



December/January 2001-2002

The Army's Chesapeake Review



Former Leaders Urge Increased Efforts to Restore the Bay

by Adriane Miller

Decades of gains in restoration and health of the Chesapeake Bay could easily become undone without more enthusiastic and dedicated support from political leaders, says a group of policy makers who were instrumental in charting Bay improvements in the 1970s and '80s.

"Today's political leadership has to put the Bay at the top of their list and keep it there, to engender public support," said former Maryland Governor Harry Hughes at a recent panel discussion of the history of Chesapeake Bay restoration efforts. "Public support is the key. In the past, wherever you went, people would yell, 'Save the Bay!' Now, I don't think we're doing a very good job of keeping the Bay a top priority."

Hughes joined other retired leaders at Washington College on Maryland's Eastern Shore recently to discuss their early work to protect the Bay. In addition to Hughes, the panel featured former Maryland State Senator Bernie Fowler, former Virginia State Senator Joseph Gartlan, former Virginia Delegate Tayloe Murphy and former Chesapeake Bay Commission Member George Wolff. They spoke to an audience of about 120 at the request of the Washington College Center for Environment and Society, the Alliance for the Chesapeake Bay and the Chesapeake Bay Program.

"These are leaders who inspired us all," said Washington College President John Toll of the panel. "They played a major role in establishing the policies that have made a great difference in restoration of the Chesapeake Bay."

(Continued on page 3)



Family gathering on Poole's Island, date unknown.

Vegetation Is Used to Find Cultural Artifacts at Aberdeen Proving Ground's Poole's Island

by Brian Feeney

When the U.S. Army requisitioned Poole's Island as part of the land that became Aberdeen Proving Ground (APG) in 1917, the island was home to the Poole's Island lighthouse keeper, his family and two other families. Eighty years later, scientists from APG's Conservation Section of the Directorate of Safety, Health and the Environment arrived at Poole's Island looking for remnants of the three homesteads and clues that would reveal the daily life on the island. The scientists studied the dense undergrowth for anomalies in the vegetation, a possible sign of the island's past.

James Battin, an intern, and Deidre DeRoia, a biologist with the Conservation Section, began a project the summer of 1997. It was aimed at finding artifacts on the post by developing a reliable, easy method of locating old homesteads. Battin and DeRoia started by using historical maps

to identify the presence of structures. Even using a Global Positioning System receiver in conjunction with map data, they were often unable to get precise locations for structures. As a result, they supplemented map data with vegetation surveys. The scientists had discovered at other sites on post that they could increase the accuracy of the Historic Resource Predictive Model developed for finding historic structures from 23 to 90 percent by looking for black walnut and sweet cherry trees together with daffodils. These three species only grow where they are planted, and all three were frequently planted around homes in the 19th and early 20th centuries, making them useful indicator species.

Black walnut was highly valued for its nuts, as a source of black dye and for hardwood. Sweet cherry was prized for its fruit and used as a root stock for grafting improved fruit varieties.

(Continued on page 4)



The Scranton Army Ammunition Plant today covers 15 acres in Downtown Scranton and employs 400 people to make artillery and mortar shells for the U.S. Army.

Army Chesapeake Bay Program's Newest Installation has a Long Industrial History

Walking the Scranton Army Ammunition Plant's (SAAP) 15 hardtop acres in downtown Scranton, Pa., today, a visitor is struck by the fully automated 500,000-square-foot ammunition manufacturing facility that makes the U.S. Army's 105mm and 155mm artillery shells and 120mm mortar rounds. What is not apparent is the site's long industrial history, evolving from a sawmill and blacksmith shop in colonial times to an iron works around 1800, a steel mill in 1842 and to a locomotive shop 1910. In 1953, the Department of Defense purchased the site and converted it from a locomotive construction and repair facility to a government-owned,

contractor-operated ammunition plant. Chamberlain Manufacturing Corporation has been the sole contractor since 1963. It currently employs 400 people at the site, while the Army maintains eight civilian employees at SAAP.

SAAP is a small quantity generator and has a National Pollutant Discharge Elimination System (NPDES) permit for a single stormwater discharge to Roaring Brook, a tributary of the Lackawanna River located directly across the street to the east. SAAP employs best management practices through its contractor. It runs stormwater through an on-site oil/water separator before discharging it into Roaring Brook, and it has

implemented a pollution prevention plan. The plan identifies all potential contaminated runoff sources, establishes good housekeeping measures to keep water away from those sources and includes an inspection schedule for equipment whose breakdown could cause spills. It also includes spill prevention and response procedures and employee response training.

With more than 200 years of industrial use comes a history of past pollution. The Army and its contractor have undertaken major cleanup projects at the site under a cooperative agreement with the Pennsylvania Department of Environmental Protection (PA DEP). In 1986, it excavated a large area of petroleum-contaminated soil and installed a groundwater recovery and treatment system that is still operating. In 1992, it excavated a large area of asphalt and soil in response to a PCB spill. At a recent ceremony at the plant, PA DEP credited SAAP as the first military installation in Pennsylvania to achieve a facility-wide cleanup under the Pennsylvania Land Recycling Program.

Railroad enthusiasts know SAAP best as the site of the Scranton Locomotive Shops from 1910 to 1947. In its heyday in the 1920s, it employed 4,000 people to build and repair locomotives. The Scranton Locomotive Shops built some well-known diesel engines of the first half of the 20th Century. They ran along 998 miles of Delaware, Lackawanna & Western track from Hoboken, NJ, to Buffalo, NY. As a steel mill, the site



This newsletter is produced by Horne Engineering Services, Inc., under Contract No. DACA31-97-D-0051 for the U.S. Army Environmental Center (USAEC). Contributing writers for this issue include Shana Bullock, Brian Feeney, Don Maglienti, and Adrienne Miller of Horne Engineering. Contributing editors include Gretchen Gueguen, Bill Maly and Helene Merkel. Please contact Janmichael Graine, USAEC, by e-mail, <Janmichael.Graine@aec.apgea.army.mil> or by telephone, (410) 436-1557, DSN 584-1557, with any questions, comments or installation success stories.

