

A N A C O S T I A C u r r e n t s

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Dear Friends of the Anacostia Watershed:



George Harman,
AWRC Chair

Continued cooperation by the numerous restoration partners has led to ever increasing improvements in the Anacostia River watershed.

One of the most exciting developments in the past year has been the creation of a Forest Management and Protection

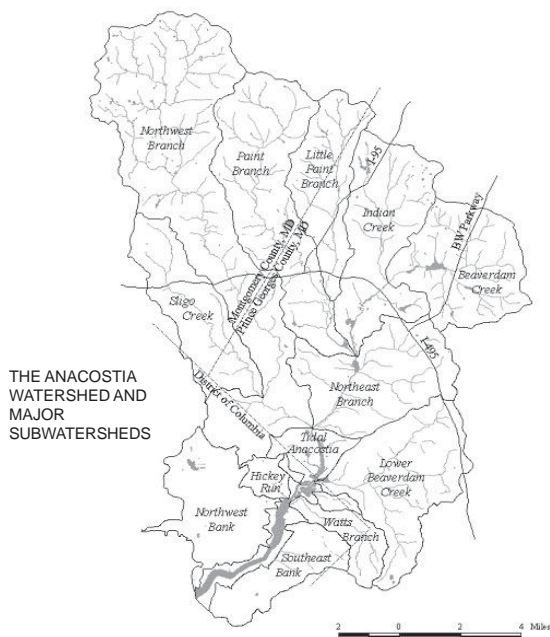
Strategy for the watershed. A joint project of the Anacostia Restoration Potential Workgroup, the Anacostia Watershed Restoration Committee (AWRC), and COG, this strategy represents a major stepping stone

for the protection and reforestation of the riparian, upland, and urban forests of the watershed.

The AWRC member jurisdictions continue to make great strides in the restoration effort, from the subwatershed to the national level. The Montgomery County Department of Environmental Protection has been working on several stream restoration and low impact development projects in the watershed that will help to reduce streambank erosion and increase habitat. The successes of past efforts to restore vital habitat led to the reintroduction of ten species of fish to the Sligo Creek subwatershed, a project that was greatly appreciated by area residents as it shows that conditions in the creek are improving.

Prince George's County Department of Environmental Resources continues to lead the nation in Low Impact Development (LID) techniques. In September 2004, PGDER worked in partnership with several other AWRC members and the Anacostia Watershed Toxics Alliance to hold the first national conference on LID. This successful event brought together over 450 interested individuals from around the globe to share their insights on ever-growing LID techniques, strategies, and real world applications.

A major step forward in providing educational outreach to watershed residents was the opening of the Aquatic Resources Education Center in Anacostia Park in April 2005. This was a joint endeavor by the District of Columbia's Department of Health, National Park Service, and U.S. Fish and Wildlife Service. The Center will be open to the public six days a week, and will serve to educate residents about the aquatic resources in the Anacostia and Potomac Rivers and the Chesapeake Bay



through the several exhibits, aquariums and presentations available.

While the technical accomplishments of the AWRC members and partners continue to move the restoration process forward, increased citizen awareness and involvement in the protection of this valuable natural resource remains a top goal. The Anacostia Watershed Citizen Advisory Committee (AWCAC), being charged with the duties of both acting as an advisor to the AWRC and as a conduit of information to the citizens of the watershed, has set its own goals high for performing its duties. The AWCAC Board and Associates continue to grow in force, reflecting the increased interest of the public in the health of the Anacostia River and its tributaries. A major accomplishment of the group in 2004 was the signing of a Memorandum of Understanding with the National Arboretum and U.S. Department of Agriculture to protect and restore Hickey Run, the Anacostia tributary which flows through the arboretum. In the spring of 2005, AWCAC also led the way to ensure that a new baseball stadium, proposed to be built along the banks of the Anacostia, will be designed and built using LEED certified green building techniques that will minimize environmental impacts on the river.

As Chair of the AWRC, I am pleased to invite you to read about the successes of the restoration effort within the Anacostia River watershed in the past year, and to then become involved as a volunteer in the effort. The help of you, the citizens of the watershed, is always appreciated, and always needed. By working together, we can strengthen our ties to our natural surroundings, and preserve and protect the resources that the Anacostia River has to offer.

