Virginia

COASTAL MANAGEMENT

Protecting, Restoring, Strengthening Our Coastal Ecosystems & Economy

Summer/Fall 2003

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DEQ
Virginia Department of Environmental Quality
Virginia Coastal Program

Virginia's Coastal Resources Management Program links state, local, and federal efforts to create more vital and sustainable coastal communities and ecosystems. Virginia's coastal zone includes the 29 counties and 15 cities of Tidewater Virginia, and all tidal waters out to the three mile territorial sea boundary. The program includes state laws and policies to protect and manage Virginia's coastal resources, implemented by the Departments of Environmental Quality, Chesapeake Bay Local Assistance, Conservation and Recreation, Game and Inland Fisheries, and Health, and the Marine Resources Commission. The Department of Environmental Quality serves as the lead agency for the program.

Message from the Program Manager……

Tayloe Murphy, Secretary of Natural Resources, Ellie Donahue, Trinity Episcopal High School (Coastal Program Intern) and Laura McKay, Coastal Program Manager.

Despite the heavy rains of spring and summer 2003 followed by the fury of Hurricane Isabel, there have been many rays of sunshine for the Virginia Coastal Program. We were honored to have our Secretary of Natural Resources, Tayloe Murphy, join our Coastal Policy Team for a discussion of how to strengthen the program and move forward with our recommendations on improving secondary and riverine dunes and beach management (see page 2).

We've also been showered with help from some fantastic high school interns: Ellie Donahue from Trinity Episcopal and Katherine Helm from St. Catherine's, as well as graduate school interns: Lindy Dingerson from the Virginia Institute of Marine Science and Krista Trono from University of Miami's Rosenstiel School of Marine Science. Thanks to their help, we were able to make an admirable showing at the Coastal Zone '03 international conference in Baltimore last July, catch up on the ecotour guide certification project, develop Clean Marina Success stories (http://www.deq.state.va.us/vacleanmarina) and review current shoreline permitting practices.

So we hope to have a "blizzard" of great ideas and projects to share with you at our Coastal Partners Workshop this December in Williamsburg. Look for the registration form in this issue! Better be prepared for snow!!

Virginia Coastal Management

Summer/Fall 2003

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Virginia Coastal Management is published twice a year by the Virginia Coastal Program to highlight coastal resource management issues and activities in the Commonwealth.

Please direct ideas for future issues of *Virginia Coastal Management*, or subscription requests to Virginia Witmer, Editor, 629 East Main Street, Richmond, VA 23219, (804) 698-4320 or e-mail vgwitmer@deq.state.va.us

Please circulate this *publication* to other interested parties.

Virginia Coastal Management is also available on the Virginia Coastal Program Web site.

Visit our Web site at: www.deq.state.va.us/coastal

Cover Photo: Natural Shoreline along Chesapeake Bay in Virginia. Photo courtesy of Virginia Institute of Marine Science.

DEQ
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Blue-Green Infrastructure and Land-Water Policy Integration: Steps to Creating a Vision for Virginia's Coastal Zone

By Laura McKay, Coastal Program Manager

What is infrastructure? The dictionary says it is "the facilities needed to support the functioning of a system or organization." To put that in a coastal resources context, blue and green infrastructure are the water and land-based natural resources needed to support the functioning of our coastal ecosystem and economy. They are our life support system – the water we drink – the air we breathe – the places we get our food. They are the natural resources without which we cannot survive. Pretty basic, pretty important. How does the Virginia Coastal Program fit into that concept?

In December of 2001, the Coastal Program held its biennial Coastal Partners Workshop. (*Please come to our next one this December – see back cover*). The final session of the workshop was set aside to discuss what should be the next, three-year "focal area." Many of our partners wanted us to create "a vision" for what Virginia's coastal zone should be and how it could be managed in a more sustainable fashion in light of increasing growth pressures. This presented a daunting task for our small staff of six people.

Although the Coastal Policy Team voted the "Seaside Heritage Program" as the next focal area for October 2002 – September 2005, the "coastal vision" idea came in as a very close second choice. So Coastal Program staff began to work on this topic in small ways, rather than wait until 2005.

Our first step was to convene a group of state agency and Planning District Commission representatives to discuss creation of a map of the best remaining coastal resources in Virginia's coastal zone. In other words, could we at least identify the best remaining blue and green infrastructure? However, there was some concern about how this map would be used. Localities expressed concern that the map might become the basis for mandated "state planning." What we all finally agreed upon was that we would simply map, as best we could, the large swaths of critical, remaining blue and green infrastructure so that individual localities in the coastal zone could more readily see where these vital areas crossed, touched or were adjacent to their boundaries. The idea is for the state to identify the gross-scale infrastructure so that the localities can fill in the fine-scale infrastructure protection plans.

The Green Infrastructure Map

As we thought about doing that, we were asked by DCR's Natural Heritage Program for funding for a "Conservation Lands Assessment." In the summer of 2002, the Coastal Program contracted with DCR to create a map of the coastal zone depicting conservation "hubs and corridors" based on land cover data. The Virginia Conservation Lands Assessment model identifies ecologically significant hubs (large tracts of natural areas) and corridors (narrower strips of land that connect the hubs) that can be prioritized for various protection and management needs. Examples of conservation lands are large blocks of forest, large wetland complexes, relatively pristine rivers and streams, sensitive species habitat and existing parks and conservation lands. The effort, which is now well under way, is based on Maryland's Green Infrastructure project.

This fall the Coastal Program will continue funding DCR's work on the green infrastructure maps. DCR will meet with staff from state agencies to determine what data they have available. They will assess the potential for development of GIS data layers and prioritize the data in a format compatible with an integrated Conservation Lands Assessment tool. Once trained in using this tool, coastal Planning District Commissions can encourage their localities to use it as well. In this way, localities will receive a detailed picture of important areas that should be protected in order to ensure adequate nature-based services to sustain healthy coastal communities. They will also be able to mesh their priorities and needs with the state map, make adjustments and develop more fine-scaled plans for their own local actions.

Continued on page 13

Better linkage of local land use policies and state water use policies will help protect all coastal resources. Illustation by Virginia Witmer. (Inspired by previous illustration by NOAA.)

Coastal Network in Action

Surveying and Protecting Virginia's Beaches and Dunes

By Shep Moon, Coastal Program Planner

Mathews County. Site of an extensive dune field, including a secondary dune feature, that fronts the cottage communities of Bavon and Chesapeake Shores. Photo courtesy of the Virginia Institute of Marine Science.

Virginia's dunes and beaches are valuable, dynamic natural resources. They help replenish adjacent beaches and shallow near shore areas with sand, protect inland areas from flooding and erosion, and provide unique and important coastal habitats for rare plants and animals. They are an edge ecosystem – an interface between land and water habitats. They are also prone to substantial change, in both location and form, over time. As a result, dune and beach management has presented a number of challenges.

Virginia formally recognized the importance of its dune systems in 1980 with passage of the Coastal Primary Sand Dunes and Beaches Act. Although this legislation has helped protect many critical dune and beach sites, others remain vulnerable because they do not fall within the regulatory definition of a primary dune or because they are not located within the eight coastal jurisdictions covered by the Act. The jurisdictions currently included are Mathews, Northumberland, Lancaster, Northampton and Accomack counties and the cities of Virginia Beach, Norfolk and Hampton.

The Coastal Program began a collaborative effort with the Virginia Institute of Marine Science (VIMS) in 1998 to improve our knowledge of the state's dune systems and to evaluate protection of dunes, through a series of projects totaling $440,770 in Coastal Program grants. The last of these projects begins this fall.

The first project resulted in the 2001 VIMS publication, "Chesapeake Bay Dune Systems: Evolution and Status". This report includes an inventory of primary and secondary dunes on the Chesapeake Bay shoreline within the eight jurisdictions included in the Coastal Primary Sand Dunes and Beaches Act. The Atlantic coastline was not included in this effort because virtually all of the dunes on the seaside barrier islands are in conservation ownership or covered under the Barrier Island Policy of the Virginia Marine Resources Commission.

During the initial study, dune systems were first delineated from aerial imagery analysis, then field checked to verify their vegetation types and coastal zone profile. VIMS has also published four locality specific dune reports for Mathews and Northumberland counties and the cities of Virginia Beach and Hampton to assist local decision makers. Reports for the four remaining jurisdictional localities are currently underway.

The "Chesapeake Bay Dune Systems" report highlights the variable character of dunes around the Chesapeake Bay in terms of physical structure and stability. Field researchers found that Bay dunes and beaches can be as dynamic in form and stability as ocean coastal dunes and beaches, and are more likely to be affected by man-made structures due to shoreline development patterns. This conclusion was reached, in part, through an assessment of changes to the dune systems of Northumberland and Northampton Counties over time. Researchers compared a series of aerial photographs from 1937 and 1994 to develop a historical record of factors that may have influenced dune and beach evolution.

In order to better understand how the physical and vegetative characteristics of Bay dunes and beaches change over time, researchers initiated a Bay-wide monitoring program. Nine sites in five localities were chosen for monitoring. The sites were selected to be representative of the various classes of dune systems based on a classification system developed earlier in the project. Monitoring objectives are to characterize the seasonality of dune resources, conduct biological assessments, research groundwater dynamics and analyze historical shoreline changes. Results of the monitoring program will help scientists understand the effects of local shoreline dynamics on the erosion control and habitat functions of dunes and beaches. This improved understanding should, in turn, allow resource managers to better understand the need to protect these sensitive lands.