The newsletter is distributed via U.S. mail and e-mail. It can also be viewed on the Army Chesapeake Bay Program home page. The home page address is <<http://www.hqda.army.mil/acsimweb/env/cbi/index.html>>. If you want to be on the distribution list, contact Brian Feeney, Horne Engineering Services, Inc., at <bfeeney@horne.com> or call (410) 515-5802.



The Scranton Army Ammunition Plant in the 1920s when, as the Scranton Locomotive Shops, it employed 4000 to make and repair locomotives for the Delaware, Lackawanna & Western Railroad.

was an important source of war material for the Grand Army of the Potomac during the Civil War. Its use as an ammunition plant today continues a tradition.

The U.S. Army Environmental Center is pleased to add SAAP as its 19th Chesapeake Bay watershed installation. USAEC's point of contact at SAAP is Tim Tuttle. He can be reached at tim.tuttle@aco.pica.army.mil.

Bay Leadership

(Continued from page 1)

The panel was missing former U.S. Senator Charles "Mac" Mathias of Maryland, who was ill. Mathias played a key role in the creation of the Chesapeake Bay Program and was instrumental in producing the first Bay Agreement in 1983. In that agreement, the Environmental Protection Agency, the State of Maryland, the Commonwealths of Pennsylvania and Virginia, and the District of Columbia pledged to work together on Bay protection efforts.

Many of the panel members referred to Fowler as the "guiding spirit" of their work. Well known for annually wading into the Patuxent River, one of the six main tributaries of the Chesapeake Bay, to measure water clarity by how well he can see his white sneakers, Fowler was introduced to the audience as "the only member of this panel who is the subject of a song about his toes." Fowler admitted he has become "a little more disillusioned" about the future of the Bay in recent years. "I don't think we're making adequate

progress," he said. "I'm not quite as optimistic as I was a few years ago. We have to tighten the screws a little."

Wolff said he is disappointed that younger generations do not seem to have as much interest in protecting the Bay as those he worked with just a decade before. "I look in this room, and I say where is the next generation, or two? All this [Bay restoration] was done for the will of the people. But is the will of the people going to be the same in the next generation?"

When asked about the role of scientific research in policy making for the Chesapeake Bay, Hughes recalled that politics sometimes held sway over scientific study during his tenure as governor. He remembered when watermen appeared en masse at the Annapolis State House with their oyster tongs to protest a fishing moratorium. "Science wasn't playing a big part then," he said.

Fowler credited Bay research with giving policy makers a road map to follow. "It wasn't an uncaring, but an unlearned mind that didn't know what the problems were in the Bay," he said. Wolff and Gartlan both agreed that scientific study is essential, but so is the ability to act quickly.

Today's leaders should be considering a holistic approach to Bay protection, said Murphy, one that involves voluntary efforts and regulation. A healthy dose of common sense would help too, Fowler added.

"We're seeing now an uprising of opposition against trying to preserve the blue crab," said Fowler, who has spent most of his life near the Patuxent River. In his youth, he said, he often fished for crab. "But when we were crabbing, we never took the female crab. It's simple common sense—if you've got no mamas, you're not going to have babies. It doesn't take a rocket scientist to figure that out."

For many of the leaders, no specific event motivated their involvement in protection and restoration of the Bay. Hughes recalled exploring the Bay by boat with no particular purpose other than enjoyment, and soon realizing the treasure that he had the responsibility to protect. Gartlan grew concerned

when he discovered the federal government intended to lease parts of the Atlantic Ocean for oil exploration with drilling operations built very near the Bay, which would result in a "huge onrush of development."

Fowler said he noticed that the Patuxent River was losing its clarity, year by year, and that the clarity of the Bay would naturally follow the same downward trend. Murphy realized the same vitality he had known in the Rappahannock, hence the Bay, would not be there for his own daughter. Wolff saw the public affairs nightmare the poultry industry would face if poultry farmers were unable to reduce phosphorus runoff.

Out of their individual concerns came influential action. As governor, Hughes prepared Bay initiatives that were enacted by the Maryland General Assembly in 1984 and 1985. Gartlan advanced legislation that would become important parts of Bay restoration. Fowler managed to convince Maryland counties to limit their discharges of sewage into the Patuxent River. Murphy led a growth and land-use commission. Wolff organized Pennsylvania farmers to support the Bay Program.

There are still plenty of causes to get behind—Murphy said sprawl may be the next generation's "show stopper."

"If we don't start utilizing the infrastructure we already have, we aren't going to solve our problems," he said. "Sprawl is the greatest issue facing the Bay watershed today."

"I think one of the most helpful signs politically on the horizon is the offshoot of the tributary strategy for tributary management," Gartlan said, referring to the effort to increase monitoring and restoration of rivers leading to the Bay. "It begins to move the consciousness of people who don't live on shore that what they do ultimately impacts the Bay also. The Bay is not mine. It isn't anybody's. But every single one of us has a responsibility for taking care of that piece of creation."

Poole's Island

(continued from page 1)

Daffodils were appreciated for their ornamental value as much then as they are now. The trunk widths of the two tree species reveal their age, making it possible to date historical buildings.

In September and October 1997, Battin and DeRoia performed vegetation surveys in 21 areas at APG known to have been the site of historical buildings. They successfully located the remains of 70 structures using this technique. The telltale combination of black walnut, sweet cherry and daffodils was present at 19 of the structures.

Battin and DeRoia made sure to include Poole's Island in their surveys because living relatives of the three families on the island had related stories to the Conservation Section staff about life on the island before 1917. In addition, the Conservation Section staff was given pictures showing the members of these families engaged in everyday life on the island. The pictures show children playing, wash being hung and men holding up fish they just caught.

Battin and DeRoia had high hopes of finding artifacts at Poole's Island because it had not been subject to redevelopment and heavy bombardment as has much of APG's shoreline areas. They also wanted to be able to place the lighthouse itself—a National Register-listed historic monument restored by the U.S. Coast Guard in 1996—in its historical context.