Sincerely,

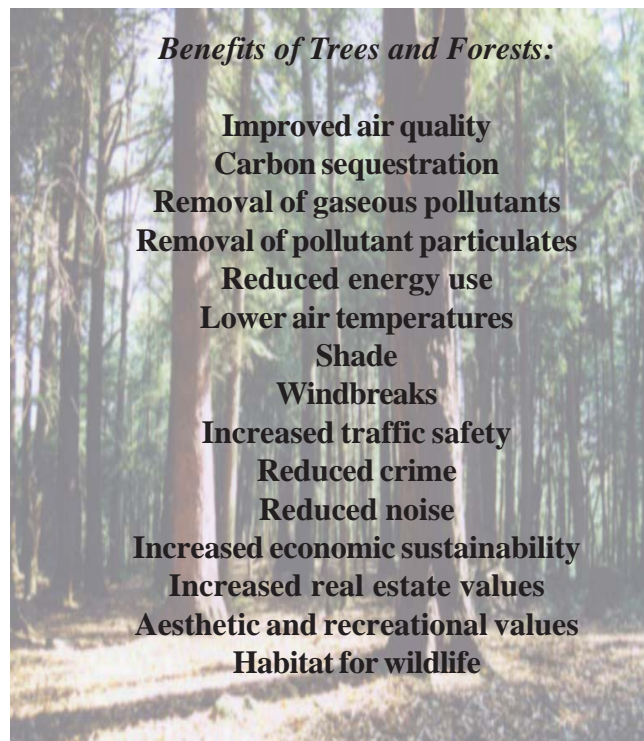


George Harman, Chair
Anacostia Watershed Restoration Committee

Seeing the Forest and the Trees

The importance of forest cover to the restoration of the Anacostia River watershed was first officially recognized in the 1991 Six Point Action Plan adopted by signatories from the State of Maryland, Montgomery and Prince George’s County, Maryland, and the District of Columbia. Goal five of the six point plan was to expand forest cover in the watershed. In 2001, the Anacostia Watershed Restoration Indicators and Targets document listed the creation of a Forest Management and Protection Strategy (FMPS) as a critical step for reaching the goal of expanded forest cover. In a joint effort of the Anacostia Restoration Potential Workgroup, the AWRC and COG, and with funding assistance from the Maryland Department of Natural Resources, the Anacostia FMPS has become a reality.

The report takes a watershed approach to both forest and tree cover management, and uses existing and historical tree cover and forest data to assess changes within the major subwatersheds of the Anacostia basin. So what exactly is the difference between the “forest” and the “trees”? According to Ms. Kate Levendosky



(MWCOG), the FMPS lead author, "...tree cover describes the area covered by the canopy of individual trees and is especially applicable in an urban setting, such as along a city street. Forest cover describes larger stands of trees that generally cover an area that is an acre or more in size, a minimum



(Clockwise from top left) Riparian, upland, mature, and urban/street trees: the four major categories of forest cover discussed in the Anacostia FMPS.

of 100 feet wide and at least 90% covered by the canopy of trees." Within the FMPS, the forest and tree cover data is further divided into four categories: riparian, upland, mature and urban/street trees. Analysis of these categories allows the creation of conservation and management goals, and helps to establish strategies and priorities for reaching these goals. Perhaps the most critical component of the FMPS is the inclusion of several options of strategies for reforestation, and descriptions of techniques for managing of invasive plants and nuisance wildlife.

A critical look through the FMPS shows that the total tree canopy cover throughout the watershed decreased by 11 square miles from the late 1930's to 2000. In terms of the total area of the watershed, in 1936, 42.6% of the land area was covered by tree canopy, while in 2000 that number had decreased to only 36.3% of the watershed. Similarly, the total watershed forest cover decreased from 66 square miles (37.5%) in the late 1930's to 52 square miles (29.6%) in

2000. Of particular importance will be protecting and maintaining the existing mature forests because of their irreplaceable habitat and water quality benefits. The mature forests of the watershed are defined as being 65 or more years of age with an average overstory tree diameter of 18-24 inches and a

generally well developed woody understory plant community. Currently, 15% (26 square miles) of the watershed is covered in mature forest. The goals for protecting these areas, and identifying and restoring mature forest tracts that are becoming degraded will be accomplished with the following strategies set forth in the FMPS: making the conservation of these forest resources a top priority for public land acquisition and easements, protecting forested areas during development, inventorying mature forest tracts, and expanding local master plans to include mature forest lands as a high priority for protection.

The single most useful attribute of the Anacostia FMPS is its watershed approach, which will allow each jurisdiction to tailor the data for their own forest protection and reforestation needs. The joint collaboration on the creation and acceptance of the plan points toward a positive future for the forests and trees of the Anacostia River watershed.

Continuing Restoration Efforts in Montgomery County

The Montgomery County Department of Environmental Protection (DEP) continued to be quite active over the past year in its proactive efforts to reduce stormwater-related impacts from already developed areas of the Anacostia watershed. Several projects are underway in the Sligo Creek, Northwest Branch and Paint Branch subwatersheds.

Over the past 15 years, DEP has implemented a dozen projects in the upper Sligo Creek to help restore aquatic habitat. Before restoration efforts began, the habitat had been degraded to the point of being able to support only two species of fish. Thanks to the success of several restoration projects, and a gradual reintroduction of formerly resident native fish species,

encouraging improvements have been observed in the biological community. Encouraged by the fact that 11 native species were surviving in the subwatershed in the early 2000's, DEP worked with the Friends of Sligo Creek, the Maryland-National Capital Park and Planning Commission and other agencies and volunteers to hold another fish reintroduction in spring 2004. At this very popular and successful event, another 10 more pollutant sensitive species were reintroduced in the hopes that some of these species could also now survive in the improved habitat conditions. The activity at this exciting event included help from Montgomery County Council President Thomas Perez. Also occurring in Sligo Creek is the construction of two low impact development rain

garden retrofit projects at the Sligo Creek Recreation Center and the Dennis Avenue Health Center. Completion of these projects is expected in the early summer, 2005.

Two new stream restoration projects were completed in 2004 in the Northwest Branch to abate severe erosion problems and add habitat and wetlands

features to the Sherwood forest and Dumont Oaks tributaries. Collectively, these projects restored about 1.6 miles of severely degraded headwater stream areas. Work also continued with the Corps of Engineers on the design of another 20 stream restoration projects. Construction of some of these facilities is expected to commence in summer 2006.