While this initial inventory provided invaluable information to resource managers responsible for implementing the Coastal Primary Sand Dunes and Beaches Act, it considered only those areas that fall within the jurisdiction of the Act. Dunes and beaches outside of these eight jurisdictions are afforded some protection if they fall within the 100-foot Resource Protection Area Buffer required by the Chesapeake Bay Preservation Act. But the Bay Act Regulations were designed to protect water quality and may not always ensure that sensitive dune features and vegetation are preserved in their natural state. Also, in some cases, dune systems extend landward beyond the 100-foot Bay Act Resource Protection Area, which is measured from mean high water.

This regulatory gap concerns coastal managers because we recognize the critical importance of dune and beach systems outside of the Coastal Primary Sand Dunes and Beaches Act localities. To address this issue, a second study undertaken by VIMS and funded by the Coastal Program, focused on expanding the inventory of primary and secondary dunes to other coastal localities identified as having dune

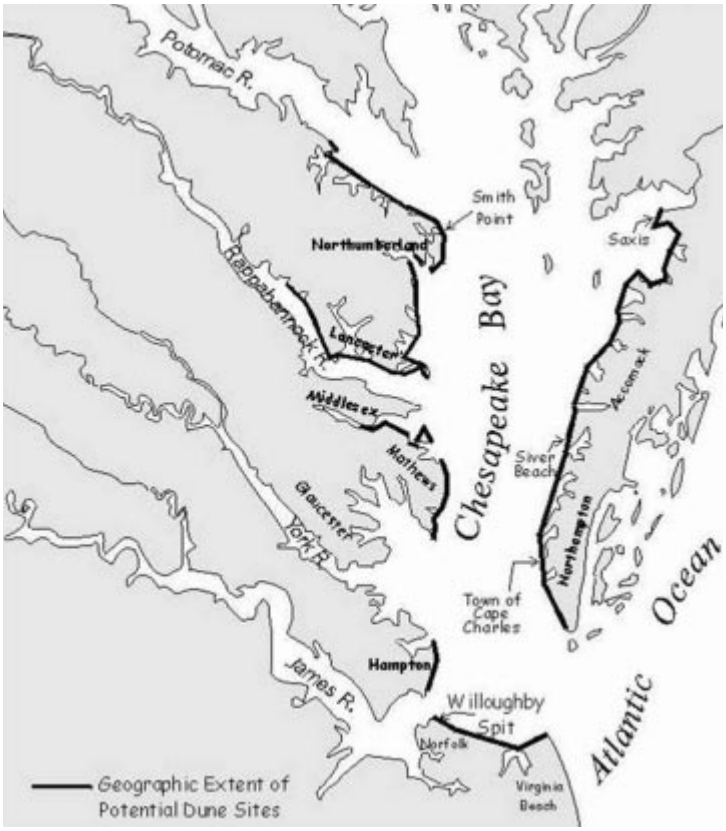
Virginia Institute of Marine Science staff (Dr. Scott Hardaway pictured) conducted extensive aerial and ground studies of dune sites and systems resulting in a new dunes classification system, expansion of inventory studies to jurisdictions not covered by the Dunes Act (so far, 30 additional dunes sites have been identified - most in Westmoreland and Middlesex counties), and completion of an assessment of secondary dunes most at risk of disturbance or loss due to development. VIMS narrowed the field of concern to about 45 acres of secondary dunes at risk in five locations in three counties: Lancaster, Northumberland and Northampton (see map at right). Maps courtesy of Virginia Institute of Marine Science.

and beach resources: the counties of Westmoreland, Middlesex, Isle of Wight, Surry and York and the cities of Newport News, Suffolk and Poquoson. VIMS staff used the same methodology for shoreline profiling and vegetation/sediment analysis for potential sites in these localities as was used in the previous dunes inventory. A significant number of additional dunes and beaches were identified, characterized, and classified.

While successfully documenting the location and value of secondary dunes and dune fields was a very important first step, as researchers continued their study of Virginia's dune systems it became clear that the regulatory programs intended to oversee the wise use of these sensitive areas may not be sufficient to continue to protect remaining dunes and beaches from continued coastal development. As a result of an additional study (conducted by VIMS) of upland development patterns contiguous to critical dune systems, resource managers now know the probable level of risk posed by development to each site. The risk assessment study defines the secondary dunes at risk of disturbance or loss due to development. It distinguishes these systems from dune areas already in government or conservation ownership, those too remote and/or physically inaccessible, those already significantly impacted by development and those dunes of minimal ecological and coastal hazard value due to their relatively small size and landscape position. The study narrowed the field of concern to about 45 acres of secondary dunes at risk in five locations in three counties: Lancaster, Northumberland and Northampton.

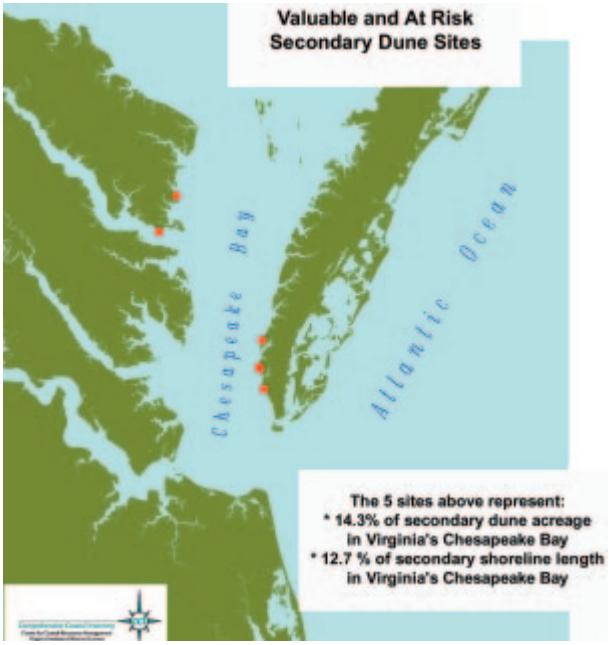
The research and inventory work conducted to date provides resource managers with a valuable base of information from which to make policy decisions regarding dunes and beaches. Over the next

Dunes… *Continued on page 13*



Above - Map showing study area for inventory of primary and secondary dunes. Goals of study: determine the extent of existing dunes around Chesapeake Bay; develop a geology-based classification of dune systems; determine morphologic, or structural, changes of selected dunes and identify factors that influence their evolution; and, determine the relationship between primary and secondary dunes.

Below - Map identifying secondary dune sites at risk and not protected under the current Coastal Primary Sand Dunes and Beaches Act.



Measuring Our Progress Toward Improved Coastal Management

By Julie Bixby, Coastal Program Planner

Measuring Progress, Performance Measurement, Outcome Indicators: these are the buzzwords heard throughout state and federal government offices lately. The movement toward tracking progress is more than shuffling paperwork – it allows us to communicate our accomplishments more clearly to our legislative representatives, our state leaders and our colleagues as well as to the general public. Especially in times of budget shortfalls, it is important to be able to demonstrate the effectiveness and successes of a program.

Performance measurement systems track the results of actions taken and programs implemented. In the field of coastal management, these measurable results are cleaner air and water, restored or protected habitat for our fish, wildlife and plants, as well as sustainable economic growth and development. The Coastal Zone Management Act (CZMA) was passed in 1972 to achieve these goals of resource protection and economic development. So in 30 years, how have we done? In the nation? In Virginia?

Virginia's new coastal indicators will guide development of the Coastal Program's State of the Coast Report.

The National Oceanic and Atmospheric Administration (NOAA) has been working on a series of National Performance Indicators for Coastal Zone Management Programs to answer just that question. The National Performance Indicators will allow NOAA to communicate what improvements and accomplishments have been made through state CZM programs to Congress as well as the states. This system will increase program efficiency and the information available for decision-making.

In fact, when Congress began considering the reauthorization of the CZMA in 2000, discussions focused on requiring the development of a performance measurement system. The Government Performance and Results Act of 1993 already set the stage for this movement by requiring federal agencies to develop plans to track and evaluate their programs. As a result, NOAA commissioned The Heinz Center to identify shared national and state coastal resource goals for the framework of a Performance Indicator system. Each coastal state would then be required to report to NOAA on these performance indicators.

Coastal Program Goals

Coastal Resource Protection

Goal 1.
To protect and restore coastal resources, habitats, and species of the Commonwealth. These include, but are not limited to, wetlands, subaqueous lands and vegetation, sand dune systems, barrier islands, underwater or maritime cultural resources, riparian forested buffers, and endangered or threatened species.

Goal 2.
To restore and maintain the quality of all coastal waters for human and ecosystem health through protection from adverse effects of excess nutrients, toxics, pathogens, and sedimentation.

Goal 3.
To protect air quality.

Goal 4.
To reduce or prevent losses of coastal habitat, life, and property caused by shoreline erosion, storms, and other coastal hazards in a manner that balances environmental and economic considerations.

Coastal Resource Sustainable Use

Goal 5.
To provide for sustainable wild fisheries and aquaculture.

Goal 6.
To promote sustainable ecotourism and to increase and improve public access to coastal waters and shorefront lands compatible with resource protection goals.

Goal 7.
To promote renewable energy production and provide for appropriate extraction of energy and mineral resources consistent with proper environmental practices.

Coastal Management Coordination

Goal 8.
To ensure sustainable development on coastal lands and support access for water-dependent development through effective coordination of governmental planning processes.