Battin and DeRoia arrived at the lighthouse on the northwest side of the island late in the afternoon of a particularly hot and humid early autumn day after a long day of vegetation surveying. They quickly found themselves battling biting black flies and struggling through very dense brush as they began their survey. After a couple of hours of searching, they realized that no black walnut, sweet cherry or daffodils were present together anywhere on the island, so the scientists decided instead to look for anything unusual in the vegetation.



Poole's Island lighthouse keeper showing off the day's catch, date unknown.

They soon discovered a half dozen vine-enshrouded peach trees at the east end of the island. The trunk widths indicated that they were the right age to have been part of an orchard before 1917. Battin and DeRoia began searching the ground around the trees and found complete foundations of a main house and an outbuilding. No other remnants of the buildings remained, and no artifacts such as cooking utensils could be found. This was not surprising according to DeRoia because all of Poole's Island has been heavily "pot hunted," or scavenged, by local boaters.

Battin and DeRoia obtained photographs and compared them to their findings. They think they may have identified the two buildings; however, they could not identify a peach orchard in any of the photographs. The house found on the east end of the island was one of three. The lighthouse keeper and his family had a house and some outbuildings close to the lighthouse on the west side, and two bachelor brothers shared a house on the south end. The 208-acre island was once much larger, and erosion is evident by the fact that the house on the east end is now almost at the beach, a location that would never

have been considered prior to 1917 because of the frequency and severity of storms.

Nonetheless, DeRoia hopes to turn her discovery of the peach trees into living history by grafting branches from the Poole's Island orchard onto trees surrounding the historic Mitchell House next to the APG Aberdeen Area golf course where the Conservation Section is located. Her effort will contribute to a larger Conservation Section project to establish a highly accurate Victorian landscape at the Mitchell House. Ground was broken on the project on National Public Lands Day last fall (see the article on page 6 for details). Members of the Conservation Section believe that looking to APG's own Victorian past is an apt way to continue the installation's traditions. It will also preserve the genetic information contained in a Victorian-era fruit. Modern fruit tends to be less sweet because of genetic alterations to enhance shelf life. To one day sit on the porch of the Mitchell House eating the same fruit enjoyed by the residents of Poole's Island before there even was an APG will be sweet indeed.

IC Highlights

Meeting Announcements

The Implementation Committee (IC) recently met at the Chesapeake Bay Program (CBP) office headquarters in Annapolis, Md to discuss the results of the public access survey; the draft Stormwater Directive; interpretation of the Chesapeake 2000 (C2K) goal to reduce harmful sprawl; the status of the CBP's submerged aquatic vegetation (SAV) no-net-loss policy; the status of the Innovative Technologies clearinghouse; the latest efforts of the Water Quality Seteering committee; the role of the IC; citizen monitoring; criteria for watershed management plans; the new monitoring and analysis subcommittee; and the elimination of mixing zones. Highlights from the IC meetings follow.

Public Access Survey

Michael Scott of the Land, Growth, and Stewardship Subcommittee's Public Access Workgroup presented the final results of the Chesapeake Bay Public Access Survey. The purpose of the project was to provide a database of information on public access demand and satisfaction from which planning decisions can be made. A commitment in the C2K agreement calls for a 30-percent increase in public access to the Bay by 2010. Information from the survey could be used as baseline data as the CBP seeks to meet the goal. The project database includes information about recreational users' opinions on access, satisfaction and facility-expansion issues, and general population profile information.

The survey was conducted during the summer of 2000 at 26 sites throughout the Bay watershed. A total of 1,294 users from the three signatory Bay states (630 from Maryland, 594 from Virginia, and 70 from Pennsylvania) completed a 19-question survey. It asked participants to rank their satisfaction on certain issues on a scale of 1 to 10.

Results of the survey indicated that users of Chesapeake Bay recreation

areas come from more than 20 states and 3 foreign countries. The number one reason for visiting a recreation area was fishing, followed by relaxing, spending time at the beach, camping, being with family or friends, getting a suntan, swimming and boating. More than one in five respondents were visiting their access point for the first time. Users were generally satisfied with their visits, with the most dissatisfaction expressed over restroom facilities. Based on the survey results, the workgroup recommended that land-based activities near the water be given greater consideration for enhancement.

Stormwater Directive

Scott Crafton, co-chair of the Urban Stormwater Workgroup, presented the draft Stormwater Directive. The directive addresses stormwater as a large contributor of pollutant loads to the Bay and a critical problem for meeting the Bay Program's water quality goals. Bay Program partners will now set an example for local governments, municipalities, property managers, contractors, developers, and private land owners to follow in developing, funding and implementing innovative stormwater management approaches. The directive focuses on strategies that mimic the preexisting hydrologic conditions of a site to manage water quality and quantity.

Partners will establish a large number of demonstration sites for new development and redevelopment that are accessible to the public and provide significant educational value. A new level of cooperation will begin with departments of transportation, academic institutions, local governments and community organizations to develop and implement innovative stormwater management solutions.

During the presentation, the IC discussed and resolved several issues regarding specific language of the draft directive, which will first be presented for approval by the Principals' Staff Committee prior to final endorsement by the CBP's Executive Council at its meeting on December 3, 2001.

Chesapeake 2000 Invasive Species Goals

The Living Resources Subcommittee's Invasive Species Workgroup presented a draft strategy for achieving an invasive species goal within the C2K agreement. The goal commits CBP partners to identify and rank non-native, invasive aquatic and terrestrial species that are causing or have the potential to cause significant impacts to the Bay's aquatic ecosystem. It also calls for the development and implementation of management plans for those species deemed problematic for the Bay's restoration and ecosystem integrity.

