2 of pine BA on 33.83 acres of future potential habitat. There was no potentially suitable habitat (Table 6-18).

The pre- project RS foraging habitat totals were 7,816.74 ft^2 of pine BA on 187.75 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-19).

The 2008 Road Improvements will remove 8.28 ft^2 of pine BA on 0.18 acre (Table 6-22 and Figure 6-13).

Table 6-21. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2007 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation project, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
64370	Trainee Barracks Complex 1, Borrow Area/Pit	Harmony Church	BB03-01R	16.55	414.24	0.00	0.00	0.00	0.00	16.55	414.24	0	0	0	N	N
			HCC-11R	21.73	206.07	0.00	0.00	0.00	0.00	21.73	206.07	0	0	0	N	N
64370/65040	Trainee Barracks Complex 1	Harmony Church	HCC-10R	81.88	3013.99	0.24	8.16	56.42	2,419.43	25.22	586.40	0	0	1	Y	N
64459/65862	Training Support Brigade Complex (Phase 1 and 2)	Harmony Church	HCC-03R	14.66	550.79	12.22	550.79	0.00	0.00	2.44	0.00	0	0	0	N	N
			HCC-10R	7.85	294.47	6.82	283.03	0.00	0.00	1.03	11.44	0	0	0	N	N
65032	Fire and Movement Range (FM1)	Oscar Ranges	O05-03R	13.90	523.48	11.30	457.18	0.00	0.00	2.60	66.30	0	0	0	Y	Y
65056	IET Brigade Headquarters Building	Harmony Church	HCC-11R	6.18	99.69	0.00	0.00	0.00	0.00	6.18	99.69	0	0	0	N	N
65068-B	Trainee Barracks Complex 2	Sand Hill	U04-01R	40.02	1,454.16	25.59	1,115.05	0.00	0.00	14.43	339.11	0	0	0	Y	N
65382	Tank/Fighting Vehicle Stationary Gunnery Range (SGR1)	Northern Ranges	O08-03R	19.02	455.19	0.00	0.00	1.31	39.30	17.71	415.89	0	0	0	Y	Y
			O09-04R	146.00	4,378.74	78.44	3,107.44	41.76	1,271.30	25.80	0.00	7	-	-	-	-
			O09-05R	241.05	9,125.81	145.47	6,543.64	57.16	1,972.03	38.42	610.14	6	-	-	-	-
			TOTAL:	**608.84**	**20,516.63**	**280.08**	**12,065.29**	**156.65**	**5,702.06**	**172.11**	**2,749.28**	**13**	**0**	**1**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-22. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2008 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation projects, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
62956	Health Clinic Expansion - Winder	Sand Hill	SHC-02	0.39	9.24	0.00	0.00	0.00	0.00	0.39	9.24	0	0	0	N	N
64462/51256/ 67419	Reception Station Barracks & Processing Center	Sand Hill	SHC-02	24.86	968.72	0.00	0.00	24.85	968.54	0.01	0.18	0	0	0	N	N
65035	Rifle/Machinegun Zero Range-Z1	Oscar Ranges	O05-03R	14.28	570.93	14.28	570.93	0.00	0.00	0.00	0.00	0	0	0	Y	N
65036	Rifle/Machinegun Zero Range-Z2	Oscar Ranges	O05-01	12.42	632.25	11.54	549.53	0.88	82.72	0.00	0.00	0	0	0	Y	N
			O05-02	23.38	1,069.90	4.94	235.24	1.68	157.92	16.76	676.74	0	0	0	Y	N
			O05-03R	1.98	68.05	0.00	0.00	1.84	63.92	0.14	4.13	0	0	0	Y	N
65251	Unit Maintenance Activity Facility	Harmony Church	HCC-03R	3.70	122.10	3.70	122.10	0.00	0.00	0.00	0.00	0	0	0	N	N
65322	General Instruction Building Complex	Harmony Church	BB04-01R	21.53	836.16	3.36	133.59	5.60	634.03	12.57	68.54	0	0	0	N	N
			BB05-01R	15.60	802.67	11.94	663.62	3.09	139.05	0.57	0.00	0	0	0	N	N
			R02-01R	12.20	210.25	1.25	56.95	0.00	0.00	10.95	153.30	0	0	0	N	N
65439	Infrastructure Support	Installation-wide	BB05-01R	9.29	389.91	7.96	353.83	0.01	0.33	1.32	35.75	0	0	0	N	N
			SHC-02	1.38	48.32	0.23	8.74	0.47	20.88	0.68	18.70	0	0	0	N	N
			R01-01	4.48	268.80	4.48	268.80	0.00	0.00	0.00	0.00	0	0	0	N	N
65439	Road Improvements	Installation-wide	A06-01	0.18	8.28	0.18	8.28	0.00	0.00	0.00	0.00	0	0	0	N	N
			A07-01	0.04	1.16	0.00	0.00	0.00	0.00	0.04	1.16	0	0	0	N	N
			BB04-01R	7.38	316.26	7.38	316.26	0.00	0.00	0.00	0.00	0	0	0	N	N
			BB05-01R	5.79	194.48	2.41	117.13	0.30	9.84	3.08	67.51	0	0	0	N	N
			HCC-03R	1.09	29.88	0.40	17.40	0.00	0.00	0.69	12.48	0	0	0	N	N
			HCC-10R	4.17	157.55	1.76	59.84	2.41	97.71	0.00	0.00	0	0	3	Y	N
			HCC-11R	17.06	430.37	0.75	29.28	0.00	0.00	16.31	401.09	0	0	0	N	N
			R02-01R	1.37	29.96	0.00	0.00	0.00	0.00	1.37	29.96	0	0	0	N	N
65439	Road Improvements/ Tank Bridge	Harmony Church	HCC-10R	9.64	393.77	2.23	77.91	5.90	273.58	1.51	42.28	0	0	0	N	N
			TOTAL:	**192.21**	**7,559.01**	**78.79**	**3,589.43**	**47.03**	**2,448.52**	**66.39**	**1,521.06**	**0**	**0**	**3**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-23. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2009 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation projects, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
n/a	Heavy Maneuver Corridor-South (Maneuver Heavy Use Area)	Northern Ranges	D05-02R	13.54	353.87	3.02	122.43	0.00	0.00	10.52	231.44	0	0	0	N	Y
			D05-04R	90.85	3,276.80	69.21	2,901.18	0.00	0.00	21.64	375.62	0	0	0	N	Y
			D10-01	1.35	0.00	0.00	0.00	0.00	0.00	1.35	0.00	0	0	0	N	Y
			D11-01	81.60	1,867.90	49.23	1,836.64	0.00	0.00	32.37	31.26	7	2	0	Y	Y
			D11-02	84.56	2,879.66	67.71	2,491.27	0.00	0.00	16.85	388.39	7	0	0	Y	Y
			D15-01R	21.94	671.31	7.89	291.93	0.00	0.00	14.05	379.38	0	0	0	N	Y
			D16-02	57.94	752.09	0.00	0.00	0.00	0.00	57.94	752.09	2	2	0	Y	Y
			D17-04R	11.89	340.46	1.03	38.63	0.00	0.00	10.86	301.83	0	0	0	N	Y
			E04-01	38.72	1,429.32	33.12	1,203.02	0.00	0.00	5.60	226.30	2	0	0	Y	Y
			F02-01R	65.55	1,753.36	19.84	825.66	0.00	0.00	45.71	927.70	0	0	0	N	Y
			K21-02R	14.54	508.05	10.27	407.58	0.00	0.00	4.27	100.47	0	0	0	N	Y
62207	Combined Arms Collective Training Facility, Phase II	Northern Ranges	E02-01R	5.71	0.00	0.00	0.00	0.00	0.00	5.71	0.00	0	0	0	N	Y
			T01-01	2.65	73.13	1.87	58.27	0.00	0.00	0.78	14.86	0	1	1	Y	Y
			T02-01	12.00	39.95	0.00	0.00	0.00	0.00	12.00	39.95	0	0	0	N	Y
			T03-04R	5.50	105.43	0.00	0.00	0.00	0.00	5.50	105.43	0	0	0	N	Y
64797	Drivers Training Course	Harmony Church	HCC-03R	2.16	69.12	0.00	0.00	2.16	69.12	0.00	0.00	0	0	0	N	Y
64797	Vehicle Recovery Area	Harmony Church	R01-01	151.66	4,983.69	42.55	1,869.76	34.79	1321.06	74.32	1,792.87	0	0	12	Y	Y
			R01-03R	40.60	848.83	0.00	0.00	24.63	777.23	15.97	71.60	0	0	14	Y	Y
			R02-01R	20.58	771.14	17.91	622.08	1.80	126.00	0.87	23.06	0	0	0	N	Y
n/a	Off-road Drivers Training	Northern Ranges	L02-02R	113.81	3,849.61	89.36	3,380.61	2.64	79.20	21.81	389.80	2	2	0	Y	N
65061	Museum Operations Support Building	Harmony Church	HCC-03R	0.32	10.56	0.32	10.56	0.00	0.00	0.00	0.00	0	0	0	N	N
65252/48644	Centralized Wash Facility with Soaking Capability	Harmony Church	HCC-03R	70.00	2,725.24	69.45	2,717.02	0.01	0.32	0.54	7.90	2	0	2	Y	N
			HCC-10R	1.11	46.07	1.11	46.07	0.00	0.00	0.00	0.00	0	0	0	N	N
65286	Army Officer Basic Course HQ Complex (Utility Corridor)	Southern Ranges	A08-01	2.12	79.93	0.36	14.10	1.76	65.83	0.00	0.00	0	0	0	N	N
			A09-03R	2.98	99.29	0.26	9.53	2.72	89.76	0.00	0.00	0	0	0	N	N
			A09-05	3.63	130.11	3.22	119.01	0.22	6.60	0.19	4.50	0	0	0	N	N
			Q02-02	4.74	150.54	0.31	11.94	4.43	138.60	0.00	0.00	0	0	0	N	N
65383	Tank/Fighting Vehicle Stationary Gunnery Range (SGR2)	Northern Ranges	K02-01	191.70	4,317.56	0.00	0.00	2.78	86.18	188.92	4,231.38	5	-	-	-	-
			O09-02	13.28	338.64	0.00	0.00	0.00	0.00	13.28	338.64	0	0	0	Y	N
			O10-01	1.63	46.20	0.00	0.00	0.57	27.65	1.06	18.55	0	0	0	Y	N
65438	Vehicle Maintenance Instruction Facility	Harmony Church	HCC-03R	0.85	34.26	0.85	34.26	0.00	0.00	0.00	0.00	0	0	0	N	N

Table 6-23. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2009 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation projects, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
n/a	Tank Trail Construction	Southern Ranges	A07-01	5.05	152.34	1.47	49.98	0.00	0.00	3.58	102.36	0	0	0	N	N
			A08-01	2.92	81.50	0.00	0.00	1.57	59.66	1.35	21.84	0	0	0	N	N
			A08-02a	1.81	72.15	0.71	24.85	1.10	47.30	0.00	0.00	0	0	0	N	N
			A09-03R	2.63	99.08	1.23	45.10	1.40	53.98	0.00	0.00	0	1	0	Y	N
			A09-05	3.04	94.10	2.05	83.35	0.00	0.00	0.99	10.75	0	0	0	N	N
			A20-06	0.54	18.36	0.54	18.36	0.00	0.00	0.00	0.00	0	0	0	N	N
			BB03-01R	2.20	42.05	0.00	0.00	0.00	0.00	2.20	42.05	0	0	0	N	N
			BB04-01R	1.22	14.03	0.00	0.00	0.00	0.00	1.22	14.03	0	0	0	N	N
			HCC-10R	1.85	56.21	0.23	7.91	0.40	17.20	1.22	31.10	0	0	0	N	N
			HCC-11R	6.23	143.68	0.00	0.00	0.00	0.00	6.23	143.68	0	0	1	Y	N
			Q02-02	1.78	65.35	1.29	49.67	0.49	15.68	0.00	0.00	0	0	0	N	N
			Q02-04R	0.26	8.82	0.21	8.82	0.00	0.00	0.05	0.00	0	0	0	N	N
			R01-01	1.52	20.06	0.01	0.30	0.00	0.00	1.51	19.76	0	0	0	N	N
			R01-03R	0.25	2.79	0.00	0.00	0.09	2.79	0.16	0.00	0	0	0	N	N
n/a	Good Hope Maneuver Area	Southern Ranges	A09-03R	0.16	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0	0	0	N	N
			Q02-04R	9.99	423.25	0.78	32.76	9.16	390.49	0.05	0.00	0	0	0	N	N
			TOTAL:	**1,170.96**	**33,845.89**	**497.41**	**19,332.65**	**92.72**	**3,374.65**	**580.83**	**11,138.59**	**27**	**8**	**30**		

Table 6-24. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2010 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation projects, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
65405	Equipment Concentration Site	Harmony Church	HCC-08R	8.90	308.71	8.74	308.71	0.00	0.00	0.16	0.00	0	0	0	N	N
			HCC-10R	41.73	773.91	15.39	542.43	3.27	152.06	23.07	79.42	0	0	0	N	N
65554	Construct Installation-wide Roads	Installation-wide	E04-01	4.86	222.12	4.19	194.95	0.00	0.00	0.67	27.17	1	0	4	Y	N
			J06-01	3.38	98.63	1.69	67.50	0.00	0.00	1.69	31.13	0	0	0	N	N
			J06-03	15.10	478.79	11.80	381.44	0.00	0.00	3.30	97.35	0	0	0	N	N
			K08-03	6.85	234.76	6.26	234.76	0.00	0.00	0.59	0.00	0	1	1	Y	N
			K08-04	13.67	519.94	13.20	506.07	0.00	0.00	0.47	13.87	0	0	0	N	N
			K09-01	1.23	37.94	0.52	16.99	0.00	0.00	0.71	20.95	0	0	0	N	N
			K09-03R	9.99	219.88	5.08	172.15	0.22	11.00	4.69	36.73	0	0	0	N	N
			K11-02	2.58	78.01	0.55	19.53	1.72	58.48	0.31	0.00	0	0	0	N	N
			K11-03	8.39	175.54	2.55	90.53	0.07	2.38	5.77	82.63	0	0	0	N	N
			O03-02	1.06	52.44	1.06	52.44	0.00	0.00	0.00	0.00	0	0	0	N	N
			O05-01	4.07	209.76	3.37	160.48	0.67	47.74	0.03	1.54	0	0	0	N	N
			O05-02	2.51	121.41	2.51	121.41	0.00	0.00	0.00	0.00	0	0	0	N	N
65557	Repair/ Upgrade Exising Training Area Roads	Installation-wide	D08-01R	3.32	109.46	2.61	92.60	0.00	0.00	0.71	16.86	0	0	0	N	N
			E02-01	4.22	104.45	3.13	97.03	0.00	0.00	1.09	7.42	0	0	0	N	N
			E03-01	4.01	176.52	4.01	176.52	0.00	0.00	0.00	0.00	0	0	0	N	N
			E04-01	2.24	136.38	1.09	86.36	0.00	0.00	1.15	50.02	0	2	0	Y	N
			E08-05R	4.64	155.71	3.37	155.71	0.00	0.00	1.27	0.00	0	0	0	N	N
			F02-01R	0.70	22.01	0.30	12.96	0.00	0.00	0.40	9.05	0	0	0	N	N
			J03-01	3.01	104.76	2.11	86.31	0.00	0.00	0.90	18.45	0	0	0	N	N
			J04-01	5.83	143.66	2.06	74.58	0.11	4.62	3.66	64.46	0	0	0	N	N
			J05-01	6.04	200.13	3.40	127.20	1.26	39.12	1.38	33.81	0	1	0	Y	N
			K14-01R	4.95	196.71	3.09	158.58	0.00	0.00	1.86	38.13	0	0	2	Y	N
			K17-02	4.63	128.14	1.36	68.57	0.00	0.00	3.27	59.57	0	0	0	N	N
			K17-05R	0.96	10.68	0.24	10.68	0.00	0.00	0.72	0.00	0	0	0	N	N
			K18-01	6.94	236.45	2.98	145.00	0.42	17.54	3.54	73.91	0	0	2	Y	N
			K18-02R	3.16	127.17	1.94	78.98	1.22	48.19	0.00	0.00	0	0	0	N	N
			K18-03R	3.62	110.79	0.00	0.00	1.72	69.66	1.90	41.13	0	0	0	N	N
			T03-04R	5.13	177.94	4.13	156.94	0.00	0.00	1.00	21.00	0	0	0	N	N
			T04-01	1.61	76.77	1.47	70.05	0.00	0.00	0.14	6.72	0	0	0	N	N
			T05-02	1.22	50.76	1.22	50.76	0.00	0.00	0.00	0.00	0	0	0	N	N
			TOTAL:	**190.55**	**5,800.33**	**115.42**	**4,518.22**	**10.68**	**450.79**	**64.45**	**831.32**	**1**	**4**	**9**		

Table 6-25. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2011 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternative B Transformation, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
63799	3 ID BCT (Heavy) Complex	Harmony Church	HCC-03R	33.08	985.76	13.82	629.50	0.00	0.00	19.26	356.26	5	-	-	-	-
			R02-01R	0.67	17.09	0.00	0.00	0.00	0.00	0.67	17.09	0	0	0	N	N
65070	Multi-Purpose Machine Gun Range-MPMG3	Northern Ranges	O07-03R	0.48	8.64	0.00	0.00	0.00	0.00	0.48	8.64	0	0	0	N	N
65248	Physical Fitness Center with Pool	Harmony Church	R02-01R	6.57	174.11	0.00	0.00	0.00	0.00	6.57	174.11	0	0	0	N	N
67012	Qualification Training Range and Beaten Area	Southern Range	A17-01	87.59	4,559.73	55.19	2,936.94	32.40	1,622.79	0.00	0.00	4	-	-	-	-
			A17-02	0.16	10.56	0.16	10.56	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-03	109.12	5,769.38	94.31	5,028.88	14.81	740.50	0.00	0.00	11	-	-	-	-
			A17-04	16.32	869.17	16.32	869.17	0.00	0.00	0.00	0.00	0	0	0	Y	Y
			A17-05	1.38	45.54	1.38	45.54	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-07	13.36	695.67	6.10	274.50	7.26	421.17	0.00	0.00	0	0	0	N	Y
			A17-08	1.23	63.96	1.23	63.96	0.00	0.00	0.00	0.00	0	0	0	N	N
			A17-13	2.92	151.84	2.92	151.84	0.00	0.00	0.00	0.00	0	0	0	Y	Y
			A17-14	122.32	6,411.09	107.06	5,908.42	7.77	457.73	7.49	44.94	7	-	-	-	-
			TOTAL:	**395.20**	**19,762.54**	**298.49**	**15,919.31**	**62.24**	**3,242.19**	**34.47**	**601.04**	**27**	**0**	**0**		

"–" denotes no impact because RCW cavity trees were taken by project.

Table 6-26. Direct project impacts for active red-cockaded woodpecker (RCW) clusters for Fiscal Year 2012 using the Standard for Managed Stability (SMS) (USFWS 2003), Alternatvie B Transformation, Fort Benning, Georgia.

						SMS Foraging Habitat Removals										
						Suitable Habitat Removed		Potentially Suitable Habitat Removed		Future Potential Habitat Removed						
Project Number	Project Name	Location	Cluster Impacted	Total Acres of RCW Habitat Removed	Total BA of RCW Habitat Removed	Acres	BA	Acres	BA	Acres	BA	Cavity Trees Taken by Project	Cavity Trees With Impacts Within 50 feet	Cavity Trees With Impacts Within 51 - 200 feet	Disturbance due to Noise, Pedestrian or Vehicular Traffic (Y/N)	Access Limited as a Result of Project (Y/N)
64460	DS/GS Vehicle Maintenance Facility	Harmony Church	R02-01R	6.34	259.82	5.42	246.94	0.00	0.00	0.92	12.88	0	0	0	N	N
64790	Battle Command Training Center	Harmony Church	BB03-01R	1.20	35.40	0.00	0.00	0.00	0.00	1.20	35.40	0	0	0	N	N
65065	Chapel	Harmony Church	HCC-10R	0.56	16.80	0.00	0.00	0.56	16.80	0.00	0.00	0	0	0	N	N
			TOTAL:	**8.10**	**312.02**	**5.42**	**246.94**	**0.56**	**16.80**	**2.12**	**48.28**	**0**	**0**	**0**		

Table 6-27. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative B Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2007	65382	Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and Beaten Area	120mm & .50 Cal	O09-04R	4920	Y	-	-	-	ACT	2	2	
					4124A	Y	-	-	-	ACT	4	1	2006
					4125A	Y	-	-	-	ACT	4	2	
					4126A	Y	-	-	-	INA	4	1	
					4127A	Y	-	-	-	INA	4	1	
					4276A	Y	-	-	-	INA	4	1	
					4277A	Y	-	-	-	INA	3	1	
				O09-05R	5628	Y	-	-	-	ACT	1	1	
					4335A	Y	-	-	-	INA	4	2	
					4336A	Y	-	-	-	INA	4	1	
					4337A	Y	-	-	-	ACT	4	1	2005-2006
					4338A	Y	-	-	-	ACT	4	1	
					5601A	Y	-	-	-	INA	4	1	
2007	64370	Trainee Barracks Complex 1	…	HCC-10R	4431A	N	N	Y	N	ACT	4	1	
				Total number of trees impacted in 2007		**13**	**0**	**1**					
2008	65439	Road Improvements/ Tank Bridge	…	HCC-10R	4429A	N	N	Y	N	ACT	4	1	
					4430A	N	N	Y	N	INA	4	1	
					4432A	N	N	Y	N	INA	4	1	2006
				Total number of trees impacted in 2008		**0**	**0**	**3**					
2009	65252	Centralized Wash Facility with Soaking Capability	…	HCC-03R	4995	Y	-	-	-	ACT	1	1	
					5429	N	N	Y	N	ACT	1	1	2005-2006
					5430	N	N	Y	N	INA	2	2	
					4131A	Y	-	-	-	INA	4	1	
2009	65383	Tank/ Fighting Vehicle Stationary	120MM & .50 Cal	K02-01	1617	Y	-	-	-	INA	1	2	
					4773	Y	-	-	-	INA	1	2	
					3900A	Y	-	-	-	ACT	4	1	2002-2006
					3901A	Y	-	-	-	INA	4	1	
					4772A	Y	-	-	-	ACT	4	1	
2009	64797	Vehicle Recovery Area	…	R01-01	2135	N	N	Y	N	INA	1	2	
					3227	N	N	Y	N	INA	1	2	
					3360	N	N	Y	N	INA	2	2	
					3992	N	N	Y	N	INA	1	2	
					4103	N	N	Y	N	INA	2	2	
					4681	N	N	Y	N	ACT	1	1	
					4682	N	N	Y	N	INA	2	2	
					5491	N	N	Y	N	INA	2	2	
					4661A	N	N	Y	N	ACT	4	1	
					4662A	N	N	Y	N	ACT	4	1	2006
					4975A	N	N	Y	N	ACT	4	1	
					4976A	N	N	Y	N	ACT	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-27. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative B Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Vehicle Recovery Area	…	R01-03R	4027	N	N	Y	N	INA	1	2	
					4206	N	N	Y	N	INA	1	2	
					4691	N	N	Y	N	ACT	1	1	
					4711	N	N	Y	N	INA	1	2	
					4833	N	N	Y	N	INA	1	2	
					4912	N	N	Y	N	ACT	1	1	
					5054	N	N	Y	N	INA	1	1	
					5151	N	N	Y	N	ACT	1	1	2006
					2650A	N	N	Y	N	INA	4	2	
					2652A	N	N	Y	N	INA	5	2	
					2654A	N	N	Y	N	INA	4	1	
					2655A	N	N	Y	N	INA	4	2	
					2657A	N	N	Y	N	INA	5	1	
					3920A	N	N	Y	N	INA	4	1	
2009	N/A	Off Road Drivers Training	…	L02-02R	5133A	N	Y	-	Y	ACT	3	1	2006
					5134A	N	Y	-	Y	ACT	3	1	
					5135A	Y	-	-	Y	ACT	4	1	
					5136A	Y	-	-	Y	ACT	4	2	
2009	62207	Combined Arms Collective Training Facility Phase II (CACTF)	…	T01-01	0062	N	N	Y	N	ACT	1	2	2006
					3718	N	Y	-	N	INA	2	2	
2009	N/A	Tank Trail Construction	…	A09-03R	4821	N	Y	-	N	INA	2	2	
				HCC-11R	5384	N	N	Y	N	ACT	1	1	
2009	N/A	Heavy Maneuver Corridor - **South**	…	D11-01	0469	Y	-	-	N	INA	2	2	
					1855	Y	-	-	N	INA	1	1	
					2477	Y	-	-	N	INA	1	2	
					3380	Y	-	-	Y	ACT	1	1	2004-2006
					5464	Y	-	-	N	INA	1	1	
					5591	Y	-	-	Y	ACT	1	1	
					3967A	Y	-	-	N	INA	4	1	
					4237A	N	Y	-	N	INA	4	1	
					4238A	N	Y	-	Y	ACT	4	1	
				D11-02	4517	Y	-	-	Y	ACT	1	1	
					4918	Y	-	-	N	INA	1	2	
					5476	Y	-	-	Y	ACT	1	1	2006
					3852A	Y	-	-	N	INA	4	1	
					3853A	Y	-	-	N	INA	4	1	
					4239A	Y	-	-	N	INA	4	1	
					4240A	Y	-	-	N	INA	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-27. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative B Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2009	N/A	Heavy Maneuver Corridor - South	…	D16-02	2418	Y	-	-	N	INA	1	1	
					3450A	N	Y	-	N	INA	4	2	
					3451A	Y	-	-	N	INA	4	1	
					4576A	N	Y	-	N	INA	4	1	
				E04-01	3958	Y	-	-	N	INA	2	2	
					5185	Y	-	-	N	INA	2	2	
				Total number of trees impacted in 2009		**27**	**8**	**30**					
2010	65554	Construct Installation-wide Roads	…	E04-01	0180	N	N	Y	N	ACT	1	2	
					2804	N	N	Y	N	ACT	1	1	
					3957	N	N	Y	N	ACT	1	1	2006
					4459	N	N	Y	N	ACT	1	1	
					5109	Y	-	-	-	INA	1	1	
				K08-03	5407	N	N	Y	N	ACT	1	1	
					5440	N	Y	-	N	ACT	2	1	
2010	65557	Repair/ Upgrade Existing Training Area Roads	…	E04-01	3958	N	Y	-	N	INA	2	2	
					5185	N	Y	-	N	INA	2	2	
				J05-01	4497	N	Y	-	N	INA	2	1	
				K14-01R	5218A	N	N	Y	N	INA	4	1	
					4610A	N	N	Y	N	INA	4	2	
				K18-01	4232	N	N	Y	N	ACT	1	1	
					5212	N	N	Y	N	ACT	1	1	
				Total number of trees impacted in 2010		**1**	**4**	**9**					
2011	63799	3 ID Brigade Combat Team Complex	…	HCC-03R	4128A	Y	-	-	-	INA	4	1	
					4129A	Y	-	-	-	INA	4	2	
					4272A	Y	-	-	-				
					4273A	Y	-	-	-	INA	5	2	
					5155	Y	-	-	-	INA	1	1	
2011	67012	Qualification Training Range and Beaten Area	7.62mm & .50 Cal	A17-01	5618	Y	-	-	-	ACT	1	1	
					5619	Y	-	-	-	ACT	1	1	
					5616A	Y	-	-	-	INA	4	1	
					5617A	Y	-	-	-	INA	4	1	

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-27. Red-cockaded woodpecker cavity trees impacted within active clusters impacted by Fiscal Year 2007 - 2013 Alternative B Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Harassment	Activity Status	Stage	Cavity Condition	Nest tree History
2011	67012	Qualification Training Range and Beaten Area	7.62mm & .50 Cal	A17-03	1247	Y	-	-	-	ACT	1	1	
					1694	Y	-	-	-	INA	1	2	
					2192	Y	-	-	-	INA	1	1	
					4243	Y	-	-	-	ACT	1	1	
					4511	Y	-	-	-	ACT	1	1	
					4716	Y	-	-	-	INA	1	1	
					4853	Y	-	-	-	ACT	1	1	2006
					5071	Y	-	-	-	INA	2	2	
					5072	Y	-	-	-	ACT	2	1	
					5389	Y	-	-	-	INA	2	2	
					5390	Y	-	-	-	INA	2	2	
				A17-14	4236	Y	-	-	-	ACT	1	1	
					4246	Y	-	-	-	INA	1	2	
					4247	Y	-	-	-	ACT	1	1	
					4248	Y	-	-	-	ACT	1	1	2006
					4251A	Y	-	-	-	ACT	4	1	
					4252A	Y	-	-	-	ACT	4	1	
					4253A	Y	-	-	-	ACT	4	1	
				Total number of trees impacted in 2011		**27**	**0**	**0**					

Activity Status

ACT	Active
INA	Inactive

Stage

1	Natural RCW cavity	4	Insert cavity
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

Table 6-28. Red-cockaded woodpecker cavity trees impacted within inactive clusters impacted by Fiscal Year 2007 - 2013 Alternative B Transformation projects, Fort Benning, Georgia.