Goal 9.
To avoid and minimize coastal resource use conflicts through research, planning, and a forum for coordination and facilitation among government agencies, interest groups, and citizens.

Goal 10.
To promote informed decision-making by maximizing the availability of up-to-date educational information, technical advice, and scientific data.

Visit the Virginia Coastal Program Web site at http://www.state.va.us/coastal/goals.html for a copy of the Executive Order signed by Governor Mark Warner in 2002, which outlines these goals. Also available are highlights of the Program's accomplishments towards meeting these goals.

There are two ways to approach performance measurement, the focus can be on either the *processes* (or programs) intended to achieve a set of goals or on the *outcome* intended from the process. For example, Virginia regulates impacts to wetlands with the goal of minimizing the net impacts to wetlands. Indicators of success of this program could focus on permitting *programs* (i.e. number of permits issued or processing time) or the indictors could focus on the environmental *outcome* (i.e. acres of wetlands impacted). NOAA's performance measurement system targets environmental outcome indicators, in this example the acres of wetlands impacted, as this is the ultimate goal that coastal zone management is trying to achieve. The trends in these outcome indicators can provide the basis for reevaluating the process in place, if necessary.

Based on the objectives of the Coastal Zone Management Act, the national indicators focus on six areas (1) coastal ecosystems and populations (2) coastal water quality (3) public access (4) coastal hazards (5) coastal community development and (6) coastal dependent uses. A stakeholder group of state and NOAA representatives is now developing the specific indicators that will be used to determine national success in each of these areas.

Virginia may be required to report to NOAA on the indicators identified for these six areas. This sounds like a daunting task, but the Commonwealth has a head start. The Virginia Coastal Program has already begun working with its Coastal Policy Team, an interagency committee, to develop a performance measurement system for our state program. The Coastal Policy Team developed a list of draft indicators which Coastal Program staff are now mapping to the Program's ten goals.

Since our state program is comprehensive, and based on the Coastal Zone Management Act goals, the state system will inherently be very similar to the national program. As NOAA releases its draft indicators for the national system, these potential indicators are being considered for our state performance measurement system as well.

One difference between the state and national program is that the Virginia Coastal Program's (VCP) performance measurement system will look at both outcome and process indicators. This way we will have information and feedback on both our coastal resources *and* the programs intended to protect them.

The VCP's performance indicators will be used to track the Commonwealth's progress toward achieving the 10 goals for our program (see text box at left). Data collected on the performance indicators will be used to document trends and will be published in the VCP's State of the Coast report. Our goal is to produce a comprehensive State of the Coast report every two years that can be used to show the improvements made in Virginia with respect to coastal habitats, species protection, air and water quality, hazard preparedness, public access and sustainable resource use.

Since the movement toward measuring success is not unique to coastal management, Coastal Program staff are working closely with the programs and agencies in the Commonwealth that are also developing performance measurement systems, to ensure that there is coordination. Since the VCP will rely on its partner agencies to report data on these indicators, we want to take advantage of existing indicator programs and reporting mechanisms wherever possible. For example, the Department of Environmental Quality and the Nonpoint Source Pollution program at the Department of Conservation and Recreation are both in the process of adopting and implementing their own performance measurement systems.

It is going to take significant effort, dedication and resources to get these performance measurement systems up and running but the end result will be a clearly communicated message of our goals and achievements toward managing our coastal resources here, in Virginia, and all across the nation.

For more information on the Virginia Coastal Program's work on coastal management indicators, please contact Julie Bixby, (804) 698-4333 or jabixby@deq.state.va.us.

A copy of the Heinz Report, *Coastal Zone Management Act: Developing a Framework for Identifying Performance Indicators,* is available on-line at http://www.heinzctr.org/publications.htm.

Virginia Coastal Policy Team

Virginia's network of natural resource agencies shares responsibility for implementing Virginia's coastal resources management laws and policies.

The Coastal Policy Team, whose members and alternates represent all of Virginia's Coastal Program partners, facilitates cooperation among these agencies and provides a forum for discussion of cross-cutting coastal resource management issues. Members serve on the team at the discretion of their agency director.

Secretary Tayloe Murphy addressed the CPT at a March 4 meeting (above).

For a roster of the Coastal Policy Team and member responsibilities - please visit http://www.deq.state.va.us/coastal/policytm.html.

Photo by Virginia Witmer.

News Around The Zone

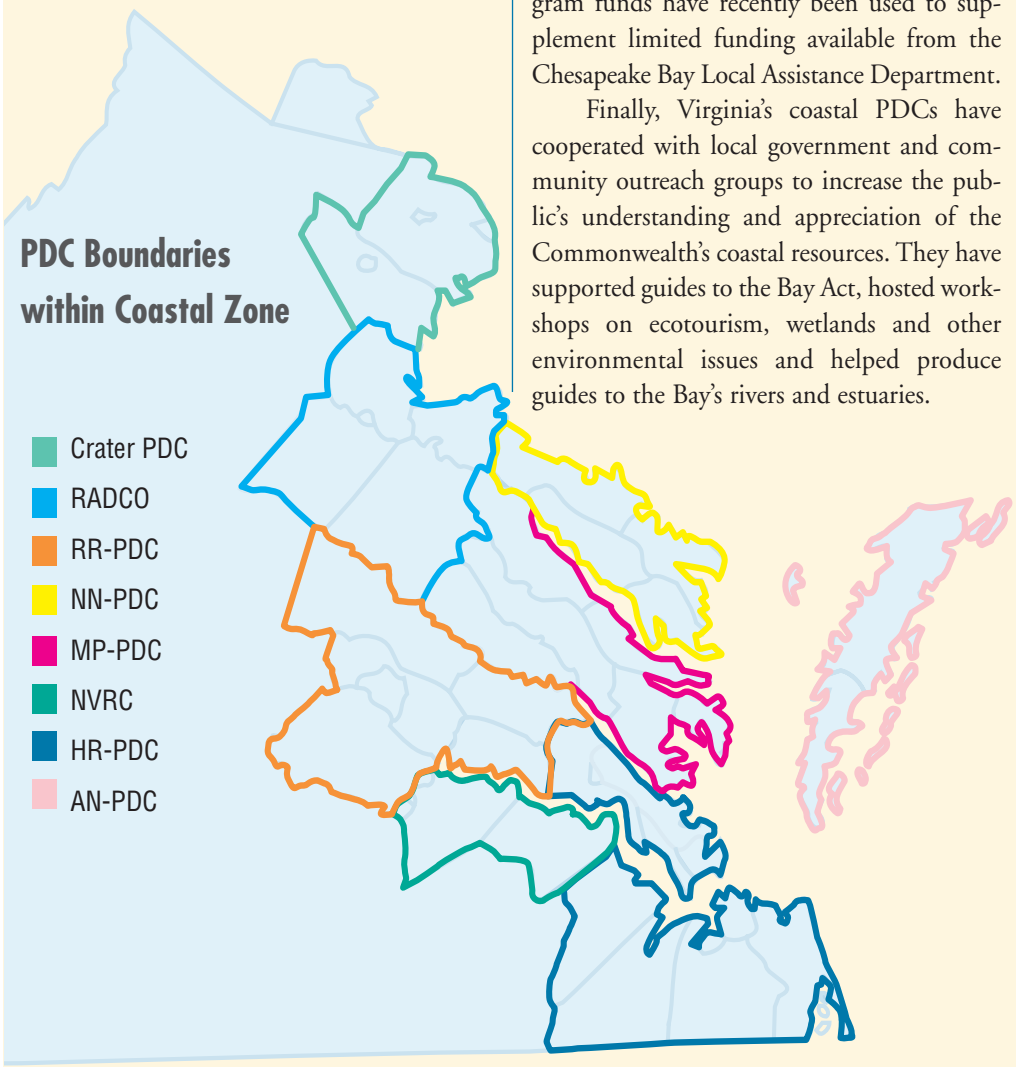
Coastal Management at the Regional Level

Virginia's Coastal Planning District Commissions (PDCs) can point with pride to a growing list of accomplishments in environmental planning and assistance. With funding from the Virginia Coastal Program, the PDCs are implementing an increasing number of state and local environmental programs. Since the Coastal Program's inception, each of the eight coastal PDCs has received funding to provide coordinated coastal technical assistance to the 86 localities in Virginia's coastal zone.

Virginia's Coastal PDCs serve as regional points-of-contact. The PDCs work with state and local governments, community watershed organizations and other private entities in their region. This work results in the development of watershed management plans, emergency hazard mitigation plans, water supply plans and programs to manage stormwater, wetlands and nonpoint source pollution. Coastal PDCs also regularly interact with the Coastal Program's partner agencies, providing the conduit for a constant and consistent flow of information between the state and localities.

The PDC's also serve as regional repositories for data from state and federal agencies, and as a clearinghouse for Geographic Information System analysis of environmental resource features. They often provide mapping, training and data-hosting services to their localities. In addition, they have established or enhanced programs to provide technical assistance for comprehensive planning and land use regulation efforts. Coastal Program funds have recently been used to supplement limited funding available from the Chesapeake Bay Local Assistance Department.

Finally, Virginia's coastal PDCs have cooperated with local government and community outreach groups to increase the public's understanding and appreciation of the Commonwealth's coastal resources. They have supported guides to the Bay Act, hosted workshops on ecotourism, wetlands and other environmental issues and helped produce guides to the Bay's rivers and estuaries.



PDCs not only provide ongoing technical assistance, as regional governments, the PDCs initiate and coordinate new programs to enhance coastal resource management in Virginia's localities. Below are some recent examples.