The strategy consists of four main tasks. Task 1 will be to identify and rank the species that pose threats to the Bay. This includes sending information requests to all appropriate state and federal agencies and academic institutions. The workgroup will then develop criteria to rank and prioritize species, and identify five species for the development of draft management plans. Task 2 will be to develop the management plans for these species. This includes an assessment and a gap analysis of current management programs. The workgroup will also examine the possibility of establishing a Mid-Atlantic Nuisance Species Panel. Task 3 will be to develop a protocol for the CBP to follow in addressing environmental emergencies caused by invasive species. Finally, task 4 will be to develop a set of comments from CBP partners on the upcoming re-authorization of the National Invasive Species Act.

Chesapeake 2000 Harmful Sprawl Goal

Menchu Martinez of the CBP and Steve Taglang, chair of the Land, Growth, and Stewardship Subcommittee, presented to the IC various interpretations of a commitment within the C2K agreement to reduce harmful sprawl. The goal commits partners to reduce the rate of harmful sprawl development

(continued on page 6)

IC Highlights

(Continued from page 9)

of forest and agricultural land in the Chesapeake Bay watershed by 30 percent measured as an average over five years from the baseline of 1992 to 1997. Martinez and Taglang said this goal can be interpreted in three distinct ways. First, it could be calling for a reduction of the rate of all forest and agricultural land conversion. Second, it could be calling for a reduction of land conversion only where it is considered “harmful sprawl.” Finally, the commitment could be interpreted as calling first for a reduction in all land conversion, followed by a reduction in harmful sprawl on land that will be developed. Given the contentious and important nature of this particular commitment, the IC agreed to consider the options presented and decide which interpretation to adopt as CBP policy.

Submerged Aquatic Vegetation No-Net-Loss Policy

Gregory Peck, acting deputy director of the CBP office, updated the IC on the status of the ongoing SAV “no-net-loss” policy discussions. The Bay Program is considering developing a policy to mitigate impacts to SAV caused by dredging projects in the Chesapeake Bay. Issues discussed during a meeting of Bay Program partners on June 12 included the triggering of a review of impacts and the avoidance, minimization and compensation of any impacts to SAV from dredging projects. At issue is the type of regulated activity that will be covered by the proposed policy, whether it will cover all permitted activities, or only those activities related to improving navigation. The proposed policy could address only direct impacts, such as the direct removal or destruction of SAV, or include indirect impacts such as degradation of shallow water habitat. The policy could also address increased wave action or increased sediment loading. A system may have to be established to determine the presence or absence of SAV in an area, so that

impacts may be accurately predicted. Also, it may be beneficial to count certain exotic plant species as SAV. A regulatory review may be triggered for maintenance activity and new projects, or just for new projects. The proposed policy may set a specific term for all dredging permits to expire, or it may leave term limits to be decided on a project-by-project basis. Compensation for impacts may be specified in the policy as being anything that an agency considers appropriate. It may also be specific restoration or enhancement actions, or may be determined based on the details of a project and its impacts.

Innovative Technologies Clearinghouse

Rodney Sobin of the Virginia Department of Environmental Quality presented an update on the status of the innovative technologies Clearinghouse. A task force on Innovative Technologies has been working to address previous IC recommendations regarding the clearinghouse, which can be found online at www.chesapeakebay.net/innovative.html. The clearinghouse, which originated as a result of Executive Council Directive 98-3, Accelerating Bay Restoration Through Implementation of Innovative Technologies, is designed to serve as a mechanism for innovative technology information exchange to reduce duplication and foster awareness of technological developments, pilot projects, and research and capabilities.

Two issues raised at the previous IC meeting were that the clearinghouse may be duplicative of various other technology clearinghouses and that the process of screening submittals of technology information may require more staff time than is currently available. The task force examined each of these issues and reported that neither of them present a significant reason to halt development of the clearinghouse. The task force conducted a search of existing web-based clearinghouses and found no others that provide a similar amount of

coverage of the entire scope of Chesapeake Bay-related restoration and protection activities. The task force also stated that the review of technologies for inclusion in the clearinghouse will be cursory and will not require large amounts of time by the task force or other Bay Program subcommittees.

Water Quality Steering Committee

Allison Wiedeman of the CBP office presented an update on the status of the efforts of the Water Quality Steering Committee. The steering committee provides management oversight for the process of integrating the cooperative and statutory programs pertaining to the Chesapeake Bay and its tributaries. Due to recent actions taken under Section 303(d) of the Clean Water Act, Bay Program partners have committed to removing the Bay and its tributaries from the list of impaired waters by the year 2010 to avoid the impending requirement of total maximum daily loads for Bay pollutants.

The Bay Program is evaluating the possibility of using new water quality criteria to guide restoration efforts that are more closely linked to habitat improvements and living resources. These criteria are chlorophyll *a*, dissolved oxygen, and water clarity. The steering committee has established several task groups to develop recommendations for specific numerical targets for each of these criteria that will be effective in achieving Bay Program goals, while also avoiding the need for total maximum daily loads for the Bay under the Clean Water Act. More information about the steering committee can be found at www.chesapeakebay.net/wqsc.htm. This Web site also contains links to each of the steering committee’s task groups, where draft documents for the new water quality criteria recommendations are located.

The Role of the Implementation Committee

IC members in attendance discussed the role of the IC in relation to the Budget Steering Committee (BSC) and C2K commitments. The members agreed that the IC tends to duplicate the BSC both in its membership and its role of setting priorities for the subcommittees and workgroups. The reason for this overlap, the group agreed, is that the IC has allowed much day-to-day decision making on policy to devolve to the subcommittee chairs. The distinct role of the IC, they decided, is to devote more of its meeting time to policy control to ensure that the tasks of subcommittees and work groups add up to the implementation of a coherent set of policies. This will be particularly important to do as the IC directs its efforts at implementing the 98 commitments contained in C2K.

Three main impediments to fulfilling this role exist, according to the members present. The IC has not clearly recorded its decisions so that they can be given to the subcommittee chairs. The IC has allowed too much policy-setting to be made by subcommittee chairs at BSC meetings, and the IC has allowed too much of its meeting time to be spent receiving progress reports from subcommittees and work groups. The members agreed that the Gutman lecture, or "State of the Bay" reports, should be retained, but it should be followed by five hours of actual decision making in response to subcommittee reports, especially when those reports include matters that fall under the purview of other committees.