Fiscal Year	Project Number	Project Name	Ammunition	Cluster Number	Cavity Tree	Tree Taken? (Yes (Y)/ No (N))	Impact within 50 feet? (Y/N)	Impact within 51 - 200 feet? (Y/N)	Activity Status	Stage	Cavity Condition
2009	N/A	Vehicle Recovery Area	…	R01-02R	2613A	N	N	Y	INA	4	2
					2614A	N	N	Y	INA	4	2
					2632A	N	N	Y	INA	4	2
					2633A	N	N	Y	INA	4	2
					5609A	N	N	Y	INA	4	1
					5610A	N	N	Y	INA	4	2
					5611A	N	N	Y	INA	4	1
					5612A	N	N	Y	INA	4	2
2009	N/A	Off Road Drivers Training	…	L02-01R	1292	Y	-	-	INA	1	2
					3154A	Y	-	-	INA	4	2
					3155A	Y	-	-	INA	4	2
					3156A	Y	-	-	INA	4	2
					3157A	Y	-	-	INA	4	2
2009	N/A	Heavy Maneuver Corridor - **South**	…	F01-02R	4632A	Y	-	-	INA	4	1
					4633A	Y	-	-	INA	4	1
					4634A	Y	-	-	INA	4	1
					4635A	Y	-	-	INA	4	1
				Total number of trees impacted in 2009		**9**	**0**	**8**			

Activity Status

ACT	Active
INA	Inactive

Stage

1	Complete RCW cavity	4	Artificial insert
2	Natural start	5	Drilled start
3	Drilled cavity		

Cavity Condition

1	Suitable
2	Unsuitable

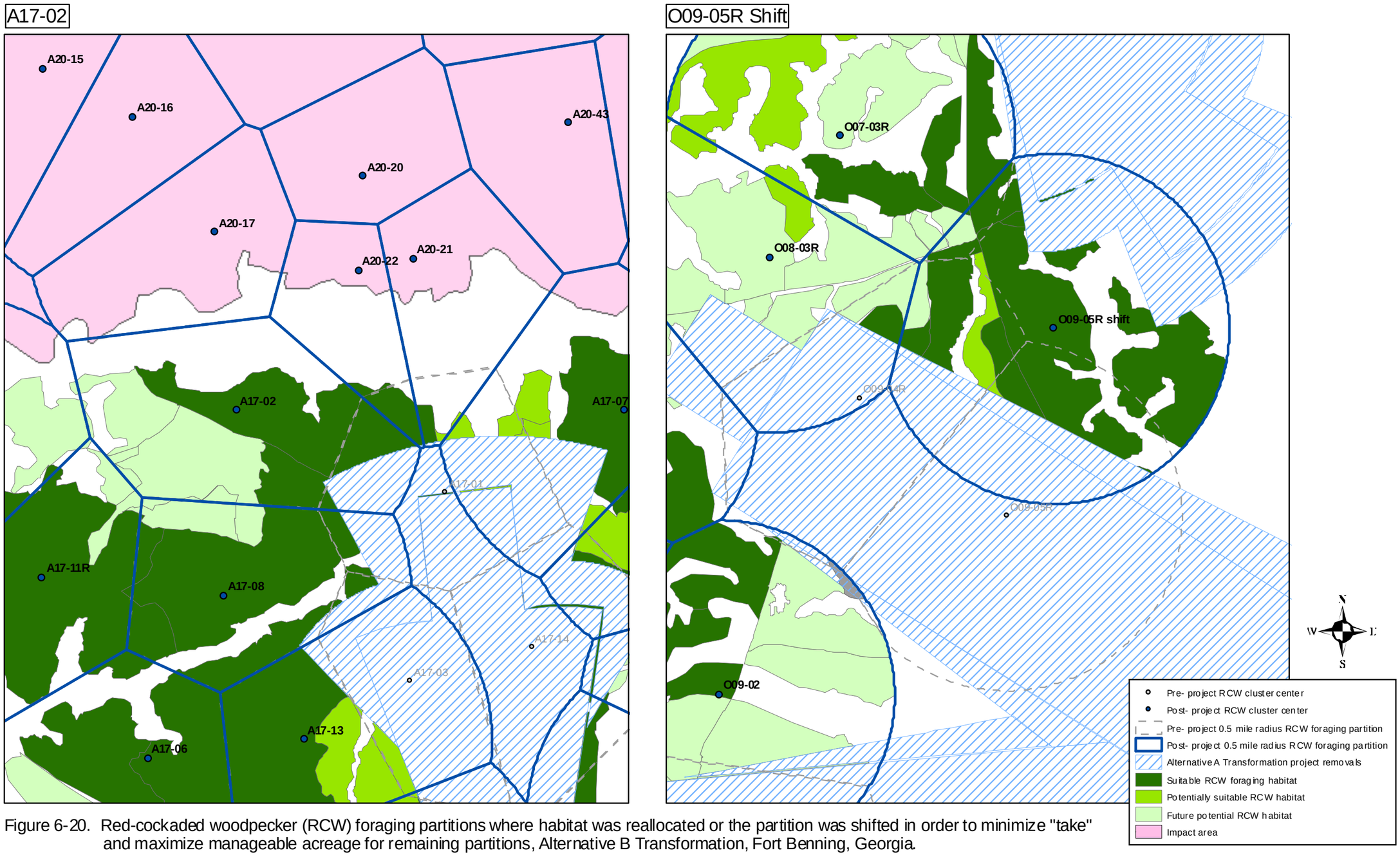


Figure 6-20. Red-cockaded woodpecker (RCW) foraging partitions where habitat was reallocated or the partition was shifted in order to minimize "take" and maximize manageable acreage for remaining partitions, Alternative B Transformation, Fort Benning, Georgia.

Table 6-29. Red-cockaded woodpecker (RCW) groups impacted directly or indirectly using the Standard for Managed Stability (USFWS 2003) for Fort Benning Transformation projects, Alternative B, Fort Benning, Georgia.

Impacted Cluster	Habitat Deficient	Total Acreage Removed by Project (Suitable/ Potentially Suitable)	# of Cavity Trees Removed	Take by Cavity Tree Loss	Take by Habitat/ Forage Loss	Take by Harassment	Group Level Take[2]	Neighborhood Level Take[2, 3]
	Pre-Project							
A06-01	N	0.18	0	N	N	-	N	N
A07-01	Y	1.47	0	N	Y	-	-	-
A08-01	N	0.69	0	N	N	-	N	N
A08-02a	N	1.81	0	N	N	-	N	N
A09-03R	N	5.61	0	N	N	N	N	N
A09-05	N	5.49	0	N	N	-	N	N
A17-01	Y	87.59	4 of 4	Y	Y	-	-	-
A17-02	Y	0.16	0	N	Y	-	-	-
A17-03	N	109.12	11 of 11	Y	Y	-	-	-
A17-04	N	16.32	0	N	N	-	N	N
A17-05	N	1.38	0	N	N	-	N	N
A17-07	N	13.36	0	N	N	-	N	N
A17-08	N	1.23	0	N	N	-	N	N
A17-13	N	2.92	0	N	N	-	N	N
A17-14	N	114.83	7 of 7	Y	Y	-	-	-
A20-06	N	0.54	0	N	N	-	N	N
BB03-01R	N	0.00	0	N	Y[5]	-	-	-
BB04-01R	N	16.34	0	N	N	-	N	N
BB05-01R	N	25.71	0	N	N	-	N	N
D05-02R	N	3.02	0	N	N	-	N	N
D05-04R	N	69.21	0	N	N	-	N	N
D08-01R	N	2.61	0	N	N	-	Y	-
D10-01	Y	0.00	0	N	Y	-	-	-
D11-01	N	49.23	7 of 9	Y	Y	Y	-	-
D11-02	N	67.71	7 of 7	Y	Y	Y	-	-
D15-01R	N	7.89	0	N	N	-	N	N
D16-02	Y	0.00	2 of 7	N	Y	N	-	-
D17-04R	N	1.03	0	N	N	-	N	N
E02-01	N	3.13	0	N	N	-	N	N
E03-01	N	4.01	0	N	N	-	N	N
E04-01	N	38.40	3 of 8	N	N	N	N	N
E08-05R	N	3.37	0	N	N	-	N	N
F02-01R	N	20.14	0	N	Y	-	-	-
HCC-03R	N	102.93	7 of 9	Y	N	-	-	-
HCC-08R	N	8.74	0	N	N	-	N	N
HCC-10R	N	96.74	0	N	N	-	N	N
HCC-11R	Y	0.75	0	N	Y	-	-	N
J03-01	N	2.11	0	N	N	-	N	N
J04-01	N	2.17	0	N	N	-	N	N
J05-01	N	4.66	0	N	N	-	N	N
J06-01	N	1.69	0	N	N	-	N	N
J06-03	N	11.80	0	N	N	-	N	N
K02-01	Y	2.78	5 of 5	Y	Y	-	N	N
K08-03	N	6.26	0	N	N	N	N	N
K08-04	N	13.20	0	N	N	-	N	N
K09-01	N	0.52	0	N	N	-	N	N
K09-03R	N	5.33	0	N	N	-	N	N

Table 6-29 (cont.). Red-cockaded woodpecker (RCW) groups impacted directly or indirectly using the Standard for Managed Stability (USFWS 2003) for Fort Benning Transformation projects, Alternative B, Fort Benning, Georgia.

Impacted Cluster	Habitat Deficient	Total Acreage Removed by Project (Suitable/ Potentially Suitable)	# of Cavity Trees Removed	Take by Cavity Tree Loss	Take by Habitat/ Forage Loss	Take by Harassment	Group Level Take[2]	Neighborhood Level Take[2, 3]
	Pre-Project							
K10-01	-	-	0	N	N	-	Y	-
K11-02	N	2.27	0	N	N	-	Y	-
K11-03	Y	2.62	0	N	Y	-	N	N
K14-01R	Y	3.09	0	N	Y	-	N	N
K17-02	N	1.36	0	N	N	-	N	N
K17-05R	N	0.24	0	N	N	-	N	N
K18-01	N	3.40	0	N	N	-	N	N
K18-02R	N	3.16	0	N	N	-	N	N
K18-03R	Y	1.72	0	N	Y	-	N	N
K21-02R	N	10.27	0	N	N	-	N	N
L02-02R	N	92.00	2 of 4	N	Y	N	N	N
O03-02	N	1.06	0	N	N	-	N	N
O05-01	N	16.46	0	N	N	-	N	N
O05-02	N	9.13	0	N	N	-	N	N
O05-03R	N	27.42	0	N	N	-	N	N
O07-03R	N	0.00	0	N	N	-	N	N
O08-03R	Y	1.31	0	N	Y	-	N	N
O09-02	N	0.00	0	N	N	-	N	N
O09-04R	N	120.20	7 of 7	Y	Y	-	N	N
O09-05R	N	202.63	6 of 6	Y	Y	-	N	N
O10-01	N	0.57	0	N	N	-	N	N
Q02-02	N	6.52	0	N	N	-	N	N
Q02-04R	N	10.15	0	N	N	-	N	N
R01-01	N	81.83	0	N	Y	-	N	N
R01-03R	Y	24.72	0	N	Y	-	N	N
R02-01R	N	26.38	0	N	Y	-	N	N
SHC-02	N	25.55	0	N	N	-	Y	-
T01-01	N	1.87	0	N	N	N	N	N
T02-01	Y	0.00	0	N	Y	-	N	N
T03-02	N	1.63	0	N	N	-	N	N
T03-04R	N	4.13	0	N	N	-	N	N
T04-01	N	1.47	0	N	N	-	N	N
T05-02	Y	1.22	0	N	Y	-	N	N
U04-01	N	25.59	0	N	Y	-	N	N
CLUSTER NOT IMPACTED BY TRANSFORMATION PROJECTS								
K12-01	–	–	0	N	–		N	Y
TOTAL		**1,642.04**	**66**	**9**	**26**	**2**	**4**	**1**

[1] Inactive clusters F01-02R and L02-01R will have 100% cavity tree removal.

[2] If RCW cluster is "taken" by habitat loss or cavity tree loss, it was not considered at the group or neighborhood level.

[3] Additional takes due to Neighborhood impacts are conceivable due to habitat fragmentation, reduction of productivity and dispersal impairment.

[4] Additional takes due to Neighborhood impacts are conceivable due to habitat fragmentation, reduction of productivity and dispersal impairment.

[5] RCW cluster is "taken" due to noncontiguous habitat resulting from project impact.

RCW cluster is "taken" as a result of habitat/forage loss in addition to cavity tree loss.

Table 6-30. The number of red-cockaded woodpecker clusters requiring Incidental Takes ("Take") by the fiscal year of construction initiation, Alternative B Transformation, Fort Benning, Georgia. This does not include group or neighborhood takes.

Fiscal Year "Taken"	Project Number (PN)	Project Resulting in "Take"*	Clusters "Taken"
2007	PN 64370	Trainee Barracks Complex 1, Borrow Areas	BB03-01R HCC-11R
	PN 65382	Tank/ Fighting Stationary Gunnery Range 1	O08-03R O09-04R O09-05R
	PN 65068	Trainee Barracks Complex 2	U04-01R
2008	PN 65439	Road Improvements	A07-01
2009	n/a	Heavy Maneuver Corridor - South (Maneuver Heavy Use Area)	D10-01 D11-01 D11-02 D16-02 F02-01R
	PN 65252	Centralized Wash Facility with Soaking Capability	HCC-03R**
	PN 65383	Tank/ Fighting Stationary Gunnery Range 2	K02-01
	PN 64797	Off-road Drivers Training	L02-02R
	PN 64797	Vehicle Recovery Area	R01-01 R01-03R R02-01R
	PN 62207	Combined Arms Collective Training Facility, Phase II	T02-01
2010	PN 65554	Construct Installation-wide Roads, Paved	K11-03
	PN 65557	Repair/ Upgrade Existing Training Area Roads	K14-01R K18-03R T05-02
2011	PN 67012	Qualification Training Range	A17-01 A17-02 A17-03 A17-14
			27

* When a cluster was impacted by 2 projects in the same fiscal year, the project that removed the most habitat was considered to result in "take".

** Cluster "taken" by cavity tree removal.

Table 6-31. Post- project suitable and potentially suitable foraging habitat using the Standard for Managed Stability (USFWS 2003) with a high risk of loblolly pine decline for red-cockaded woodpecker partitions impacted by Alternative B Transformation projects, Fort Benning, Georgia.

Cluster	Total Suitable and Potentially Suitable Acreage	Total High-Risk Suitable and Potentially Suitable Acreage	Percent of Acres At High Risk of Loblolly Pine Decline
A06-01	153.74	0.00	0.00%
A07-01	34.10	11.94	35.01%
A08-01	154.84	22.41	14.47%
A08-02a	96.08	0.00	0.00%
A09-03R	114.04	18.16	15.92%
A09-05	124.09	56.60	45.61%
A17-01	32.37	0.74	2.29%
A17-02	63.62	0.00	0.00%
A17-03	5.49	3.09	56.28%
A17-04	211.19	22.21	10.52%
A17-05	117.37	10.80	9.20%
A17-07	75.58	0.00	0.00%
A17-08	110.70	0.00	0.00%
A17-13	102.42	15.11	14.75%
A17-14	5.55	5.55	100.00%
A20-06	122.66	24.06	19.62%
BB03-01R	44.32	29.99	67.66%
BB04-01R	119.83	8.97	7.49%
BB05-01R	189.66	41.06	21.65%
D05-02R	119.78	24.29	20.28%
D05-04R	180.47	94.72	52.48%
D08-01R	110.49	63.25	57.25%
D10-01	44.24	27.54	62.25%
D11-01	43.79	7.95	18.16%
D11-02	18.45	18.45	100.00%
D15-01R	163.11	23.74	14.55%
D16-02	0.00	0.00	0.00%
D17-04R	89.74	0.00	0.00%
E02-01	104.49	6.83	6.54%
E03-01	157.07	25.10	15.98%
E04-01	76.42	30.50	39.91%
E08-05R	101.34	4.74	4.68%
F02-01R	65.10	20.24	31.09%
HCC-03R	91.91	60.68	66.02%
HCC-08R	101.98	69.53	68.18%
HCC-10R	123.06	48.01	39.01%
HCC-11R	11.08	1.06	9.56%
J03-01	96.81	1.40	1.45%
J04-01	95.14	64.76	68.07%
J05-01	124.05	37.04	29.86%

Table 6-31 (cont'd). Post- project suitable and potentially suitable foraging habitat using the Standard for Managed Stability (USFWS 2003) with a high risk of loblolly pine decline for red-cockaded woodpecker partitions impacted by Alternative B Transformation projects, Fort Benning, Georgia.

Cluster	Total Suitable and Potentially Suitable Acreage	Total High Risk Suitable and Potentially Suitable Acreage	Percent of Acres At High Risk of Loblolly Pine Decline
J06-01	102.53	8.55	8.34%
J06-03	200.40	29.65	14.80%
K02-01	7.25	3.82	52.70%
K08-03	92.05	24.37	26.47%
K08-04	170.43	56.45	33.12%
K09-01	89.56	0.17	0.19%
K09-03R	186.21	81.92	43.99%
K11-02	242.73	47.66	19.64%
K11-03	39.71	0.02	0.05%
K14-01R	62.93	0.00	0.00%
K17-02	117.02	0.00	0.00%
K17-05R	143.86	22.09	15.36%
K18-01	143.13	5.57	3.89%
K18-02R	151.85	21.83	14.38%
K18-03R	17.33	10.50	60.59%
K21-02R	184.05	17.37	9.44%
L02-02R	34.91	16.17	46.32%
O03-02	114.52	1.99	1.74%
O05-01	210.34	45.53	21.65%
O05-02	99.81	2.43	2.43%
O05-03R	164.29	33.14	20.17%
O07-03R	133.53	114.01	85.38%
O08-03R	7.83	7.83	100.00%
O09-02	77.15	14.59	18.91%
O09-04R	49.93	21.20	42.46%
O09-05R	38.40	4.06	10.57%
O10-01	112.03	73.13	65.28%
Q02-02	144.54	84.80	58.67%
Q02-04R	138.66	80.82	58.29%
R01-01	1.44	0.00	0.00%
R01-03R	2.96	2.96	100.00%
R02-01R	65.82	0.00	0.00%
SHC-02	157.18	79.21	50.40%
T01-01	101.53	1.73	1.70%
T02-01	28.16	27.26	96.81%
T03-02	164.40	16.62	10.11%
T03-04R	108.98	0.00	0.00%
T04-01	128.36	20.08	15.64%
T05-02	70.25	0.18	0.26%
U04-01	60.48	17.83	29.48%

cluster is taken by Alternative B Transformation

Table 6-32. Post- project ability of red-cockaded woodpecker (RCW) clusters "taken" by Alternative B Transformation to meet the Recovery Standard (RS) (USFWS 2003) in the future, Fort Benning, Georgia.

Cannot meet	**May not meet**	**Can meet**
Partition with < 120 acres of manageable habitat	**Partition with 121-149 acres of manageable habitat**	**Partition with ≥ 150 acres of manageable habitat**
A17-01	A17-02*	A07-01
A17-03	D10-01	BB03-01R
A17-14	F02-01R	D08-01R
D11-01	K11-03	HCC-11R
D11-02	O08-03R	K14-01R
D16-02	R02-01R	K18-03R
HCC-03R		O09-05R*
K02-01		SHC-02
L02-02R		T02-01
O09-04R		T05-02
R01-01		
R01-03R		
U04-01		

*assumes reallocation or partition shift

Table 6- 33. Post- project ability of red-cockaded woodpecker (RCW) clusters not "taken" by Alternative B Transformation to meet the Recovery Standard (RS) (USFWS 2003) in the future, Fort Benning,Georgia.

Cannot meet	May not meet	Can meet
Partition with < 120 acres of manageable habitat	**Partition with 121-149 acres of manageable habitat**	**Partition with ≥ 150 acres of manageable habitat**
A08-02a	A09-03R	A06-01
A17-07	A17-05	A08-01
A17-13	A17-08	A09-05
O05-02	D05-02R	A17-04
	E04-01	A20-06
	HCC-10R	BB04-01R
	K08-03	BB05-01R
	K09-01	D05-04R
		D15-01R
		D17-04R
		E02-01
		E03-01
		E08-05R
		HCC-98R
		J03-01
		J04-01
		J05-01
		J06-01
		J06-03
		K08-04
		K09-03
		K11-02
		K17-02
		K17-05R
		K18-01 *
		K18-02R
		K21-02R
		O03-02
		O05-01 *
		O05-03R
		O07-03R
		O09-02
		O10-01
		Q02-02
		Q02-04R
		T03-02
		T03-04
		T04-01

* currently meets RS

The post- project SMS foraging habitat totals were 7,072.04 ft^2 of pine BA on 153.74 acres of suitable habitat and 736.42 ft^2 of pine BA on 33.83 acres of future potential habitat (Table 6-18). There was no potentially suitable foraging habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 7,808.46 ft^2 of pine BA on 187.57 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster A07-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,313.76 ft^2 of pine BA on 35.57 acres of suitable habitat and 4,112.80 ft^2 of pine BA on 150.78 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 92.46 ft^2 of pine BA on 2.01 acres of potentially suitable habitat and 5,334.10 ft^2 of pine BA on 184.34 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 Road Improvements will remove 1.16 ft^2 of pine BA on 0.04 acres (Table 6-22 and Figure 6-13).

The 2009 Tank Trail Construction will remove 152.34 ft^2 of pine BA on 5.05 acres (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 1,263.78 ft^2 of pine BA on 34.10 acres of suitable habitat and 4,009.28 ft^2 of pine BA on 147.16 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 35.01 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 92.46 ft^2 of pine BA on 2.01 acres of potentially suitable habitat and 5,180.60 ft^2 of pine BA on 179.25 acres of future potential habitat

(Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-32).

FB Cluster A08-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,621.44 ft^2 of pine BA on 113.12 acres of suitable habitat, 1,706.76 ft^2 of pine BA on 45.41 acres of potentially suitable habitat and 375.78 ft^2 of pine BA on 27.65 acres of future potential habitat (Table 6-18).

The 2009 Army Officer Basic Course HQ Complex will remove 79.93 ft^2 of pine BA on 2.12 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 81.50 ft^2 of pine BA on 2.92 acres (Table 6-23 and Figure 6-13).

The pre- project RS foraging habitat totals were 6,703.98 ft^2 of pine BA on 186.18 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The post- project SMS foraging habitat totals were 4,607.34 ft^2 of pine BA on 112.76 acres of suitable habitat, 1,581.27 ft^2 of pine BA on 42.08 acres of potentially suitable habitat and 353.94 ft^2 of pine BA on 26.30 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 14.47 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 6,542.55 ft^2 of pine BA on 181.14 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster A08-02a: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,233.50 ft^2 of pine BA on 91.04 acres of suitable habitat and 294.55 ft^2 of pine BA on 6.85 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat.

The 2009 Tank Trail Construction will remove 72.15 ft^2 of pine BA on 1.81 acres (Table 6-23 and Figure 6-13).

The pre- project RS foraging habitat totals were 294.55 ft^2 of pine BA on 6.85 acres of potentially suitable habitat and 3,233.50 ft^2 of pine BA on 91.04 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The post- project SMS foraging habitat totals were 3,208.65 ft^2 of pine BA on 90.33 acres of suitable habitat and 247.25 ft^2 of pine BA on 5.75 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 247.25 ft^2 of pine BA on 5.75 acres of suitable habitat and 3,208.65 ft^2 of pine BA on 90.33 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

FB Cluster A09-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 14 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Tank Trail Construction will have impacts within 50 feet of 1 of 14 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 408.84 ft^2 of pine BA on 11.57 acres of suitable habitat, 3,527.64 ft^2 of pine BA on 108.08 acres of potentially suitable habitat and 0.0 ft^2 of pine BA on 8.39 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,936.48 ft^2 of pine BA on 128.04 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Army Officer Basic Course HQ Complex will remove 99.29 ft^2 of pine BA on 2.98 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 99.08 ft^2 of pine BA on 2.63 acres (Table 6-23 and Figure 6-13).

The 2009 Good Hope Maneuver Area will remove 0.0 ft^2 of pine BA on 0.16 acre (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 354.21 ft^2 of pine BA on 10.08 acres of suitable habitat, 3,383.90 ft^2 of pine BA on 103.96 acres of potentially suitable habitat and 0.0 ft^2 of pine BA on 7.89 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 15.92 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,738.11 ft^2 of pine BA on 121.93 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-33).

FB Cluster A09-05: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,357.84 ft^2 of pine BA on 115.77 acres of suitable habitat, 419.31 ft^2 of pine BA on 13.81 acres of potentially suitable habitat and 1,230.38 ft^2 of pine BA on 51.07 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 6,007.53 ft^2 of pine BA on 180.65 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Army Officer Basic Course HQ Complex will remove 130.11 ft^2 of pine BA on 3.63 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 94.10 ft^2 of pine BA on 3.04 acres (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 4,155.48 ft^2 of pine BA on 110.50 acres of suitable habitat, 412.71 ft^2 of pine BA on 13.59 acres of potentially suitable habitat and 1,214.13 ft^2 of pine BA on 49.89 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 45.61 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 5,783.32 ft^2 of pine BA on 173.98 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster A14-03: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2011 Qualification Training Range and will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster A17-01: This cluster was found during the 2006 surveys after nesting season (USFS 2006) (Table 6-20) and 2 RCWs were seen. The cluster contained 4 cavity trees in various stages of completion and suitability in November 2006 (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove 4 of 4 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 4,475.19 ft^2 of pine BA on 84.65 acres of suitable habitat and 1,832.54 ft^2 of pine BA on 37.64 acres of potentially suitable habitat. There was no future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 4,475.19 ft^2 of pine BA on 84.65 acres of potentially suitable habitat and 1,832.54 ft^2 of pine BA on 37.64 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 4,559.73 ft^2 of pine BA on 87.59 acres (Table 6-25 and Figure 6-15).

As a result of project impacts, 96.54 ft^2 of pine BA on 2.33 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1538.25 ft^2 of pine BA on 29.46 acres of suitable habitat and 113.21 ft^2 of pine BA on 2.91 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 2.29 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,538.25 ft^2 of pine BA on 29.46 acres of potentially suitable habitat and 113.21 ft^2 of pine BA on 2.91 acres of future potential habitat (Table 6-19). This partition cannot meet the RS in the future (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-15).

FB Cluster A17-02: This cluster had a PBG from 2002 to 2005 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,370.19 ft^2 of pine BA on 63.78 acres of suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat. There was no potentially suitable habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,370.19 ft^2 of pine BA on 63.78 acres of potentially suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 10.56 ft^2 of pine BA on 0.16 acre (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 3,359.63 ft^2 of pine BA on 63.62 acres of suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-19), however, reallocation and management of foraging habitat from neighboring "taken" partitions will enable A16-02 to meet SMS (Figure 6-20) (See Section 9). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 3,359.63 ft^2 of pine BA on 63.62 acres of potentially suitable habitat and 460.97 ft^2 of pine BA on 64.50 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

FB Cluster A17-03: This cluster had a PBG from 2002 to 2005 and a PBG and a helper in 2006 (Table 6-20). The cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove

11 of 11 cavity trees, which will result in "take" of the cluster by loss of cavity trees (Table 6-11 and 6-13) .(Table 6-27).

The pre- project SMS foraging habitat totals were 5,175.53 ft^2 of pine BA on 97.13 acres of suitable habitat and 1,014.50 ft^2 of pine BA on 20.29 acres of potentially suitable habitat. There was no future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,671.24 ft^2 of pine BA on 51.37 acres of potentially suitable habitat and 3,518.79 ft^2 of pine BA on 66.05 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 5,769.38 ft^2 of pine BA on 109.12 acres (Table 6-25 and Figure 6-15).

As a result of project impacts, 146.12 ft^2 of pine BA on 2.81 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 0.53 ft^2 of pine BA on 0.01 acre of suitable habitat and 274.00 ft^2 of pine BA on 5.48 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat. This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 56.28 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 274.53 ft^2 of pine BA on 5.49 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-15).