Accomack-Northampton PDC provided extensive technical assistance to the Virginia Department of Game and Inland Fisheries in planning and developing the Eastern Shore loop of the Virginia Coastal Birding and Wildlife Trail.

Crater PDC works closely with the Friends of the Lower Appomattox River (a nonprofit citizen group it helped establish) to: plant riparian trees, develop the Lower Appomattox River Corridor Greenway/Blueway Plan, and produce the "Becoming Friends of the Appomattox River" video.

Middle Peninsula PDC staff drafted enabling legislation, gained General Assembly approval and implemented the Middle Peninsula-Chesapeake Bay Public Access Authority to improve and manage public access across a multi-jurisdictional area.

The Northern Virginia Regional Commission is developing a pollution-prevention outreach strategy that will target three key pollution-causing behaviors through mass media. This element of the Coastal Program dovetails well with the public outreach that is integral to NVRC's watershed planning process in the Occoquan basin, TMDL development, and other projects such as the promotion of environmentally-friendly lawn care companies. Finally, NVRC's approach to outreach and hands-on stewardship will employ water trails or blueways as a way to encourage citizens to protect natural resources through enjoyment of on-the-water experiences.

Northern Neck PDC employs two Regional Environmental Inspectors for the region. These inspectors work cooperatively with federal, state and local government to provide review, implementation and compliance assistance with Bay Act, Erosion and Sediment Control and Wetland program requirements.

The Great Wicomico Fishing Pier in the Northern Neck PDC, a partnership between Northumberland County, the NNPDC and Virginia Coastal Program. Photo courtesy of Northern Neck PDC.

The Rappahannock River Basin Commission, jointly staffed by Rappahannock Area Development Commission and Northern Neck PDC, is widely recognized for its collaborative processes, which are particulary effective in the development and refinement of water policy within the basin.

Hampton Roads PDC, in cooperation with the Virginia Coastal Program and Cities of Chesapeake and Virginia Beach, established the Southern Watershed Special Area Management Plan (SWAMP) to address the unique environmental resources and growth pressures of this watershed, which drains into North Carolina. The results of technical studies are now being incorporated into local comprehensive plans and ordinances and Memoranda of Agreement among state, federal and local agencies.

The Middle Peninsula PDC, working with the Coastal Program, the counties of Essex, Gloucester, King and Queen and Middlesex and several state and federal agencies, developed a cohesive management approach for the Dragon Run Watershed that led to the establishment of the Dragon Run Special Area Management Plan (*see Fall 2002/Winter 2003 issue of Virginia Coastal Management.*)

Hampton Roads PDC conducted a series of technical studies of stormwater management that led to the establishment of a Regional Stormwater Management Program that coordinates implementation of six MS4 Permits (Phase I), annual reporting on permit activities, and regional education on stormwater management. A more cost-effective approach to monitoring and annual reporting has been one result. In 2002, an expanded program to develop permit applications, stormwater programs, and coordinated implementation of six additional MS4 Permits (Phase II) was created.

Richmond Regional PDC established a Stormwater Management Task Force to discuss public participation requirements of the NPDES permitting process and the potential benefits of such efforts in the Richmond area.

The growing need for central water supplies and wastewater treatment systems on the Eastern Shore led Accomack and Northampton Counties to create the Eastern Shore of Virginia Public Service Authority, staffed by the **Accomack-Northampton PDC**. The Authority succeeded in having the Eastern Shore designated as an EPA Sole Source Aquifer, which helped Accomack and Northampton Counties draft ground water protection ordinances.

The Rappahannock River Basin Commission promotes the use of Low Impact Development as an alternative stormwater management approach for water quality protection in the **Rappahannack Area Development Commission**. Stafford County has now modified its ordinances to allow alternatives to traditional retention pond systems.

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The first of three years of focus by the Virginia Coastal Program on the seaside of the Eastern Shore will soon be completed. Substantial progress has been made toward all the program goals (see box at right).

An Internet mapping system is being developed for the Seaside Heritage Program Web site. Later this fall click on the "boundaries" button to connect to mapped data on seagrass beds, oyster reefs and other data layers.

The Department of Conservation and Recreation's Division of Natural Heritage has accepted a State Natural Area designation from The Nature Conservancy on Parramore Island. This will allow Coastal Program funds to be spent to control the common reedgrass, *Phragmites*, on the island. The island burned last summer opening the door for an extensive invasion by *Phragmites*.

Tremendous progress was made on seagrass restoration, and oyster reefs were built in 5 locations from South Bay to Chincoteague Bay. Following are some highlights from Year One.

Program Goals

Development of a comprehensive seaside inventory of natural resources and human use patterns that would form the basis for long term restoration and management strategies;

Restoration of underwater grasses, scallops, oyster reefs, marshes and shorebird habitats;

Development of management tools such as a use suitability model, improved enforcement capabilities and public education efforts; and,

Development of sustainable ecotourism opportunities through construction or enhancement of public access sites, creation of a canoe/kayak water trail and map, and an ecotour guide certification course

For more detail on the VSHP goals and a description of projects to be completed during Year One of the Seaside Heritage Program Web, visit http://www.deq.state.va.us/coastal/vshpweb/homepage.html.

Seaside Program Highlight: Seagrass Restoration - Returning Natives to the Seaside

Seagrasses, primarily eelgrass, *Zostera marina*, were once very abundant in Virginia's seaside coastal bays, covering most of the subaqueous bottom. In the 1930's eelgrass underwent a massive decline attributed to a wasting disease pathogen, *Labyrinthula* sp. The decline was pandemic, affecting not only populations in the coastal bays but also populations on both sides of the Atlantic. In August 1933, this region was also affected by one of the most destructive hurricanes to influence the area in the twentieth century, contributing to the decimation of seagrasses in the bays.

Natural recovery of seagrasses has been limited primarily to Chincoteague, Sinepuxent, Isle of Wight and Assawoman bays with little or no recovery in the Virginia seaside bays. Today, the Virginia seaside bays are primarily salt marsh and macroalgal dominated. But that may begin to change as attempts to restore seagrass to the bays take on a new meaning, with support from the Virginia Seaside Heritage Program.

In 1996, Virginia Institute of Marine Science (VIMS) began an experimental program to reestablish eelgrass in the seaside bays, funded by a grant from the Virginia Coastal Program. While the early work in Magothy Bay was marginally successful, subsequent work beginning in 1998 in South Bay as well as Magothy Bay have proved significantly more successful.

"VIMS early restoration work relied on using adult plants traditionally used by most seagrass restoration programs. However, using adult plants has often proved very labor and time intensive," explains Dr. Robert Orth, Virginia's foremost SAV expert. "In the late 1980's, VIMS initiated research efforts in understanding aspects of seeds and seed ecology with an eye of using seeds in future restoration efforts."

Earlier experimental work with eelgrass showed that eelgrass seeds, when placed on the sediment surface, do not move far from where they settle, becoming incorporated into the sediment rapidly, explains Orth. Small-scale topographic features on the bottom such as animal burrows, pits and mounds, act to shield seeds from flow and prevent their being washed out.

However, Orth also discovered that new patches of eelgrass have developed over 100 km from the nearest potential donor beds, most likely due to the reproductive shoot, which when broken off in the late spring (May), can float long distances carrying viable seeds. "We also discovered an interesting retention mechanism whereby eelgrass reproductive shoots with viable seeds that are drifting along the bottom can be captured by an infaunal, tube-building, polychaete (*Diopatra cuprea*)," explains Dr. Orth. "The shoot is then 'cemented' into the tube cap similar to what they do with shells and macroalgae. Seeds from these retained shoots are then released as the shoot decays near the tube cap and develop into viable plants." In a series of seed density experiments, Orth found no density dependence on germination and initial seedling establishment, i.e., more seeds meant more plants but rates of germination were quite low (generally less than 10%).

Armed with this information, and buoyed by some intriguing successes with using seeds in experiments in South Bay, VIMS has embarked on a large-scale restoration of seagrasses primarily using seeds rather than adult plants.

The first hurdle in this large-scale program is obtaining adequate number of eelgrass seeds. Over a decade ago, VIMS established a new procedure. Mature reproductive shoots are collected from established beds as seeds are being released from the flowering shoots (normally mid-to the end of May and into early June). Harvested shoots are placed in nylon mesh bags, returned to the laboratory, and placed in flow-through circular, 3.8 m^3 outdoor tanks that are shaded and aerated. Shoots are maintained in these tanks for up to 6 weeks until early July to allow for decomposition of the shoots and release of seeds. Un-

Above: Collecting seed by harvesting reproductive shoots, or if the timing is right, capturing seeds just released with a net. Collection on the York River.

Above: Closeup of a reproductive shoot with seeds, which almost looks like peas in a pod.

Left: Reproductive shoots are held in tanks until seeds are separated from plant.

Above: Some 100,000 seeds ready to be scattered at selected sites.

Left: Broadcasting the seed by hand near Wreck Island on the Eastern Shore of Virginia.

Photos by Virginia Witmer.

decomposed stem and leaf material is subsequently removed from the tanks by sieving and elutriating lighter material. The seed collection method is fairly effective and has resulted in up to *2.5 to 6.6 million seeds being collected in 246 to 204 actual collecting hours*, respectively. The difference in collecting hours and fewer seeds being collected was due to harsher environmental conditions (windy and cold) during the collecting period in one year.