The group also proposed creating a flowchart of the IC's responsibilities that includes the scheduling and sequencing of the subcommittees' activities. This would enable the IC to monitor specific tasks and provide a graphic representation of how those activities form a coherent whole for implementing the goals and commitments of the CBP. The group also refined the wording used to describe its responsibilities. The

changes will be reviewed at the next IC meeting.

Citizen Monitoring

The Citizen Monitoring Program requests funding from the BSC every year, but has not yet received any primarily because the CBP does not use citizen monitoring data for its own monitoring program. IC members discussed whether it should be funded in the future and, if not, what the role of citizen monitoring should be in the CBP.

IC members agreed that, while the quality of citizen-generated data is

good, the chief weakness of the data is that the citizens do not obtain it by sampling at CBP or state monitoring stations. The data cannot be integrated with existing data for the benefit of the model. The members discussed whether a better use of citizens' efforts, as an extension of the CBP's eyes and ears, would be amphibian monitoring because it is currently not being performed at all.

Another suggestion considered by the group was to assign funding to the states that actively use citizen monitoring, such as Virginia. Some

(Continued on page 8)

Potomac Conservancy Seed Bank is Growing with Help from DoD Installations

Riparian forest buffer planting in the Chesapeake Bay watershed has become so popular that nurseries are low on native seed stock. The Potomac Conservancy is responding to this need through its Growing Native Seed Collection Program, but white oak and red oak acorns are still needed.

The Potomac Conservancy organized more than 2000 volunteers from community conservation groups, local schools, and Boy Scout and Girl Scout troops in the Potomac watershed to gather seeds over the weekend of October 20 and 21. They were joined by volunteers from the Patuxent Naval Air Station, Norfolk Naval Base and Langley Air Force Base who collected seeds independently during the last week of October. At Norfolk Naval Base alone, volunteers collected more than 18 bushels of black walnut. The seeds were delivered to designated state nurseries in Virginia and Maryland. The seeds will be planted by the nurseries and grown into saplings that can be used for riparian buffer planting projects in the Chesapeake Bay and Potomac watersheds in about two years.



State foresters Paul Reier and James Harris unload some of the 18 bushels of black walnut seed collected by volunteers at the Norfolk Naval Base.

The Chesapeake Bay Program has a goal of planting 400 miles of riparian forest buffer by 2010, and the Potomac Conservancy's seed bank will be a valuable source of native samplings. "This is a fantastic program that has direct benefits for our Chesapeake Bay riparian forest projects. I encourage all DoD facilities throughout the watershed to support the effort," said Glenn Markwith, DoD Chesapeake Bay Program Coordinator.

Army installations in the Chesapeake Bay watershed are invited to help. Anyone interested in collecting white oak and red oak acorns can contact Christine Rodick at the Potomac Conservancy to receive volunteer training, state nursery locations, and collection materials such as tree identification charts and burlap bags. She can be reached at <trees@potomac.org>.

IC Highlights

(continued from page 7)

members said that the CBP is not fully utilizing state water quality data, so funding citizen monitoring through the states would still not add to its database. However, the members agreed that citizen monitoring has a real value to the CBP because it fosters grassroots involvement and environmental stewardship among the public.

Dave Bancroft, the new executive director of the Alliance for the Chesapeake Bay, pointed out that the CBP had itself begun as a grassroots organization in the 1970s and had professionalized over the course of the 1980s and 1990s as a result of becoming government funded. The members accepted his offer to provide a full presentation at the IC's next meeting. The discussion ended with an agreement that citizen monitoring is recognized by the IC as a valued component of the CBP, but probably could not be funded out of the CBP budget.

CWiC Update

Carin Bisland of the C2K Watershed Commitment (CWiC) Task Force presented a draft for a minimum set of criteria for a watershed management plan. The criteria are to be used by the CBP to evaluate whether or not a local initiative qualifies as progress toward the C2K goal of developing and implementing locally supported watershed management plans in two-thirds of the Chesapeake Bay watershed. The proposed criteria include the following:

- A management plan must be based on a natural resource assessment that includes the condition of stream corridors, riparian buffers and wetlands within the watershed.
- The plan should contain management options that address the protection, conservation and restoration of the assessed natural resources consistent with the requirements of the watershed's jurisdiction and C2K goals.

- The plan should reflect the issues of the stakeholders in the watershed as well as benefiting habitat and water quality.
- The goals should be based on priorities as established by the plan.
- The plan should specify management actions to be taken, who will take them, the resources required and when they will be completed.
- The plan should include periodic reevaluation to determine the effectiveness of actions taken and any follow-up needed.
- The plan should demonstrate local support in the form of local government, community group and watershed organization support.

In addition to providing local efforts with these guidelines, the taskforce has been funded to help with the preparation of watershed management plans and to act as a clearinghouse for management tools, techniques and resources. Individual jurisdictions are responsible for developing their own set of protocols for local watershed management efforts that reflect each jurisdiction's watershed management programs and governing structure.

The IC approved the draft set of criteria. The task force will present the criteria of the individual jurisdictions to the IC at its January 2002 meeting and present its final criteria to the IC for formal CBP approval in February.

Monitoring and Analysis Subcommittee

Carlton Haywood presented the Monitoring Subcommittee's reorganization as the Monitoring and Analysis Subcommittee (MASC). MASC is to function as a forum for internal communication regarding all Chesapeake Bay watershed monitoring activities. This role will include data integration and analysis, as well as multidisciplinary interpretation. To fulfill this mission, the committee will serve as an information hub for 11 other subcommittees and workgroups. MASC will also work with CBP partners and committees to secure sufficient funding, will periodically review and update monitoring strategy,

advise BSC of monitoring priorities and draw conclusions from the data in order to guide management decisions regarding Bay restoration.