<u>FB Cluster A17-04</u>: This cluster was captured by FB Cluster A13-03 in 2002 and had a PBG from 2003 to 2006 (Table 6-20). This cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,987.49 ft^2 of pine BA on 155.95 acres of suitable habitat, 4,033.36 ft^2 of pine BA on 71.56 acres of potentially suitable habitat and 1.76 ft^2 of pine BA on 3.69 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,277.08 ft^2 of pine BA on 43.79 acres of potentially suitable habitat and 9,745.53 ft^2 of pine BA on 187.41 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 869.17 ft^2 of pine BA on 16.32 acres (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 7,118.32 ft^2 of pine BA on 139.63 acres of suitable habitat, 4,033.36 ft^2 of pine BA on 71.56 acres of potentially suitable habitat and 1.76 ft^2 of pine BA on 3.69 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 10.52 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,102.49 ft^2 of pine BA on 40.70 acres of potentially suitable habitat and 9,050.95 ft^2 of pine BA on 174.18 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster A17-05: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,379.85 ft^2 of pine BA on 102.39 acres of suitable habitat, 867.08 ft^2 of pine BA on 16.36 acres of potentially suitable habitat and 24.90 ft^2 of pine BA on 4.15 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,778.20 ft^2 of pine BA on 83.96 acres of suitable habitat and 1,493.63 ft^2 of pine BA on 38.94 acres of future potential habitat. There was no potentially suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 45.54 ft^2 of pine BA on 1.38 acres (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 4,334.31 ft^2 of pine BA on 101.01 acres of suitable habitat, 867.08 ft^2 of pine BA on 16.36 acres of potentially suitable habitat and 24.90 ft^2 of pine BA on 4.15 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 9.20 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,778.20 ft^2 of pine BA on 83.96 acres of suitable habitat and 1,448.09 ft^2 of pine BA on 37.56 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat. This partition may not meet the RS in the future (Table 6-33).

FB Cluster A17-07: This cluster was inactive in 2002 and had a PBG between 2003 and 2006 (Table 6-20). This cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,223.80 ft^2 of pine BA on 71.64 acres of suitable habitat and 876.20 ft^2 of pine BA on 17.30 acres of potentially suitable habitat. There was no future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,223.80 ft^2 of pine BA on 71.64 acres of suitable habitat and 876.20 ft^2 of pine BA on 17.30 acres of future potential habitat. There was no potentially suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 695.67 ft^2 of pine BA on 13.36 acres (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 2,949.30 ft^2 of pine BA on 65.54 acres of suitable habitat and 455.03 ft^2 of pine BA on 10.04 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 2,949.30 ft^2 of pine BA on 65.54 acres of suitable habitat and 455.03 ft^2 of pine BA on 10.04 acres of future potential habitat (Table 6-

19). There was no potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

FB Cluster A17-08: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,124.60 ft^2 of pine BA on 111.93 acres of suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat. There was no potentially suitable habitat (Table 6-18).

The pre- project RS foraging habitat totals were 954.36 ft^2 of pine BA on 14.46 acres of suitable habitat, 6,170.24 ft^2 of pine BA on 97.47 acres of potentially suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 63.96 ft^2 of pine BA on 1.23 acres (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 7,060.64 ft^2 of pine BA on 110.70 acres of suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 954.36 ft^2 of pine BA on 14.46 acres of suitable habitat, 6,106.28 ft^2 of pine BA on 96.24 acres of potentially suitable habitat and 100.53 ft^2 of pine BA on 17.76 acres of future potential habitat (Table 6-19). This partition may not meet the RS in the future (Table 6-33).

FB Cluster A17-13: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,206.28 ft^2 of pine BA on 80.89 acres of suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of potentially suitable habitat. There was no future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 4,206.28 ft^2 of pine BA on 80.89 acres of potentially suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 151.84 ft^2 of pine BA on 2.92 acres (Table 6-25 and Figure 6-15).

The post- project SMS foraging habitat totals were 4,054.44 ft^2 of pine BA on 77.97 acres of suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of potentially suitable habitat (Table 6-18). There was no future potential habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 14.75 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 4,054.44 ft^2 of pine BA on 77.97 acres of potentially suitable habitat and 1,222.50 ft^2 of pine BA on 24.45 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

FB Cluster A17-14: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2011 Qualification Training Range and Beaten Area will remove 7 of 7 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-27 and 6-29).

The pre- project SMS foraging habitat totals were 6,306.98 ft^2 of pine BA on 114.16 acres of suitable habitat, 575.66 ft^2 of pine BA on 9.99 acres of potentially suitable habitat and 79.50 ft^2 of pine BA on 13.25 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 344.24 ft^2 of pine BA on 6.62 acres of potentially suitable habitat and 6,617.90 ft^2 of pine BA on 130.78 acres of future potential habitat. There was no suitable habitat (Table 6-19).

The 2011 Qualification Training Range and Beaten Area will remove 6,411.09 ft^2 of pine BA on 122.32 acres (Table 6-23 and Figure 6-13).

As a result of project impacts, 201.63 ft^2 of pine BA on 3.77 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 313.00 ft^2 of pine BA on 5.52 acres of suitable habitat, 1.86 ft^2 of pine BA on 0.03 acre of potentially suitable habitat and 34.56 ft^2 of pine BA on 5.76 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-15).

The post- project RS foraging habitat totals were 349.42 ft^2 of pine BA on 11.31 acres of future potential habitat (Table 6-3). There was no suitable or potentially suitable habitat. This partition cannot meet RS in the future (Table 6-31).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-15).

FB Cluster A20-06: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,495.90 ft^2 of pine BA on 123.20 acres of suitable habitat and 1,413.14 ft^2 of pine BA on 50.90 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,909.04 ft^2 of pine BA on 174.10 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-19).

The 2009 Tank Trail Construction will remove 18.36 ft^2 of pine BA on 0.54 acre (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 4,477.54 ft^2 of pine BA on 122.66 acres of suitable habitat and 1,413.14 ft^2 of pine BA on 50.90 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 19.62 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 5,890.68 ft^2 of pine BA on 173.56 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster BB03-01R: This cluster had a PBG from 2002 to 2005 (Table 6-20) and a solitary male in 2006 (Table 6-20). The cluster contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,020.86 ft^2 of pine BA on 27.62 acres of suitable habitat, 2,169.33 ft^2 of pine BA on 50.29 acres of potentially suitable habitat and 2,169.33 ft^2 of pine BA on 143.97 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 428.29 ft^2 of pine BA on 8.87 acres of potentially suitable habitat and 5,387.04 ft^2 of pine BA on 213.01 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Trainee Barracks Complex 1Borrow Pit Area will remove 414.24 ft^2 of pine BA on 16.55 acres (Table 6-21).

The 2009 Tank Trail Construction will remove 42.05 ft^2 of pine BA on 2.20 acres (Table 6-23 and Figure 6-13).

The 2012 Battle Command Training Center will remove 35.40 ft^2 of pine BA on 1.20 acres (Table 6-26 and Figure 6-13).

As a result of project impacts, 1,616.71 ft^2 of pine BA on 52.92 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,020.86 ft^2 of pine BA on 27.62 acres of suitable habitat, 804.57 ft^2 of pine BA on 16.70 acres of potentially suitable habitat and 1,881.50 ft^2 of pine BA on 104.69 acres of future potential habitat (Table 6-18). This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 67.66 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 428.29 ft^2 of pine BA on 8.87 acres of potentially suitable habitat and 3,278.64 ft^2 of pine BA on 140.13 acres of future potential habitat

(Table 6-19). There was no suitable habitat. This partition can meet the RS in the future (Table 6-32).

FB Cluster BB04-01R: This cluster had a PBG in 2002, a solitary male in 2003, and a PBG from 2004 to 2006 (Table 6-20). The cluster contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,956.55 ft^2 of pine BA on 123.90 acres of suitable habitat, 1,229.31 ft^2 of pine BA on 12.27 acres of potentially suitable habitat and 836.25 ft^2 of pine BA on 46.07 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,123.16 ft^2 of pine BA on 24.50 acres of potentially suitable habitat and 5,898.95 ft^2 of pine BA on 157.74 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 General Instruction Building Complex will remove 836.16 ft^2 of pine BA on 21.53 acres (Table 6-22 and Figure 6-13).

The 2008 Road Improvements will remove 316.26 ft^2 of pine BA on 7.38 acres (Table 6-22 and Figure 6-13).

The 2009 Tank Trail Construction will remove 14.03 ft^2 of pine BA on 1.22 acres (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 4,506.70 ft^2 of pine BA on 113.16 acres of suitable habitat, 595.29 ft^2 of pine BA on 6.67 acres of potentially suitable habitat and 753.68 ft^2 of pine BA on 32.28 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 7.49 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,123.16 ft^2 of pine BA on 24.50 acres of potentially suitable habitat and 4,732.50 ft^2 of pine BA on 127.61 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster BB05-01R: This cluster had a PBG from 2002 to 2005. In 2006, this cluster had a PBG (Table 6-20) and a helper. The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,706.03 ft^2 of pine BA on 113.25 acres of suitable habitat, 4,015.93 ft^2 of pine BA on 102.12 acres of potentially suitable habitat and 1,493.99 ft^2 of pine BA on 63.62 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 10,215.95 ft^2 of pine BA on 278.99 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-19).

The 2008 General Instruction Building Complex will remove 802.67 ft^2 of pine BA on 15.60 acres (Table 6-22 and Figure 6-13).

The 2008 Infrastructure Support project will remove 389.91 ft^2 of pine BA on 9.29 acres (Table 6-22 and Figure 6-13).

The 2008 Road Improvements will remove 194.48 ft^2 of pine BA on 5.79 acres (Table 6-22 and Figure 6-13).

The post- project SMS foraging habitat totals were 3,571.46 ft^2 of pine BA on 90.94 acres of suitable habitat, 3,866.71 ft^2 of pine BA on 98.72 acres of potentially suitable habitat and 1,390.73 ft^2 of pine BA on 58.65 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 21.65 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 8,828.90 ft^2 of pine BA on 248.31 of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster D05-02R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,840.55 ft^2 of pine BA on 122.80 acres of suitable habitat and 858.61 ft^2 of pine BA on 39.09 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,699.16 ft^2 of pine BA on 161.89 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 353.87 ft^2 of pine BA on 13.54 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,718.12 ft^2 of pine BA on 119.78 acres of suitable habitat and 627.17 ft^2 of pine BA on 28.57 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 20.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project SMS foraging habitat totals were 5,345.29 ft^2 of pine BA on 148.35 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-33).

FB Cluster D05-04R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 10,245.41 ft^2 of pine BA on 255.06 acres of suitable habitat and 504.18 ft^2 of pine BA on 48.27 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Transformation.

The pre- project RS foraging habitat totals were 10,749.59 ft^2 of pine BA on 303.33 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 3,276.80 ft^2 of pine BA on 90.85 acres (Table 6-23 and Figure 6-14).

As a result of project impacts, 219.71 ft^2 of pine BA on 5.38 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 7,124.52 $ft^2$of pine BA on 180.47 acres of suitable habitat and 128.56 ft^2 of pine BA on 26.63 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-

18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 52.48 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS habitat totals were 7,253.08 ft^2 of pine BA on 207.10 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster D06-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2009 Heavy Maneuver Corridor - South will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster D08-01R: This cluster contained a solitary male in 2002, a PBG in 2003 and 2004 and a solitary male in 2005 and 2006 (Table 6-20). The cluster contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,104.18 ft^2 of pine BA on 113.10 acres of suitable habitat and 1,321.06 ft^2 of pine BA on 139.48 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 68.89 ft^2 of pine BA on 1.59 acres of potentially suitable habitat and 5,351.85 ft^2 of pine BA on 250.98 acres on future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 109.46 ft^2 of pine BA on 3.32 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,011.58 ft^2 of pine BA on 110.49 acres of suitable habitat and 1,304.20 ft^2 of pine BA on 138.77 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

Cluster D08-01R has not consistently had a PBG for the last 5 years. Per USFWS guidance, clusters that meet the lower foraging habitat guidelines (established during informal consultation for this action), but are not demographically stable, could still require Incidental Take (Section 5). However, because of the distance of the proposed road upgrade from the

cluster center (approximately 0.35 miles), the relatively small amount of foraging habitat removed and the sufficient foraging habitat remaining post- project, this cluster is not expected to be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 57.25 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 52.42 ft^2 of pine BA on 1.21 acres of potentially suitable habitat and 5,258.86 ft^2 of pine BA on 248.04 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

FB Cluster D10-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Corridor - South will have impacts within 51 to 200 feet of 9 of 10 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 1,472.00 ft^2 of pine BA on 44.24 acres of suitable habitat and 672.54 ft^2 of pine BA on 76.66 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,144.54 ft^2 of pine BA on 120.90 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 0.0 ft^2 of pine BA on 1.35 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 1,472.00 ft^2 of pine BA on 44.24 acres of suitable habitat and 672.54 ft^2 of pine BA on 75.31 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 62.25 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,144.54 ft^2 of pine BA on 119.55 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-32).

FB Cluster D11-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). Seven of 7 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, which could result in "take" of the cluster by loss of cavity trees or harassment (Table 6-27 and 6-29).

The pre- project SMS foraging habitat totals were 3,472.58 ft^2 of pine BA on 93.02 acres of suitable habitat and 96.31 ft^2 of pine BA on 49.47 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 20.71 ft^2 of pine BA on 0.41 acre of potentially suitable habitat and 3,548.18 ft^2 of pine BA on 142.08 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 1,867.90 ft^2 of pine BA on 81.60 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 1,635.94 ft^2 of pine BA on 43.79 acres of suitable habitat and 65.05 ft^2 of pine BA on 17.10 acres of future potential habitat. There was no potentially suitable habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 18.16 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 20.71 ft^2 of pine BA on 0.41 acre of potentially suitable habitat and 1,680.28 ft^2 of pine BA on 60.48 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-14).

Cluster D11-01 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D11-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Corridor - South will have impacts within 51 to 200 feet of 7 of 7 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 3,994.86 ft^2 of pine BA on 108.40 acres of suitable habitat and 1,305.57 ft^2 of pine BA on 55.81 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 24.75 ft^2 of pine BA on 0.49 acre of potentially suitable habitat and 5,275.68 ft^2 of pine BA on 163.72 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 2,879.66 ft^2 of pine BA on 84.56 acres (Table 6-23 and Figure 6-14).

As a result of project impacts, 1,218.12 ft^2 of pine BA on 42.38 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 716.21 ft^2 of pine BA on 18.45 acres of suitable habitat and 486.44 ft^2 of pine BA on 18.82 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 100.00 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 24.75 ft^2 of pine BA on 0.49 acre of potentially suitable habitat and 1,177.90 ft^2 of pine BA on 36.78 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss, loss of foraging habitat and harassment impacts (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-14).

Cluster D11-02 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D15-01R: This cluster had a PBG from 2002 to 2005 (Table 6-20). In 2006, this cluster had a PBG and a helper. The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 6,807.87 ft^2 of pine BA on 156.24 acres of suitable habitat, 560.88 ft^2 of pine BA on 14.76 acres of potentially suitable habitat and 2,566.22 ft^2 of pine BA on 111.12 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 551.86 ft^2 of pine BA on 8.33 acres of potentially suitable habitat and 9,383.11 ft^2 of pine BA on 273.78 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 671.31 ft^2 of pine BA on 21.94 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,515.94 ft^2 of pine BA on 148.35 acres of suitable habitat, 560.88 ft^2 of pine BA on 14.76 acres of potentially suitable habitat and 2,186.84 ft^2 of pine BA on 97.07 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 14.55 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 551.86 ft^2 of pine BA on 8.33 acres of potentially suitable habitat and 8,711.80 ft^2 of pine BA on 251.84 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

Cluster D15-01R was included in an Incidental Take Statement for the DMPRC (USFWS 2004a), however it was still inhabited by a PBG in 2006. FBCB personnel are currently conducting home range follows of this group as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster D16-02: This cluster had a PBG from 2002 to 2006(Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Heavy Maneuver Corridor - South will result in impacts within 50 feet of 2 of 7 cavity trees and 2 of 7 cavity trees will be subject to military training impacts (Table 6-27).

The pre- project SMS foraging habitat totals were 534.92 ft^2 of pine BA on 15.33 acres of suitable habitat and 3,299.43 ft^2 of pine BA on 200.53 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,834.35 ft^2 of pine BA on 215.86 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 752.09 ft^2 of pine BA on 57.94 acres (Table 6-23 and Figure 6-14).

As a result of project impacts, 1,366.72 ft^2 of pine BA on 67.36 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS and RS foraging habitat totals were 1,715.54 ft^2 of pine BA on 90.56 acres of future potential habitat (Table 6-18 and Table 6-19). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). There is no loblolly pine at high risk of decline within this partition (Table 6-31). This partition cannot meet the RS in the future (Table 6-32).

FB Cluster D17-04R: This cluster had a PBG from 2002 to 2005 (Table 6-20) and a PBG and 2 helpers in 2006. The cluster contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,187.41 ft^2 of pine BA on 79.80 acres of suitable habitat, 356.53 ft^2 of pine BA on 10.97 acres of potentially suitable habitat and 1,871.43 ft^2 of pine BA on 101.41 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,483.69 ft^2 of pine BA on 34.52 acres of potentially suitable habitat and 3,931.68 ft^2 of pine BA on 177.66 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 340.46 ft^2 of pine BA on 11.89 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,148.78 ft^2 of pine BA on 78.77 acres of suitable habitat, 356.53 ft^2 of pine BA on 10.97 acres of potentially suitable habitat and 1,569.60 ft^2 of pine BA on 90.55 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging

habitat (Table 6-18, 6-29 and Figure 6-17). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 1,483.69 ft^2 of pine BA on 34.52 acres of potentially suitable habitat and 3,591.22 ft^2 of pine BA on 145.77 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster E02-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 2,867.93 ft^2 of pine BA on 90.53 acres of suitable habitat, 515.56 ft^2 of pine BA on 17.09 acres of potentially suitable habitat and 399.63 ft^2 of pine BA on 124.82 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 79.54 ft^2 of pine BA on 1.64 acres of suitable habitat and 3,703.58 ft^2 of pine BA on 230.80 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 0.0 ft^2 of pine BA on 5.71 acres (Table 6-23 and Figure 6-14).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 104.45 ft^2 of pine BA on 4.22 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,770.90 ft^2 of pine BA on 87.40 acres of suitable habitat, 515.56 ft^2 of pine BA on 17.09 acres of potentially suitable habitat and 392.21 ft^2 of pine BA on 118.02 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 6.54 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 79.54 ft^2 of pine BA on 1.64 acres of suitable habitat and 3,599.13 ft^2 of pine BA on 220.87 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster E03-01: This cluster had a PBG from 2002 to 2005 (Table 6-20) and a PBG and a helper in 2006. The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,046.71 ft^2 of pine BA on 161.08 acres of suitable habitat and 1,912.80 ft^2 of pine BA on 41.27 acres of future potential habitat (Table 6-18). There was not potentially suitable habitat.

The pre- project RS foraging habitat totals were 8,959.51 ft^2 of pine BA on 202.35 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 176.52 ft^2 of pine BA on 4.01 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,870.19 ft^2 of pine BA on 157.07 acres of suitable habitat and 1,912.80 ft^2 of pine BA on 41.27 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 15.98 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 8,782.99 ft^2 of pine BA on 198.34 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster E04-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). Two of seven cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South, 1 of 8 cavity tree s will be removed and 3 other cavity trees will have impacts within 51 to 200 feet from the 2010 Construction of Installation-wide Roads project and the 2010 Repair/ Upgrade Existing Training Area Roads will have impacts within 50 feet of 2 of 8 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 4,504.91 ft^2 of pine BA on 114.82 acres of suitable habitat and 1,275.52 ft^2 of pine BA on 52.26 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 242.55 ft^2 of pine BA on 5.39 acres of suitable habitat, 575.70 ft^2 of pine BA on 6.06 acres of potentially suitable habitat and 4,962.18 ft^2 of pine BA on 155.63 acres of future potential habitat(Table 6-19).

The 2009 Heavy Maneuver Corridor - South (Maneuver Heavy Use Areas) will remove 1,429.32 ft^2 of pine BA on 38.72 acres (Table 6-23 and Figure 6-14).

The 2010 Construction of Installation-wide Roads project will remove 222.12 ft^2 of pine BA on 4.86 acres (Table 6-24 and Figure 6-14).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 136.38 ft^2 of pine BA on 2.24 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,020.58 ft^2 of pine BA on 76.42 acres of suitable habitat and 972.03 ft^2 of pine BA on 44.84 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 39.91 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 234.45 ft^2 of pine BA on 5.21 acres of suitable habitat, 417.05 ft^2 of pine BA on 4.39 acres of potentially suitable habitat and 3,341.11 ft^2 of pine BA on 111.66 acres of future potential habitat(Table 6-19). This partition may not meet the RS in the future (Table 6-33).

FB Cluster E08-05R: This cluster was inactive in 2002 and 2003 (Table 6-20) and a PBG from 2004 to 2006. This cluster contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,852.66 ft^2 of pine BA on 104.71 acres of suitable habitat and 103.01 ft^2 of pine BA on 70.74 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,676.58 ft^2 of pine BA on 54.85 acres of suitable habitat, 1,014.47 ft^2 of pine BA on 25.39 acres of potentially suitable habitat and 1,174.62 ft^2 of pine BA on 95.20 acres of future potential habitat (Table 6-19).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 155.71 ft^2 of pine BA on 4.64 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,696.95 ft^2 of pine BA on 101.34 acres of suitable habitat and 103.01 ft^2 of pine BA on 69.47 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 4.68 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,557.75 ft^2 of pine BA on 52.40 acres of suitable habitat, 1,081.41 ft^2 of pine BA on 24.86 acres of potentially suitable habitat and 1,160.80 of pine BA on 93.54 acres of future potential habitat (Table 6-19). This cluster can meet the RS in the future (Table 6-33).

FB Cluster F01-02R: This cluster has been inactive for the previous 5 years (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C).). Four of 4 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South (Table 6-28).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster F02-01R: This cluster was inactive between 2002 and 2004, had a solitary male in 2005 and a PBG in 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,739.60 ft^2 of pine BA on 85.24 acres of suitable habitat and 2,585.72 ft^2 of pine BA on 124.79 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,172.46 ft^2 of pine BA on 70.53 acres of potentially suitable habitat and 3,152.86 ft^2 of pine BA on 139.50 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 1,753.36 ft^2 of pine BA on 65.55 acres (Table 6-23 and Figure 6-14).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 22.01 ft^2 of pine BA on 0.70 acre (Table 6-24 and Figure 6-14).

As a result of project impacts, 66.22 ft^2 of pine BA on 5.22 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,900.98 ft^2 of pine BA on 65.10 acres of suitable habitat and 1,582.75 ft^2 of pine BA on 73.46 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 31.09 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,713.46 ft^2 of pine BA on 60.10 acres of potentially suitable habitat and 1,770.27 ft^2 of pine BA on 78.46 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-32).

FB Cluster HCC-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2009 Centralized Wash Facility will remove 2 of 9 cavity trees and have impacts within 51 to 200 feet of 2 others. In addition, the 2011 3 ID Brigade Combat Team project will remove 5 of 9 cavity trees which could result in "take" of the cluster by loss of cavity trees (Table 6-27 and 6-29).

The pre- project SMS foraging habitat totals were 6,714.85 ft^2 of pine BA on 165.86 acres of suitable habitat, 1,141.04 ft^2 of pine BA on 30.15 acres of potentially suitable habitat and 478.61 ft^2 of pine BA on 30.14acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,799.74 ft^2 of pine BA on 36.29 acres of potentially suitable habitat and 6,534.76 ft^2 of pine BA on 189.15 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Training Support Brigade Complex will remove 550.79 ft^2 of pine BA on 14.66 acres (Table 6-21 and Figure 6-13).

The 2008 Unit Maintenance Activity Facility will remove 122.10 ft^2 of pine BA on 3.70 acres (Table 6-22 and Figure 6-13).

The 2008 Road Improvements will remove 29.88 ft^2 of pine BA on 1.09 acres (Table 6-22 and Figure 6-13).

The 2009 Drivers Training Course will remove 69.12 ft^2 of pine BA of suitable foraging habitat on 2.16 acres (Table 6-22 and Figure 6-13)

The 2009 Museum Operations Support Building will remove 10.56 ft^2 of pine BA on 0.32 acre (Table 6-23 and Figure 6-13).

The 2009 Centralized Wash Facility will remove 2,725.24 ft^2 of pine BA on 70.00 acres (Table 6-23 and Figure 6-13).

The 2009 Vehicle Maintenance Instruction Facility will remove 34.26 ft^2 of pine BA on 0.85 acre (Table 6-23 and Figure 6-13).

The 2011 3 ID Brigade Combat Team Complex will remove 985.76 ft^2 of pine BA on 33.08 acres (Table 6-25 and Figure 6-13).

As a result of project impacts, 14.40 ft^2 of pine BA on 0.45 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,633.22 ft^2 of pine BA on 65.10 acres of suitable habitat, 1,057.20 ft^2 of pine BA on 26.81 acres of potentially suitable habitat and 101.97 ft^2 of pine BA on 7.22 acres of future potential habitat (Table 6-18). This cluster will <u>not</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 66.02 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 197.23 ft^2 of pine BA on 3.83 acres of potentially suitable habitat and 3,595.16 ft^2 of pine BA on 95.30 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss (Table 6-18, 6-19, 6-13, 6-29 and Figure 6-14).

<u>FB Cluster HCC-08R</u>: This cluster contained a solitary male in 2005 and 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,962.19 ft^2 of pine BA on 58.75 acres of suitable habitat, 1,634.98 ft^2 of pine BA on 51.97 acres of potentially suitable habitat and 2,551.09 ft^2 of pine BA on 97.76 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 145.34 ft^2 of pine BA on 3.38 acres of potentially suitable habitat and 6,002.92 ft^2 of pine BA on 205.10 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Equipment Concentration Site will remove 308.71 ft^2 of pine BA on 8.90 acres (Table 6-24 and Figure 6-13).

The post- project SMS foraging habitat totals were 1,653.48 ft^2 of pine BA on 50.01 acres of suitable habitat, 1,634.98 ft^2 of pine BA on 51.97 acres of potentially suitable habitat and 2,551.09 ft^2 of pine BA on 97.60 acres of future potential habitat (Table 6-18). This cluster has not had a PBG since its activation in 2005. We do <u>not</u> expect this cluster to be taken at the cluster level by Alternative B Transformation projects because of the distance of the proposed project from the cluster area (approximately 0.26 miles), the sufficient amount of remaining suitable and potentially suitable habitat remaining post- project and the amount of future potential habitat adjacent to the cluster (73 acres of 105-year old loblolly pine averaging 29 ft^2 of pine BA/ acre) (Tables 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 68.18 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 145.34 ft^2 of pine BA on 3.38 acres of potentially suitable habitat and 5,694.21 ft^2 of pine BA on 196.20 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

<u>FB Cluster HCC-10R</u>: This cluster had a PBG from 2002 to 2005 (Table 6-20) and a PBG and a helper in 2006. The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2007 Trainee Barracks Complex 1 will have impacts within 51 to 200 feet of 1 of 4 cavity trees and the 2008 Road Improvements/ Tank Bridge will have impacts within 51 to 200 feet of 3 of 4 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 3,419.15 ft^2 of pine BA on 95.84 acres of suitable habitat, 5,317.02 ft^2 of pine BA on 123.96 acres of potentially suitable habitat and 1,273.41 ft^2 of pine BA on 74.91 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 4,572.42 ft^2 of pine BA on 99.14 acres of potentially suitable habitat and 5,437.16 ft^2 of pine BA on 195.57 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Trainee Barracks Complex 1 will remove 3,013.99 ft^2 of pine BA on 81.88 acres (Table 6-21 and Figure 6-13).

The 2007 Training Support Brigade Complex will remove 294.47 ft^2 of pine BA on 7.85 acres (Table 6-21 and Figure 6-13).

The 2008 Road Improvements will remove 157.55 ft^2 of pine BA on 4.17 acres (Table 6-22 and Figure 6-13).

The 2008 Road Improvements/ Tank Bridge will remove 393.77 ft^2 of pine BA on 9.64 acres (Table 6-22 and Figure 6-13).

The 2009 Centralized Wash Facility will remove 46.07 ft^2 of pine BA on 1.11 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 56.21 ft^2 of pine BA on 1.85 acres (Table 6-23 and Figure 6-13).

The 2010 Equipment Concentration Site will remove 773.91 ft^2 of pine BA on 41.73 acres (Table 6-24 and Figure 6-13).

The 2012 Chapel will remove 16.80 ft^2 of pine BA on 0.56 acre (Table 6-26 and Figure 6-13).

The post- project SMS foraging habitat totals were 2,393.80 ft^2 of pine BA on 68.06 acres of suitable habitat, 2,340.24 ft^2 of pine BA on 55.00 acres of potentially suitable habitat and 522.77 ft^2 of pine BA on 22.86 acres of future potential habitat (Table 6-18). This cluster will <u>not</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 39.01 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,009.64 ft^2 of pine BA on 43.98 acres of potentially suitable habitat 3,247.17 ft^2 of pine BA on 101.94 acres of future potential habitat

(Table 6-19). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-33).

FB Cluster HCC-11R: This cluster was captured by FB Cluster A06-01 from 2002 to 2004 and had a PBG in 2005 and 2006 (Table 6-20). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Tank Trail Construction will have impacts within 51 to 200 feet of 1 of 7 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 385.98 ft^2 of pine BA on 11.83 acres of suitable habitat and 5,469.75 ft^2 of pine BA on 241.24 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,855.73 ft^2 of pine BA on 253.07 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2007 Trainee Barracks Complex 1Borrow Pit Area will remove 206.07 ft^2 of pine BA on 21.73 acres (Table 6-21 and Figure 6-13).