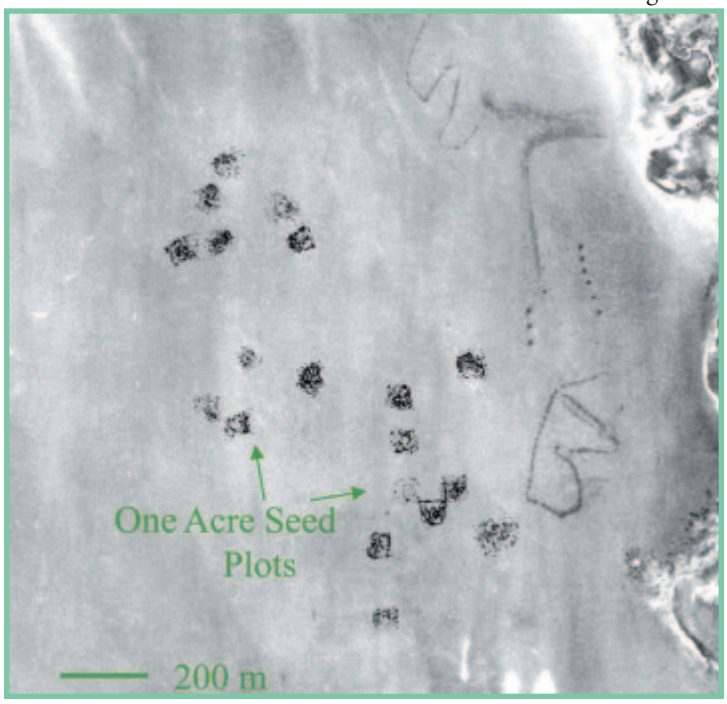
VIMS research has shown that seeds germinate between mid-November and early December, so harvested seeds can be kept in these flow-through tanks under ambient conditions until they are ready to be sown at the different sites in the late summer or early fall. VIMS has placed seeds at different sites as late as the end of October and had successful establishment of seedlings.

VIMS has attempted several methods of putting eelgrass seeds in the field. Seeds have been either broadcast from a boat or airplane, planted with an underwater planter, or placed in protective bags anchored into the bottom. Each method has distinct advantages and disadvantages. "Despite the low initial survivorship of seeds (5-10%), the simplicity and time savings, and so far effectiveness, in establishing eelgrass into several of Virginia's seaside bays by broadcasting seeds by hand from a boat into a pre-described area, has convinced VIMS researchers that this is the technique to use in reestablishing eelgrass in the seaside bays," states Orth.

The success of the seed experiments and the sustained growth of previous transplants in South Bay led the Virginia Marine Resources Commission (VMRC) to designate a 400 acre area of subtidal habitat in South Bay to be set aside for seagrass restoration. In the fall of 2001, VIMS broadcast 3.8 million seeds into 24-one acre parcels in the 400-acre set aside area. In addition they broadcast 600,000 seeds into 4 one-acre parcels in lower Cobb Island Bay and 600,000 seeds into 6 one-acre plots in Magothy Bay. Because of the fewer number of seeds collected in 2002, seeds were broadcast to 24 one-acre plots at two seed densities: 50,000 seeds in 12 acres and 100,000 seeds in 12 acres. Based on previous success in the South Bay area, Dr. Orth expects the area covered in seagrass to increase to approximately 50 acres, 4 acres in Cobb Island Bay and a little over 6 acres in Magothy Bay, in 2003.

In addition to the seagrass restoration, VIMS researchers are also monitoring water quality at the different sites as well as areas adjacent to the sites to monitor existing conditions while plants are spreading and identify new restoration sites based on the suitability of water quality. As eelgrass begins to spread from both the seed work as well as the natural spread now occurring, the restoration of eelgrass draws closer to reality. It may become one of the most successful large scale seagrass restoration projects ever successfully attempted.

For more information about seagrass restoration on Virginia's Eastern Shore, please contact Dr. Robert Orth, Virginia Institute of Marine Science, at (804) 684-7392 or jjorth@vims.edu.



Portion of a 1:24,000 vertical aerial photograph taken in July, 2002, showing the South Bay seagrass restoration site. Arrows are pointing to one-acre plots of eelgrass (dark portions) that are the result of broadcasting eelgrass seeds in fall 2001. Small dark squares to the right of these plots (9 total, each being 10x10m) and dark images in the shape of a 'B' and 'W' are also eelgrass beds from seed broadcast experiments conducted in 1999 and 2000.

Seaside Program Highlight:

Ensuring Sustainable Ecotourism

Photo by Barry Truitt.

Ecotour Guide Certification Class Offered

Dates: Monday and Tuesday, November 17-18, 2003
Instructor: Dr. Jim Perry, VIMS
Guest Lecturers: Dr. Mark Luckenbach, VIMS; Barry Truitt, TNC; Dr. Bill Williams, W&M
Location: Wachapreague Teaching Lab
Price: Certification with a marketing logo is provided free through a grant from the Virginia Coastal Program upon successful completion of the written exam. Dorm space is available for $10.00/night (advance notice required).
Open to: Two (2) guides per organization for Eastern Shore businesses. One (1) guide per organization for businesses not located on the Eastern Shore. Maximum enrollment is 20 people.
For more information contact:
Dr. Jim Perry
Virginia Institute of Marine Science
(804) 684-7388
jperry@vims.edu

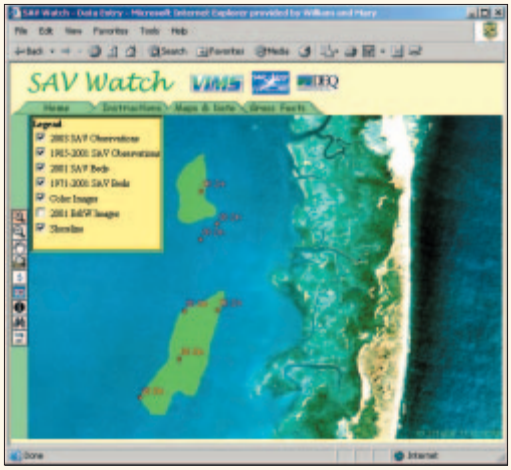
On November 19 a day-long American Red Cross First Aid Course will be offered for any one interested. Please indicate your interest in this course when you register for the Certification Course.

Coming in Spring 2004... an instructors' ecotour guide training course.

WEBLINKS

New Interactive Web Site Gives Bird's Eye View of SAV Beds

By David Wilcox, VIMS



Volunteers and scientists who monitor the health of submerged aquatic vegetation (SAV) in Virginia's Chesapeake Bay and seaside coastal waters will soon be able to record their observations and view interactive maps on the Web.

With funding from the Coastal Program and the Chesapeake Bay Foundation (CBF), VIMS has developed an interactive Web site that will be closely integrated into the SAV field monitoring program, initiated in 1985 by volunteers, scientists, and bay managers to supplement annual aerial monitoring of beds. Field monitors provide on-the-ground confirmation of SAV and crucial information about the species composition of SAV beds. Each year hundreds of field observations are submitted and incorporated into the SAV annual report, which is posted on the VIMS SAV website (http://www.vims.edu/bio/sav). Observations entered by field monitors to the new Web site will immediately appear on the web-based map.

In addition to greatly simplifying the processing of SAV field monitoring data, the SAV Watch Web site provides the public access to SAV aerial photography and historic SAV field observations. While the annual SAV monitoring reports have been on the web since 1994, the new Web site adds many new data layers and far greater interactive map controls. The site also provides a photo album and bulletin board where visitors can post pictures and discuss current conditions.

The SAV Watch Web site is currently being tested and is expected to be available by the end of this summer. A link to the new site will be available on the VIMS Web site as well as the Virginia Coastal Program Web site at http://www.deq.state.va.us/coastal/whatnew.html and the Virginia Seaside Heritage Program Web site at http://www.deq.state.va.us/coastal/vshpweb/homepage.html For more information, please contact David Wilcox at (804) 684-7088 or dwilcox@vims.edu.

Seaside Program Highlight:

Increasing Public Access - Seaside Park is a Rare Opportunity in Northampton

By Pat Smith

Northampton County is converting a seaside landfill to a new park. Already popular with bird watchers, the county is working with the Virginia Coastal Program's Seaside Heritage Program, government, and other groups to create a park with room for not only natural habitat, but also play space and renewable energy resource projects. It is located on waterfront property off Seaside Road north of Oyster, Virginia.

Seaside Park offers a rare opportunity. The County plans to open a regional-scale park on land once reserved for landfill expansion. This property includes access to coastal waters along Brockenberry Bay, a coastal climax forest, a large freshwater pond, open fields, and an overlook to uninhabited Barrier Islands offshore.

ing birds traveling through the Delmarva Peninsula, natural buffer for shallow seaside waters, and inviting woods for nature lovers. An onsite freshwater lake of about 15-20 acres when full is a magnet for waterfowl and wildlife amid saltwater surroundings. The mixed habitat setting of Seaside Park is prime migratory bird habitat, rounded out with plentiful open fields and saltwater marsh.

The county has plans for trails around the lake, up on top of the closed landfill overlooking the Barrier Islands, and through the woods to the marsh The Coastal Program is funding construction of the first nature trail, through the woods to the marsh. Plans are to make the trail wheelchair & stroller friendly, and provide some protection

In a broader context, this waterfront park and trails will be an important link in the Seaside Heritage Program's Water Trail.