Reintroduction of native fish species into Sligo Creek Park, with the help of Tom Perez, Montgomery County Council President (lower right photo)

When completed they will restore another 2.3 miles of tributary waters, and provide 2.3 acres of riparian buffer, mostly in fragile headwater areas. DEP also continued working with the Neighbors of Northwest Branch, the Montgomery County Board of Education, and the Izzak Walton League in cooperative efforts to retrofit several LID projects, including a small green roof, to the modernization of the Northwood High School.

In the Paint Branch, DEP will begin construction of three tree box filters as a retrofit LID project to help mitigate runoff impacts from the White Oak Library. Designs are being completed for another LID project at the Colesville Health Center., and enhanced stormwater

management, including additional on-site filters and a potential rain garden, have been included in the modernization design for the Department of Public Works and Transportation's Colesville maintenance depot. This is a 12-acre, highly impervious site which drains to the Good Hope Tributary of the Upper Paint Branch. Work continued on the Lower Paint Branch watershed study to assess stream impact problems and associated mitigation opportunities including new stormwater controls or retrofit practices, new small LID retrofit projects at publicly owned sites, and areas for stream restoration. Thus far, the project has identified five potential stormwater retrofit sites, ten sites with opportunities for LID retrofits, and a dozen potential stream restoration projects. DEP is now evaluating these potential projects and setting priorities for possibly including some of them as future capital projects.

The DEP continues to provide environmental outreach to the communities in the Anacostia watershed, including "Rainscapes" workshops and demonstration sites on how homeowners can reduce runoff impacts from their lawns and backyards. Additional benefits include creation of wildlife habitat and water conservation. The "Rainscapes" program includes instructions on making your own rain barrels to collect rooftop runoff and rain gardens to slow and filter yard runoff before it enters storm drains and streams. During 2003-2004, the DEP used Chesapeake Bay Trust grant funding to provide all materials for three "Make and Take" rain barrel workshops in the Paint Branch and Northwest Branch watersheds, and three demonstration gardens in the Paint Branch, Northwest Branch, and Sligo Creek watersheds. There were about 100 participants in the three rain barrel workshops and about 50 volunteers to plant approximately 1,500 sq. ft of gardens and planter boxes to intercept runoff. For the sites in Northwest Branch and Sligo Creek, all periodic maintenance is being carried out by school and community volunteers.

During 2005, the DEP has been a partner in several grant applications targeting the Anacostia watershed. The applications cover funding to continue Rainscapes demonstration projects, to provide enhanced outreach to the business community, to monitor the effectiveness of associated pollution source controls, and to construct some additional LID projects on public facility sites.

Putting the LID on Stormwater Management

Prince George's Department of Environmental Resources and the Anacostia Watershed Toxics Alliance (AWTA) hosted the first national conference on Low Impact Development (LID) September 21-23 in College Park, Maryland. The conference was funded in part by a U.S. EPA grant and sponsored by Prince George's County in association with the Montgomery County Department of Environmental Protection, District of Columbia Department of Health, Metropolitan Washington Council of Governments (COG) and the Anacostia Watershed Toxics Alliance.

The "Putting the LID on Stormwater Management" Conference was a huge success. With more than 450 attendees from across the United States and abroad at the two and a half day conference, a wealth of information was shared about the techniques and applications for LID stormwater management controls. More than half the attendees came from outside the mid-Atlantic area, and many traveled from the West coast, Canada, and as far away as New Zealand and Asia, further expanding the common value of these techniques. In fact, one of the major findings from the conference was the realization that LID has become national and international in acceptance and that it has evolved to include many different practitioners beyond the landscape architects, civil and environmental engineers. LID may take on different names, but the principles are universal and the goals are similar.



Over 450 attendees participated in the Fall 2004 LID Conference.



A stop in Prince George's County on one of several tours during the LID Conference.

Anacostia Watershed Welcomes the New and Improved Aquatic Resources Education Center

The Aquatic Resources Education Program, led by the District of Columbia's Department of Health, Fisheries and Wildlife Division (DC-DOH/FWD), has served nearly a million residents of the District of Columbia since 1986. In 1992, the DC-DOH/FWD, National Park Service, and U.S. Fish and Wildlife Service first opened the Aquatic Resources Education Center (AREC), located in Anacostia Park, to serve the goals of the program. Six years ago, in response to a growing need for additional space and expanded hours of availability to the public, the AREC partners decided to update and renovate the center to provide more opportunities to educate the public about the native stream resources of the area. On April 22, 2005, those six years of planning and hard work came to fruition when the Center hosted a Grand Re-opening celebration.

AREC has been designed as a multi-purpose facility, and will be host both to research and restoration work, and will further function as a public outreach and education center. The public is welcome to explore the exhibits and will have access to guided tours of the facility. Educational events will be held at the center on weekends, with both scheduled groups and walk-in visitors welcome. Scheduled visitors will have the

The Conference was part of a larger effort to show the benefits of using LID and stream restoration. John Tippett, a conference keynote speaker with the Friends of the Rappahannock added this thought with respect to the conference and LID, "I think LID is coming into its own as both a scientific discipline and a readily-marketable alternative to conventional stormwater management practices. This was clear in the great mix of the technical and practical presentations at the conference." US Senator Paul Sarbanes (MD) added that it was fitting for Prince George's County to help host this conference and viewed both the State of Maryland and Prince George's County as leaders in innovative stormwater management on a national scale.