The 2007 IET Brigade Headquarters Building will remove 99.69 ft^2 of pine BA on 6.18 acres (Table 6-21 and Figure 6-13).

The 2008 Road Improvements will remove 430.37 ft^2 of pine BA on 17.06 acres (Table 6-22 and Figure 6-13).

The 2009 Tank Trail Construction will remove 143.68 ft^2 of pine BA on 6.23 acres (Table 6-23 and Figure 6-13).

As a result of project impacts, 47.56 ft^2 of pine BA on 2.32 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 356.70 ft^2 of pine BA on 11.08 acres of suitable habitat and 4,571.66 ft^2 of pine BA on 188.47 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-2, 6-30 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 9.56 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 4,928.36 ft^2 of pine BA on 199.55 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-32).

FB Cluster J02-02R: This cluster was inactive in 2002 and 2003 and had a PBG in 2004, 2005 and 2006 (Table 6-20). The cluster contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2012 Rail Car Storage/ Tracks for Deployment project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster J03-01: This cluster had a PBG in 2002 and 2003, a solitary male in 2004 and had a PBG in 2005 and 2006 (Table 6-20). The cluster contained 12 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,982.19 ft^2 of pine BA on 98.92 acres of suitable habitat and 1,245.41 ft^2 of pine BA on 75.73 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 3,378.49 ft^2 of pine BA on 82.23 acres of potentially suitable habitat and 1,858.11 ft^2 of pine BA on 92.42 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 104.76 ft^2 of pine BA on 3.01 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,895.88 ft^2 of pine BA on 96.81 acres of suitable habitat, and 1,235.96 ft^2 of pine BA on 74.83 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 1.45 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,295.26 ft^2 of pine BA on 80.20 acres of potentially suitable habitat and 1,836.58 ft^2 of pine BA on 91.44 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster J04-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,187.22 ft^2 of pine BA on 85.90 acres of suitable habitat, 432.19 ft^2 of pine BA on 11.41 acres of potentially suitable habitat and 1,734.35 ft^2 of pine BA on 98.37 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 158.76 ft^2 of pine BA on 3.78 acres of potentially suitable habitat and 5,195.00 ft^2 of pine BA on 191.90 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 143.66 ft^2 of pine BA on 5.83 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,112.64 ft^2 of pine BA on 83.84 acres of suitable habitat, 427.57 ft^2 of pine BA on 11.30 acres of potentially suitable habitat and 1,699.89 ft^2 of pine BA on 94.71 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 68.07 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 154.14 ft^2 of pine BA on 3.67 acres of potentially suitable habitat and 5,055.96 ft^2 of pine BA on 186.18 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster J05-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 50 feet of 1 of 11 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 3,110.24 ft^2 of pine BA on 82.76 acres of suitable habitat, 1,492.79 ft^2 of pine BA on 45.95 acres of potentially suitable habitat and 2,078.48 ft^2 of pine BA on 108.05 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 6,681.51 ft^2 of pine BA on 236.76 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 200.13 ft^2 of pine BA on 6.04 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,983.04 ft^2 of pine BA on 79.36 acres of suitable habitat, 1,453.67 ft^2 of pine BA on 44.69 acres of potentially suitable habitat and 2,044.67 ft^2 of pine BA on 106.67 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 29.86 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 6,481.38 ft^2 of pine BA on 230.72 acres of future potential habitat. There was no suitable or potentially suitable habitat (Table 6-19). This cluster can meet the RS in the future (Table 6-33).

FB Cluster J06-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,674.76 ft^2 of pine BA on 104.22 acres of suitable habitat and 501.55 ft^2 of pine BA on 57.10 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 4,176.31 ft^2 of pine BA on 161.33 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 98.63 ft^2 of pine BA on 3.38 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,607.26 ft^2 of pine BA on 102.53 acres of suitable habitat and 470.42 ft^2 of pine BA on 55.41 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 8.34 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 4,077.68 ft^2 of pine BA on 157.95 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

Cluster J06-01 was included in an Incidental Take Statement for the DMPRC (USFWS 2004a), however it was still inhabited by a PBG in 2006. FBCB personnel are currently conducting home range follows of this group as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster J06-03: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,630.60 ft^2 of pine BA on 211.95 acres of suitable habitat, 7.76 ft^2 of pine BA on 0.25 acre of potentially suitable habitat and 2,023.96 ft^2 of pine BA on 73.65 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 9,662.32 ft^2 of pine BA on 285.85 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 478.79 ft^2 of pine BA on 15.10 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 7,249.16 ft^2 of pine BA on 200.15 acres of suitable habitat, 7.76 ft^2 of pine BA on 0.25 acre of potentially suitable habitat and 1,926.61 ft^2 of pine BA on 70.35 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 14.80 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 9,183.53 ft^2 of pine BA on 270.75 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K02-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) and beaten area will remove 5 of 5 cavity trees which will result in “take” of the cluster by loss of cavity trees or harassment (Table 6-27 and 6-29).

The pre- project SMS foraging habitat totals were 315.11 ft^2 of pine BA on 10.03 acres of potentially suitable habitat and 5,936.56 ft^2 of pine BA on 253.93 acres of future potential habitat (Table 6-18). There was no suitable habitat.

The pre- project RS foraging habitat totals were 6,251.67 ft^2 of pine BA on 263.96 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 4,317.56 ft^2 of pine BA on 191.70 acres (Table 6-23 and Figure 6-14).

As a result of project impacts, 151.90 ft^2 of pine BA on 8.68 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 228.93 ft^2 of pine BA on 7.25 acres of potentially suitable habitat and 1,553.28 ft^2 of pine BA on 56.33 acres of future potential habitat (Table 6-18). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 52.70 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,782.21 ft^2 of pine BA on 63.58 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Tables 6-18, 6-19, 6-13, 6-29 and Figure 6-14).

FB Cluster K08-03: This cluster was inactive in 2002, captured by FB Cluster K08-02 in 2003 and had a PBG in 2004 to 2006 (Table 6-20). The cluster contained 6 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2010 Installation –wide Roads will have impacts within 50 feet of 1 of 6 cavity trees and 51 to 200 feet of 1 other cavity tree (Table 6-27).

The pre- project SMS foraging habitat totals were 3,551.58 ft^2 of pine BA on 98.31 acres of suitable habitat and 0.0 ft^2 of pine BA on 29.02 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 1,515.13 ft^2 of pine BA on 35.65 acres of suitable habitat and 2,036.45 ft^2 of pine BA on 91.68 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 234.76 ft^2 of pine BA on 6.85 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,316.82 ft^2 of pine BA on 92.05 acres of suitable habitat and 0.0 ft^2 of pine BA on 28.43 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 26.47 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,382.10 ft^2 of pine BA on 32.52 acres of suitable habitat and 1,934.72 ft^2 of pine BA on 87.96 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat. This partition may not meet the RS in the future (Table 6-33).

FB Cluster K08-04: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 6,554.22 ft^2 of pine BA on 177.18 acres of suitable habitat, 70.95 ft^2 of pine BA on 6.45 acres of potentially suitable habitat and 39.83 ft^2 of pine BA on 4.42 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 999.18 ft^2 of pine BA on 23.51 acres of suitable habitat and 5,665.82 ft^2 of pine BA on 164.54 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 519.94 ft^2 of pine BA on 13.67 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,048.14ft^2 of pine BA on 163.98 acres of suitable habitat, 70.95 ft^2 of pine BA on 6.45 acres of potentially suitable habitat and 25.97 ft^2 of pine BA on 3.95 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29 and Figure 6-

10). Loblolly pine that is at high risk of decline accounts for 33.12 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 862.75 ft^2 of pine BA on 20.30 acres of suitable habitat and 5,282.31 ft^2 of pine BA on 154.08 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K09-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,793.89 ft^2 of pine BA on 89.57 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 1,685.70 ft^2 of pine BA on 59.46 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,198.83 ft^2 of pine BA on 48.43 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 3,280.76 ft^2 of pine BA on 100.60 acres of future potential habitat (Table 6-19).

The 2010 Construction of Installation-wide Roads project will remove 37.94 ft^2 of pine BA on 1.23 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,776.90 ft^2 of pine BA on 89.05 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 1,664.75 ft^2 of pine BA on 58.75 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 0.19 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,198.83 ft^2 of pine BA on 48.43 acres of suitable habitat, 25.50 ft^2 of pine BA on 0.51 acre of potentially suitable habitat and 3,242.82 ft^2 of pine BA on 99.37 acres of future potential habitat (Table 6-19). This partition may not meet the RS in the future (Table 6-33).

FB Cluster K09-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 5,245.87 ft^2 of pine BA on 147.03 acres of suitable habitat, 2,224.00 ft^2 of pine BA on 44.48 acres of potentially suitable habitat and 661.84 ft^2 of pine BA on 59.62 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,224.00 ft^2 of pine BA on 44.48 acres of potentially suitable habitat and 5,907.71 ft^2 of pine BA on 206.65 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 219.88 ft^2 of pine BA on 9.99 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 5,073.72 ft^2 of pine BA on 141.95 acres of suitable habitat, 2,213.00 ft^2 of pine BA on 44.26 acres of potentially suitable habitat and 625.11 ft^2 of pine BA on 54.93 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 43.99 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,213.00 ft^2 of pine BA on 44.26 acres of potentially suitable habitat and 5,698.83 ft^2 of pine BA on 196.88 acres of future potential habitat (Table 6-18). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K10-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2010 Construction of Installation-wide Roads project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

FB Cluster K11-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 9,093.19 ft^2 of pine BA on 239.88 acres of suitable habitat, 174.08 ft^2 of pine BA on 5.12 acres of potentially suitable habitat and 717.70 ft^2 of pine BA on 77.22 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,532.46 ft^2 of pine BA on 84.19 acres of potentially suitable habitat and 6,452.51 ft^2 of pine BA on 238.03 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 78.01 ft^2 of pine BA on 2.58 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 9,073.66 ft^2 of pine BA on 239.33 acres of suitable habitat, 115.60 ft^2 of pine BA on 3.40 acres of potentially suitable habitat and 717.70 ft^2 of pine BA on 76.91 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 19.64 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,532.46 ft^2 of pine BA on 84.19 acres of potentially suitable habitat and 6,374.50 ft^2 of pine BA on 235.45 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

FB Cluster K11-03: This cluster had a PBG in 2002, a solitary male in 2003 and PBGs from 2004 to 2006 (Table 6-20). The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,426.04 ft^2 of pine BA on 40.17 acres of suitable habitat, 73.44 ft^2 of pine BA on 2.16 acres of potentially habitat and 2,517.23 ft^2 of pine BA on 111.63 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 4,016.71 ft^2 of pine BA on 153.96 acres of future potential habitat (Table 6-19). There was no suitable or potentiality suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 175.54 ft^2 of pine BA on 8.39 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 1,335.51 ft^2 of pine BA on 37.62 acres of suitable habitat, 71.06 ft^2 of pine BA on 2.09 acres of potentially suitable habitat and 2,434.60 ft^2 of pine BA on 105.86 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Tables 6-18, 6-29, 6-30 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 0.05 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,841.17 ft^2 of pine BA on 145.57 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-32).

FB Cluster K14-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 51 to 200 feet of 2 of 10 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 3,104.66 ft^2 of pine BA on 66.02 acres of suitable habitat and 2,014.31 ft^2 of pine BA on 145.86 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 5,118.97 ft^2 of pine BA on 211.89 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 196.71 ft^2 of pine BA on 4.95 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,946.08 ft^2 of pine BA on 62.93 acres of suitable habitat and 1,976.18 ft^2 of pine BA on 144.00 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-10). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 4,922.26 ft^2 of pine BA on 206.94 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K17-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2010 Repair and Upgrade Existing Training Area Roads project will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster K17-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 6,102.84 ft^2 of pine BA on 118.38 acres of suitable habitat and 623.87 ft^2 of pine BA on 45.47 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 6,726.71 ft^2 of pine BA on 163.84 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 128.14 ft^2 of pine BA on 4.63 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,034.27 ft^2 of pine BA on 117.02 acres of suitable habitat and 564.30 ft^2 of pine BA on 42.20 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29 and Figure 6-10). There is no loblolly pine at high risk of decline within this partition ().

The post- project RS foraging habitat totals were 6,598.57 ft^2 of pine BA on 159.21 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K17-05R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 6,658.60 ft^2 of pine BA on 144.10 acres of suitable habitat and 89.27 ft^2 of pine BA on 130.37 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 6,747.87 ft^2 of pine BA on 274.47 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 10.68 ft^2 of pine BA on 0.96 acre (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,647.92 ft^2 of pine BA on 143.86 acres of suitable habitat and 89.27 ft^2 of pine BA on 129.65 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 15.36 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 6,737.19 ft^2 of pine BA on 273.51 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K18-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). The 2010 Repair/ Upgrade Existing Training Area Roads project will have impacts within 51 to 200 feet of 2 of 9 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 6,052.18 ft^2 of pine BA on 121.71 acres of suitable habitat, 1,539.75 ft^2 of pine BA on 24.82 acres of potentially suitable habitat and 1,905.45 ft^2 of pine BA on 100.39 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 6,236.76 ft^2 of pine BA on 126.13 acres of potentially suitable habitat and 3,260.62 ft^2 of pine BA on 120.79 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 236.45 ft^2 of pine BA on 6.94 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 5,907.18 ft^2 of pine BA on 118.73 acres of suitable habitat, 1,522.21 ft^2 of pine BA on 24.40 acres of potentially suitable habitat and 1,831.54 ft^2 of pine BA on 96.85 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 3.89 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 6,074.21 ft^2 of pine BA on 122.73 acres of potentially suitable habitat and 3,186.71 ft^2 of pine BA on 117.25 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster currently meets the RS (Table 6-33).

FB Cluster K18-02R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 5,357.23 ft^2 of pine BA on 138.32 acres of suitable habitat, 665.48 ft^2 of pine BA on 16.69 acres of potentially suitable habitat and 1,013.52 ft^2 of pine BA on 45.67 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,090.90 ft^2 of pine BA on 71.04 acres of potentially suitable habitat and 3,945.33 ft^2 of pine BA on 129.64 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 127.17 ft^2 of pine BA on 3.16 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 5,278.25 ft^2 of pine BA on 136.38 acres of suitable habitat, 617.29 ft^2 of pine BA on 15.47 acres of potentially suitable habitat and 1,013.52 ft^2 of pine BA on 45.67 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 14.38 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,031.45 ft^2 of pine BA on 69.68 acres of potentially suitable habitat and 3,877.61 ft^2 of pine BA on 127.84 acres of future potential habitat (Table 6-18). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster K18-03R: This cluster was provisioned in 2006 and had a PBG in 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS and RS foraging habitat totals were 771.53 ft^2 of pine BA on 19.05 acres of potentially suitable habitat and 3,755.91 ft^2 of pine BA on 167.03 acres of future potential habitat (Table 6-18 and Table 6-19). There was no suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 110.79 ft^2 of pine BA on 3.62 acres (Table 6-24 and Figure 6-14).

The post- project SMS and RS foraging habitat totals were 701.87 ft^2 of pine BA on 17.33 acres of potentially suitable habitat and 3,714.78 ft^2 of pine BA on 165.13 acres of future potential habitat (Table 6-18 and Table 6-19). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-10). Loblolly pine that is at high risk of decline accounts for 60.59 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31). This cluster can meet the RS in the future (Table 6-32).

FB Cluster K21-02R: This cluster had a PBG from 2002 to 2004, was inactive in 2005 and had a PBG in 2006 (Table 6-20). The cluster contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 8,285.35 ft^2 of pine BA on 194.32 acres of suitable habitat and 780.02 ft^2 of pine BA on 33.15 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,639.38 ft^2 of pine BA on 51.25 acres of potentially suitable habitat and 6,425.99 ft^2 of pine BA on 176.22 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Heavy Maneuver Corridor – South (Maneuver Heavy Use Areas) will remove 508.05 ft^2 of pine BA on 14.54 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 7,877.77 ft^2 of pine BA on 184.05 acres of suitable habitat and 679.55 ft^2 of pine BA on 28.88 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster was inactive for 1 of the past 5 years and we do not expect this cluster to be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-10). Cluster K21-02R would meet the SMS as described in the Recovery Plan (USFWS 2003a), with 4,349.68 ft^2 of pine BA on 93.47 acres of suitable habitat using a minimum BA of 40 ft^2/ acre. Loblolly pine that is at high risk of decline accounts for 9.44 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,639.38 ft^2 of pine BA on 51.25 acres of potentially suitable habitat and 5,917.94 ft^2 of pine BA on 161.68 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster L02-01R: This cluster has been inactive for the past 5 years (Table 6-20). There are 5 cavity trees in various stages of completion and suitability (Appendix C). Five of 5 cavity trees will be subject to military training impacts as a result of the 2009 Heavy Maneuver Corridor – South (Table 6-28).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster L02-02R: This was inactive between 2002 and 2005 and had a PBG in 2006 (Table 6-20). There are 4 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Off-Road Drivers Training Area will remove 2 of 4 cavity trees and 2 others will have impacts within 51 to 200 feet. The latter cavity trees were considered to be "removed" because of the likelihood of tree mortality (see Section 5.2.4) (Table 6-27), however, this cluster was not considered to be "taken" by cavity tree removal, because it is likely that the cluster could be

shifted by installing artificial cavities.. Both trees are active and would be subject to harassment impacts, however, with the shift of the cluster this impact alone would not result in the "take" of the cluster.

The pre- project SMS foraging habitat totals were 4,677.98 ft^2 of pine BA on 119.30 acres of suitable habitat, 276.90 ft^2 of pine BA on 9.23 acres of potentially suitable habitat and 1,369.06 ft^2 of pine BA on 69.59 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 303.75 ft^2 of pine BA on 4.86 acres of potentially suitable habitat and 6,020.19 ft^2 of pine BA on 193.26 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Off Road Drivers Training project will remove 3,849.61 ft^2 of pine BA on 113.81 acres (Table 6-23 and Figure 6-14).

As a result of project impacts, 250.42 ft^2 of pine BA on 10.57 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,236.38 ft^2 of pine BA on 28.32 acres of suitable habitat, 197.70 ft^2 of pine BA on 6.59 acres of potentially suitable habitat and 789.83 ft^2 of pine BA on 38.83 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 46.32 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 303.75 ft^2 of pine BA on 4.86 acres of potentially suitable habitat and 1,920.16 ft^2 of pine BA on 68.88 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

FB Cluster O03-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,624.49 ft^2 of pine BA on 115.58 acres of suitable habitat and 621.96 ft^2 of pine BA on 40.60 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 982.58 ft^2 of pine BA on 19.68 acres of potentially suitable habitat and 4,263.87 ft^2 of pine BA on 136.50 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2010 Construction of Installation-wide Roads project will remove 52.44 ft^2 of pine BA on 1.06 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,572.05 ft^2 of pine BA on 114.52 acres of suitable habitat and 621.96 ft^2 of pine BA on 40.60 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 1.74 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 930.13 ft^2 of pine BA on 18.62 acres of potentially suitable habitat and 4,263.87 ft^2 of pine BA on 136.50 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster O05-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 20 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 11,088.51 ft^2 of pine BA on 218.46 acres of suitable habitat, 640.86 ft^2 of pine BA on 8.34 acres of potentially suitable habitat and 611.92 ft^2 of pine BA on 43.98 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 7,361.08 ft^2 of pine BA on 144.91 acres of potentially suitable habitat and 4,980.21 ft^2 of pine BA on 125.87 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 632.25 ft^2 of pine BA on 12.42 acres (Table 6-22 and Figure 6-14).

The 2010 Construction of Installation-wide Roads project will remove 209.76 ft^2 pine BA on 4.07 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 10,378.50 ft^2 of pine BA on 203.55 acres of suitable habitat, 510.40 ft^2 of pine BA on 6.79 acres of potentially suitable habitat and

610.38 ft^2 of pine BA on 43.95 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by the Alternative B Transformation projects (Table 6-18, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 21.65 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 7,361.08 ft^2 of pine BA on 144.91 acres of potentially suitable habitat and 4,158.20 ft^2 of pine BA on 109.38 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster currently meets the RS (Table 6-33).

FB Cluster O05-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,191.52 ft^2 of pine BA on 98.79 acres of suitable habitat, 456.87 ft^2 of pine BA on 10.20 acres of potentially suitable habitat and 955.31 ft^2 of pine BA on 31.70 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 642.12 ft^2 of pine BA on 12.98 acres of potentially suitable habitat and 4,941.58 ft^2 of pine BA on 127.71 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 1,069.90 ft^2 of pine BA on 23.38 acres (Table 6-22 and Figure 6-14).

The 2010 Construction of Installation-wide Roads project will remove 121.41 ft^2 pine BA on 2.51 acres of suitable habitat (Table 6-24 and Figure 6-14).

As a result of project impacts, 31.82 ft^2 of pine BA on 0.58 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 3,834.87 ft^2 of pine BA on 91.34 acres of suitable habitat, 294.25 ft^2 of pine BA on 8.47 acres of potentially suitable habitat and 231.45 ft^2 of pine BA on 14.41 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 2.43 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 591.66 ft^2 of pine BA on 11.66 acres of potentially suitable habitat and 3,768.91 ft^2 of pine BA on 102.26 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

FB Cluster O05-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 5 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 7,686.14 ft^2 of pine BA on 180.31 acres of suitable habitat, 454.18 ft^2 of pine BA on 11.40 acres of potentially suitable habitat and 818.05 ft^2 of pine BA on 43.92 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,555.84 ft^2 of pine BA on 74.08 acres of potentially suitable habitat and 5,402.53 ft^2 of pine BA on 161.55 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Fire and Movement Range (FM1) will remove 523.48 ft^2 of pine BA on 13.90 acres (Table 6-21 and Figure 6-14).

The 2008 Rifle/ Machinegun Zero Range – Z1 will remove 570.93 ft^2 of pine BA on 14.28 acres (Table 6-22 and Figure 6-14).

The 2008 Rifle/ Machinegun Zero Range – Z2 will remove 68.05 ft^2 of pine BA on 1.98 acres (Table 6-22 and Figure 6-14).

The post- project SMS foraging habitat totals were 6,658.03 ft^2 of pine BA on 154.73 acres of suitable habitat, 390.26 ft^2 of pine BA on 9.56 acres of potentially suitable habitat and 747.62 ft^2 of pine BA on 41.18 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by the Alternative B Transformation projects (Table 6-18, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 20.17 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,465.12 ft^2 of pine BA on 72.19 acres of potentially suitable habitat and 4,330.49 ft^2 of pine BA on 133.28 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster O07-03R: This cluster had a PBG in 2003, was inactive in 2004 and contained a PBG in 2004, 2005 and 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 2,822.41 ft^2 of pine BA on 70.64 acres of suitable habitat, 2,072.15 ft^2 of pine BA on 62.89 acres of potentially suitable habitat and 2,763.64 ft^2 of pine BA on 119.19 acres of future potential habitat (Table 6-19).

The pre- project RS foraging habitat totals were 7,658.20 ft^2 of pine BA on 252.72 acres of future potential habitat (Table 6-18). There was no suitable or potentially suitable habitat.

The 2011 Multi-Purpose Machine Gun Range (MPMG3) will remove 8.64 ft^2 of pine BA on 0.48 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,822.41 ft^2 of pine BA on 70.64 acres of suitable habitat, 2,072.15 ft^2 of pine BA on 62.89 acres of potentially suitable habitat and 2,755.00 ft^2 of pine BA on 118.71 acres of future potential habitat (Table 6-19). This cluster will not be taken at the cluster level by the Alternative B Transformation (Table 6-19, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 85.38 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 7649.56 ft^2 of pine BA on 252.24 acres of future potential habitat (Table 6-18). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster O08-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals 279.13 ft^2 of pine BA on 9.14 acres of potentially suitable habitat and 2,921.27 ft^2 of pine BA on 137.69 acres of future potential habitat (Table 6-18). There was not suitable habitat.

The pre- project RS foraging habitat totals were 3,200.40 ft^2 of pine BA on 146.83 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 455.19 ft^2 of pine BA on 19.02 acres (Table 6-21 and Figure 6-14).

The post- project SMS foraging habitat totals were 239.83 ft^2 of pine BA on 7.83 acres of potentially suitable habitat and 2,505.38 ft^2 of pine BA on 119.98 acres of future potential habitat (Table 6-18). There was no suitable habitat. This cluster will be taken at the cluster level by the Alternative B Transformation (Table 6-18, 6-29, 6-30 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,745.21 ft^2 of pine BA on 127.81 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition may not meet the RS in the future (Table 6-32).

FB Cluster O09-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,320.16 ft^2 of pine BA on 77.15 acres of suitable habitat and 2,897.78 ft^2 of pine BA on 116.11 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 2,152.92 ft^2 of pine BA on 44.39 acres of potentially suitable habitat and 4,065.02 ft^2 of pine BA on 148.87 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 338.64 ft^2 of pine BA on 13.28 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 3,320.16 ft^2 of pine BA on 77.15 acres of suitable habitat and 2,559.14 ft^2 of pine BA on 102.83 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 18.91 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,152.92 ft^2 of pine BA on 44.39 acres of potentially suitable habitat and 3,726.38 ft^2 of pine BA on 135.59 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster O09-03R: This cluster was inactive from 2002 to 2005 and was captured by another RCW group in 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range project will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster O09-04R: This cluster had a solitary male in 2002, was inactive from 2003 to 2005 and had a PBG in 2006 (Table 6-20). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and beaten area will remove 7 of 7 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-27 and 6-29)..

The pre- project SMS foraging habitat totals were 4,750.67 ft^2 of pine BA on 118.37 acres of suitable habitat, 1,674.92 ft^2 of pine BA on 53.69 acres of potentially suitable habitat and 1.28 ft^2 of pine BA on 52.52 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,267.44 ft^2 of pine BA on 81.42 acres of potentially suitable habitat and 3,159.43 ft^2 of pine BA on 143.16 acres of future potential habitat (Table 6-19, 6-29 and 6-30). There was no suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 4,378.74 ft^2 of pine BA on 146.00 acres (Table 6-21 and Figure 6-14).

As a result of project impacts, 58.79 ft^2 of pine BA on 17.98 acres will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 1,637.54 ft^2 of pine BA on 39.77 acres of suitable habitat, 350.52 ft^2 of pine BA on 10.16 acres of potentially suitable habitat and 1.28 ft^2 of pine BA on 10.67 acres of future potential habitat (Table 6-18). This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 42.46 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 372.40 ft^2 of pine BA on 9.31 acres of potentially suitable habitat and 1,616.94 ft^2 of pine BA on 51.29 acres of future potential habitat

(Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-18, 6-19, 6-13, 6-29 and Figure 6-14).

FB Cluster O09-05R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) and beaten area will remove 6 of 6 cavity trees which will result in "take" of the cluster by loss of cavity trees (Table 6-27 and 6-29).

The pre- project SMS foraging habitat totals were 8,833.70 ft^2 of pine BA on 183.45 acres of suitable habitat, 1,988.24 ft^2 of pine BA on 57.63 acres of potentially suitable habitat and 766.33 ft^2 of pine BA on 44.10 acres of future potential habitat (Table 6-19).

The pre- project RS foraging habitat totals were 2,385.30 ft^2 of pine BA on 49.94 acres of potentially suitable habitat and 9,202.97 ft^2 of pine BA on 235.24 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR1) will remove 9,125.81 ft^2 of pine BA on 241.05 acres (Table 6-21 and Figure 6-14).

As a result of project impacts, 3.22 ft^2 of pine BA on 0.13 acre will be non-contiguous and cannot be counted towards the available foraging habitat for the partition.

The post- project SMS foraging habitat totals were 2,288.36 ft^2 of pine BA on 37.93 acres of suitable habitat, 16.21 ft^2 of pine BA on 0.47 acre of potentially suitable habitat and 154.67 ft^2 of pine BA on 5.60 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-18), however, if the cluster is shifted to the north with installation of artificial cavity trees, and the foraging habitat from neighboring "taken" partitions is reallocated and managed, O09-05 can meet SMS (Figure 6-20) (See Section 9). Loblolly pine that is at high risk of decline accounts for 10.57 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,459.24 ft^2 of pine BA on 44.00 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

This partition can meet the RS in the future with reallocation of habitat from neighboring "taken" partitions (Table 6-32).

This cluster will be taken at the cluster level by Alternative B Transformation projects due to cavity tree loss and loss of foraging habitat (Table 6-18, 6-19, 6-13, 6-29 and Figure 6).

FB Cluster O10-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,411.15 ft^2 of pine BA on 43.42 acres of suitable habitat, 2,590.53 ft^2 of pine BA on 69.18 acres of potentially suitable habitat and 1,194.72 ft^2 of pine BA on 114.70 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 5,196.40 ft^2 of pine BA on 227.30 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Tank/ Fighting Vehicle Stationary Gunnery Range (SGR2) will remove 46.20 ft^2 of pine BA on 1.63 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 1,411.15 ft^2 of pine BA on 43.42 acres of suitable habitat, 2,562.89 ft^2 of pine BA on 68.61 acres of potentially suitable habitat and 1,176.17 ft^2 of pine BA on 113.64 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-18). Loblolly pine that is at high risk of decline accounts for 65.28 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 5,150.21 ft^2 of pine BA on 225.67 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster Q02-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 13 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 2,364.38 ft^2 of pine BA on 62.85 acres of suitable habitat, 3,336.99 ft^2 of pine BA on 88.21 acres of potentially suitable habitat and 107.52 ft^2 of pine BA on 6.58 acres of future potential habitat (Table 6-18).