Elimination of Mixing Zones

Bob Steidel, co-chair of the Pollution Prevention and Point Source Workgroup of the Toxics Subcommittee, presented a draft strategy for publicly owned and private wastewater treatment facilities to follow in order to voluntarily eliminate the practice of using mixing zones. A mixing zone is an area where an effluent discharge is initially diluted in a water body to ambient levels. Water quality standards in the designated area can be exceeded as long as acutely toxic conditions are prevented. This exemption, under the NPDES, is contrary to the C2K goal of zero release of toxics to the waters of the Bay.

A formal voluntary elimination of the mixing zones program would set geographic priorities and a timeline for participating facilities to follow. It would also include technical assistance such as how to apply pretreatment and tertiary treatment technologies, and education and outreach efforts such as identifying practical benefits like flexibility from regulatory authorities and avoidance of total maximum daily loads.

The organizers of this initiative say that they still need to work with state NPDES permitting authorities to create a distinction between voluntary efforts and regulatory actions. They would also like access to state water quality data to quantify the environmental benefits. Finally, they would like to work with states to clarify whether individual mixing zone elimination efforts fall under permitting or pollution prevention.

The IC accepted the initiative as a CBP strategy with the understanding that many unresolved aspects will be worked out before it is introduced.

Army Celebrates National Public Lands Day in the Chesapeake Bay Watershed

The U.S. Army celebrated National Public Lands Day in the Chesapeake Bay Watershed with several events in September and October. Four Army installations and the U.S. Army Corps of Engineers held plantings and trail renovation projects, although volunteer involvement from surrounding communities was curtailed because of heightened security.

At the Aberdeen Proving Ground, the U.S. Army Environmental Center (USAEC) completed a BayScapes demonstration garden at its headquarters building in the Edgewood area of the installation. Volunteers from the Boy Scouts and USAEC planted more than 700 native flowers, herbs, shrubs and trees to improve water quality and provide habitat. In the Aberdeen Area, staff from the Environmental Conservation and Restoration Division worked on restoring the plantings around the historic Mitchell House to its 19th century design. They planted pear and plum trees, and hope to graft branches from the remnants of a 19th century peach orchard, which now grows wild

in a few isolated places (see the article on page 1 for more information). They also planted species of flowers and windbreaks of white cedar characteristic of Victorian gardens.

At Fort A.P. Hill, volunteers from the Caroline County Junior ROTC and staff from the Environmental and Natural Resources Division began planting a 3,000-square-foot hummingbird, butterfly and bee garden using native plants known to attract them. They also weeded, pruned and mulched the Virginia Medal of Honor Memorial and did maintenance work on 21 American Heritage trees, which were planted from seeds of trees on the National Register of Historic Trees.

Volunteers at Carlisle Barracks connected the Town of Carlisle's Letort Scenic Trail with Middlesex Township's trail by renovating their stretch of streamside trail. It runs along the installation's Heritage Park, which contains a collection of American Heritage trees and the Colonial period Wilson Home. Members of the Safety and Environmental Management Office were joined by 65 local Girl

Scouts, Brownies, Boy Scouts and community volunteers. They removed weeds and overgrowth, and covered the trail with mulch. They also installed interpretive signs explaining the trees' heritage, the history of the Wilson Home and the functions of a wetlands area next to the trail.

At Fort Belvoir, members of the Environmental and Natural Resources Division improved the Potomac View Trail, which follows the Potomac River at Fort Belvoir's eastern boundary. They were joined by nearly 40 volunteers from the Boy Scouts, Girl Scouts, the Fairfax Audubon Society and the community. They placed wood chips on nearly a mile of trail, installed interpretive signs explaining the history of the river, and renovated benches.

Finally, the Army Corps of Engineers built 20 fish habitat structures and installed them in Hammond Lake in north central Pennsylvania. Park rangers were joined by staff from the Pennsylvania Fish and Boat Commission, and 40 volunteers from local bass fishing clubs and the community. The five-foot high structures were constructed of hemlock slats that resemble porcupine quills. Juvenile sports fish use them to hide from predators and feed on the phytoplankton and aquatic insects they attract. They also help fishermen find adult bass attempting to feed on the fish hiding in the structures.

These six projects in the Chesapeake Bay watershed were only a fraction of the total number of projects occurring around the country. An estimated 50,000 volunteers worked on projects valued at \$8 million at 350 sites. The National Public Lands Day Project began in 1994 with three sites and 700 volunteers. Over the last eight years it has grown into a unique public-private partnership, coordinated by the National Environmental Education & Training Foundation, and involving the Department of Defense, federal, state, and local land agencies, and non-profit conservation organizations.



Girl Scouts and Fairfax Audubon Society volunteers work with Environmental and Natural Resources staff to improve Fort Belvoir's Potomac View Trail.

FAC Highlights

Important FACTs

The Federal Agencies Committee (FAC) recently met at the Chesapeake Bay Program (CBP) office in Annapolis, Md. Highlights of these meetings follow.

Federal Efforts in the Anacostia

The FAC discussed the activities of various federal agencies in the Anacostia watershed, which faces problems from fecal coliform bacteria, low dissolved oxygen and chemical contamination in sediments. Combined sewer overflows in the District of Columbia are a major delivery system of these pollutants. Until the implementation of the Water and Sewer Authority's Long Term Control Plan in 2002, the U.S. Environmental Protection Agency (EPA) seeks to reduce sewer overflow pollutant inputs through low impact development techniques and stormwater management.

Most FAC member agencies have a participating representative in the Anacostia Watershed Toxics Alliance. The Alliance, created as a public-private partnership to address contaminated sediments in 1999, is looking at various remediation options, including removal of sediments by dredging. Where dredging is not an option, on-site treatment and monitored attenuation—the process of allowing natural chemical and biological processes to reduce contaminant levels—may be used. Contaminated sediments can also be capped with a clean isolating material such as sand, gravel or geotextiles.

Hickey Run, a major tributary of the Anacostia River, is a focus of federal agency efforts. Its watershed drains an urban area containing numerous transportation-related facilities, which contribute hydrocarbon pollutants from petroleum products such as oil and gasoline. The lower portion of Hickey Run flows through the U.S. Department of Agriculture's National Arboretum, the location for several

types of water quality improvement efforts. Bay Program agencies are planning to install best management practices for stormwater control upstream at the Arboretum, supplemented by creation of a wetland to further remove pollutants and a trash trap to collect floatable debris.