Several presentations showed how LID offered a unique approach that can be viewed as an enhancement to the surroundings in an urban landscape. Incorporating LID was presented as a functional amenity that one could offer as a premium over traditional development and stormwater management systems. The majority of barriers to using LID are encountered in the beginning phases of development. It was also agreed that the conference helped to document the body of data already existing and the efforts that are underway to bring about the successful implementation of LID, but as with other areas involving innovative and new techniques, more is needed. The Conference program, speaker papers, and speaker bios are available for download at www.mwcog.org/environment/lidconference.



April 22, 2005 ribbon cutting event at the grand re-opening of the Aquatic Resources Education Center in Anacostia Park (Robert Bobb and Gayle Hazelwood pictured)



Jim Collier (DC-DOH) and other attendees at the Grand Re-opening event among the AREC exhibits



Native fish of the Anacostia River watershed in one of the several live exhibits of the region's local species.

opportunity to participate in a number of structured presentations on subject matter related to both the Anacostia and Potomac River systems.

With a mission to “protect, restore and educate,” AREC will help sponsor several educational and recreational programs including an annual summer program, fishing clinics, in-school presentations, and a tackle loaner program. The in-school presentations program will offer visits by staff biologists to District of Columbia schools throughout the academic year, and will present information on:

- Introduction to DC Fisheries and Wildlife
- Fish Biology
- Aquatic Ecology
- Water as an Environment
- Wetlands
- The Chesapeake Bay

Perhaps the most exciting component of the revitalized AREC are the several live exhibits of various local fish and other aquatic species. Several aquariums, ranging in size from 20 to 2,500 gallons, feature aquatic species found in the Anacostia and Potomac Rivers, Rock Creek, and the Chesapeake Bay. On guided tours of the aquaculture area, the public will also have the opportunity to see some of the fisheries enhancement work being done in the District. Rearing tanks, aquariums and living streams will be available for viewing the work of fisheries biologists as they hatch and grow native fish species, such as the American shad, for release into the region's rivers

and tributaries. According to Mr. Ira Palmer (DC-DOH/FWD), “the general impression of our visitor's so far has been pleasant surprise and happiness that such a valuable resource is present in the park.”

For more information, and to learn how to schedule a visit, please call Silvia Whitworth at (202) 535-2276. The center will be open for group appointments Monday through Saturday, from 9 am to 4 pm, and is open to the general public Thursday through Saturday, from noon to 4 pm.

Anacostia Watershed Citizens Advisory Committee: In the LEED for Watershed Development

Development is taking place throughout the watershed, but perhaps the most talked about development will be that of the proposed major league baseball stadium along the shores of the Anacostia River. In December of 2004, the District of Columbia and Major League Baseball agreed to a financing package for a \$440 million publicly financed 41,000-seat baseball stadium that will be designed by HOK Sport and Devroux & Purnell Architects. The stadium will be the new home for the Washington Nationals, formerly the Montreal Expos and will be located at South Capitol and N Streets, SE. The close proximity of the stadium to the Anacostia River prompted the Anacostia Watershed Citizens Advisory Committee (AWCAC) to ensure that the stadium will be built under environmentally-friendly



Proposed Major League Baseball stadium along the banks of the Anacostia River.

guidelines with limited impacts on the river. AWCAC joined forces with several other local environmental groups, including the Anacostia Watershed Society, Chesapeake Bay Foundation, Natural Resources Defense Council, Clean Water Action, Casey Trees, and the Sierra Club, to work with the DC Sports and Entertainment Commission and Anacostia Waterfront Corporation to ensure that the new stadium will be a Leadership in Energy and Environmental Design (LEED) certified green building. According to Mr. Tom Arrasmith (AWCAC) the efforts of the coalition thus far have been successful, and the chosen architects appear to be committed to the use of environmental techniques. AWCAC, along with the other partners, will continue to monitor the stadium project and will work to keep the issue of environmental design front and center.

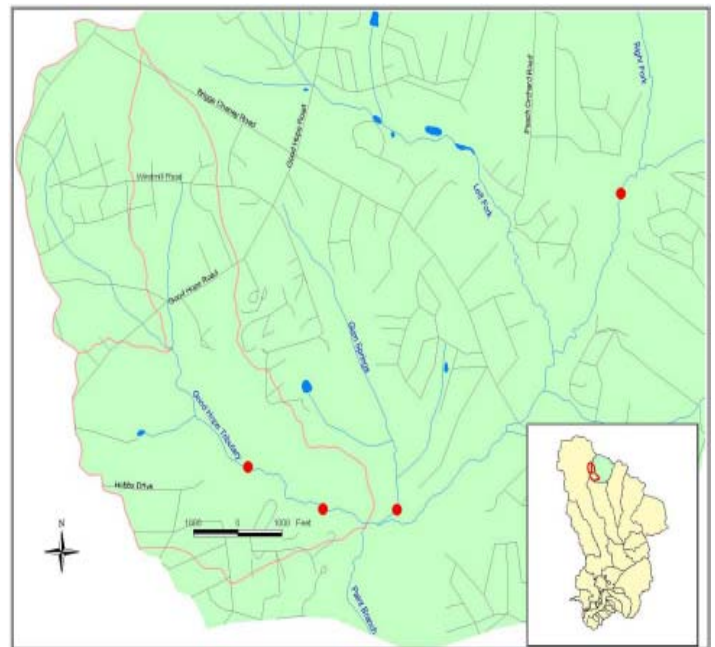
Another major project that has been undertaken by AWCAC is the pursuit for the installation of a floating dock on the Anacostia River at the National Arboretum. AWCAC has gained support from the Anacostia Watershed Society, M-NCPPC, National Capital Parks - East, and the DC Bureau of Environmental Quality for the dock, which would provide the opportunity for boaters to access the Arboretum directly from the river, which would likely increase the use and appreciation of river resources. AWCAC will continue to work with Arboretum management to find a cooperative agreement for installing the dock, with an objective of having the installation finalized in 2005.