The 2009 Army Officer Basic Course HQ Complex will remove 150.54 ft^2 of pine BA on 4.74 acres (Table 6-23 and Figure 6-14).

The 2009 Tank Trail Construction will remove 65.35 ft^2 of pine BA on 1.78 acres (Table 6-23 and Figure 6-15).

The pre- project RS foraging habitat totals were 5,808.89 ft^2 of pine BA on 157.64 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The post- project SMS foraging habitat totals were 2,302.77 ft^2 of pine BA on 61.25 acres of suitable habitat, 3,182.71 ft^2 of pine BA on 83.29 acres of potentially suitable habitat and 107.52 ft^2 of pine BA on 6.58 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 58.67 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 5,593.00 ft^2 of pine BA on 151.12 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster Q02-04R: This cluster was inactive in 2002 and had a PBG from 2003 to 2006 (Table 6-20). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,493.76 ft^2 of pine BA on 96.01 acres of suitable habitat, 2,263.46 ft^2 of pine BA on 52.80 acres of potentially suitable habitat and 108.20 ft^2 of pine BA on 82.81 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 5,865.42 ft^2 of pine BA on 231.62 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Tank Trail Construction will remove 8.82 ft^2 of pine BA on 0.26 acre (Table 6-23 and Figure 6-15).

The 2009 Good Hope Maneuver Area will remove 423.25 ft^2 of pine BA on 9.99 acre (Table 6-23 and Figure 6-15).

The post- project SMS foraging habitat totals were 3,452.18 ft^2 of pine BA on 95.02 acres of suitable habitat, 1,872.97 ft^2 of pine BA on 43.64 acres of potentially suitable habitat and

108.20 ft^2 of pine BA on 82.71 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-19). Loblolly pine that is at high risk of decline accounts for 58.29 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 5,433.35 ft^2 of pine BA on 221.37 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster R01-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Vehicle Recovery Area will have impacts within 51 to 200 feet of 12 of 12 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 2,182.36 ft^2 of pine BA on 48.48 acres of suitable habitat, 1,321.06 ft^2 of pine BA on 34.79 acres of potentially suitable habitat and 1,853.97 ft^2 of pine BA on 86.18 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,336.55 ft^2 of pine BA on 23.72 acres of potentially suitable habitat and 4,020.84ft^2 of pine BA on 145.73 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 Infrastructure Support will remove 268.80 ft^2 of pine BA on 4.48 (Table 6-22 and Figure 6-13).

The 2009 Vehicle Recovery Area will remove 4,983.69 ft^2 of pine BA on 151.66 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 20.06 ft^2 of pine BA on 1.52 acres (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 43.50 ft^2 of pine BA on 1.44 acres of suitable habitat and 41.34 ft^2 of pine BA on 10.35 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-16). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 0.60 ft^2 of pine BA on 0.01 acre of potentially suitable habitat and 84.24 ft^2 of pine BA on 11.78 acres of future potential habitat

(Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

FB Cluster R01-02R: This cluster has been inactive for the past 5 years (Table 6-20). There are 8 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Vehicle Recovery Area will have impacts within 51 to 200 feet of 8 of 8 inactive cavity trees (Table 6-28).

Since this cluster was inactive, no foraging habitat analysis was conducted.

FB Cluster R01-03R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 14 cavity trees in various stages of completion and suitability (Appendix C). The 2009 Vehicle Recovery Area will have impacts within 51 to 200 feet of 14 of 14 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 871.78 ft^2 of pine BA on 27.68 acres of potentially suitable habitat and 557.29 ft^2 of pine BA on 40.59 acres of future potential habitat (Table 6-18). There was no suitable habitat.

The pre- project RS foraging habitat totals were 1,429.07 ft^2 of pine BA on 68.27 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Vehicle Recovery Area will remove 848.83 ft^2 of pine BA on 40.60 acres (Table 6-23 and Figure 6-13).

The 2009 Tank Trail Construction will remove 2.79 ft^2 of pine BA on 0.25 acre (Table 6-23 and Figure 6-13).

The post- project SMS foraging habitat totals were 91.76 ft^2 of pine BA on 2.96 acres of potentially suitable habitat and 485.69 ft^2 of pine BA on 24.46 acres of future potential habitat (Table 6-18). There was no suitable habitat. This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 100 % of the SMS post-project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 577.45 ft^2 of pine BA on 27.42 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

FB Cluster R02-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 6 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,286.40 ft^2 of pine BA on 80.87 acres of suitable habitat, 846.09 ft^2 of pine BA on 11.33 acres of potentially suitable habitat and 2,093.80 ft^2 of pine BA on 96.48 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,911.17 ft^2 of pine BA on 32.29 acres of potentially suitable habitat and 4,315.12 ft^2 of pine BA on 156.39 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 General Instruction Building Complex will remove 210.25 ft^2 of pine BA on 12.20 acres (Table 6-22 and Figure 6-13).

The 2008 Road Improvements will remove 29.96 ft^2 of pine BA on 1.37 acres (Table 6-22 and Figure 6-13).

The 2009 Vehicle Recovery Area will remove 771.13 ft^2 of pine BA on 20.58 acres (Table 6-23 and Figure 6-13).

The 2011 3 ID Brigade Combat Team Complex will remove 17.09 ft^2 of pine BA on 0.67 acre (Table 6-25 and Figure 6-13).

The 2011 Physical Fitness Center with Pool will remove 174.11 ft^2 of pine BA on 6.57 acres (Table 6-25 and Figure 6-13).

The 2012 DS/ GS Vehicle Maintenance Facility will remove 259.82 ft^2 of pine BA on 6.34 acres (Table 6-26 and Figure 6-13).

The post- project SMS foraging habitat totals were 2,360.43 ft^2 of pine BA on 56.29 acres of suitable habitat, 720.09 ft^2 of pine BA on 9.53 acres of potentially suitable habitat and 1,683.40 ft^2 of pine BA on 75.13 acres of future potential habitat (Table 6-18). This cluster <u>will</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-16). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 1,644.97 ft^2 of pine BA on 25.86 acres of potentially suitable habitat and 3,118.95 ft^2 of pine BA on 115.09 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition may not meet the RS in the future (Table 6-32).

FB Cluster S02-01: This cluster had a PBG from 2002 to 2006 (Table 6-20). The cluster contained 12 cavity trees in various stages of completion and suitability (Appendix C).

The 2009 Drivers Training Course will only impact non- contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster SHC-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 14 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,129.81 ft^2 of pine BA on 27.00 acres of suitable habitat, 6,275.47 ft^2 of pine BA on 155.73 acres of potentially suitable habitat and 1,524.38 ft^2 of pine BA on 62.06 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 1,569.93 ft^2 of pine BA on 36.51 acres of potentially suitable habitat and 7,359.73 ft^2 of pine BA on 208.27 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2008 Health Clinic Expansion – Winder will remove 9.24 ft^2 of pine BA on 0.39 acre (Table 6-22 and Figure 6-13).

The 2008 Reception Station Barracks and Processing Center will remove 968.72 ft^2 of pine BA on 24.86 (Table 6-22 and Figure 6-13).

The 2008 Infrastructure Support will remove 48.32 ft^2 of pine BA on 1.38 (Table 6-22 and Figure 6-13).

The post- project SMS foraging habitat totals were 1,121.07 ft^2 of pine BA on 26.77 acres of suitable habitat, 5,286.05ft^2 of pine BA on 130.41 acres of potentially suitable habitat and 1,496.26 ft^2 of pine BA on 60.98 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 50.40 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,565.63 ft^2 of pine BA on 36.41 acres of potentially suitable habitat and 6,337.75 ft^2 of pine BA on 181.74 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

This cluster had 0 active clusters within 1.25 miles pre-project. Habitat between it and the nearest active cluster, U04-01R, will become more fragmented as a result of cantonment area projects, therefore it will be at more risk of cluster abandonment due to the proposed action.

This cluster is expected to be "taken" at the group level (See Section 6.10.6.).

FB Cluster T01-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 10 cavity trees in various stages of completion and suitability (Appendix C). Construction of the 2009 Combined Arms Collective Training Facility Phase II will have impacts within 50 feet of 1 of 10 cavity trees and 51 to 200 feet of 1 of 10 cavity trees (Table 6-27).

The pre- project SMS foraging habitat totals were 2,842.16 ft^2 of pine BA on 84.53 acres of suitable habitat, 584.97 ft^2 of pine BA on 18.87 acres of potentially suitable habitat and 947.22 ft^2 of pine BA on 41.77 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 4,347.35 ft^2 of pine BA on 145.17 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 73.13 ft^2 of pine BA on 2.65 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,783.89 ft^2 of pine BA on 82.66 acres of suitable habitat, 584.97 ft^2 of pine BA on 18.87 acres of potentially suitable habitat and 932.36 ft^2 of pine BA on 40.99 acres of future potential habitat (Table 6-18). This cluster will <u>not</u> be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 1.70 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 4,301.22 ft^2 of pine BA on 142.52 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This partition cannot meet the RS in the future (Table 6-33).

FB Cluster T02-01: This cluster was captured in 2002, was inactive from 2003 to 2005 and contained a solitary male in 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 1,027.84 ft^2 of pine BA on 28.16 acres of suitable habitat and 3,019.41 ft^2 of pine BA on 155.05 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 4,047.25 ft^2 of pine BA on 183.21 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 39.95 ft^2 of pine BA on 12.00 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 1,027.84 ft^2 of pine BA on 28.16 acres of suitable habitat and 2,979.46 ft^2 of pine BA on 143.05 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 96.81 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 4,007.30 ft^2 of pine BA on 171.21 acres of future potential habitat (Table 6-19). There was no suitable or potentially habitat. This cluster can meet the RS in the future (Table 6-32).

FB Cluster T02-02R: This cluster had a PBG in 2002 and 2003, was captured in 2004 and had a PBG in 2005 and 2006 (Table 6-20). The cluster contained 7 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The 2012 Rail Car Storage/ Tracks for Deployment project will only impact non-contiguous habitat and a foraging habitat analysis was not conducted.

FB Cluster T03-02: This cluster had a PBG from 2002 to 2006 (Table 6-20). The cluster contained 9 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 5,622.26 ft^2 of pine BA on 149.60 acres of suitable habitat, 690.06 ft^2 of pine BA on 16.43 acres of potentially suitable habitat and 840.90 ft^2 of pine BA on 34.45 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,868.18 ft^2 of pine BA on 68.29 acres of potentially suitable habitat and 4,285.04 ft^2 of pine BA on 132.19 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Combined Arms Collective Training facility, Phase II will remove 105.43 ft^2 of pine BA on 5.50 acres (Table 6-23 and Figure 6-14).

The post- project SMS foraging habitat totals were 5,569.26 ft^2 of pine BA on 148.05 acres of suitable habitat, 686.70 ft^2 of pine BA on 16.35 acres of potentially suitable habitat and 780.74 ft^2 of pine BA on 32.18 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 10.11 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 2,864.82 ft^2 of pine BA on 68.21 acres of potentially suitable habitat and 4,171.88 ft^2 of pine BA on 128.37 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster T03-04R: This cluster was captured by FB Cluster T01-01 in 2004 and 2005 and had a PBG in 2006 (Table 6-20). The cluster contained 4 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,286.09 ft^2 of pine BA on 113.11 acres of suitable habitat and 1,011.66 ft^2 of pine BA on 51.05 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 100.86 ft^2 of pine BA on 2.46 acres of potentially suitable habitat and 5,196.89 ft^2 of pine BA on 161.70 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2009 Combined Arms Collective Training Facility Phase II project will remove 105.43 ft^2 of pine BA on 5.50 acres (Table 6-24 and Figure 6-14).

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 177.94 ft^2 of pine BA on 5.13 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,129.15 ft^2 of pine BA on 108.98 acres of suitable habitat and 885.23 ft^2 of pine BA on 44.55 acres of future potential habitat (Table 6-18). This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). There is no loblolly pine at high risk of decline within this partition (Table 6-31).

The post- project RS foraging habitat totals were 75.44 ft^2 of pine BA on 1.84 acres of potentially suitable habitat and 4,938.94 ft^2 of pine BA on 151.69 acres of future potential habitat (Table 6-19). There was no suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster T04-01: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 12 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 4,815.90 ft^2 of pine BA on 129.83 acres of suitable habitat and 72.52 ft^2 of pine BA on 23.88 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat.

The pre- project RS foraging habitat totals were 444.60 ft^2 of pine BA on 9.88 acres of suitable habitat and 4,443.82 ft^2 of pine BA on 143.83 acres of future potential habitat (Table 6-19). There was no potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 76.77 ft^2 of pine BA on 1.61 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 4,745.85 ft^2 of pine BA on 128.36 acres of suitable habitat and 65.80 ft^2 of pine BA on 23.74 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster will not be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 15.64 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 429.75 ft^2 of pine BA on 9.55 acres of suitable habitat and 4,381.90 ft^2 of pine BA on 142.55 acres of future potential habitat (Table 6-18). There was no potentially suitable habitat. This cluster can meet the RS in the future (Table 6-33).

FB Cluster T05-02: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 11 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 2,120.44 ft^2 of pine BA on 62.61 acres of suitable habitat, 394.27 ft^2 of pine BA on 8.86 acres of potentially suitable habitat and 659.27 ft^2 of pine BA on 110.82 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 3,173.98 ft^2 of pine BA on 182.29 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat.

The 2010 Repair/ Upgrade Existing Training Area Roads project will remove 50.76 ft^2 of pine BA on 1.22 acres (Table 6-24 and Figure 6-14).

The post- project SMS foraging habitat totals were 2,069.68 ft^2 of pine BA on 61.39 acres of suitable habitat, 394.27 ft^2 of pine BA on 8.86 acres of potentially suitable habitat and 659.27 ft^2 of pine BA on 110.82 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-17). Loblolly pine that is at high risk of decline accounts for 0.26 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 3,123.22 ft^2 of pine BA on 181.07 acres of future potential habitat (Table 6-19). There was no suitable or potentially suitable habitat. This cluster can meet the RS in the future (Table 6-32).

Cluster T05-02 is currently monitored as a minimization effort for the DMPRC (FBCB, unpub. data).

FB Cluster U04-01R: This cluster had a PBG from 2002 to 2006 (Table 6-20) and contained 8 cavity trees in various stages of completion and suitability (Appendix C). No cavity trees will be taken or impacted by Alternative B Transformation projects.

The pre- project SMS foraging habitat totals were 3,401.68 ft^2 of pine BA on 71.18 acres of suitable habitat, 560.15 ft^2 of pine BA on 14.89 acres of potentially suitable habitat and 622.81 ft^2 of pine BA on 46.09 acres of future potential habitat (Table 6-18).

The pre- project RS foraging habitat totals were 2,536.78 ft^2 of pine BA on 50.29 acres of potentially suitable habitat and 2,047.86 ft^2 of pine BA on 81.87 acres of future potential habitat (Table 6-19). There was no suitable habitat.

The 2007 Trainee Barracks Complex 2 will remove 1,454.16 ft^2 of pine BA on 40.02 acres (Table 6-21 and Figure 6-13).

The post- project SMS foraging habitat totals were 2,286.63 ft^2 of pine BA on 45.59 acres of suitable habitat, 560.15 ft^2 of pine BA on 14.89 acres of potentially suitable habitat and 283.70 ft^2 of pine BA on 31.66 acres of future potential habitat (Table 6-18). This cluster will be taken at the cluster level by Alternative B Transformation projects due to loss of foraging habitat (Table 6-18, 6-29, 6-30 and Figure 6-16). Loblolly pine that is at high risk of decline accounts for 29.48 % of the SMS post- project suitable and potentially suitable acreage (Table 6-31).

The post- project RS foraging habitat totals were 1,936.23 ft^2 of pine BA on 38.38 acres of potentially suitable habitat and 1,194.25 ft^2 of pine BA on 53.76 acres of future potential habitat (Table 6-19). There was no suitable habitat. This partition cannot meet the RS in the future (Table 6-32).

6.10.6 GROUP LEVEL ANALYSES

6.10.6.1 Alternatives A and B

The Group Level Analysis evaluates density effects to clusters directly impacted by Alternative A and Alternative B Transformation projects, but not "taken" at the cluster level. Four clusters (D18-01R,K10-01R, K11-02R and SHC-02) were considered "taken" for both Alternative A and Alternative B due to project related group density reduction around the subject clusters (Tables 6-13, 6-29, 6-34 and 6-35 and Figures 6-21 and 6-22).

D08-01R. This cluster had 0 active clusters within 1.25 miles pre-project. Habitat between D18-01R and the nearest active clusters, D16-01 and D16-02, is fragmented by young pine plantations and will become more so with the proposed Maneuver Corridor – South; therefore, this cluster will be at a greater risk of cluster abandonment due to the proposed action.

K10-01. Under Alternative A and B, this cluster's group density will be reduced from 2 active clusters within 1.25 miles to 1 cluster within 1.25 miles.

K11-02. Under Alternative A and B, this cluster's group density will be reduced from 2 active clusters within 1.25 miles to 1 cluster within 1.25 miles.

Table 6-34. Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Alternative A Transformation projects, Fort Benning, Georgia.

	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
Southern Ranges	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
A15-03	19	dense	16	dense	N	N
A17-01	13	dense	10	dense	Y	N/A
A17-02	10	dense	7	dense	Y	N/A
A17-03	16	dense	13	dense	Y	N/A
A17-04	14	dense	11	dense	N	N
A17-05	14	dense	10	dense	N	N
A17-07	11	dense	7	dense	N	N
A17-08	11	dense	6	dense	N	N
A17-13	15	dense	11	dense	N	N
A17-14	18	dense	15	dense	Y	N/A
Average density =	**14.10**		**10.60**			
Cantonment						
BB03-01R	4	moderate	3	moderate	Y	N/A
BB04-01R	6	dense	4	moderate	N	N
BB05-01R	5	dense	3	moderate	N	N
C01-02	10	dense	9	dense	Y	N/A
C01-03	10	dense	9	dense	Y	N/A
C02-02	7	dense	5	dense	N	N
HCC-03R	5	dense	5	dense	Y	N/A
HCC-08R	10	dense	7	dense	N	N
HCC-10R	6	dense	5	dense	N	N
HCC-11R	7	dense	6	dense	Y	N/A
R01-03R	6	dense	6	dense	N	N
R02-01R	9	dense	8	dense	N	N
SHC-02	0	N/A	0	N/A	N	Y
U04-01R	3	moderate	3	moderate	Y	N/A
Average density =	**6.29**		**5.21**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-34 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative A, Fort Benning, Georgia.

Southern Maneuver Corridor and Drivers Training Course	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
D05-02R	6	dense	5	dense	N	N
D05-04R	9	dense	8	dense	N	N
D06-01R	7	dense	5	dense	N	N
D08-01R	0	N/A	0	N/A	N	Y
D10-01	9	dense	6	dense	Y	N/A
D11-01	10	dense	7	dense	Y	N/A
D11-02	10	dense	6	dense	Y	N/A
D16-02	6	dense	5	dense	Y	N/A
D17-04R	9	dense	5	dense	N	N
E02-01R	15	dense	13	dense	N	N
E03-01	15	dense	9	dense	N	N
E04-01	12	dense	8	dense	Y	N/A
E08-05R	13	dense	10	dense	N	N
F02-01R	4	moderate	4	moderate	Y	N/A
J01-02R	8	dense	5	dense	Y	N/A
J02-02R	11	dense	8	dense	N	N
J03-01	10	dense	4	moderate	Y	N/A
J04-01	9	dense	5	moderate	Y	N/A
J05-01	9	dense	4	moderate	Y	N/A
J06-03	14	dense	5	moderate	N	N
K21-02R	3	moderate	3	moderate	N	N
L02-02R	3	moderate	1	sparse	Y	N/A
L03-01	4	moderate	2	sparse	Y	N/A
O12-04R	5	dense	3	moderate	Y	N/A
T01-01	12	dense	7	dense	N	N
T02-01	12	dense	8	dense	Y	N/A
T02-02R	9	dense	7	dense	N	N
T03-02	11	dense	6	dense	Y	N/A
T03-04R	12	dense	8	dense	Y	N/A
T04-01	15	dense	9	dense	N	N
T04-03R	13	dense	9	dense	Y	N/A
T05-02	13	dense	8	dense	N	N
Average density =	**9.31**		**6.03**			

Density rating: 4.7 active clusters within 1.25 miles = dense

2.6 - 4.6 active clusters within 1.25 miles = moderate

2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-34 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative A, Fort Benning, Georgia.

Northern Maneuver Corridor and Oscar Ranges	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
M08-04R	9	dense	7	dense	N	N
M08-05R	10	dense	6	dense	N	N
O01-01	13	dense	5	dense	N	N
O01-02	11	dense	6	dense	Y	N/A
O01-03	10	dense	6	dense	Y	N/A
O01-04R	11	dense	5	dense	N	N
O02-01	10	dense	7	dense	N	N
O03-01	11	dense	5	dense	Y	N/A
O03-02	8	dense	6	dense	N	N/A
O03-03	8	dense	4	moderate	Y	N/A
O03-04	13	dense	6	dense	Y	N/A
O03-05	8	dense	7	dense	N	N/A
O03-06R	10	dense	5	dense	Y	N/A
O03-07	9	dense	6	dense	N	N/A
O04-03	10	dense	7	dense	Y	N/A
O05-01	6	dense	6	dense	N	N
O05-02	7	dense	5	dense	N	N
O05-03R	6	dense	5	dense	N	N
O11-01	9	dense	4	moderate	N	N
O14-01	11	dense	6	dense	Y	N/A
O14-02	6	dense	2	sparse	Y	N/A
O14-03R	8	dense	4	moderate	Y	N/A
O15-01	11	dense	5	dense	Y	N/A
O15-02	10	dense	3	moderate	Y	N/A
O15-03	12	dense	5	dense	Y	N/A
Average density =	**9.48**		**5.32**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-34 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative A, Fort Benning, Georgia.

	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
Stationary Gunnery Ranges	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
K02-01	8	dense	7	dense	Y	N/A
O07-03R	6	dense	3	moderate	N	N
O08-03R	7	dense	5	dense	Y	N/A
O09-02	9	dense	5	dense	N	N
O09-03R	8	dense	4	moderate	N	N
O09-04R	7	dense	5	dense	Y	N/A
O09-05R	6	dense	3	moderate	Y	N/A
O10-01	9	dense	8	dense	N	N
Average density =	**7.50**		**5.00**			
Tank Trails						
A06-01	8	dense	6	dense	N	N
A07-01	8	dense	7	dense	Y	N/A
Average density =	**8.00**		**6.50**			
Installation, Training and Upgraded Roads						
K08-03	7	dense	7	dense	N	N
K08-04	9	dense	9	dense	N	N
K09-01	9	dense	9	dense	N	N
K09-03R	3	moderate	3	moderate	N	N
K10-01R	2	sparse	1	sparse	N	Y
K11-02	2	sparse	1	sparse	N	Y
K11-03	2	sparse	2	sparse	Y	N/A
K14-01R	1	sparse	1	sparse	Y	N/A
K17-01	5	dense	5	dense	N	N
K17-02	5	dense	5	dense	N	N
K17-05R	4	moderate	4	moderate	N	N
K18-01	2	sparse	2	sparse	N	N
K18-02R	3	moderate	3	moderate	N	N
K18-03R	3	moderate	3	moderate	Y	N/A
Average density =	**4.07**		**3.93**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-35. Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative B, Fort Benning, Georgia.

	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
Southern Ranges	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
A15-03	19	dense	16	dense	N	N
A17-01	13	dense	10	dense	Y	N/A
A17-02	10	dense	7	dense	Y	N/A
A17-03	16	dense	13	dense	Y	N/A
A17-04	14	dense	11	dense	N	N
A17-05	14	dense	10	dense	N	N
A17-07	11	dense	7	dense	N	N
A17-08	11	dense	6	dense	N	N
A17-13	15	dense	11	dense	N	N
A17-14	18	dense	15	dense	Y	N/A
Average density =	**14.10**		**10.60**			
Cantonment						
BB03-01R	4	moderate	3	moderate	Y	N/A
BB04-01R	6	dense	4	moderate	N	N
BB05-01R	5	dense	3	moderate	N	N
HCC-03R	5	dense	4	moderate	Y	N/A
HCC-08R	10	dense	9	dense	N	N
HCC-10R	6	dense	5	dense	N	N
HCC-11R	7	dense	5	dense	Y	N/A
R01-01	3	moderate	1	sparse	Y	N/A
R01-03R	6	dense	4	moderate	Y	N/A
R02-01R	9	dense	7	dense	Y	N/A
S02-01R	10	dense	8	dense	N	N
SHC-02	0	-	0	-	N	Y
U04-01R	3	moderate	3	moderate	Y	N/A
Average density =	**5.69**		**4.31**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-35 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Alternative B Transformation projects, Fort Benning, Georgia.

Southern Maneuver Corridor and Drivers Training Course	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
D05-02R	6	dense	5	dense	N	N
D05-04R	9	dense	8	dense	N	N
D06-01R	7	dense	5	dense	N	N
D08-01R	0	N/A	0	N/A	N	Y
D10-01	9	dense	6	dense	Y	N/A
D11-01	10	dense	7	dense	Y	N/A
D11-02	10	dense	6	dense	Y	N/A
D16-02	6	dense	5	dense	Y	N/A
D17-04R	9	dense	5	dense	N	N
E02-01R	15	dense	14	dense	N	N
E03-01	15	dense	11	dense	N	N
E04-01	12	dense	9	dense	Y	N/A
E08-05R	13	dense	11	dense	N	N
F02-01R	4	moderate	4	moderate	Y	N/A
J02-02R	11	dense	8	dense	N	N
J03-01	10	dense	9	dense	N	N
J04-01	9	dense	8	dense	N	N
J05-01	9	dense	7	dense	N	N
J06-03	14	dense	7	dense	N	N
K21-02R	3	moderate	3	moderate	N	N
L02-02R	3	moderate	3	moderate	Y	N/A
T01-01	12	dense	11	dense	N	N
T02-01	12	dense	12	dense	Y	N/A
T02-02R	9	dense	6	dense	N	N
T03-02	11	dense	10	dense	N	N/A
T03-04R	12	dense	11	dense	N	N/A
T04-01	15	dense	11	dense	N	N
T05-02	13	dense	12	dense	Y	N/A
Average density =	**9.57**		**7.64**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-35 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative B, Fort Benning, Georgia.

Oscar Ranges	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
O03-02	8	dense	6	dense	N	N
O05-01	6	dense	6	dense	N	N
O05-02	7	dense	7	dense	N	N
O05-03R	6	dense	6	dense	N	N
Average density =	**6.75**		**6.25**			
Stationary Gunnery Ranges						
K02-01	8	dense	7	dense	Y	N/A
O07-03R	6	dense	3	moderate	N	N
O08-03R	7	dense	5	dense	Y	N/A
O09-02	9	dense	5	dense	N	N
O09-03R	8	dense	4	moderate	N	N
O09-04R	7	dense	5	dense	Y	N/A
O09-05R	6	dense	3	moderate	Y	N/A
O10-01	9	dense	8	dense	N	N
Average density =	**7.50**		**5.00**			
Tank Trails						
A06-01	8	dense	6	dense	N	N
A07-01	8	dense	7	dense	Y	N/A
A08-01	10	dense	10	dense	N	N
A08-02a	9	dense	9	dense	N	N
A09-03R	6	dense	6	dense	N	N
A09-05	9	dense	9	dense	N	N
A20-06	7	dense	5	dense	N	N
Q02-02	8	dense	8	dense	N	N
Q02-04R	4	dense	4	dense	N	N
Average density =	**7.67**		**7.11**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

Table 6-35 (cont.). Pre- and post- project densities of red-cockaded woodpecker (RCW) clusters within 1.25 miles of clusters impacted by Transformation projects, Alternative B, Fort Benning, Georgia.

Installation, Training and Upgraded Roads	Pre- Project		Post- Project		Cluster Level Take Y/N	Group Level Take (Y/N)
	# Active Clusters within 1.25 Miles	Density Rating	# Active Clusters within 1.25 Miles	Density Rating		
K08-03	7	dense	7	dense	N	N
K08-04	9	dense	9	dense	N	N
K09-01	9	dense	9	dense	N	N
K09-03R	3	moderate	3	moderate	N	N
K10-01R	2	sparse	1	sparse	N	Y
K11-02	2	sparse	1	sparse	N	Y
K11-03	2	sparse	2	sparse	Y	N/A
K14-01R	1	sparse	1	sparse	Y	N/A
K17-01	5	dense	5	dense	N	N
K17-02	5	dense	5	dense	N	N
K17-05R	4	moderate	4	moderate	N	N
K18-01	2	sparse	2	sparse	N	N
K18-02R	3	moderate	3	moderate	N	N
K18-03R	3	moderate	3	moderate	Y	N/A
Average density =	**4.07**		**3.93**			

Density rating: 4.7 active clusters within 1.25 miles = dense
2.6 - 4.6 active clusters within 1.25 miles = moderate
2.5 active clusters within 1.25 miles = sparse

N/A = If subject cluster was "taken" at cluster level, it was not considered for "take" at group level.