Over 200 acres were purchased to use as a landfill in the 1970's. After using about 40 acres for landfill activities, the county resolved to close its landfill, restore the property, and return the land to the people and visitors of Northampton County for ecotourism and recreation. "We have the opportunity to turn a detriment into an asset to enjoy," commented County Administrator Lance Metzler. The county is working with the Virginia Department of Environmental Quality, the Environmental Protection Agency, and the Army Corps of Engineers to assure the site restoration is adequate for safe reuse.

The Seaside Park mixes access to nature with the community's need for group recreation and exercise. About 45 acres of climax forest, now rare on the East Coast of the US, provide haven to migrat-

from ticks and snakes for casual birdwatchers, walkers, sightseers, and classes, by providing a boardwalk. High use, core facilities will be centrally located, distant from the sensitive coastal buffer.

The property extends from the Seaside Road Scenic Byway (VA 600) on the west, to the marshes and protected bays behind the Barrier Islands of the Atlantic seaboard to the east. The Norfolk-Virginia Beach area is within a 40-minute drive of the park. From there, take highway 13 across the Chesapeake Bay Bridge tunnel to the Eastern Shore, turn right at highway 636 after Cheriton, right onto Seaside Road and look for the high ground on the left. From the North, take highway 13 south past Eastville, and turn left on highway 636, following the rest of the northbound directions. The park should be open by 2005. For more information, contact Barry Randall at (757) 678-0468 or Pat Smith at (757) 678-0413.

Virginia's Living History:
Focus on Our Coastal Towns

Gloucester - Steeped in American History

By Deborah Woodward, Department of Historic Resources

Nestled in the historic Tidewater region at the southern tip of the Middle Peninsula, the county seat of Gloucester played significant roles in Virginia history from its earliest days of settlement. Tucked between the York River to the south and the Chesapeake Bay to the east, Gloucester was first home to nomadic Indians before English settlers arrived in the early 17th century. Chief Powhatan established his stronghold on the northern side of the York River, and legend states that Pocahontas saved Captain John Smith from his captors in Gloucester.

The county seat derived its name from Henry, Duke of Gloucester, third son of King Charles I. It is home to beautiful sprawling estates and plantation homes, testimony to the region's thriving tobacco industry during the 17th and early 18th centuries. Boasting an impressive number of shoreline miles with five rivers and the Chesapeake Bay, Gloucester became an ideal hub for trade and shipping, especially in the late 19th and early 20th centuries with the rapid growth of the steamship industry. Residents flocked to this coastal area to profit from the new steamship lines running between West Point, Baltimore, and Norfolk. Fishing, seafood harvesting, and transportation became important area industries. To serve the expanding population, country stores and post offices sprouted up along the rivers and were quite profitable. Today, visitors can travel back in time and enjoy a taste of this simple way of life on a Driving Tour of Gloucester County Country Stores and Rural Post Offices. A dozen sites, some of which, like the Arthur Tab Store dating to 1875, are still open, will make a trip to the area a memorable experience. For details, on the Web, go to http://www.gloucesterva.info/pr/tourism/podt.htm

Along the historic Main Street of Gloucester are commercial buildings such as the old Botetourt Hotel, dating to 1769, which was originally a roadside tavern and later a colonial hostelry. The Botetourt housed government offices in the late 1970s before becoming the Gloucester Museum of History in 2000. Just across Main Street lies the Court House Historic District, an impressive, circular complex comprised of the 1766 colonial courthouse, the green, and the old debtor's jail. Each April, thousands gather here along Main Street to watch the annual Daffodil Festival and parade, which celebrates the arrival of the English, who brought the yellow flowers as reminders of springtime. Visitors enjoy the town's antique stores and eateries year round.

The Historic Circle in the Town of Gloucester.

A Special Note to Our Readers:

The Coastal Zone Management Act states that - "Important ecological, cultural, historic, and esthetic values in the coastal zone which are essential to the well-being of all citizens are being irretrievably damaged or lost" and declares that it is the national policy to provide for "...sensitive preservation and restoration of historic, cultural, and esthetic coastal features."

In this issue of Virginia Coastal Management we introduce a new feature by the Department of Historic Resources, "Focus on Our Coastal Towns", which will highlight the efforts of our historic coastal towns and villages to preserve and conserve their maritime history and uniquely coastal resources.

One of Gloucester's antique shops waits for visitors and buyers.

About 15 minutes away at the tip of the peninsula is the Gloucester Point Archaeological Historic District that celebrates the point's role in protecting critical waterways during wartime with evidence of three separate fortifications, from 1667 to 1862.

Other attractions include the York River Yacht Haven, a designated Virginia Clean Marina that works with boat owners in environmental management and pollution prevention efforts. The marina also boasts an extensive and state of the art oyster gardening facility and has supported the Virginia Oyster Heritage Program. At the Virginia Institute of Marine Science, a partner in the Virginia Coastal Program, travelers like to stop at the Waterman's Hall Visitor Center to learn more about the marine environment and current research. Public tours are scheduled on Fridays through the summer. To make an appointment, contact the institute at (804) 684-7000, or visit http://www.vims.edu/welcome/visitus.html

Visitors to a Gloucester County beach enjoy the hands on experience.

Photos courtesy of Gloucester Parks, Recreation and Tourism.

Blue Green infrastructure… *Continued from page 1*

The Blue Infrastructure Map

At the same time work was progressing on our green infrastructure mapping, NOAA began work on a federal inventory of "Marine Managed Areas," or MMAs and invited Virginia to be a "model" state for the inventory. The Coastal Program was fortunate to receive assistance from the Coastal States Organization and NOAA Coastal Services Center in the form of an intern, Sarah Everett, who has been helping to identify sites in Virginia's waters that might meet the federal criteria for MMAs. Although NOAA is still finalizing the federal criteria, the sites generally will need to have distinct boundaries, be established in laws or regulations, have protections enacted for a minimum of 2 years, have protections within the boundaries more stringent than outside and be marine or estuarine. To date, the Virginia inventory includes such things as oyster reef sanctuaries, protected SAV beds, the deepwater blue crab sanctuary, shellfish management areas, and submerged shipwrecks.

In addition, the Coastal Program, through a grant to VIMS, began creation of a use conflict model for marine and estuarine resources. This effort has resulted in the development and collection of many data layers that will also contribute to efforts to map "blue infrastructure."

This fall the Coastal Program will fund the Virginia Institute of Marine Science and the Department of Game and Inland Fisheries to formally begin work on our blue infrastructure maps. Although a number of models exist for describing and planning preservation and restoration of "green" infrastructure, similar models for "blue" or aquatic (both freshwater and marine) are limited and primarily focus on oceanic waters. In order to succeed in coordination of green and blue resource management (our Section 309 Integration Strategy, see http://www.deq.state.va.us/coastal/assess.html), we must first define specific spatial objectives for aquatic resources. In particular, we must develop a basis for prioritizing issues, concerns and/or management efforts for aquatic resource protection.

Examples of blue infrastructure could include:

- DCR's priority waters based on the Modified Index of Biotic Integrity (MIBI) model
- Data included in the Marine Managed Areas (MMA) inventory (SAV beds, oyster reefs, etc.)
- Data included in DGIF's aquatic gap analysis, anadromous fish usage areas and Threatened and Endangered species waters. Coastal Program agencies will also decide if there are other data that would be useful in the future for a comprehensive, coastal zone wide, blue infrastructure map. The final step in this one-year project will be to produce a blue infrastructure map of the Coastal Zone with the areas that fit those criteria that have been established.

The Land-Water Policy Integration Effort

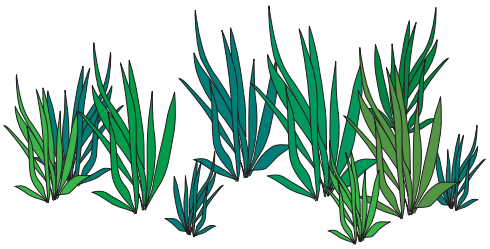
The Coastal Program's Blue-Green Infrastructure mapping concept will feed into our three-year "Integration Strategy" to develop new laws or policies that better link local land use plans to state water use policies. This effort will begin this fall through two Coastal Program grants. One grant will result in an analysis of Virginia's regulatory programs and the other will result in an interagency shoreline management consensus document. Funding for this policy integration effort under Section 309 of the Coastal Zone Management Act will continue through the fall of 2005.

Dunes… *Continued from page 3*

year, the Coastal Program will continue to add to the information base supporting dunes management through work that will provide a predictive model of dune and shoreline change, examine groundwater flow through dune systems to define the role of dunes and beaches in local water quality improvement, develop a website for easy access to dunes information, examine the values of created dunes for shoreline management, and research the relationship between dunes and adjacent seagrass beds. An analysis of dune and beach management and policy issues will also be completed that will include recommendations for more effective stewardship. Discussions with members of the Coastal Policy Team have already led to preliminary recommendations for improved dune and beach management. These recommendations include:

1. modifying the Coastal Primary Sand Dunes and Beaches Act to allow more Tidewater localities the opportunity to engage in local dune and beach resource management issues,
2. educating shoreland owners with dunes and beaches on their property,
3. further use of the "other lands" provision in the Chesapeake Bay Preservation Act Regulations which allows localities to protect additional land as Resource Protection Areas,
4. possible acquisition of certain high risk and uniquely valuable dune system sites or placement of conservation easements on those sites.

Photo courtesy of Virginia Institute of Marine Science.



Northampton County Nears Completion of SAMP:

A New Ordinance to Protect Native Vegetation and Groundwater Under Consideration

The Northampton County Board of Supervisors is considering adoption of a new ordinance to protect the County's unique and critical natural communities and groundwater supplies. This ordinance would likely be the first of its kind in Virginia if adopted and is the result of years of effort through the Northampton County Special Area Management Plan funded by the Virginia Coastal Program since 1991.