Anacostia River Watershed Fisheries

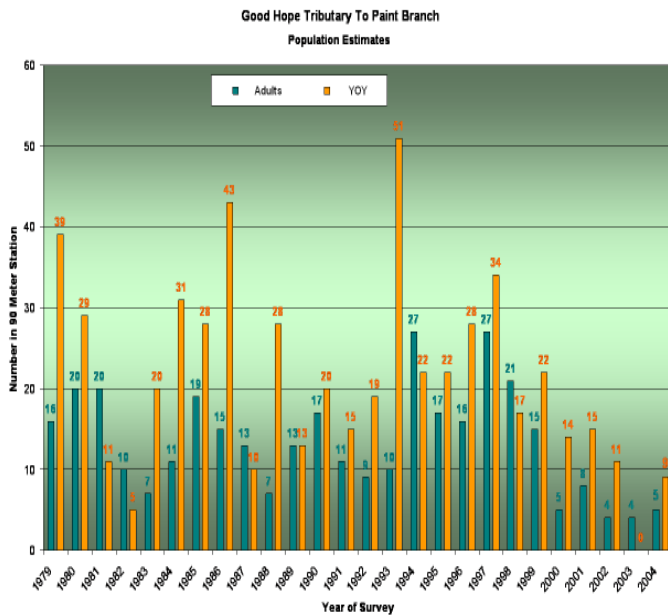
Guarded Optimism for Trout

For more than 60 years, a self-sustaining brown trout fishery has been a part of the ecosystem in the Upper Paint Branch subwatershed. Since 1979, this population has been monitored annually by the Maryland Department of Natural Resources (MD-DNR) to chart the health of this resource. In 2003, the results of the annual survey looked grim. Following the extensive drought of 2002, the survey showed that the trout had been negatively impacted in a variety of ways. Low water levels led to decreased habitat availability for spawning, prevented fish passage to those spawning areas that remained available, and allowed predators, such as heron, to have greater access to the trout, thereby decreasing the numbers of trout available for spawning. The most striking data from the 2003 survey was the near complete lack of young-of-year brown trout in the system. This marked the first time in twenty-five years of monitoring that there was virtually zero recruitment in the trout population.

Though the 2002 drought severely impacted the stream in several ways, there were significantly higher base flows in both 2003 and 2004. The increased



Fisheries monitoring stations of the Upper Paint Branch area



MD-DNR data showing the population of trout in the Upper Paint Branch over the past 25 years.

volume of water in the system provided ideal conditions for trout and other fish species. Fisheries biologists remained guardedly optimistic that the population would rebound.

According to Mr. Charlie Gougeon (MD-DNR Coldwater Fisheries Biologist), the overall health of the trout population of the Upper Paint Branch is still questionable. A monitoring station established in 1979 at Hobbs Drive has previously shown the highest water quality in the watershed, and has supported a trout population since the earliest monitoring activities. In 2003, no signs of reproduction were found at Hobbs Drive, or at other monitoring stations including Gum Springs and the Right Fork. In 2004, one yearling was found, indicating that very limited reproduction had occurred in 2003. A total of nine young-of-year trout were found in 2004, compared to the average of 21. Despite these setbacks, individuals appeared to be large and in good condition, so the prognosis was that, barring any disastrous event, there would be potential for a good hatch in 2005.

This past spring, MD-DNR staff surveys reported a count of 31 fry in the Good Hope tributary, signaling that the hatch had been successful. Of the fry counted, 24 were located near the mouth of the tributary. These sightings are further downstream than observed in past monitoring efforts, and appear to indicate that changes in

the stream have shifted suitable gravel-bottom spawning areas from the historical upstream reaches. The changes in substrate could be the result of streambank erosion that has added a layer of sand on top of existing gravel, or increased water velocities that are now carrying gravel from the upstream areas down to the mouth of the tributary. Monitoring of the Upper Paint Branch system will continue to be a closely watched process in the fall of 2005, and it is expected that with favorable conditions, the young-of-year trout will redistribute throughout the system by the time of the August-September monitoring. The MD-DNR will continue to report to the Anacostia Watershed Restoration Committee on the health of the fish populations, particularly the trout, to ensure that this valuable resource continues to survive in the watershed.

Northwest Branch Smallmouth Bass Fishery Continues to Grow

Known for its high sportfishing value, the smallmouth bass is a favorite of local anglers. Between 2000 and 2002, the Northwest Branch was stocked with five thousand one to two inch long smallmouth bass fingerlings.

Monitoring efforts by MD-DNR have found numerous healthy individuals of both the 2000 and 2002 year classes. More importantly, the 2004 survey showed that there has been successful natural reproduction of this species. The moderately high number of individuals captured during the electrofishing survey were all in excellent condition and exhibited good growth rates, furthering the belief that the establishment of this new recreational fishery is near at hand.



Five to 10-inch long Smallmouth bass from the Northwest Branch.