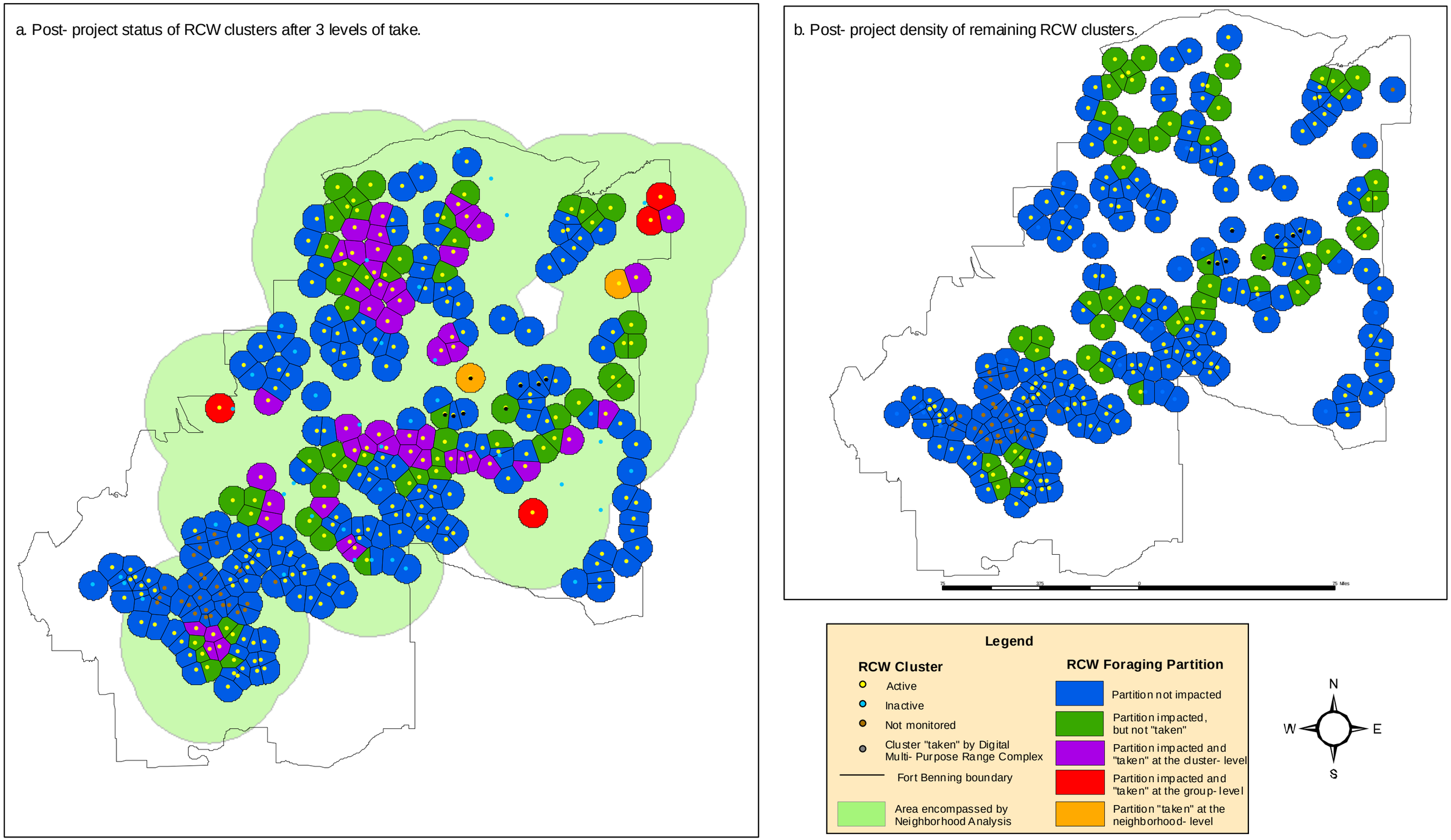


Figure 6-21. (a.) Post- project status of red-cockaded woodpecker (RCW) clusters after cluster, group (1.25 mile radius) and neighborhood (2.57 mile radius) analyses and (b.) post- project density of RCW clusters, Alternative A, Fort Benning, Georgia.

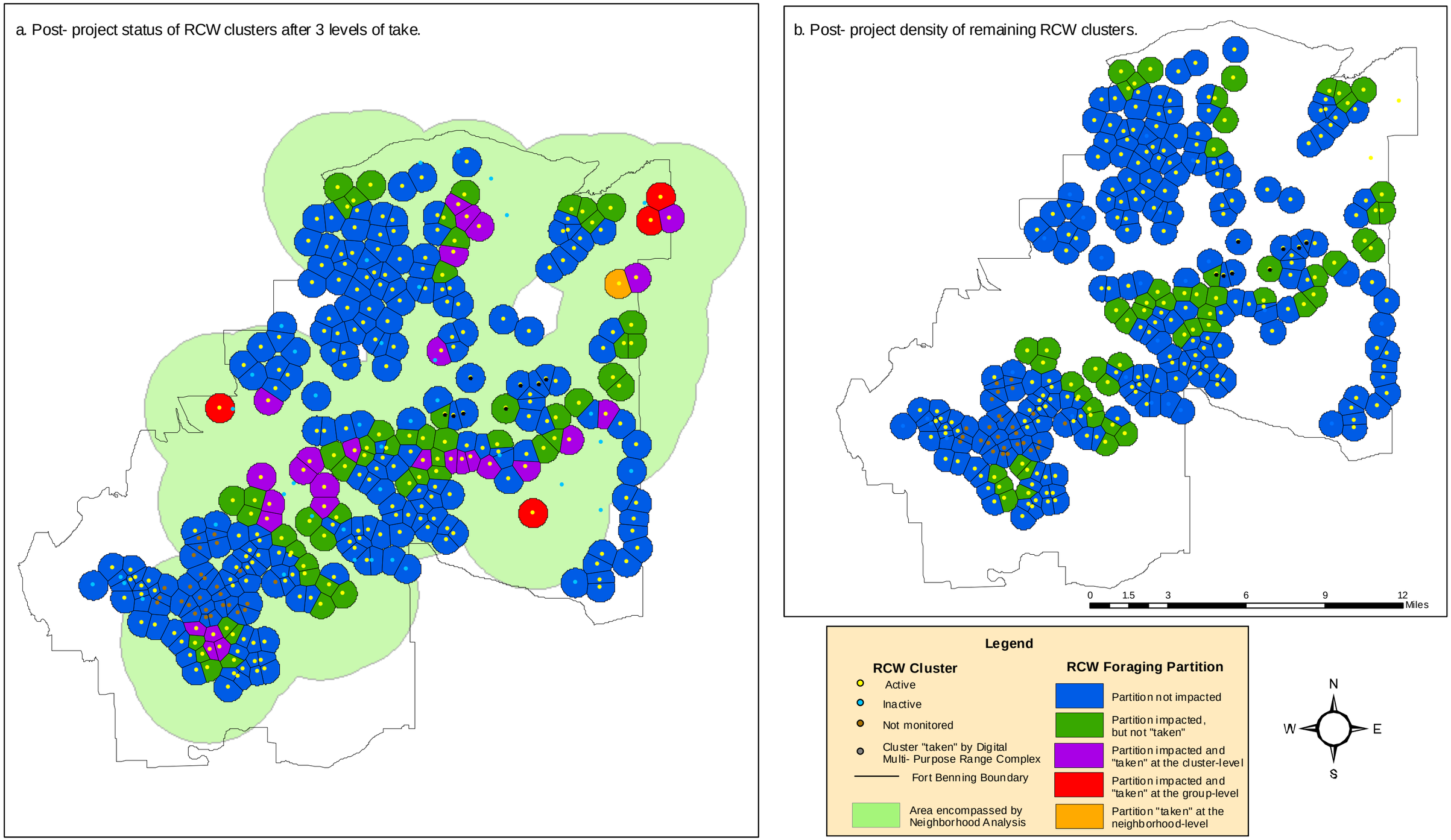


Figure 6-22. (a.) Post- project status of red-cockaded woodpecker (RCW) clusters after cluster, group (1.25 mile radius) and neighborhood (2.57 mile radius) analyses and (b.) post- project density of RCW clusters, Alternative B, Fort Benning, Georgia.

SHC -02. Under Alternatives A and B, this cluster had 0 active clusters within 1.25 miles pre-project. Habitat between it and the nearest active cluster, U04-01R, will become more fragmented as a result of cantonment area projects; therefore it will be at more risk of cluster abandonment due to the proposed action.

Note: Cluster K18-01 had a "sparse" group density rating (2 active clusters within 1.25 miles) pre and post-Transformation; however it was not considered "taken" at the Group Level. The proposed action will not cause a reduction in its cluster density, nor will it substantially fragment habitat outside of the partition to isolate it from the remainder of the Fort Benning RCW population.

6.10.7 NEIGHBORHOOD LEVEL ANALYSES

6.10.7.1 Alternatives A and B

The Neighborhood Level Analysis evaluates indirect group density impacts to clusters not directly impacted by the Transformation projects (Alternatives A and B) within a 2.57 mile radius "Neighborhood." One cluster (K12-01) was considered "taken" due to project related neighborhood level impacts for Alternatives A and B projects (Tables 6-13, 6-29 and Figures 6-21 and 6-22).

6.10.8 POPULATION LEVEL ANALYSIS

The Population Level Analysis considers the ability of Fort Benning to meet its RCW population goal (351 PBGs, 428 total managed clusters) post-Transformation.

6.10.8.1 Alternative A

RCW Impacts. Post- project, 54 of the 99 analyzed active RCW clusters will be "taken" by the proposed Transformation under Alternative A as a result of forage loss, cavity tree removal, harassment, Group Level impacts and/ or Neighborhood Level impacts (Table 6-13). In addition, 6 impacted (but not "taken") clusters will have less than 120 acres of manageable habitat and will be unable to meet the RS in the future (Tables 6-17 and 6-33). Ten other impacted clusters will have between 120 and 150 acres of habitat and may or may not be able to meet the RS depending on local site conditions and management regime (Tables 6-16 and 6-17).

Four inactive clusters will also have all of their cavity trees removed, reducing the number of recruitment clusters available on the Installation for population growth.

Fragmentation. Under Alternative A, the proposed action will create several large openings, the largest being SGR1 (±984 acres, averaging 0.8 mile by 2.0 miles), SGR2 (±890 acres, averaging 0.8 mile by 2.0 miles), MPMG3 (±404 acres, averaging 0.7 mile by 1.1 miles) and the QTR (±432 acres, 0.7 mile by 1.1 miles). Additionally, the combined development in the Harmony Church area could create an opening ±697 acres (averaging 1.6 miles by 1.14 miles). While these openings will be substantial and RCWs are unlikely to cross them directly, sufficient dispersal corridors will remain so habitat necessary for recovery will not be permanently isolated as a result of the proposed action. Clusters SHC-01 (inactive) and SHC-02 (active), as well as the remaining habitat in the Sand Hill area, are currently somewhat isolated and will become more so with the proposed action, however, as young pine plantations age this area could become contiguous habitat to count toward recovery in the future. Clusters in the southeast corner of the Installation (e.g., Compartments H1, G5 and/ or F4) are also somewhat isolated from clusters to the west by large, young pine plantations. Maneuver training in the proposed Maneuver Corridor-South is not expected to worsen this situation; in time, the young plantations will serve as a sufficient dispersal corridor to link these clusters with clusters to the west.

Spatial arrangement of remaining clusters. As described in Sections 5.5 and 5.6, research has shown that the more aggregated RCW clusters are, the higher the probability of persistence, even with considerable foraging habitat loss (Hooper and Lennartz 1995). Therefore, the area with the greatest aggregation of clusters are considered to be the most stable. Pre-project, these areas on Fort Benning are in and around the A20 Dudded Impact Area in the southwest, northeast of Ochillee Creek around Hourglass Road in the center of the Installation, and in the Oscar compartments in the northwestern corner of the Installation (Figure 6-22). Under Alternative A, there will be substantial reductions in cluster density in the Oscar compartments in the Maneuver Area- North and the Maneuver Corridor- South. There will still be densely aggregated clusters post-Transformation in and around the A20 Dudded Impact Area and along Ochillee Creek, although reduced. Maintaining these high density cluster areas will be important to ensure that the RCW population remains stable enough to survive until recovery.

Habitat Removal (current and future). Of the approximately 78,061 acres of contiguous pine habitat remaining post- project, approximately 22,247 acres are in loblolly or shortleaf pine stands with a high risk of decline (Table 6-36, Figures 6-23 and 6-24). Future clusters were not mapped out in detail for Alternative A; if this alternative was chosen as the "preferred alternative," formal or informal consultation would be reinitiated and these analyses would be provided to USFWS. Using basic averaging, however, the contiguous acreage remaining post-project could support 428 clusters at 182 acres/ cluster, or 520 clusters at 150 acres/ cluster, which would be sufficient for Fort Benning to meet recovery. Additionally, FBLMB is in the process of identifying upland hardwood stands for pine conversion purposes. As of March 2007, approximately 740 acres in 25 stands of upland hardwoods had been designated for conversion to longleaf pine. This action could potentially add substantial acreage of RCW habitat to Fort Benning. (P. Swiderek, FBCB, pers. comm.)

Population Recovery and Habitat Restoration. In order to provide sufficient RCW habitat for 428 clusters with 150 acres each (150 acres was used to allow a "buffer" for future project removals or loss of stands due to disease or wildfire) with little to no risk of decline, Fort Benning will need 64,200 acres of longleaf habitat. Approximately 30,000 acres will need to be planted in order to achieve this acreage, which Fort Benning personnel expect to have completed in or around 2032, planting approximately 1,500 acres/ year. As described in Section 3.1.7, a forestry model was used to estimate when sufficient acreage would be of nesting age (calculated as 80 years) to support 428 clusters (to yield 351 PBGs, i.e., potentially meeting "recovery"). Assumptions used for all calculations were that 1,500 acres would be planted in longleaf per year, 150 acres were necessary per cluster and that the oldest "off-site" stands would be harvested first. Pre-project calculations showed that, if canopy pines in underplanted stands will be functional foraging and/ or nesting RCW habitat until replaced by the underplanted longleaf, sufficient pine stands (any species) to support 428 clusters would be nesting age in approximately 2047. In contrast, in order for all acres to be in longleaf pine, or if the overstory of underplanted stands is not functional RCW habitat, sufficient acreage would be of nesting age in approximately 2112 (Table 6-37, in part).

Post-project calculations were not conducted with the model for Alternative A; if this alternative was chosen as the "preferred alternative," formal or informal consultation would be reinitiated and these analyses would be provided to USFWS. Because of the large amounts of

Table 6-36. Removals and remaining acreage of all contiguous pine and pine- hardwood habitat (potential RCW habitat, current and future), Alternatives A and B Transformation protjects, Fort Benning, Georgia.

Pine and pine- hardwood habitat removals and post-project totals:			
	ALTERNATIVE A Acres		ALTERNATIVE B Acres
Pre- project Contiguous Habitat	84,850		84,850
Total Foraging Removals	6,789		10,113
TOTAL POST- PROJECT CONTIGUOUS HABITAT[1]	**78,061**		**74,737**
Average acres/ cluster (428 clusters)	182		175

1 Total could increase as Fort Benning identifies hardwood-dominated stands to convert to longleaf pine. Twenty five stands (740 acres) have been identified in 2007 for conversion..

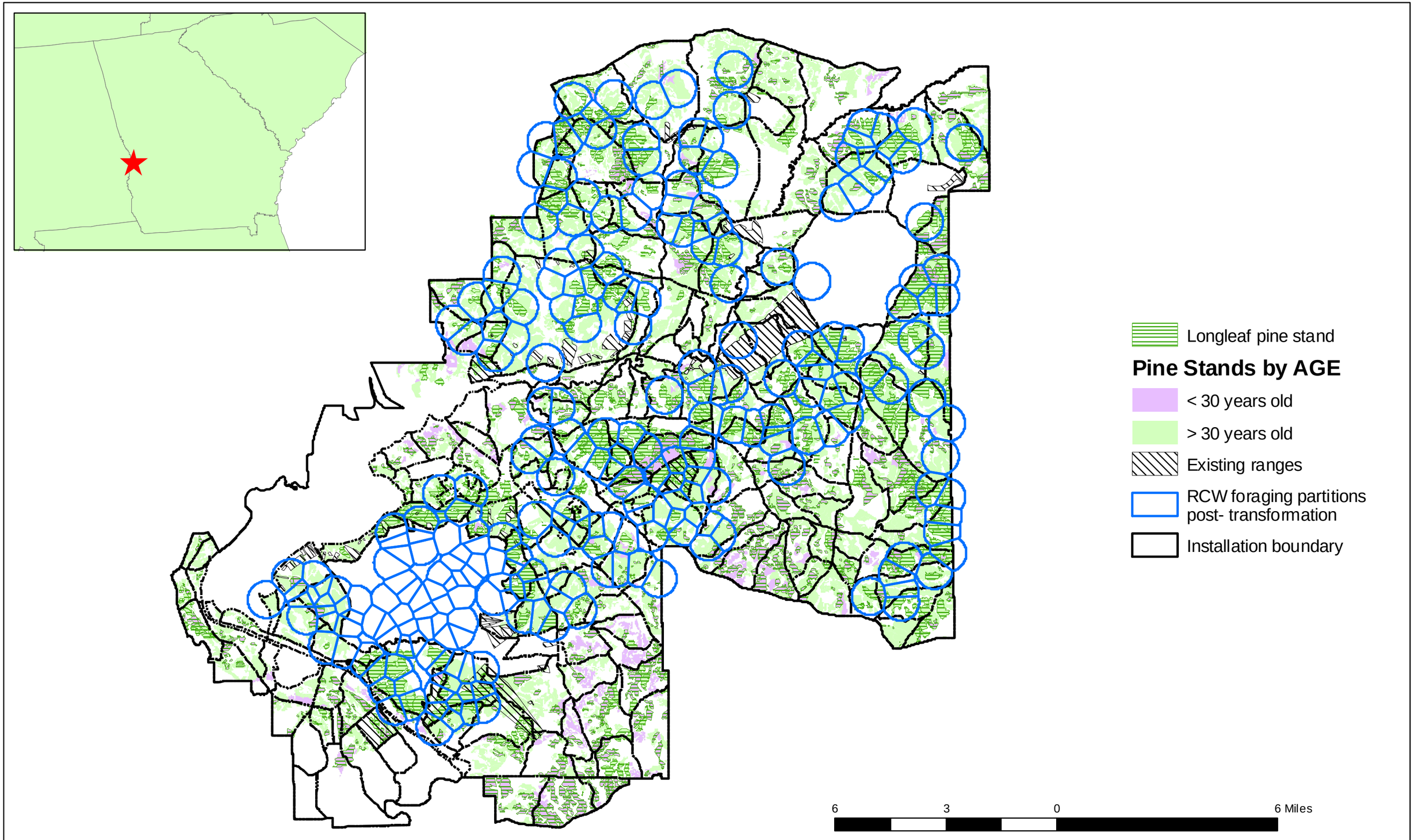


Figure 6-23. Red-cockaded woodpecker (RCW) partitions remaining post-**Alternative A** Transformation and contiguous pine and pine-hardwood stands (potential RCW foraging habitat) by age and species, Fort Benning.

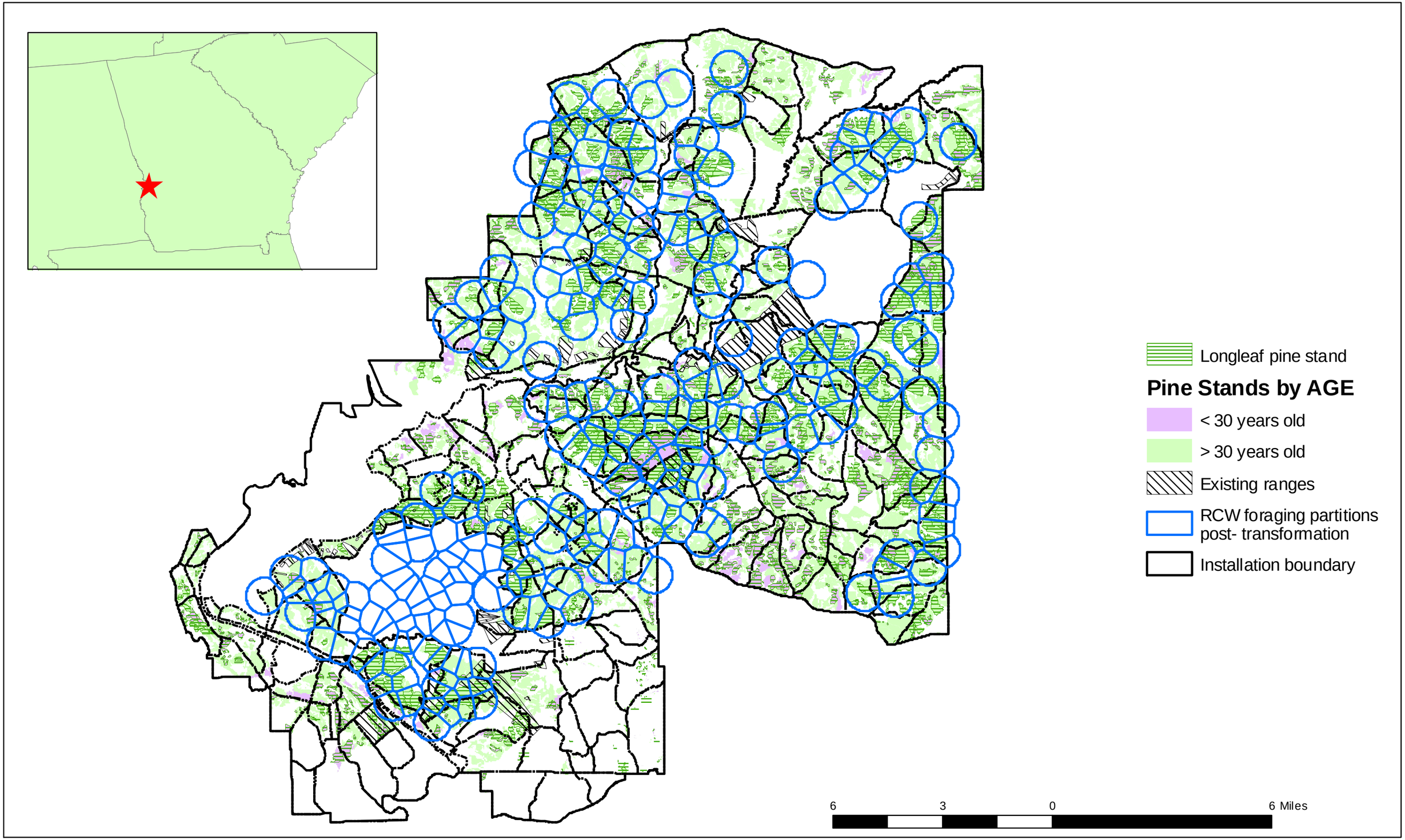


Figure 6-24. Red-cockaded woodpecker (RCW) partitions remaining post-**Alternative B** Transformation and contiguous pine and pine-hardwood stands (potential RCW foraging habitat) by age and species, Fort Benning.

Table 6-37. Years when sufficient foraging and nesting habitat could be available for 428 RCW clusters on Fort Benning.

	Underplanted stands are functional RCW habitat[1]		**Underplanted stands are not functional RCW habitat[2]**	
Years until:	**Pre-project**	**Post-project**	**Pre-project**	**Post-project**
All acres converted to longleaf:	2032	2032	2032	2032
All acres are potential RCW **foraging** habitat- any pine:	0	2027	0	2062
All acres are potential RCW **nesting** habitat- any pine:	2047	2082	2112	2112
All acres are potential RCW **foraging** habitat- longleaf:	2062	2062	2062	2062
All acres are potential RCW **nesting** habitat- longleaf:	2112	2112	2112	2112

Assumes: 64,200 total acres necessary (428 clusters with 150 acres/ cluster)
1,500 acres planted in longleaf pine per year
Foraging habitat >=30 years old
Nesting habitat >= 80 years old
"Oldest first" harvest strategy for off-site pines

[1] - Off-site pine stands that are underplanted in longleaf continue to provide functional RCW foraging and/ or nesting habitat until replaced by underplanted longleaf.

[2] - Off-site pine stands that are underplanted in longleaf do not continue to provide functional RCW foraging and/ or nesting habitat until replaced by underplanted longleaf.

acreage needing conversion to longleaf pine and the ongoing loblolly pine decline, however, the ability to meet the population goal and the RS were not readily achievable in the near term even without the proposed action under Alternative A.

While recovery could be somewhat delayed by the proposed Transformation under Alternative A, sufficient acreage of contiguous pine habitat would remain post-project to support ≥351 PBGs (428 clusters) in the future at 150 acres/ cluster. Therefore, the proposed action should not prevent Fort Benning from ultimately reaching its population goal.

6.10.8.2 Alternative B

RCW Impacts. Post-project, 32 of the 80 analyzed active RCW clusters will be directly "taken" by the Transformation projects under Alternative B as a result of forage loss, cavity tree removal, harassment, Group Level impacts and/ or Neighborhood Level impacts (Table 6-29). In addition, 4 impacted (but not "taken") clusters will have less than 120 acres of manageable habitat and will be unable to meet the RS in the future (Tables 6-32 and 6-33). Eight other impacted clusters will have between 120 and 150 acres of habitat and may or may not be able to meet the RS depending on local site conditions and management regime (Tables 6-32 and 6-33). Two inactive clusters will also have all of their cavity trees removed, reducing the number of recruitment clusters available on the Installation for population growth.

Habitat Removal. Of the approximately 74,737 acres of contiguous pine habitat post-project, 21,481 acres are in loblolly or shortleaf pine stands at high risk of decline (Table 6-36, Figures 6-23 and 6-24).

According to an analysis by FBCB (M. Barron, pers. comm.) adequate contiguous acreage will be available post- project to ultimately achieve the population goal of 428 managed clusters at ≥120 acres/ cluster. Figure 6-25 shows a potential configuration of future RCW partitions across the Fort Benning landscape. Existing clusters remaining post-project were left in their current location wherever possible, however some were shifted in order to optimize habitat usage. This map indicates that when habitat use is optimized, there could be as many as 457 RCW clusters on the future landscape, assuming no additional permanent loss of habitat. Additionally, FBLMB is in the process of identifying upland hardwood stands for pine conversion purposes. As of March 2007, approximately 740 acres in 25 stands of upland

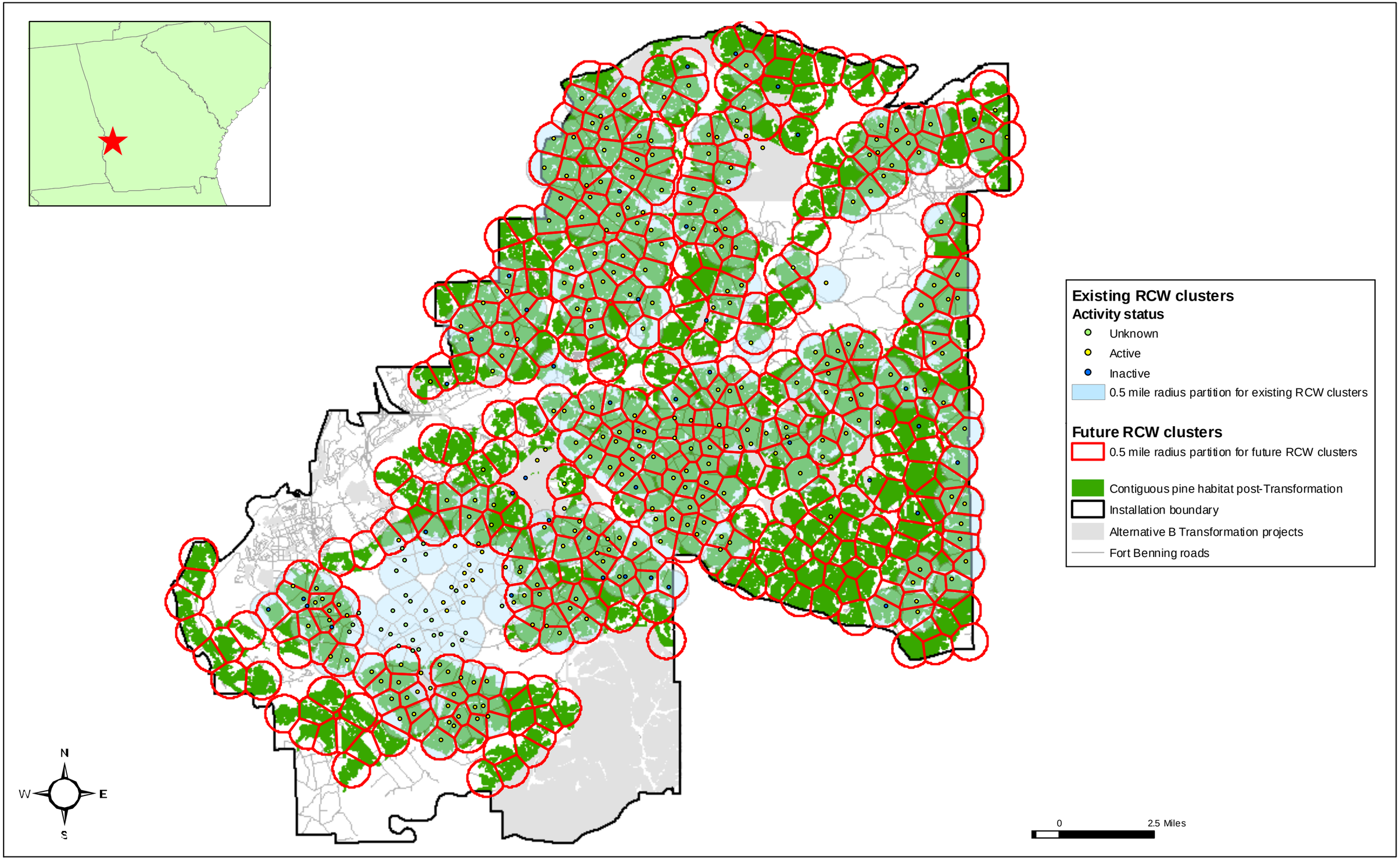


Figure 6-25. Potential future configuration of 457 red-cockaded woodpecker (RCW) clusters with a minimum of 120 acres of foraging habitat on pine acreage remaining post-Alternative B Transformation, Fort Benning. Mapped by Fort Benning Conservation Branch.

hardwoods had been designated for conversion to longleaf pine. This action could potentially add substantial acreage of RCW habitat to Fort Benning. (P. Swiderek, FBCB, pers. comm.)