Several agencies also provided individual updates at the meeting. The U.S. Army Corps of Engineers is completing a study of federal facility impacts on the Anacostia, expected to be finalized in the fall of 2001. The Corps is also completing the 2001 Biennial Federal Workplan for the Anacostia. The General Services Administration is conducting pollution monitoring and remediation for its Southeast Federal Center and White Oak facilities. In addition, the U.S. Army is studying blockages to fish migration at its Adelphi Laboratory and Walter Reed Army Medical Center facilities. Finally, the National Park Service (NPS) created a presentation on the history of the Anacostia, including uses and restoration efforts. The U.S. Forest Service has made \$50 million available for forestry projects in the District of Columbia. The National Aeronautics and Space Administration can provide geographic data for use with any Anacostia restoration work.

U.S. Army Corps of Engineers Anacostia Efforts

Steve Kopecky of the U.S. Army Corps of Engineers presented an overview of several of the Corps' restoration efforts in the Anacostia watershed. The Civil Works program constructs restoration projects, while Operations and Maintenance ties these projects to dredging operations. The Support for Others program provides technical assistance to other agencies, and the Military program provides technical assistance to military installations.

The Corps has categorized projects into three areas on the river: Mainstem, Northeast Branch, and Northwest Branch. Restoration activities include stormwater management, sediment control, stream restoration, wetland creation, fish blockage removal and riparian forest

restoration. Within the Mainstem, the Corps restored 32 wetland acres in Kenilworth Marsh and 40 wetland acres in Kingman Lake Marsh (see the March/April 2001 issue of the *Chesapeake Review* for more information). Within the Northeast and Northwest branches, fish blockages were removed from the area of 38th Street, Rhode Island Avenue, and Paint Branch. A total of 11,000 feet of stream restoration work was also completed. Restoration studies are underway for Heritage Island and Lower Kingman Island to focus on ecosystem enhancement and habitat improvement. Fort Dupont, which contains a healthy tributary in the District of Columbia, will undergo additional in-stream habitat improvements. Lower Anacostia Park is being evaluated for projects to reduce recreational impacts, restore habitat, remove a culvert from a section of Pope's Creek, install best management practices in parking lots and improve riparian buffers.

Mid-Atlantic Integrated Assessment Ecosystem Restoration Inventory

Scott Minamyer of EPA's National Risk Management Research Laboratory presented an overview of EPA's Inventory of Ecological Restoration Projects within the Mid-Atlantic region, which includes Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia, as well as Susquehanna, Allegheny, Delaware, Chowan-Roanoke and Neuse-Pamlico River Basins. The inventory is designed to provide a free, internet-based repository of existing ecological restoration projects that serve to enhance, restore or create ecological function in these areas. Each project listing will include the environmental issues being addressed, project location, parties involved, technical approaches, costs and lessons learned. Any individual or group that conducts or sponsors a project of this type may add the project to the database directly by using an internet template at <<http://yosemite1.epa.gov/water/restorat.nsf/>>, or may mail a template to Scott

Minamyer at USEPA, Mid-Atlantic Integrated Assessment (MAIA) Restoration Inventory, Mail Stop G-75, 26 West Martin Luther King Drive, Cincinnati, Ohio, 45268. Electronic or hard copies of the template may be requested from <<http://www.epa.gov/ttbnrml/inventory.htm>>.

Bird Inventories within National Capital Parks – East

Brent Steury of the NPS presented an overview of recent efforts to develop an inventory of birds that covers locations within the National Capital Parks–East network. The goal of the project is to provide data on the distribution and relative abundance of birds, which will be used to facilitate decisions on future use and management of the parks. The inventory should also increase public awareness and appreciation of the parks and their natural resources. National Capital Parks–East covers total of more than 12 square miles of parkland within the District of Columbia and Prince George’s and Charles Counties in Maryland. Eleven parks were included in the inventory, including urban parks, recreation areas, parkways, and historical sites. Bird populations were surveyed from April 1999 through December 2000 by biologists from the U.S. Geological Survey’s Patuxent Wildlife Research Center in Laurel, Md. A checklist of birds in National Capital Parks–East contains information about 257 species of birds, including 26 that are considered to be extirpated, rare, or transient, and eight are that not native to the area. One species on the checklist, the passenger pigeon, is now extinct. The NPS’s Inventory and Monitoring Program and the U.S. Geological Survey jointly funded the inventory. The checklist can be viewed at <<http://www.mbr-pwrc.usgs.gov/Infocenter/Nps/park.htm>>.

Inventories and Monitoring at the National Park Service

Marcus Koenen of the NPS presented an overview of the inventory and monitoring program for the National Capital Region. To fulfill the NPS

mission of preserving the nation’s heritage, it is essential to know the nature and condition of resources under stewardship. In 1991, the NPS published the Vail Agenda, which established a strategy for meeting park stewardship responsibilities, including an inventory and monitoring program. Data for the inventory included geology, weather, soils, air and water quality, vegetation, vertebrates and vascular plants, and species of concern. Program goals are to complete all baseline resource inventories, then eventually implement ecological monitoring in all units of the National Park System.

Within the National Capital Region, inventory and monitoring may help address management issues relating to exotic species, white-tailed deer abundance, urban sprawl, habitat fragmentation, and air and water quality. A biological inventory, initiated in 2000, began with a review of all existing data and an analysis of data gaps. Field surveys are now being performed to inventory birds, small mammals, deer, amphibians, and reptiles. The inventory will provide data to park managers, interpreters, scientists and the public. The monitoring program will integrate natural resource information with other park operations, such as interpretation, maintenance and law enforcement. A comprehensive integrated management system for the monitoring data, including a geographic information system, will facilitate data storage, analysis and reporting. Additional information on this program may be found at <<http://www.nature.nps.gov/im>>.