Upper Beaverdam Creek - A Low Development Reference for the Anacostia River Watershed

In the northeast portion of the Anacostia Watershed, flowing between the fields, forests and wetlands of the Beltsville Agricultural Research Center (BARC), lies the Upper Beaverdam Creek. As one of the least developed portions of the watershed in Prince George’s County, this subwatershed is home to a Great Blue Heron rookery, Bald Eagle nests, wild turkeys, brook lamprey, and countless other species. It is a world apart from the highly urbanized, piped and channelized portions of the watershed, which makes the subwatershed an excellent candidate for becoming a reference site for the rest of the Coastal Plain portion of the Anacostia River watershed.

During the spring of 2004, with funding from the Maryland Department of the Environment and in partnership with BARC, COG staff began a multi-phase pilot project to evaluate the streambank erosion levels of the Upper Beaverdam Creek. This initial phase of the study sought to: 1) evaluate the current streambank erosion conditions in the BARC portion of the Upper Beaverdam Creek subwatershed, 2) perform chemical analyses of streambank soils to determine what residual chemicals and pollutants have been trapped in the sediments, and 3) develop representative permanent cross-sections within the survey area to serve as reference points for future study.

The mainstem of Upper Beaverdam Creek in the study area stretches roughly 5.7 miles through relatively undeveloped, largely agricultural terrain. The study found that streambank stability of the mainstem within the study area was found to be in the “excellent” range, a fact largely attributed to the low level of development in the area. Likewise, the stability of the tributary streambanks within the study reach ranged from “good” to “excellent”. This relative stability of streambanks, along with the finding that there has been little channel downcutting and widening, generally translates into higher water quality and clarity since very little sediment is washed downstream during storm events.

On the other hand, the tributaries to Upper Beaverdam Creek were generally found to be wider and deeper than expected, reflecting a long-standing lack of stormwater management controls for runoff flowing off of impervious surfaces.

Recommendations from the first phase of the study included stabilization of the few areas where severe streambank erosion was found, removal or modification of one major fish blockage, determination of the current biological conditions of the stream, and further study of the riparian corridor of the subwatershed. Overall, the study is a valuable addition to the monitoring of water quality, as well as an important piece of information for on-going modeling and TMDL development efforts for the Anacostia River watershed as a whole.

Anacostia Automated Water Quality Monitoring Stations Providing Real-time Data on the Health of the River

In April 2003, a cooperative project between the Maryland Department of the Environment, Prince George’s County Department of Environmental Resources, and the U.S. Geological Survey, with funding from the U.S. Environmental Protection Agency, began with the intent to monitor pollutant loadings to the river and to provide water quality data for the Northeast and Northwest Branches in real-time. The establishment of automatic water quality monitoring sites at the two existing USGS stream gauging stations allows for the generation of continuous real-time, flow integrated water



Wetland area upstream of Research Road in the Upper Beaverdam Creek subwatershed.



Anacostia River Real-time Sampling Station on the Northwest Branch at Hyattsville, MD

quality data. In addition to this continuous retrieval of data such as stream discharge, water temperature, pH, turbidity, and conductivity, discrete water quality samples are collected on a monthly and storm event basis that will be used to help develop regression relationships to predict pollutant loads to the river system.

In mid to late 2004, the two automated sampling stations became operational. The first of these stations is located on the Northeast Branch at Riverdale Road, and the other is on the Northwest Branch near Hyattsville at

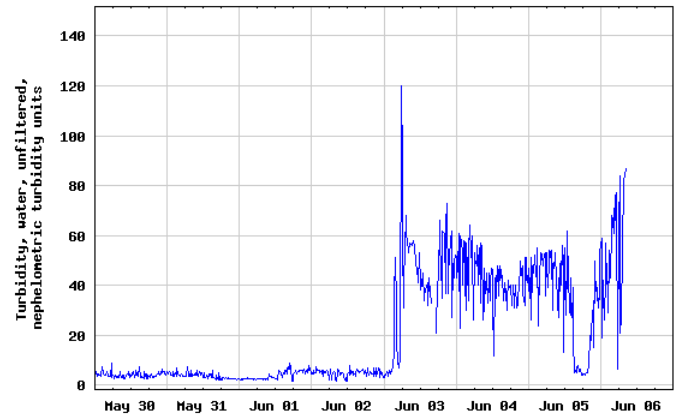


Anacostia River real-time sampling equipment on the Northeast Branch at Riverdale, MD

Queen's Chapel Road. Both sites are urban, non-tidal sampling sites, and both are equipped with data loggers, real-time data transmitting modems, auto-samplers, rain gauges, pressure transducers, and instream real-time multi-parameter

data monitors. Every fifteen minutes, water quality measurements are taken at each site, and much of this data is now available for citizens and researchers to view in real-time at <http://waterdata.usgs.gov/md/nwis/rt>. According to Dr. Mow-Soung Cheng (PGDER), the stations will remain operational until 2006, at a cost of \$500,000 per year. After that point, further funding will be sought to keep the stations up and running.

USGS
USGS 01649500 NORTH EAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD



Provisional Data Subject to Revision

Water quality data from the continuous monitoring station on the Northeast Branch

Environmental Stewardship at the University of Maryland

Prominently located at the center of the Anacostia River watershed, the University of Maryland (UM) operations impact the watershed in many ways. As the flagship campus of the University System of Maryland, UM has significant environmental research and education activities. Recently, several of these activities have been integrated into campus projects relevant to the restoration of the Anacostia River and its tributaries. In the Spring of 2002, UM completed its Facilities Master Plan 2001-2020 (FMP), and UM President C.D. Mote, Jr. signed a Partnership Agreement with the Anacostia Watershed Restoration Committee (AWRC). The UM campus master plan establishes a new paradigm for the University by:



University of Maryland Facilities Master Plan
2001-2020

- viewing the campus as part of a larger ecosystem;
- approaching campus access and travel via the network of multi-modal local and regional transit systems; and,
- planning and designing campus development that builds upon its heritage and engages local communities

As a result of the FMP recommendations and plans, several projects have been developed that address watershed conservation, retrofit and enhancements. These include environmental initiatives such as the implementation of forest conservation areas that address not only regulatory compliance, but tree plantings, new general-use open spaces, and athletic and recreational fields that replace impermeable surfaces and extend the valued cultural landscape of the campus. To date, 25 total projects (12 completed; 5 in bidding/construction; 8 in planning/design) address stated goals and objectives of the University’s campus master plan. More environmental/landscape projects are being studied and planned campus-wide.