Fragmentation. The proposed action under Alternative B will create several large openings, the largest being the Good Hope Maneuver Area (±9,500 acres, averaging 4.2 miles by 2.8 miles), SGR1 (±984 acres, averaging 0.8 mile by 2.0 miles), SGR2 (±890 acres, averaging 0.8 mile by 2.0 miles), MPMG3 (±404 acres, averaging 0.7 mile by 1.1 miles) and the QTR (±432 acres, 0.7 mile by 1.1 miles). Additionally, the combined development in the Harmony Church area could create an opening ± 1,157 acres (averaging 1.8 miles by 1.0 mile). While these openings will be substantial and RCWs are unlikely to cross them directly, sufficient dispersal corridors will remain so that no habitat necessary for recovery will be permanently isolated as a result of the proposed action. Clusters SHC-01 (inactive) and SHC-02 (active), as well as the remaining habitat in the Sand Hill area, are currently somewhat isolated and will become more so with the proposed action, however, as young pine plantations age this area could become contiguous habitat to count toward recovery in the future. Clusters in the southeast corner of the Installation (e.g., Compartments H1, G5 and/ or F4) are also somewhat isolated from clusters to the west by large, young pine plantations. Maneuver training in the proposed Maneuver Corridor-South is not expected to worsen this situation; in time, the young plantations will serve as a sufficient dispersal corridor to link these clusters with clusters to the west. Stands in the proposed Good Hope Maneuver Area (Alternative B) are currently too young to provide a dispersal corridor between clusters south of the A20 Dudded Impact Area with clusters east of the Impact Area and US Hwy. 27-280. The Impact Area currently provides the most valuable link between RCWs to the south and west with the remainder of the Fort Benning population. Retention of active clusters south and west of the A20 Impact Area will be crucial in order to eventually establish a viable subpopulation in the Alabama portion of the Installation.

Spatial arrangement of remaining clusters. As described in Sections 5.5 and 5.6, research has shown that the more aggregated RCW clusters are, the higher the probability of persistence, even with substantial foraging habitat loss. Therefore, the area with the greatest aggregation of clusters are considered to be the most stable. Pre-project, these areas on Fort Benning are in and around the A20 Dudded Impact Area in the southwest, northeast of Ochillee Creek around Hourglass Road in the center of the Installation, and in the Oscar compartments in the northwestern corner of the Installation (Figure 7-22). Under Alternative B, there will be some

substantial reductions in cluster density in areas, particularly in the Harmony Church area and the Maneuver Corridor- South, but there will still be 3 areas with densely aggregated clusters post-Transformation. One of these areas, however, does include clusters in the A20 Dudded Impact Area. Maintaining the high density of these "core" areas should ensure that the species will continue to survive on the Installation until habitat conditions are suitable for recovery.

Population Recovery and Habitat Restoration. Sufficient acreage to support 428 clusters is expected to be forested in longleaf pine in approximately 2032 regardless of Transformation. In order to assess how Fort Benning's RCW recovery timeline would be impacted by Transformation under Alternative B, the model described above in Section 6.10.7.1 was run using post-project acreage. As with Alternative A, because of the large amounts of acreage (approximately 30,000 acres) needing conversion to longleaf pine and the ongoing loblolly pine decline, the ability to meet the population goal and the RS was not readily achievable in the near term even without the proposed action under Alternative B. According to the model, when compared to pre-project conditions and assuming overstory pines will remain functional RCW habitat, Transformation could delay the availability of sufficient nesting habitat for 428 clusters, using any species of pine, from approximately the year 2047 to approximately 2082 (Table 6-37). In order for all RCW habitat to be in longleaf pine, or if the overstory of underplanted stands does not provide functional RCW habitat, sufficient acreage would be of nesting age in approximately 2112 regardless of Transformation (Table 6-37).

Research currently being conducted on underplanting and forest decline at Fort Benning (Section 8) will provide valuable information in determining the best treatment methods to use to maintain the maximum amount of RCW habitat while successfully regenerating longleaf pine.

While recovery could be somewhat delayed by the proposed Transformation by up to 35 years under Alternative B, sufficient acreage of pine habitat would remain post-project to support ≥351 PBGs (428 clusters) in the future at 150 acres/ cluster. Therefore, the proposed action should not prevent Fort Benning from ultimately reaching its population goal.

6.10.9 RECOVERY UNIT ANALYSIS (JEOPARDY ANALYSIS)

While Fort Benning is geographically within the Sandhills Recovery Unit, the closest RCW recovery populations to Fort Benning are the Piedmont/ Oconee Secondary Core Population (Piedmont Recovery Unit), Talladega/ Shoal Creek Essential Support Population

(Cumberlands/ Ridge and Valley Recovery Unit) and the J.W. Jones Ecological Research Center Significant Support Population (Figure 6- 3). A demographic link between Fort Benning and the next closest population in the Sandhills Recovery Unit (Fort Gordon) would require first forming a link with the Piedmont/ Oconee population. For this reason, while Fort Benning's role in the Sandhills Recovery Unit should be the primary focus of the Recovery Unit analysis, attention must also be paid to Fort Benning's role in relation to other populations in other Recovery Units as well.

Analyses at the Cluster, Group, Neighborhood and Population Levels suggest that Fort Benning will still be able to ultimately support a primary core population, thereby continuing to perform the role described for it in the species' recovery plan (USFWS 2003a). The proposed action (either alternative) is likely to delay, but will not prevent, recovery of the Fort Benning RCW population. Additionally, there is no evidence at this time that Fort Benning will not be able to sustain a viable population of RCWs (sufficient number of PBGs) until it meets recovery.

Delaying recovery of the Fort Benning population could also delay the recovery of the Sandhills Recovery Unit. Since the Fort Benning primary core population will still be able to ultimately meet recovery, however, the proposed action should not preclude the recovery of the Unit.

If Fort Benning is unable to be a donor population, this could indirectly affect other populations in the SRTC, however the majority of the properties in the SRTC are in other recovery units.

USFWS will determine if the impacts described in this Biological Assessment will affect the Sandhills Recovery Unit's ability to recover in the BO for this action.

6.10.10 BIOLOGICAL DETERMINATION

May Affect, Likely to Adversely Affect

7 CUMULATIVE EFFECTS

Cumulative effects are defined in the USFWS Consultation Handbook to "include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area" (USFWS and NMFS 1998).

Off-post developments meeting the above-listed criteria that are expected within the Action Area (Alternatives A and B) are listed below. No Federally-listed species are known to be in the vicinity of these projects.

- Widening/ Improvements to Buena Vista Road, Columbus, GA (FY07). Work would consist of widening and reconstructing 1.15 miles of an existing 2 and 4-lane road to a 4 through-lane system with turn lanes and medians, as required. Approximate size of the overall project area is 5 to 10 acres (Fort Benning 2005b).

- Widening/ Improvements to St. Mary's Road, Columbus, GA (date undetermined). Two projects are planned to provide for (1) the widening of a 1-mile stretch of St. Mary's Road from Buena Vista Road to Robin Road (to be completed by the end of calendar year 2007) and (2) widening and reconstruction of a 1.25-mile stretch of St. Mary's Road just west of Fort Benning from Robin Road to Northstar Drive. Intersections are being reworked and the existing bridge over I-185 is being widened as part of this project (Georgia Department of Transportation 2006). Approximate size of the overall project area is 10 to 20 acres.

- Expansion of Hospitality Market (throughout Action Area). It is anticipated that Columbus will add nearly 350 hotel rooms or suites by the end of calendar year 2006 to meet the growing demand for conventions, business, military and leisure travelers. Plans are already in place to add an additional 200 rooms in 2007, a number that may continue to increase. The city's average hotel occupancy rate in 2003 was approximately 65%, as compared to the regional occupancy rate of 57% and the national occupancy rate of 59%. Many of the new and planned hotel developments are

near Fort Benning, particularly on Victory Drive and near the new Infantry Museum site. The city also will continue to encourage conventions, meetings, corporate business, sports events, and leisure travelers. Columbus attracted nearly 965,472 visitors in FY 2005 and the city aims for more than one million annual visitors (Columbus Ledger-Enquirer 2006).

- General urban growth (throughout Action Area). The urban growth associated with the Columbus Metropolitan Area has been robust over recent years and is expected to continue, particularly when considering the alternatives coupled with the aforementioned cumulative impact projects. A 2003 Government Accounting Office Testimony on the DoD's approach for managing encroachment used Columbus and Fort Benning as an example of rapid growth near a military installation. The Army and Fort Benning have been working with the community to appropriately plan development near the Installation. The efforts have had some positive results, for example, the ACUB program (described below in Section 8). Cumulative effects of the general urban growth are difficult to quantify because of the number of small projects in the Action Area. These types of projects are small housing and strip mall-type developments, renovation or rehabilitation of existing structures to allow for denser populations.

8 STANDARD ENVIRONMENTAL PROTOCOLS AND ONGOING CONSERVATION EFFORTS

The protocols and on-going conservation efforts described below should be considered part of the proposed action.

8.1 THE FORT BENNING NEPA PROCESS

As mentioned in Section 2.6, every action with a potential environmental effect (e.g., training exercises, timber operations, construction) is required to be preceded by the submission of a completed Fort Benning Form FB144-R, to the EMD DPW. Submittal of the Form FB 144-R constitutes the first step in NEPA compliance at Fort Benning. This NEPA process provides the necessary environmental analysis required to establish that proposed actions are eligible for categorical exclusions in accordance with the Army NEPA regulation. The NEPA process also helps to determine if proposed actions have been adequately covered by existing NEPA documents (EA or EIS) and would therefore be exempt from further NEPA consideration.

Each organization at Fort Benning with projects or activities that may impact natural and/ or cultural resources is required to submit a FB Form 144-R at the beginning of the planning process, along with information that includes a concept of development or description of the proposed action, the affected site location, the anticipated timeframe of accomplishment and other relevant information. The proponent of an action must clearly identify the purpose of and need for that action. This step should occur early enough to enable identification of problems and conflicts so that review and analysis of alternative sites or altered operational plans can be developed in a timely enough manner to support the proposed action.

The normal shelf life of a FB Form 144-R is one year from the date of approval. All actions that are not underway within this time period must be submitted for an updated review and approval. If changes are made in an action's scope, location or degree of impact to natural or cultural resources, a new FB Form 144-R must be re-submitted for review and approval. Additionally, for complicated projects, or for projects that may involve soil disturbing activities, both a design phase FB Form 144-R and a construction phase FB Form 144-R may be warranted.

After review by the EMD, the FB Form 144-R will be returned to the proponent marked Concur, Concur with Conditions or Non-concur. A finding of Concur allows the project or activity to move forward as proposed. A finding of Concur with Conditions allows a project to

move forward only after all comments are addressed and plans are in place to comply with the comments and concerns. It may also include information about restricted areas such as RCW clusters, gopher tortoise areas or archeological sites, training that may or may not occur in these areas and other protocols. When a finding of Non-concur is received, a project or activity cannot take place until it either has been modified as necessary and a new FB Form 144-R has been submitted or, if sufficient modification to achieve a categorical exclusion is not feasible, when an additional level of NEPA analysis (such as an EA or EIS) determines that the action can proceed. Some activities are recurring. For some of these activities, a single FB Form 144-R can be submitted that covers the activity for a year.

Proposed changes or modifications to previously approved projects or activities require submittal of a new FB Form 144-R. Changes or modifications cannot proceed until a new finding of Concur, Concur with Conditions or Non-concur has been issued and all concerns addressed.

Non-compliance with this NEPA process will result in the proponent of an action being held responsible for adverse impacts to Fort Benning's natural or cultural resources. The proponent may be held responsible for the cost of repair, replacement or mitigation required to correct the unapproved action. Violations are reported as appropriate to the FBRD, EMD, the Office of the Staff Judge Advocate, the Contracting Officer and/ or the proponent's Commanding Officer. Criminal violations of the ESA will also be reported.

8.2 ENVIRONMENTAL AWARENESS TRAINING AND PROGRAMS

Since 1999, an Environmental Awareness Training Program has been in place to instruct Fort Benning personnel about environmental issues, both to prevent environmental incidents and to protect personnel from resulting financial and legal consequences of such actions. Education is targeted towards personnel with specific responsibilities: one course is targeted toward senior leadership, such as the executive officer of a brigade or battalion-sized unit, while others may be targeted to the supervisory field personnel or to entire groups of visiting Soldiers (Appendix J). Due to the high influx of personnel expected with the USAARMS arrival, it is possible that these courses will be taught at Fort Knox prior to units' arrival at Fort Benning. If not, then these courses will be offered much more often at Fort Benning to ensure adequate and timely training of the newly arrived troops.

Training guidelines and restrictions within RCW clusters have also been included in Fort Benning's Training Directive (USAIC Regulation 350-1) and Range and Terrain Regulation (USAIC Regulation 210-4).

8.3 ONGOING RESEARCH

8.3.1 FOREST DECLINE/ FOREST RESTORATION

Several studies are currently being conducted at Fort Benning on longleaf and loblolly pine decline. The following studies are described in detail in Appendix K.

A study being conducted over the next 5 years is focused on effectively converting off-site loblolly pine stands to longleaf pine while preserving the maximum amount of foraging habitat for resident RCWs. This study will develop silvicultural protocols for site conversion and also will develop models to assess stand vulnerability to decline and to predict individual tree mortality, in order to prioritize stands to convert and in selecting leave-trees (J. Walker, USFS, unpublished report).

A 3-year study scheduled for completion in 2008 is being conducted on longleaf pine decline, which has also been observed on Fort Benning. Objectives include gaining further understanding of the pathogenicity of the condition (potentially an exotic blue stain fungus species), developing a model to predict stand vulnerability to longleaf decline and determining the overall health and condition of longleaf stands on Fort Benning (L. Eckhardt, Auburn University, unpublished report).

Another study (complete in 2007) is integrating models of RCW population dynamics, forest growth, pine decline and forest management in order to provide Fort Benning with a means to predict the effect of new developments and fragmentation on the RCW population (C. Rewerts, unpublished report).

Fort Benning is also investigating acquiring various types of remote sensing imagery which could be valuable in identifying declining stands. The forest decline issue will be addressed in greater detail in the revision of Fort Benning's INRMP and RCW Endangered Species Management Component.

8.3.2 RANGE CONSTRUCTION AND OPERATION IMPACTS TO RCWS AND HABITAT

As part of the minimization for the DMPRC and as directed, in part, as a RPM in the BO (USFWS 2004a), home range follows of RCW groups potentially affected by the project are being conducted to determine RCW reaction to construction and operation of a large-caliber range. This range is currently under construction and is expected to be operational in 2008. By the time the proposed Transformation ranges are built, there should be applicable data on the reaction of RCWs to construction and training on the DMPRC. The types of training and artillery used on the DMPRC will differ from that of the proposed Transformation ranges, however data from the DMPRC follows will be applicable, at least in part, to SGR1 and 2, MPMG1 and QTR1 proposed under both Transformation alternatives.

Habitat monitoring was also required in the DMPRC BO in order to document RCW foraging habitat degradation resulting from range operation (USFWS 2004a). A habitat monitoring plan is currently being developed.

If impacts identified in the DMPRC home range follow and/ or habitat data are inconsistent with those predicted for ranges in this document, Fort Benning will seek input from USFWS and reinitiate consultation as necessary.

8.4 MANAGED RCW HABITAT MONITORING

In addition to habitat monitoring around the DMPRC, FBCB and LMB will continue to implement RCW foraging habitat monitoring recommendations in the 2003 Recovery Plan (USFWS 2003a). Tracking the habitat available within RCW partitions Installation-wide, including changes in vegetative structure and composition, will be particularly important in monitoring the effect of Transformation on affected RCW clusters and ensuring that enough future habitat remains protected for the RCW population at Fort Benning to ultimately recover.

8.5 TIMBER HARVESTING AND MANAGEMENT

8.5.1 CONSTRUCTION PROJECTS

Many BRAC construction projects will be design-build. This means the final design will not be complete until after contract award. Once the contract is awarded and the contractor has finalized the design, FBLMB personnel will mark the areas that would be clear-cut in support of

the construction for BRAC. FBLMB and/ or the USACE Resident Forester will monitor timber operations for compliance with Georgia Forestry BMPs for water quality, streamside management zones and timber vegetation removal. In clear-cut areas, all trees 5 in. dbh and 30 ft. tall or larger will be removed within the red painted boundary (J. Parker, FBLMB, pers. comm.)

8.5.2 THINNING WITHIN MANEUVER HEAVY USE AREAS

Maneuver Corridors will be thinned to support Armor Crewman and Cavalry Scout training courses. Thinnings will be marked, favoring longleaf pine and healthy 10 in. dbh or larger pines as "leave trees." FBLMB and/ or the USACE Resident Forester will monitor timber harvesting for compliance with GA Forestry BMPs.

8.5.3 OTHER STANDARDS AND NORMAL ACTIVITIES TO OCCUR BEFORE AND DURING TIMBER HARVEST ACTIVITIES.

Soil disturbance will be minimized in wetlands (except where permitted in construction areas) and historic property sites. Cut-to-length will be the only authorized process used for timber harvest from eligible historic property sites and other sensitive areas that may be identified later.

If the harvest is performed by a USACE contract, the USACE Resident Forester will monitor the timber harvest and prepare a biweekly written report to the FBLMB Chief. These reports will document compliance with all applicable minimization and/ or mitigation requirements and/ or restrictions including compliance with Forestry BMPs, any deviations from the same and any corrective action that was taken.

FBCB personnel will conduct an RCW survey and foraging habitat analysis prior to any timber harvesting in areas that may impact RCW clusters or habitat. FBCB will provide that information to the USFWS and coordinate with them as needed. FBCB will also conduct an appropriate resurvey within a year prior to timber and slash removal. Timber harvesting within RCW clusters will occur outside of the breeding season and will be coordinated with FBCB.

8.6 TOTAL LAND MANAGEMENT STRATEGY

The combination of the proposed increase in heavy maneuver training and the terrain and soil conditions at Fort Benning has the potential to create major soil erosion problems, which could have adverse effects on the RCW and other Federally-listed Threatened and Endangered species.

Avoidance and minimization of impacts to RCWs must be accomplished by a combination of institutional and engineering controls and the programming of adequate resources necessary to proactively manage the impacts of the Transformation actions. Fort Benning is developing a management system and plan along with the appropriate organizational structure that will proactively manage the impacts of Transformation training activities.

One key issue that this strategy will address is the lack of resources for personnel to effectively respond to land maintenance issues. Another shortfall is the lack of enough heavy maneuver area to allow rotation of heavy maneuver training from one area to another in order to rehabilitate and maintain the maneuver areas. Problems such as soil erosion can escalate quickly and can cause substantial damage to the landscape if not repaired. For instance, washed out areas in trails tend to widen as drivers avoid the center of the puddle or new trails are formed through forested habitat to avoid the hazard. While this type of disturbance would typically be minor, the high volume of training exercises and throughputs, especially in the heavy maneuver areas, could cause minor disturbances to quickly escalate into a substantial environmental impact. Fort Benning does not currently have the capability to respond in a timely manner to erosion issues and must use outside contractors, sometimes resulting in delays and worsening of the problems. The new strategy will give them the ability to handle problems in-house, thereby shortening response time and reducing environmental impacts.

In order to prevent and/ or control the impact of the maneuver training requirements on the landscape, the following measures will be taken:

8.6.1 SOIL CONSERVATION PROGRAM

The Soil Conservation Program addresses erosion and sedimentation in RCW habitat as required by the BO for the RCW ESMP (USFWS 2002). The BO requires Fort Benning to repair existing, and prevent future, erosion that threatens individual RCW cavity trees and the

integrity of the cluster. Erosion control BMPs employed to prevent erosion and rehabilitate eroded areas include the construction of rock channels, rock check dams, sediment basins, diversions and silt fencing. Vegetative measures include temporary and permanent grassing, mulching and the installation of erosion control blankets. Longleaf pines are planted to further stabilize the project sites and to provide habitat for the RCW. These practices are part of erosion control plans implemented by the USDA Natural Resources Conservation Service (NRCS) and the USACE. Fort Benning has a Memorandum of Understanding (MOU) with the NRCS. A MOU with the USACE is not necessary since it is part of the Army. The services provided include solicitation of bids, developing contracts, performing surveys, preparing plans and the implementation of those plans. It takes approximately one year to get BMPs constructed from the time the money is sent to the receiving agency until project completion. Projects can be completed sooner depending on the backlog of projects that exists with NRCS. Approximately 10-15 sites are rehabilitated each year covering approximately 50 acres. Currently the Soil Conservation Program provides approximately $300,000.00 to the NRCS and $300,000.00 to the USACE annually for construction of BMPs.

8.6.2 SUSTAINABLE RANGE PROGRAM (SRP).

The SRP is the Army's roadmap for how it designs, manages and uses it ranges in order to ensure the capability, availability, and accessibility of its ranges to meet its training mission. It is the Army's response to the increasing challenges brought about by incompatible land uses and meeting the ever increasing need for ranges and training land brought about by the Global War on Terrorism, the Army Campaign Plan, BRAC, and GDPR. Because many programs and functions affect the management of our ranges and training lands, the Sustainable Range Program is the Army's overarching guidance for integrating operational, training, facility, safety, and environmental requirements to improve the management of its ranges and ensure their sustainability to support mission requirements now and into the future.

The Army's SRP is made up of its two core programs: the RTLP, which includes the day-to-day management of its ranges as well as new range construction; and the Integrated Training Area Management (ITAM) Program for the repair and maintenance of its maneuver lands. AR 350-19 defines and prescribes policies for implementing the SRP on Army controlled training

ranges and training lands. A description of this program, termed the Fort Benning Sustainable Range Program can be found in Appendix H.

8.6.3 NPDES PERMIT AND SOIL EROSION CONTROL PLAN

Construction projects or any land disturbing projects larger than one acre will require a National Pollution Discharge Elimination System (NPDES) permit, which requires a Soil Erosion Control Plan. Variances may also be required for disturbance or vegetation removal in the stream buffers.

Measures will be taken wherever applicable to minimize impacts on affected natural resources. An Erosion Sediment and Pollution Control Plan (ESPCP) is required to be submitted with the application for the NPDES permit. The ESPCP will utilize BMPs to reduce erosion and sedimentation. Examples of BMPs include rock check dams, rock channels, sediment basins, diversions and the placement of silt fences and erosion control measures (G. Hollon, FBCB, pers. comm.).

8.6.4 LESSONS LEARNED FROM OTHER INSTALLATIONS

Fort Benning and JCA have sought input from other installations with both heavy maneuver training and RCWs. Correspondence with representatives from Fort Stewart, GA and Fort Polk, LA and Fort Knox, KY has further illustrated the need for proactive land management and the potential to minimize impacts through landscape design (e.g., thinning corridors in maneuver areas to direct tank traffic).

8.7 OFF-PROPERTY HABITAT PROTECTION AND MANAGEMENT

As mentioned in Section 6.10.2.1, there are no active RCW clusters near Fort Benning that are within the average RCW dispersal distance that can be counted as part of the Fort Benning RCW population. There is habitat adjacent to or near the Installation that could become RCW habitat capable of supporting RCWs which in the future could potentially be counted toward the Fort Benning RCW population goal. (Appendix L)

Perhaps the most promising program for lessening the environmental constraints on the Installation is the ACUB program. ACUBs support the Army's responsibility as a federal agency to comply with all environmental regulations, including endangered species habitat protection.

By working in partnership with conservation organizations, ACUBs can coordinate habitat conservation planning at the ecosystem level to ensure that greater benefits are realized towards species and habitat recovery.

* Reduce training restrictions
* Meet Endangered Species Act recovery responsibilities
* Prevent development along installation boundaries
* Preclude the need to list future threatened and endangered species

In the face of increasing urban sprawl, DoD developed the Readiness and Environmental Protection Initiative (REPI), a multi-level effort designed to ensure the future use training land by addressing issues of potential encroachment on military training. Congress provides DoD with funding for compatible land use efforts under the Conservation Buffer Program. The REPI program was established as a way for DoD to implement the authority provided by Congress in Section 2684a of Title 10 United States Code (USC) which allows the Services to enter into agreements with private conservation organizations or with state and local governments. These agreements allow installations to cost-share the acquisition from willing sellers of land or interest in land by the partner in order to preserve high-quality habitat and limit incompatible development around installations. The Office of the Secretary of Defense oversees the program and allocates funding to the Services to help implement these projects.

The Army has implemented the REPI Program through its ACUB Program. The ACUB program represents a powerful tool and unique opportunity to work in partnership with state and local governments, and/or conservation groups to achieve a common goal of establishing buffer areas outside the installation boundary. This program allows the Army to work with partners to protect habitat and training land without using the lengthy and complicated acquisition process.

The overall management responsibility for the ACUB programs resides within the OACSIM who also provides funding for projects in addition to that received by OSD. Proposals for Active Army Installations are validated by the Army Range Sustainment Integration Council and prioritized for funding by the Office of Deputy Chief of Staff G/3/5/7.

Fort Benning is currently investigating options for protecting land around its boundaries to be used as a buffer between military activities onsite and surrounding agricultural, residential or industrial land uses in the community and to assist Fort Benning in achieving its conservation goals. Options include purchasing adjacent lands and assisting nonprofit organizations such as

TNC to enroll adjacent landowners into conservation easements. A description of these programs can be found in Appendix L.

TNC, through an agreement with Fort Benning, is responsible for the implementation of the program and received its first ACUB funding in 2006. TNC is currently in the process of securing two properties northeast of the Installation through conservation easements (W. Harrison, TNC, unpublished report). The ACUB program has the ability to secure much habitat for RCWs and other protected species off-Post.

In addition to ACUB, many other organizations and programs are actively conserving habitat in the Fort Benning area, including GA DNR, AL Department of Conservation and Natural Resources, GA Department of Highways, The Conservation Fund, several land trusts and Forest Legacy.

The Southeast Regional Partnership for Planning and Sustainability (SERPPAS) is a more regional initiative comprised of multiple agencies and organizations. One of the goals of this initiative is restoring longleaf pine and increasing RCW populations across the Southeast, partially to lessen the recovery obligations of military installations. This long-term initiative could be valuable in protecting potential RCW habitat in the Fort Benning area.

8.8 FUTURE CONSULTATION EXPECTED/ REINITIATION OF CONSULTATION

The Army will reinitiate formal or informal consultation with USFWS if material changes to the projects or unanticipated Federally Threatened or Endangered species impacts occur and as more project information is available, including design information on specific projects.

As described in Section 5.1.3, potential Alternative B project sites were added in late 2006, primarily in the Good Hope and Harmony Church areas. These areas will be surveyed in the spring and summer of 2007, and the results provided to USFWS. If survey results indicate additional impacts to Federally-listed species, Fort Benning will consult with USFWS as to how to proceed.

Regardless of whether or not projects change from what is presented in this document, all Transformation projects will require a FB Form 144-R prior to timber clearing and other

construction activities. If Federally-listed species impacts have changed since the Biological Assessment/ BO, USFWS will be notified.

As mentioned in Section 8.3.2, if impacts are identified during research being conducted for the DMPRC that are inconsistent with range impacts predicted for the proposed action, Fort Benning will seek input from USFWS and reinitiate consultation as necessary.