Northampton County is facing accelerating residential and commercial growth, but its local economy depends on healthy natural resources to support agriculture, seafood industries and increasingly, tourism. Protection of the County's unique and sensitive coastal resources is a high priority to ensure the sustainability of these industries.

Since 1991, Northampton County has been working with the Virginia Coastal Program on the Northampton Special Area Management Plan to better understand and protect the county's critical coastal resources and to develop sustainable industries. This partnership has brought almost $2 million match-free federal Coastal Zone Management Act dollars to the County over the past twelve years.

As part of this effort, the Northampton County Board of Supervisors appointed a citizen advisory committee to work with county planners to develop preservation measures to better manage residential and commercial land-use activities. On June 23, the citizen advisory committee presented their recommendations for a Sensitive Natural Resource District Area (SNRA) to the Northampton County Planning Commission and the County Board of Supervisors. On July 6, the Board of Superviors held a public hearing on the proposed ordinance.

The new ordinance, if adopted, will focus on protecting the County's groundwater recharge areas and drinking water quality, as well as the County's remaining natural habitat communities around the shoreline of the County. The County has mapped district boundaries based on natural resource type and established development performance standards to limit the impact of new development on these natural resources. One map identifies priority areas for groundwater recharge and another identifies areas where existing natural communities provide important habitat for abundant resident and migratory wildlife.

The SNRA preservation overlay districts include recommendations to guide new construction in practical and cost-effective measures called Best Management Practices or BMP's that meet the performance standards. These BMP's are common sense approaches and acknowledge specific site conditions. The BMP's can be relatively simple, such as revegetating a disturbed site with native plants and retaining rainfall run-off to recharge groundwater. Some measures are more complex, such as constructing an infiltration system for a parking lot to replenish groundwater recharge.

For more information about the Sensitive Natural Resource Area Districts and the proposed ordinance, please contact Kathryn Crawford at (757) 787-5347 or e-mail: kcrawford@co.northampton.va.us.

Natural Communities in the Sensitive Natural Resource Areas district:

Maritime dune grassland- This area is defined by grasses that grow in dune areas. The dominant plants are saltmeadow cordgrass, American beachgrass, sea oats, bitter seabeach grass and seaside little bluestem. These plants help stabilize dune and shoreline areas.

Maritime dune woodland- These are mixed deciduous pine forests of the back dunes protected from salt water spray. Dominant trees include live oak, bluejack oak, and sassafras, with loblolly pines. Shrubs include scrubby oaks and patches of sandheather. This Natural Community is considered globally and state rare.

Maritime mixed forest- This is a mixed forest sheltered by back dunes along the flanks of the shore. Vegetation is significantly influenced by oceanic factors. Typical trees include loblolly pine, water oak, southern red oak, and black cherry.

Maritime scrub- This is mixed shrublands sheltered by back dunes along the flanks of the shore. Plants in this group generally occupy inland edges of dune areas that are protected from constant ocean salt spray. Vegetation includes northern bayberry, live oak, persimmon, and black cherry.

Coastal plain/Piedmont acidic seepage swamp- This is a groundwater fed wetland community that contains dense shrub and herbaceous vegetation. Typical shrubs and trees include sweetbay, poison sumac, highbush berries, possum-haw and smooth alder.

Mesic mixed hardwood forest- These forests receive moderate precipitation and generally thrive in nutrient poor soils. Typical tree canopies include mixtures of American beech, oaks, tulip-poplar, and hickories. Smaller associates include American hornbeam, flowering dogwood, and American holly.

Non-riverine swamp forest- These are seasonally flooded mixed or deciduous forests that occur on poorly drained peatlands. Dominant trees include bald cypress, swamp tupelo, and red maple. Smaller associates include red bay and sweet pepperbush. This Natural Community is considered globally uncommon to rare.

Photos by Dot Field

Federal Evaluation of Virginia's Coastal Program Conducted

For a week in August, a team from the National Oceanic and Atmospheric Administration/Office of Ocean and Coastal Resources Management conducted an evaluation of Virginia's Coastal Program. Approximately every three years, an Evaluation Team from NOAA travels throughout Virginia's coastal zone to meet with representatives of federal agencies, state and local government, academia and the private sector, to review how well Virginia is implementing its approved program, adhering to the terms of its federal financial assistance awards and being consistent with the Coastal Zone Management Act.

Lead NOAA Evaluation Chris McCay and Jennifer Winston, also from NOAA, take a close look at Virginia's native oyster while visiting a restored oyster reef on Virginia's Eastern Shore. Photo by Kendell Jenkins.

During this 2003 evaluation, the team visited three locations along Virginia's coast to review coastal management projects and resources. The Evaluation Team requested visits to Virginia Oyster Heritage Program reef restoration sites on the Rappahannock River, seagrass restoration sites on the Eastern Shore of Virginia (*funded through the Coastal Program's new focal area - the Virginia Seaside Heritage Program - see page 8*), and a tour of the Dragon Run Watershed currently being studied, managed and protected under the Program's Dragon Run Special Area Management Plan. The Evaluation Team also held a public meeting at the Department of Environmental Quality on August 11 to solicit public comments.

Before leaving on August 15, the team noted what they saw as some of the Virginia Coastal Program's accomplishments, including the dedication of Program staff, the effectiveness of the Program's networking among its many partners, the navigability of the Program's Web site and information available on-line, the work of the Coastal Policy Team - particularly the lead the CPT has taken on dunes management, the comprehensiveness of the Program's new Seaside Heritage Program, maintenance of the multi-partner Oyster Heritage Program, approval of the Coastal Nonpoint Pollution Program, and the Program's use of resources and funding toward improved coastal and sustainable public access.

The Evaluation Team also noted several ideas for improvement including, increasing the visibility of the Program's work and accomplishments, continuing development of coastal indicators, and formalizing communication of coastal policy recommendations from the Coastal Policy Team to the Secretary of Natural Resources through departmental agency heads.

The Commonwealth will receive draft findings for comment and will make the final findings available on the Coastal Program Web site when they become available. The findings will identify program successes and areas needing improvement.

The Evaluation Team consisted of several representatives from NOAA's Office of Ocean and Coastal Resources Management (OCRM), including Chris McCay, Lead Evaluator, Randy Schneider, Virginia's Program Specialist at OCRM, and Jennifer Winston. The Team also included a representative from another state coastal program office, reflecting the cooperative nature of coastal management programs at the federal and state level. Janis Helton from the Alabama Coastal Program rounded out Virginia's Evaluation Team. Last March, Virginia Coastal Program Planner, Julie Bixby, participated in the North Carolina evaluation. This September, the Virginia Coastal Program Manager, Laura McKay, participated in an evaluation of the Massachusetts Coastal Program.

Super High Tech Birdwatching

This fall the Coastal Program is working with The Nature Conservancy (TNC), the Department of Game and Inland Fisheries, through a grant from the US Fish and Wildlife Service, and William and Mary's Center for Conservation Biology to get much clearer images of land bird migration through the tip of the Delmarva than ever before seen.

Prothonotory Warbler. Photo by Teta Kain.

Thanks to a loan of Doppler Radar equipment from NASA to TNC, we expect to view and collect data on these long distance migrants from late August through October. The Coastal Program will fund a team of biologists working on the ground to verify what radar technicians are seeing on the radar screen.

Project participants also hope to be able to view seabirds migrating just offshore using the Doppler radar. If this technology works, data collected may help in determining the potential impacts of proposed off-shore wind farms.

For more information, contact Laura McKay, Coastal Program Manager, at (804) 698-4323 or lbmckay@deq.state.va.us.

Photo by Richard Wiseman, Eastern Shore Photo Arts.

Coastal Clips & Contributions

Thanks to Our 2003 Coastal Interns and Volunteer!

Krista Trono

Krista Trono is working with Shep Moon, Coastal Program Planner, on a review of current shoreline management permitting and practices in Virginia. Krista joins us from Miami where she attended the Marine Affairs and Policy Masters Program at the University of Miami. Krista received her bachelors in environmental science from Virginia Commonwealth University. She plans to graduate from Miami in December 2003. Krista will be with the Program through October.

Lynne Dingerson

Lynne "Lindy" Dingerson interned with the Virginia Coastal Program for the summer to assist in implementation of the Virginia Seaside Heritage Program, specifically development of an ecotourism certification workshop targeted for recreation providers on the Eastern Shore. Lindy also developed "success stories" for the Virginia Clean Marina Program and Businesses for the Bay. Lindy is a Masters student at the Virginia Institute of Marine Science in the Department of Coastal and Ocean Policy. She is also working on a Masters in public policy at the College of William & Mary.

Katherine Helm

Special thanks to Katherine Helm, who volunteered a few weeks of her summer to help out at the Coastal Program Office. Katherine is a junior at St. Catherine's School in Richmond, and the granddaughter of Cliff Schroeder, Orville Magoon Award winner (*see page 17.*)

Coastal Program Providing Staff Support to Low Impact Development Task Force

Low Impact Development, or LID, is emerging as a highly effective and attractive approach to managing stormwater runoff. It differs from conventional stormwater management by emphasizing cost-effective, lot-level practices designed to replicate predevelopment hydrology and reduce the water quality impacts of development. The 2003 Virginia General Assembly directed DEQ to create a Low Impact Development (LID) Task Force to help advance this promising concept in the Commonwealth. The Coastal Program is helping to provide staff support to the Task Force, which is composed of stakeholders from state and local governments as well as development and environmental interests. The Task Force has a two-year charge to develop: i) a certification process for LID techniques, ii) guidance for local governments and the general public on LID, iii) recommendations for changes to existing statutes and regulations to facilitate the use of LID, and iv) a model LID ordinance for use by local governments. The Director of DEQ will make a preliminary report to the General Assembly by November 1, 2003 and a final report by November 1, 2004.