National Strategy to Restore Coastal Habitat

Mark Wolf-Armstrong of Restore America’s Estuaries, an alliance of 11 regional coastal-community-based organizations that restore and protect America’s estuaries and coastal heritage, provided an overview of a developing national strategy to restore coastal and estuarine habitat (see related story on page 12 for more information). Restore America’s

Estuaries, the National Oceanic and Atmospheric Administration, state and federal agencies, nonprofit organizations, scientists and other organizations are developing the strategy to restore function to 1 million acres of estuarine habitat by 2010. Wolf said objectives focus on partnerships, priority setting and planning, project implementation, appropriate science and technology, evaluation of restoration efforts, awareness of protection and restoration needs, and sources of funding. The strategy will maximize the benefits of habitat restoration projects and foster the coordination of coastal habitat restoration activities. It will establish restoration priorities, coordinate diverse programs for maximum benefits, and will help develop and address public expectations. The draft strategy was presented at the 16th Biennial Conference of the Estuarine Research Federation in November 2001 in St. Petersburg, Fl and can be viewed at <<http://restoration.nos.noaa.gov/>>.

Stream Restoration Efforts at Fort Dupont Park

Steven Syphax of the NPS discussed natural resource issues at Fort Dupont Park and led a brief tour of areas within the park where the Corps of Engineers is planning stream restoration efforts. Certain streams passing through the park are experiencing erosion and associated habitat loss because of high flows during storm events. Uncontrolled erosion is causing high levels of downstream sediment deposition and impaired water quality. Most of the Corps’ planned upstream restoration work is designed to reduce stormwater flow velocity and better stabilize stream banks. The Corps is evaluating downstream areas for the possibility of opening up, or “daylighting,” a stream segment that is currently piped underground. Doing so will increase the habitat value of the stream and remove a blockage to anadromous fish migration.

State of the Bay **Dam Removal in Pennsylvania**

As the Anadromous Fish Restoration Coordinator for the Pennsylvania Fish and Boat Commission, Scott Carney is a man on a mission. He turns carp pools into trout streams throughout Pennsylvania. Giving the Gutman lecture at the most recent Implementation Committee meeting in Annapolis, he described how he has done this by removing 60 dams so far, 32 of them with Chesapeake Bay Program funding, but another 3,000 remain.

Dam removal is a Pennsylvania Fish and Boat Commission program that began in 1999 with an EPA grant. It is aimed at improving water quality and opening miles of stream to trout and migrating fish such as shad and menhaden. The program costs the state \$150,000 a year. It provides dam owners technical support at no cost and offers them financial assistance. The average cost of a dam removal is \$30,000 and requires only an environmental assessment, not an environmental impact statement. By comparison, the average cost of a fish ladder is \$150,000.

Most of Pennsylvania's dams are less than six feet high, they are often unpermitted and have no owner of record. They cause a host of problems both upstream and downstream. Dams as small as three feet high block fish passage and allow silt to inundate the substrate behind them. This eliminates the aquatic insects that fish feed on. The dams slow water flow, causing stagnation and elevated temperatures that trout cannot tolerate. Dams increase erosion and stream degradation below them and aggravate flooding behind them. They are also a menace to rafters and kayakers, causing several deaths a year in Pennsylvania.

Since 1999, Pennsylvania law has required dam owners to accept explicit liability for their dams. However, according to Carney, dam removal projects are often controversial. Local fire departments use dams as a water

Estuarine Habitat Restoration Council Holds First Meeting

The first public meeting of the five-member Estuary Habitat Restoration Council was held on Friday, October 26, in Washington, D.C. The Estuary Restoration Act of 2000 called for the establishment of the Council to coordinate efforts to meet the goal of restoring 1 million acres of estuarine habitat by the year 2010, and it provides a budget of \$50 million.

The Council consists of representatives from the U.S. Army Corps of Engineers, the National Oceanic and Atmospheric Administration, the U.S. Environmental Protection Agency, the Department of the Interior (U.S. Fish and Wildlife Service), and the Department of Agriculture. Additional representatives from these agencies composing a workgroup of the Council, were also present. The Council elected its U.S. Army Corps of Engineers representative, Dominic Izzo, Deputy Assistant Secretary of the Army (Civil Works), as chair for a three-year term, with Council meetings to be held at least quarterly.

The participants discussed how to meet the act's ambitious restoration goal. The timeframe for completing the *Draft National Strategy to Restore Coastal Habitat* proved to be a pivotal issue. The projects to be included in the plan will be determined based on project proposals received in the spring of 2002 and selected by August of 2002 to be included in the Council's FY 2004 budget. Council members emphasized the importance of completing the national strategy by January of 2002 so that proposal solicitation could begin on time. This timetable gives the Council just six years to put 1 million acres of restoration work on the ground.

The workgroup is undertaking final revisions of the strategy in cooperation with the Restore America's Estuaries coalition, an alliance of 11 regional, coastal community-based environmental organizations from around the nation, including the Chesapeake Bay Foundation. These revisions will address issues that are not adequately incorporated into the strategy such as trend analysis of estuarine habitats, the peer review process, stakeholder involvement and how funding relates to project size and geographic location. The draft strategy can be viewed at <http://restoration.nos.noaa.gov/>.

source and children skate on the ponds in winter. Often housing has been built around the ponds and lakes they create, and they are usually considered a valuable amenity by the homeowners. Carney provides education and public outreach to help persuade communities that they are better off without their dams. He works with local property owners, environmental organizations, local government and federal agencies such as the U.S. Fish and Wildlife Service to build a consensus for removal and find additional funding. He has many success stories to show communities, but gaining community support can be as much as a three-year undertaking.

Dam removal projects often include larger streambank fencing and stabilization efforts. Removal of a dam becomes one step in a larger effort to improve a community's entire riparian ecosystem.

Carney is currently working with Pennsylvania State University and the U.S. Geological Survey to develop quantitative data to better describe the improvements that can be observed in the form of clearer water, renewed wetland vegetation and the return of sports fish. Scientists will generate hard data of fish assemblages, benthic micro-organism response and water quality.