9 MINIMIZATION EFFORTS

The minimization efforts described below should be considered part of the proposed action. The following additional measures will be taken wherever applicable in order to minimize impacts to RCWs affected by Transformation:

9.1 MINIMIZATION AND AVOIDANCE- PROJECT DESIGN

9.1.1 CANTONMENT AREA PROJECTS

Limits of construction for cantonment area projects were delineated in order to minimize, to the extent practicable, impacts to RCW habitat, other species of concern, wetlands, and archaeological sites. For FY08 projects and beyond, RFPs will contain site plans with environmentally sensitive areas taken into account, and Fort Benning will work with design firms to further minimize Federally-listed species impacts as much as practicable (D. Miller, Fort Benning Master Planning Division, pers. comm.).

Two clusters will have cavity trees within design-build project construction limits: HCC-03R (active) and R01-02R (inactive). Up to 7 of 9 cavity trees could be removed from HCC-03R. However, as preliminary designs have been developed for the associated projects, most or all of these trees may be avoided during construction. This cluster would have sufficient foraging habitat if the cluster area were avoided.

9.1.2 RANGES

Although many cavity trees are within the limits of construction analyzed for the ranges, there are some cases where the entire limits of construction will not require 100% clearing. FBCB personnel are working with engineer firms and Master Planning Division during planning charrettes to minimize impacts where practicable. As ranges are designed, efforts will continue to be made to avoid cavity trees and important foraging habitat.

9.1.3 ROADS

Proposed new road construction and road upgrades/ widenings are not currently in design phase. As project sites are surveyed and plans are solidified, RCW and relict trillium impacts could be appreciably lessened. FBCB personnel will work with planners and engineers to minimize RCW tree and foraging habitat as much as possible in an effort to potentially avoid take of any of the affected clusters in this area. Some impacts from a proposed asphalt road to the Randall Creek North relict trillium population appear to be unavoidable, however this impact will be minimized as much as possible during design.

9.2 SPECIFIC CLUSTER MINIMIZATION STRATEGIES

9.2.1 ACTIVE CLUSTERS WHERE CAVITY TREES WILL BE REMOVED

All cavities in trees that will be cut will be screened to prevent RCWs from being present at the time of cutting. In clusters where RCWs can be translocated, all cavities will be screened immediately after RCWs are captured and removed.

Cavity trees that are cut will be either destroyed onsite or collected for educational purposes with appropriate permitting from the USFWS. Active cavity trees will not be cut during the nesting season (April-July).

In 2 clusters (O09-05 and J03-01), active cavity trees will be cut, but there is potential to shift the cluster out of the immediate project area. Cluster O09-05 would have sufficient foraging habitat by the SMS and potential to meet the RS in the future once shifted. Cluster J03-01 would not meet SMS today, but would have at least 120 acres of future habitat so that it could meet RS in the future. Both of these clusters were counted as “takes,” but these takes could be offset by installing artificial cavities at these 2 sites (assuming there are trees suitable for cavity provisioning).

9.2.2 ACTIVE CLUSTERS TAKEN BY LOSS OF FORAGING HABITAT

Clusters which are “taken” because of insufficient post-project foraging habitat will retain the same level of protection they currently have (PRC or SRC). Painted bands will not be removed from PRCs and the 1996 Army Guidelines will apply within the 200 ft. and 50 ft. buffers (DA 1996). SRCs will remain “invisible to training,” with the exception that SRCs

within the heavy maneuver areas may be converted to PRCs for increased visibility by Armor Crewmen. If, in time, groups at "taken" clusters survive, are productive and acclimated to the training disturbance and/ or reduced foraging habitat that triggered the "take," then those clusters may be counted again towards Fort Benning's recovery and population goals with approval from the USFWS.

9.2.3 CLUSTERS WITH POTENTIAL TO MEET SMS

Clusters that contained sufficient suitable and potentially suitable habitat combined were not considered "taken" at the foraging partition level. Instead, minimization efforts will be conducted to improve the potentially suitable stands so that they are suitable, such as suppressing hardwood midstory and thinning overstory hardwoods and/ or pines <10 in. dbh.

There are a total of 2,259 acres of potentially suitable habitat in 12 clusters that will only meet the foraging guidelines if "potentially suitable" habitat is improved. These stands need work to improve hardwood midstory, hardwood overstory, and/or pines <10" dbh to make them suitable. FBLMB projects that it will take approximately 2 years to improve all potentially suitable stands that were included in foraging habitat totals in order to prevent "take." Each stand requiring management will be visited by FBLMB personnel to determine a management strategy. Treatment methods will include timber harvest where applicable for merchantable timber removal (pine or hardwood) and chemical applications (broadcast and hack/squirt) for non-merchantable hardwood control. Stands with a sparse overstory (generally ≤40 ft^2/acres in pines ≥10 in. dbh) may then be underplanted with longleaf pine. Where applicable, entire compartments will be reviewed for timber management prescriptions for efficiency purposes, but in other cases only identified stands will be treated. Although only stands ≥30 years old were counted towards foraging habitat in this document, stands ≥25 years were included in the list of stands for management, with the rationale that with management, these stands could be valuable foraging habitat during or soon after project construction. All "potentially suitable" stands requiring improvement in order to avoid "take" will have work completed by December 2009, and the management schedule will be altered as needed to complete work prior to Transformation impact.

For stands with too many pines <10 in. dbh according to the SMS, a judgement call will be made by FBLMB as to whether or not to thin, with guidance from USFWS. Retaining a BA

of <20 ft^2/acre in pines <10 in. dbh as required by the SMS (USFWS 2003a) should be sufficient to replace the natural loss of overstory pines in a healthy forest with a BA of ≥40 ft^2/acre in pines ≥10 in. dbh. However, since overstory pine mortality in many stands on Fort Benning is higher than that in similar habitats elsewhere due to forest decline and other factors (TNC 2006), and since stands were counted toward RCW foraging totals in this assessment that have a lower BA in pines ≥10 in. dbh than that is required by the SMS, more small pines may need to be retained in order ultimately to achieve the proper forest structure in some stands. This will particularly be an issue in declining off-site stands with longleaf regeneration.

9.2.4 CONTINUED MANAGEMENT OF "TAKEN" CLUSTERS

Of the 47 clusters "taken" under Alternative A, 13 can still meet the RS in the future (150+ acres of habitat) and 9 may be able to meet RS in the future (120-150 acres of habitat).

Of the 26 clusters "taken" under Alternative B, 8 can still meet the RS in the future (150+ acres of habitat) and 6 may be able to meet the RS in the future (120-150 acres of habitat).

None of these clusters (22 in Alternative A and 15 in Alternative B) should be deleted from management. Continued management of these clusters/ partitions may result in the perpetuation or reformation of "taken" groups and allow these sites to be counted towards the Installation population goal. Many of these clusters can play a role in maintaining demographic connectivity and continue to contribute fledglings for overall population stability and growth.

9.3 ADDITIONAL PERSONNEL

Environmental Compliance Officer. Fort Benning intends to hire at least one environmental compliance officer to oversee all BRAC construction activities in order to ensure that proponents, contracting officers, and contractors adhere to applicable laws and binding agreements with regulatory agencies, similar to personnel hired to oversee DMPRC construction.

BRAC RCW Biologist. A FBCB biologist will also be hired to oversee all BRAC-related RCW monitoring, as well as 1-2 technicians as the need arises.

9.4 DEMOGRAPHIC MONITORING AT AFFECTED RCW CLUSTERS

Expected monitoring requirements are listed below, however additional requirements may be necessary pending the outcome with USFWS.

Fort Benning proposes to monitor all clusters directly impacted by road projects and all clusters within 0.5 mile of a proposed Transformation project, including all "taken" clusters. This monitoring will include banding of all adults and nestlings in the cluster and will be conducted for five years after project completion. Clusters to be cut will have all birds banded prior to translocation. This equates to 34 clusters not currently monitored (M. Barron, FBCB, pers. comm.).

RCW demographic monitoring will allow Fort Benning to detect and react to unexpected RCW impacts from project construction and operation. If analysis identifies unexpected impacts, Fort Benning will consult with USFWS to determine the appropriate course of action. A detailed monitoring plan will be developed in consultation with USFWS.

9.5 HABITAT MONITORING AT AFFECTED RCW CLUSTERS

Fort Benning expects to establish vegetation monitoring plots within 0.5 mile of the Maneuver Corridor-South, the QTR, the Oscar small arms range complex and other ranges as necessary using methodology established with DMPRC vegetation monitoring plots. This habitat monitoring will be conducted for five years after project completion. These data will document the effect of heavy maneuver training, heavy artillery impact and small arms range impacts on vegetation for Alternatives A and B. Under Alternative B, vegetation data would also provide a comparison of impacts between heavy maneuver training east of Hourglass Rd and light maneuver (cavalry) training west of Hourglass Rd. Data collected from habitat monitoring will not only validate assumptions made in this document, but will also aid in future range and maneuver area impact assessments.

All removals of habitat managed for RCWs are, and will continue to be, tracked via the Fort Benning NEPA process to ensure that training exercises planned within the Heavy Maneuver Area do not bring clusters below the "take" threshold. No action that may adversely affect Federally-listed species can be approved without evaluation through the Fort Benning NEPA process, therefore any potential "take" that has not been assessed in this BA cannot be categorically excluded via this document. A detailed monitoring plan will be developed in consultation with USFWS.

9.6 TRANSLOCATION

Up to 10 RCW groups would need to be translocated because of cavity trees being cut under Alternative A, and 7 groups in Alternative B. For these groups, Fort Benning will consult with the USFWS to determine where those birds should be relocated. If intrapopulation translocation is preferred, FBLMB and FBCB will ensure that the recipient clusters are in the best condition possible via thinning, hardwood midstory control and/ or cavity installation and maintenance.

Groups could also need to be translocated from clusters within maneuver heavy use areas and range beaten areas. FBCB will consult with USFWS if monitoring in these areas indicates that translocation is necessary.

Studies have shown that the chances of RCWs returning to their "home" cluster greatly increase as the distance from their home decreases (Carrie et al. 1996, Franzreb 1999, USFWS 2003a). For instance, Franzreb (1999) had a 25% success rate of translocations of adult and hatch-year RCWs moved <4.34 miles, compared to 71.4% success for birds moved 11.8-14.3 miles. If impacted groups are translocated to other clusters on Fort Benning, they will need to be moved as far as possible and at least a minimum distance to be specified by the USFWS (R. Costa, USFWS, pers. comm.). Additionally, success rates have been significantly higher when multiple potential pairs are moved simultaneously (USFWS 2003a).

According to the Recovery Plan, translocations can be performed from 15 September to 1 January (USFWS 2003a). Attention must be paid to the time of year of these projects: FBCB will need to be made aware of all projects that require cutting of active cavity trees for each FY in order to schedule all necessary translocations. Although exceptions can be made on a case-by-case basis by the USFWS RCW Recovery Coordinator, it is ideal for the translocations to occur within the recommended time frame, both for the success of the translocation and, should the birds be taken to RCW populations off-Post, to coincide with the schedules of other organizations (USFWS 2003a).

Construction and timber clearing schedules will dictate when RCW groups will be translocated. Using the assumption that RCW groups will be moved during the fall of the year prior to the project FY (i.e.,birds moved during fall 2008 for FY 2009 projects), under Transformation Alternative B (preferred), Fort Benning will need to translocate 2 RCW groups

(Clusters O09-04R and O09-05R) in 2007, 2 groups (HCC-03R and K02-01) in 2008, 0 in 2009 and 3 groups (A17-01, A17-03 and A17-14) in 2010. Due to the close timing of the ROD to the construction of the 2007 projects, RCWs will be translocated during the fall 2007 for FY 2007 projects. Fort Benning will work with USFWS to determine if recruitment sites on the installation are suitable for translocation (habitat quality and distance from impacted clusters).

If RCWs need to be translocated off-Post, they may be used to supplement a smaller population nearby so that as young pine stands on Fort Benning become suitable habitat, that recipient population can in turn become a donor population for the Installation (R. Costa, USFWS, pers. comm.).

Consultation with USFWS will determine whether Fort Benning will continue to be a donor population for the USFWS SRTC. If so, a combination of factors will continue to be used to determine which clusters will donate hatching-year RCWs. This may include giving priority to those "taken" clusters with the least remaining habitat or that are most likely to become inactive. Also, through the BO for the Land Exchange, the Installation is allowed to translocate juvenile RCWs from "taken" Cluster N02-01 on the MTP (ICF Kaiser Engineers, Inc. et al. 1999).

9.7 TRAINING AREA ACCESS

With the increase in training activities and the number of new ranges proposed, access to training areas will become extremely challenging. Agreements will be made with FBRD to allow access by FBCB and FBLMB personnel for activities such as RCW monitoring, cavity maintenance, timber management and prescribed burning in restricted areas such as SDZs. Comparable agreements made for the DMPRC allow FBCB/ LMB 4 hours of daylight per day within the DMPRC SDZs and 4 days per year for RCW clusters in the A-20 Impact Area (P. Swiderek, FBCB, pers. comm.). The access will not present conflict with current or future operations because it is being conducted during scheduled maintenance and repair. These agreements signed by the Garrison Commander can be found in Appendix I. The access agreement for Transformation projects will be provided to USFWS for comment before finalization.

A Range Division Movement Control Center is planned to oversee the operations of the new ranges. This center should have the capabilities to track all activities in all training areas on

the Installation. This level of organization has the potential to assist FBCB and FBLMB schedule the maximum amount of time in available "windows."

9.7.1 CO-USE AND SUBDIVISION OF CURRENT TRAINING COMPARTMENTS

Groups such as military units and FBLMB wishing to reserve areas for training, timber harvesting, prescribed burning, or other activities typically must reserve entire training compartments to ensure that there is no conflict between groups. Often, however, only a small portion of the compartment is actually used. For approximately 10 years, Fort Benning has scheduled co-use of some training areas between military training exercises and small-scale logging operations. Over the past year, due to increased training demands on all training areas, Fort Benning has worked to increase co-use of training compartments between compatible users by allowing military training exercises to be conducted within the same compartment as Co-use will continue to be a goal in non-live fire areas.

FBRD is also investigating permanently sub-dividing some training compartments into smaller units. Dividing large compartments up will allow users to reserve areas that are closer in size to the area they will actually use, leaving the remaining areas available to other groups. It is possible that FBRD can use some of the boundaries that FBLMB has created to subdivide larger compartments into burn units. Fort Benning will complete this mapping no later than 2011, when the majority of the Fort Knox units will have arrived at Fort Benning.

Increasing co-use and redrawing compartment boundaries will help to minimize scheduling conflicts, ensuring that protected species and their habitat continue to be sufficiently managed and monitored post-Transformation.

9.8 BERMING OF SMALL ARMS RANGES

Fort Benning conducted extensive line of sight analyses for all of the Oscar Ranges, and found that berming would considerably reduce habitat impacts at 3 ranges in the Oscar Complex (MRF5, FM1 and Z1). This will help to conserve both current and potential future habitat, that will be essential to reach recovery objectives (Figure 6-25). The remaining ranges in the Oscar Complex either have a natural backstop or do not impact enough, if any, potential RCW habitat for berming to be worthwhile (M. Barron, FBCB, pers. comm.).

9.9 MINIMIZATION/ MITIGATION PLAN AND FUNDING

Fort Benning is in the process of writing a plan for review that addresses annual funding requirements, including staffing, in order to implement the above initiatives/ activities. This plan will be used by HQ DA to put funding for minimization needs into the POM/ funding cycle (P. Swiderek, FBCB, pers. comm.). The Transformation EIS will also contain a mitigation plan to detail funding and implementation of required mitigation, including RCW minimization efforts.

9.10 MINIMIZATION CONSIDERED BUT NOT PROPOSED

9.10.1 DUDDED IMPACT AREAS

The southwestern portion of the A-20 impact area is known to contain several RCW clusters that may be added to management as a minimization strategy. FBRD inspected the area and determined it was unsafe for human access and therefore this effort was discontinued.

9.10.2 RECRUITMENT CLUSTERS

Typically when projects result in a "take," the overall impact on the population is "minimized" by creating recruitment clusters either on the same property or off-property within the affected population. However, a large number of recruitment sites were installed on Fort Benning in the late 1990s- 2000, which has resulted in a high proportion of inactive clusters on the Installation (13.6% of all managed clusters in 2006). Also, there are currently no available off-property RCWs that are considered to be part of the Fort Benning population where installation of recruitment sites could be considered "minimization."

The Recovery Plan (USFWS 2003a) and Army RCW Guidelines (DA 1996, DA 2006b) recommend a 5% average annual population growth in all RCW populations, to be achieved by providing a number of unoccupied recruitment clusters equal to 10% of the total number of active clusters (USFWS 2003a, DA 2006b). Fort Benning currently has 26 unoccupied recruitment clusters with 4 suitable cavities each, which is 9.8% of the number of active clusters on the Installation. Potential locations for additional recruitment sites are limited on the Installation due to poor habitat conditions and other criteria, such as the distance of new recruitment clusters to active clusters. This slower growth rate will not prevent Fort Benning from reaching its recovery goal. Under the Army RCW Guidelines (DA 1996, DA 2006b), Fort Benning must informally consult with the USFWS if this growth rate is not maintained.

10 CONCLUSIONS

The ecosystem at Fort Benning is currently stressed, as land managers transition the forests from a fire-suppressed, loblolly pine-dominated system to a frequently burned, longleaf pine-dominated system. The proposed action will exacerbate the forest decline situation at Fort Benning, and there will be loss of active RCW clusters. Sufficient contiguous pine acreage will remain post-project under either alternative for the Installation to meet its population recovery goal in the future. Based upon current information, the population and/ or Recovery Unit will be able to survive until reaching recovery.

Alternative A would cause more direct "takes," more habitat fragmentation and would reduce RCW cluster densities more than Alternative B. Alternative B, however, would require the permanent removal of more future habitat than Alternative A. Both alternatives have the same impact on relict trillium.

10.1 ALTERNATIVE A

The proposed 2007-2013 Alternative A Transformation projects will have no effect on Michaux's sumac, purple bankclimber, shiny-rayed pocketbook, gulf moccasinshell, oval pigtoe, American alligator, wood stork or the bald eagle.

Potential direct impacts to relict trillium include damage to, and destruction of, plants by clearing and construction of a proposed new road and clearing, construction and operation of two small-arms ranges that will impact the Randall Creek North trillium population. Affected plants may be relocated to a recipient site on Fort Benning or to a site on GA DNR property in order to establish or enhance off-Post relict trillium populations.

RCW cavity trees and/ or foraging habitat will be impacted in 108 active and 4 inactive clusters as a result of 2007-2013 Alternative A Transformation projects. In 2006, 102 of the active clusters contained PBGs, 4 had solitary males, 1 was captured and 1 was active with unknown status.

FHAs were completed for 99 active clusters (impacts to 9 active clusters were in non-contiguous habitat and FHAs were not conducted). Pre-project, 23 of the 99 analyzed active clusters did not meet the SMS and 97 did not meet the RS.

Post- project, 54 of the 99 analyzed active RCW clusters will be "taken" by the Alternative A Transformation projects as a result of forage loss, cavity tree removal, harassment, group level impacts and/ or neighborhood level impacts.

Ninety seven clusters did not meet the RS post- project, and of these, 6 impacted (but not "taken") clusters will have less than 120 acres of manageable habitat and will be unable to meet the RS in the future and 10 others will have between 120 and 150 acres of habitat and may or may not be able to meet the RS in the future depending on the local site conditions and management regime.

Post- Alternative A Transformation, 78,061 acres of contiguous pine habitat will remain, of which 22,247 acres will be in loblolly or shortleaf pine stands with a high risk of decline. Acreage remaining post-project could potentially be enough for 428 clusters at 182 acres/ cluster, or 520 clusters at 150 acres/ cluster. Additionally, FBLMB is in the process of identifying upland hardwood stands for pine conversion purposes. As of March 2007, approximately 740 acres in 25 stands of upland hardwoods had been designated for conversion to longleaf pine. This action could potentially add substantial acreage of RCW habitat to Fort Benning. (P. Swiderek, FBCB, pers. comm.)

Because of large amounts of acreage (approximately 30,000 acres) needing conversion to longleaf pine and the ongoing loblolly pine decline, the ability to meet the RS population goal was not readily achievable in the near term even without Transformation under Alternative A. Pre-Transformation, it is estimated that at 1,500 acres/ year, Fort Benning could have sufficient nesting age habitat for 428 RCW clusters in any species of pine by 2047, or in longleaf pine by 2112. More detailed mapping and modeling of habitat removals were not conducted for Alternative A, however if it were to be chosen as the "preferred alternative," these analyses would be conducted.

10.2 ALTERNATIVE B

The proposed 2007-2013 Alternative B Transformation projects will have no effect on Michaux's sumac, purple bankclimber, shiny-rayed pocketbook, gulf moccasinshell, oval pigtoe, American alligator, wood stork or the bald eagle.

Potential direct impacts to relict trillium include damage to, and destruction of, plants by clearing and construction of a proposed new road and clearing, construction and operation of two

small-arms ranges that will impact the Randall Creek North trillium population. Affected plants may be relocated to a recipient site on Fort Benning or to a site on GA DNR property in order to establish or enhance off-Post relict trillium populations.

RCW cavity trees and/ or foraging habitat will be impacted in 88 active and 3 inactive RCW clusters as a result of 2007-2013 Alternative B Transformation projects. In 2006, 82 active clusters contained PBGs, 4 had solitary males, 1 was captured and 1 was active with unknown status.

FHAs were completed for 80 active clusters (project impacts to 8 active clusters were in non-contiguous habitat and FHAs were not conducted). Pre- project, 14 of the 80 analyzed active clusters did not meet the SMS and 78 clusters did not meet RS.

Post- project, 32 of the 80 analyzed active RCW clusters will be "taken" by the Alternative B Transformation projects as a result of forage loss, cavity tree removal, harassment, group level impacts and/ or neighborhood level impacts.

According to the RS, 78 clusters did not meet the RS post- project and of these, 4 impacted (but not "taken") clusters will have less than 120 acres of manageable habitat and will be unable to meet the RS in the future and 8 others will have between 120 and 150 acres of habitat and may or may not be able to meet the RS in the future depending on the local site conditions and management regime.

Post- Alternative B, 74,737 acres of contiguous pine habitat remain, of which 21,481 acres are in loblolly or shortleaf pine stands that are at high risk of decline. Additionally, FBLMB is in the process of identifying upland hardwood stands for pine conversion purposes. As of March 2007, approximately 740 acres in 25 stands of upland hardwoods had been designated for conversion to longleaf pine. This action could potentially add substantial acreage of RCW habitat to Fort Benning (P. Swiderek, FBCB, pers. comm.)

Because of the large amounts of acreage that need to be converted to longleaf pine regardless of Transformation, the proposed Alternative B would not delay the timeline of 428 clusters being achievable in <u>longleaf</u> pine. It is estimated that at 1,500 acres/ year, Fort Benning would have sufficient acreage for 428 clusters planted in longleaf pine by 2032 with or without Transformation, which would be nesting age in 2112. In contrast, if <u>all</u> pine species are included in habitat totals, the proposed Transformation *would* delay recovery of the population by ±45 years (2047 to 2082).

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14 ACRONYMS/ ABBREVIATIONS

1

%- percent
3rd ID - 3rd Infantry Division
AADR - Action Area Dispersal Rate
ac. - acres
ACF Basin - Apalachicola-Chattahoochee-Flint River Basin
AEC - Army Environmental Command
AL - Alabama
AMF - Army Transformation, Army Modular Force
ANCOC - Advanced Noncommissioned Officer Course
AO - Area of Operations
AR - Army Regulation
Army RCW Guidelines - 1996 and 2006 Army RCW Guidelines
AT/ FP - Anti-terrorism/ force protection
BA - Basal Area
BCT - Basic Combat Team
BCT - Brigade Combat Team
BCTB - Basic Combat Training Brigade
Bde - Brigade
BFV - Bradley Fighting Vehicle
Bn - Battalion
BO - Biological Opinion
BOLC - Basic Officer Leader Course
BRAC - Base Realignment and Closure
CACTF - Combined Arms Collective Training Facility
CAV - Cavalry
CFR - Code of Federal Regulation
CID - Criminal Investigation Division
CITES - Convention on International Trade in Endangered Species of Wild Flora and Fauna
CLFX - Convoy Life Fire Course
Co. - Company
CPQC - Automated Combat Pistol/ MP Firearm Qualification Complex
CSE - Combat Support Equipment
DA - Department of the Army
dbh - diameter at breast height
DENTAC - Dental Activity
Det - Detachment
DFC - Desired Future Condition
DMPRC - Digital Multipurpose Training Range Complex
DoD - U.S. Department of Defense
DODESS - Department of Defense Elementary and Secondary Schools
DPW - Directorate of Public Works
DS/ GS - Direct Support/General Support
DTDD - Directorate of Training and Doctrine Development
EA - Environmental Assessment
ECS - Equipment Concentration Site
EIS - Environmental Impact Statement
EMD - Environmental Management Division
ENG - Engineer
EOD - Explosive Ordnance Disposal
ESA - Endangered Species Act
ESMC - Endangered Species Management Component
ESMP- Endangered Species Management Plan
ESRI - Environmental Systems Research Institute®
FB - Fort Benning
FB Form 144-R - Fort Benning “Record of Environmental Consideration”
FBCB - Fort Benning Conservation Branch
FBLMB - Fort Benning Land Management Branch
FHA - Foraging Habitat Analysis
FORSCOM - Forces Command
ft. - foot/feet
FTX - Field Training Exercise
FY - Fiscal Year
GA - Georgia
GDPR - Global Defense Posture Realignment
GIS - Geographical Information Systems
GPS - Global Positioning Systems
HMMWV - High Mobility Multipurpose Wheeled Vehicle
HMU - Habitat Management Unit
HQ DA - Headquarters, Department of the Army
ICEC - International Classification of Ecological Communities
ID - Infantry Division
IET - Initial Entry Training
IMCOM-SE - Installation Management Command, Southeast Region
in. - inches
Inc. - Incorporated

INRMP - Integrated Natural Resource Management Plan
IPBC - Infantry Platoon Battle Course
ISBC - Infantry Squad Battle Course
ITAM - Integrated Training Area Management
ITB - Infantry Training Brigade
JBO - Jeopardy Biological Opinion
JCA - Dr. J. H. Carter III and Associates, Inc.
Km^{2-} square kilometers
KY - Kentucky
Matrix- USFWS RCW Foraging Habitat Software
MOA – Memorandum of Agreement
MCOE - Maneuver Center of Excellence
Mech - Mechanized
MEDDAC - Medical Department Activity
MILCON - Military Construction
MIMs - Maneuver Impact Mile
MOA - Memorandum of Agreement
MP - Military Police
MPMG - Multipurpose Machine Gun Range
MPRC - Multipurpose Range Complex
MRBC - Multi-Role Bridge Company
MRF - Modified Record Fire
MSL - Mean Sea Level
NCO - Noncommissioned Officer
NCOA - Noncommissioned Officer Academy
NEPA - National Environmental Policy Act
NMFS - National Marine Fisheries Service
OACSIM - Office of Assistant Chief of Staff for Installation Management
OIP - Office of Infantry Proponency
OMA - Operation and Maintenance, Army
OSUT - One Station Unit Training
PBG - Potential Breeding Group of RCWs
PN - Project number
POI - Program of Instruction
POM - Program Objective Memorandum
POV - Privately Owned Vehicle
PRC - Primary Recruitment Cluster
PUAL - Pending Unit Action List
QTR – Qualification Training Range
Range Division - Fort Benning Range Division
RCW - Red-cockaded woodpecker
RD - Range Division
RDP - RTLP Development Plan
REC - Record of Environmental Consideration
Regt - Regiment
RFP - Request for Proposal
ROD - Record of Decision
RPA - Reasonable and Prudent Alternative
RPM - Reasonable and Prudent Measures
RRC - Regional Readiness Command
RS - Recovery Standard
RTB - Ranger Training Brigade
RTLP - Range Training and Land Program

SAIC - Science Applications International Corporation
SCDNR - SC Department of Natural Resources
SDZ - Surface Danger Zone
SGR - Stationary Gunnery Range
SMS - Standard for Managed Stability
SOCOM - Special Operations Command
SOF - Special Operations Forces
SRC - Supplemental Recruitment Cluster
SRTC - USFWS RCW Southern Range Translocation Cooperative
STX - Situational Training Exercise
Take - Incidental Take
TMP - Transportation Motor Pool
TNC - The Nature Conservancy
TRADOC - Training and Doctrine Command
UEA - Unique Ecological Area
Unh Strg - Unheated Storage
US - United States
USAAA - U.S. Army Audit Agency
USARMC/S - U.S. Army Armor Center and School
USACE - US Army Corps of Engineers
USAIS/ USAIC - U.S. Army Infantry School and Center
USARC - US Army Reserve Center
USFS - US Forest Service
USFWS - US Fish and Wildlife Service
WHINSEC - Western Hemisphere Institute for Security Cooperation