Another direct outcome of the FMP was the establishment of the UM Environmental Stewardship Committee (ESC) by Provost William Destler to advise

the UM Facilities Council on matters pertaining to the implementation of environmental recommendations in the FMP. The ESC has recently developed a set of Environmental Stewardship Guidelines that reinforce the vision of the FMP and establish a means by which the campus community can direct its attention to the development of a healthy and environmentally sustainable campus. The committee is currently drafting a document regarding Environmental Stewardship Best Management Practices to more specifically address environmental sustainability issues on and around campus.

Since the start of the new millennium, the University of Maryland has moved beyond the status quo of simply meeting environmental regulations to being a leader by exceeding environmental regulatory compliance. Examples of this new focus are demonstrated by the following project grants, awards, recognition and conferences:

- 2003 – *Low Impact Development (LID) Retrofit Pilot Project Grant*
- 2003 - *Campus Ecology: Green Campus Recognition*
- 2004 - *Transportation Enhancement Program Grant for North Gate Park*
- 2005 - *Energy Star CHP Award*
- 11/3-4/05 - *“Smart and Sustainable Campuses” Symposium*

Reflecting upon its heritage and anticipating 2006, its 150th anniversary year, the University of Maryland is committed to build the future upon its position as the flagship campus of the University System of Maryland. The campus embraces a leadership role with the AWRC and other similar groups in the areas of environmental education and research and in the practice of environmental management and stewardship. More information can be found by visiting the following University of Maryland websites: UM Facilities Master Plan 2001-2020 and Environmental Stewardship Guidelines (<http://www.facilities.umd.edu/MasterPlan2/envguide.htm>) and UM Aesthetic Guidelines for Campus Development-Architecture and Landscape (<http://www.facilities.umd.edu/MMD/Aesthetic/index.cfm>).

Northwest Branch Welcomes its Neighbors

On a sunny autumn day in 2003, nearly fifty citizens gathered together at the historic Adelphi Mill to interact with AWCAC, M-NCPPC, Friends of Sligo Creek, Eyes of Paint Branch, Anacostia Watershed Society and COG representatives to learn about the Northwest Branch subwatershed. Speakers presented information about the history and environmental conditions of the subwatershed, and a panel of representatives from existing citizen-led subwatershed groups discussed the role of citizen involvement in watershed restoration. The purpose of this gathering was to find a group of committed citizens who would be interested in helping to form a citizen-led group to restore and protect the valuable resource of the Northwest Branch.

From that initial meeting, a core group of dedicated individuals stepped forward to participate in the formation of “The Neighbors of Northwest Branch” (NNWB). Each month from November 2003 through February 2004, the group worked to create a mission statement, bylaws, and articles of incorporation, and was granted 501(c)(3) non-profit status in the spring of 2004. With the momentum from these accomplishments, the group pushed forward and



Neighbors of Northwest Branch volunteers remove trash at the Northwest Branch Stream Cleanup Day, April 2004

secured its first grant, from the Chesapeake Bay Trust, in March of 2004. This initial funding was used to purchase waders and other equipment to help with the first Northwest Branch Stream Cleanup Day on April 3rd.

Since then, the “Neighbors,” led by President Bill Howard, have grown in force. With help from M-NCPPC, the Anacostia Watershed Society, COG, and others, the NNWB have planted over 1,200 trees in the stream valley park system, pulled invasive weeds and removed tons of trash in countless weekend events. Besides these restoration efforts, the group has also organized several hikes within the watershed, from the headwaters area of Sandy Spring, to the confluence with the Northeast Branch in Bladensburg.

As the largest subwatershed in the Anacostia River basin, the protection of the Northwest Branch plays a vital role in the overall watershed restoration effort. The advocacy role that the NNWB plays for the protection of this resource will have a lasting effect from the headwaters areas to the tidal river, and a warm welcome to the new “Neighbors” is well deserved.



Citizens gathered together to learn about the resources of the Northwest Branch, Adelphi Mill, October 25, 2003.

Could Your Laundry Detergent Help Clean the Anacostia River and its Tributaries?

For over 70 years, gravity-fed sewer line systems in much of the suburban Washington metropolitan area have been constructed by following the path of least resistance: the local stream valleys. Over the course of several decades, many of these pipes, once buried deep beneath stream channels, have become exposed and have begun breaking and leaking, allowing sewage and other wastewater to flow into the tributaries of the Anacostia River. Among this waste water are common household laundry detergents, flushed from homes throughout the region as gray water.

In an effort to help locate sewer line leakages in the Washington Suburban Sanitary Commission's (WSSC) extensive system, a pilot Anacostia project was developed and field tested. WSSC, with assistance from Montgomery County Department of Environmental Protection, the Maryland Department of the Environment, and COG, began testing the use of a fluorometer (a small light measuring device that uses ultraviolet light to measure levels of optical brighteners) in Sligo Creek.