Virginia Coastal Nonpoint Pollution Program RFP

A request for proposals (RFP) was released in May 2003 for project funding available through the Virginia Coastal Nonpoint Pollution Program. This is the first time since the inception of the program that Virginia has had sufficient funding to release an RFP. Coastal Nonpoint Program areas eligible for funding included: ordinance changes, watershed protection, new & operating onsite disposal systems, instream & riparian habitat, and eroding streambanks & shorelines. A description of these program areas can be found at http://www.epa.gov/owow/nps/MMGI/. Provided funds are available, staff anticipates using this approach in future grant years.

If you have any questions about the Coastal Nonpoint Program, please visit the website http://www.dcr.state.va.us/sw/czreauth.htm or contact Mark Slauter at (804) 692-0839 or mslauter@dcr.state.va.us.

Stream Survey of the Coastal Plain Underway

Virginia Commonwealth University is conducting a comprehensive stream survey of the Virginia Coastal Plain which began in Spring, 2003, with funding provided by Virginia Department of Conservation and Recreation and the Virginia Coastal Program. The study will develop an interactive, GIS database using ArcIMS (ESRI) technology for representative stream reaches, including both tidal and nontidal systems, in over 70 hydrologic units that drain into Chesapeake Bay. Data on macroinvertebrates, instream habitat and geomorphology, and fish assemblages will be collected throughout 2003. High-quality data will be incorporated into a model (i.e. 'virtual') of coastal streams that will assist state and local government agencies with environmental planning and management activities. Other project partners include the Virginia Department of Game and Inland Fisheries and the Department of Conservation and Recreation's Division of Natural Heritage. For more information, contact Dr. Steve McIninch (804) 827-0090.

NOAA Releases Report on Small Dock and Pier Management

NOAA's National Centers for Coastal Ocean Science (NCCOS) announced the availability of a report from a January 2003 workshop, "Environmental and Aesthetic Impacts of Small Docks and Piers." The workshop, which focused on the status of the science in this area, is the first in a series designed to support the development of a science-based decision tool for small dock management. The report provides a critical synthesis of potential consequences of the construction, presence, and use of small docks and piers on the coastal environment. Shading, contamination, and boating associated with docks are discussed, as well as navigation, aesthetic, and quality of life issues. The report suggests recommendations for managers, coastal decision-makers, and dock owners and builders. An accompanying searchable database includes both published and unpublished reports on the impacts of docks and piers. Future workshops, in this series, will synthesize information on regulatory, non-regulatory, and construction tools available to improve the management and reduce the environmental impacts of small docks and piers. For a copy of the report, visit http://www.coastalscience.noaa.gov, under the subheading, Notable Additions.

Virginia Conservation Leader Receives National Award

Cliff Schroeder and Orville T. Magoon

Clifford Schroeder, Chairman of the Virginia Oyster Reef Heritage Foundation, and former Chairman of the Chesapeake Bay Local Assistance Board, received the Orville T. Magoon Award for dedicated volunteer service at the 2003 International Coastal Zone Management Conference on July 16, 2003.

The award was presented by Orville Magoon, the coastal activist who founded the Coastal Zone Conference Series in 1978. It is presented by popular ballot to the person who, through his or her volunteer efforts and the giving of their own time, has made the greatest contribution in fostering coastal community cooperation and communication.

Mr. Schroeder was recognized for his service to the Commonwealth of Virginia and its coastal resources. He served as Chairman of the Chesapeake Bay Local Assistance Department for almost 8 years and spent countless hours trying to ensure implementation of Virginia's landmark Chesapeake Bay Preservation Act by fostering cooperation and coordination among coastal localities.

Mr. Schroeder is also a key player in restoring the native oyster to Virginia's waters. In 1999 he stepped up to the challenge of creating a private non-profit organization, the Virginia Oyster Reef Heritage Foundation. Through Mr. Schroeder's almost single-handed efforts he has raised hundreds of thousands of dollars for this cause. His rapport with elected officials has helped heighten their awareness of coastal management issues and resulted in the annual Congressional appropriation of $1 million/yr for oyster restoration in Virginia.

Virginia Local Planner Receives Stewardship Award

Lewie Lawrence

Lewis Lawrence, Director of Regional Planning for the Middle Peninsula Planning District Commission, has been honored with the 2003 Virginia Environmental Stewardship Award. Nominations are encouraged for individuals that exemplify innovative and effective stewardship activities that serve to protect and enhance local and state natural resources.

Mr. Lawrence has successfully developed and administered regional water quality and quality of life projects within the York, Rappahannock and Small Coastal Basin watersheds. He has been instrumental in directing the implementation of many Chesapeake Bay Agreement 2000 commitments targeting land conservation, public access, education and outreach, community engagement, nutrient and sediment load reductions, watershed planning and oyster restoration. In partnership with the Virginia Coastal Program, Mr. Lawrence set in motion a local-state-federal program to protect the 90,000 acre Dragon Run Watershed - Dragon Run Special Area Management Plan. He has developed and implemented long-term solutions for failing onsite wastewater treatment systems resulting in the repair of 60 systems. He also instituted a framework to provide hundreds of public access waterway sites in perpetuity along 1,000 miles of shoreline.

Many of Mr. Lawrence's initiatives have been supported through the Virginia Coastal Program Technical Assistance program (see related article on page 6).

Another Sea Turtle Saved!

To report a stranded marine animal to the Virginia Marine Science Museum's Stranding Center and Team, call (757) 437- 6159 (24 HOURS/DAY). Photo by Ellie Donahue.

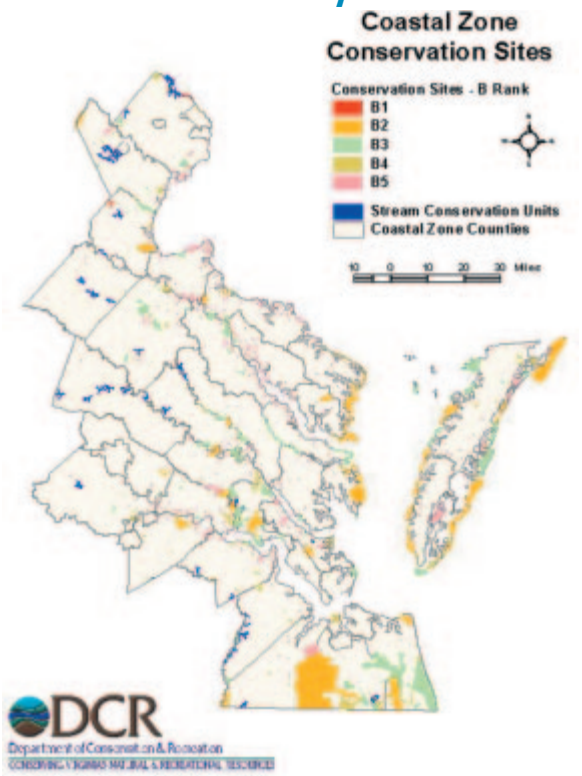
"Gustav", a loggerhead, washed ashore September 11, 2002, during the tropical storm "Gustav," with severe wounds to his carapace consistent with a boat strike. Gus received months of intensive round-the-clock rehabilitation at the Virginia Marine Science Museum Stranding Center. The Coastal Program has provided funding to the Center for over ten years.

Gus, who isn't yet sexually mature, and could turn out to be a female, was released on June 25, 2003 along with another loggerhead, a green sea turtle and three Kemps ridley turtles. They all set out to sea from a public beach at Cape Charles on Virginia's Eastern Shore.

Gus' send-off was a welcome change for stranding program volunteers. The museum has recovered more than 200 dead sea turtles this year. Mark Swingle, curator for the Museum's Stranding Center, and his staff have noticed a spike in turtle deaths over the past four years and are working to discover why. In the meantime, they celebrate every successful release of injured turtles back to the wild.

For more information about the program and how you can become a volunteer, please call (757) 437-6159.

Protect Coastal Biodiversity!



Accurate data make conservation happen…

For information, contact the DCR-Natural Heritage, Locality Liaison Program (804) 692-0984 or **locklear@dcr.state.va.us.**
Website: http://www.dcr.state.va.us/dnh

Please Register!

2003 Virginia Coastal Partners Workshop

December 3 - 5
Williamsburg Woodlands Conference Center
Williamsburg, Virginia

Look for your registration form inside this issue!

Topics: ecotourism, coastal hazards, dunes management, low impact development, shoreland planning, special area management planning, tributary strategies, shallow water management, habitat restoration - SAV, wetlands and riparian buffers, land acquisition, coastal nonpoint pollution control program updates (opportunities for local project funding to be covered) and a special tour of our coastal historic and cultural resources.

A pre-workshop session on wetlands will be offered on Wednesday, December 3.

Visit and bookmark the Virginia Coastal Program Web site http://www.deq.state.va.us/coastal/whatnew.html for more information and workshop details!

VIRGINIA COASTAL MANAGEMENT
Virginia Coastal Resources Management Program
Virginia Department of
Environmental Quality
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