According to Martin Chandler of WSSC, all laundry detergents contain an optical brightener which is basically a chemical dye that reacts with sunlight to make white fabrics appear whiter and brighter. This dye will also fluoresce at a specific wavelength of light that can be detected by a fluorometer. By placing cotton material in the stream, allowing the material to soak up water over several days, and then testing the material with hand-held fluorometers, researchers were able to detect the presence of optical brighteners, indicating leaking sewer lines upstream. However, after several field trials, it was concluded that the optical brightener detection method was not feasible for large-scale watershed monitoring projects since false positives, elevated results, and variations in upstream and downstream readings were common and problematic. Also, in one case the fluorometer did not detect a visible sewer line break beyond a two-foot distance. According to Steve Shofar (WSSC), the results indicate that the normally fast-moving stream

water and associated turbulent mixing was diluting the concentration of optical brighteners to the point where it became indistinguishable from background levels of fluorescence.

With the realization that the detection of these household chemicals would not be that useful in the pursuit of a low cost technique that would efficiently locate sewer line leaks, the partners have begun testing other methods. One alternative method that has shown promise includes chemical monitoring for "TCC," a biocide compound used in household antibacterial cleaning products.

The Newest Weapon in the War Against Invasive Weeds

Throughout the Anacostia River watershed, non-native invasive weeds are overtaking the riparian corridors, out-competing native plants, and overgrowing newly reforested areas. After habitat loss from urban and suburban development, these invasive plants are the number one threat to the remaining forested areas of the watershed. Last year's *Currents* newsletter reported on plant survival evaluation for sites that had recently been planted with native tree species with the help of citizen volunteers. Competition from invasive plants was listed among the main impediments to improving survival rates at these sites. A healthy riparian area would have a diverse understory consisting of plants such as spring beauty, Virginia creeper, and tree seedlings, followed by a diverse shrub layer, and finally a canopy layer. In many of the Anacostia's stream valleys, native plant communities are being overcome by vines and other aggressive understory invasive plants that can outcompete, and in many cases, kill native trees and shrubs.

Porcelain berry, multiflora rose and Japanese honeysuckle were among the major targets of the newest battle against these invaders. And the newest weapon employed against these plants are goats. For four days in spring 2005, M-NCPPC joined forces with COG to rent a herd of fifteen billy goats in a pilot Sligo Creek Park demonstration project to determine the effectiveness of using these herbivores famous for their voracious appetites.

The project was funded by a grant from the Maryland Department of Natural Resources Forest Service, which covered the cost of fencing, goat rental, and transport of the animals to and from the Wagon Wheel

Ranch in Mount Airy, Maryland each day. The goats were confined to between 1/8 and 1/4 acre of land with electric fencing, and allowed to munch through as much of the invasive plants as they could eat. Pre- and post-goat vegetation samples were taken in an effort to quantify the success of the project, and data were collected to determine which invasive plants the goats preferred. According to Geoffrey Mason of M-NCPPC, the most preferred plant was multiflora rose, followed by Japanese honeysuckle. Porcelain berry was a new plant to the goats, and at first they were not as interested in this option, but by the end of the fourth day, they had made a visible dent in the amount of the grape-vine looking plant in the area. The only invasive weed that the goats did not appear to eat was garlic mustard.



Invasive weed levels at the beginning of the project.



Progress made by the third day of the project.

While the four-footed mowers seemed content to eat the invasives at their feet, they did strip some bark off of a cedar tree and munch on the over-hanging leaves of a maple tree. This brings up one of the arguments against using goats for controlling the invasive weeds: they do not discriminate between native and non-native plants. This means that future use of the goats will require

restricting the goat herd to areas that have been largely overgrown with invasive species, much like the area chosen for this pilot demonstration.

This initial study shows promise as both an effective way to manage the invasive plants, and as a very successful public relations campaign. It was

estimated that over 200 people stopped to visit the goats and find out what the project was all about over the four-day period. In addition, several newspaper articles, television reports and radio spots reported to the public about the goats and the problem of invasives in the parks. With an increasingly educated citizenry,

programs like M-NCPPC's *Weed Warriors* could get a boost.

The future of the use of goats as invasive weed managers will continue to be discussed by the several agencies involved, but could possibly lead to a herd being owned and managed directly by the park land owners, M-NCPPC.

Anacostia Currents is published on behalf of the Anacostia Watershed Restoration Committee (AWRC) by the Metropolitan Washington Council of Governments (COG). Current AWRC members are:

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Thanks for your help!

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- Alliance for the Chesapeake Bay
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- Audubon Naturalist Society
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- Chesapeake Bay Foundation
- Citizens to Conserve and Restore Indian Creek
- College Park, Maryland Committee for a Better Environment
- Concerned Citizens for a Cleaner County (Prince George's County)
- Coalition for the Metropolitan Branch Trail
- D.C. Cares
- D.C. Environmental Education Consortium
- D.C. Sierra Club
- Earth Conservation Corps
- Eyes of Paint Branch
- Friends of Lower Beaverdam Creek
- Friends of Sligo Creek
- Gunpowder Citizens Association
- Greater Colesville Citizens Association
- Greenbelt Greens
- Green Democrats
- HOPE
- Izaak Walton League
- Montgomery County Conservation Corps
- Montgomery Inter-County Connector Coalition
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