# Virginia Coastal Zone Management

Summer/Fall 2010

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Virginia Coastal Zone
MANAGEMENT PROGRAM


Protecting, restoring, strengthening
our coastal ecosystems & economy

# Virginia Coastal Zone Management Program

The Virginia CZM Program is a network of state and local government agencies working to create more vital and sustainable coastal communities and ecosystems. Virginia's coastal zone includes the 29 counties and 17 cities of Tidewater Virginia and all tidal waters out to the three mile territorial sea boundary.

The Virginia CZM Program includes state and local laws and policies to protect and manage Virginia's coastal resources, implemented by:

Virginia Department of Environmental Quality– lead agency
Virginia Department of Conservation and Recreation
Virginia Department of Game and Inland Fisheries
Virginia Department of Health
Virginia Marine Resources Commission
Tidewater local governments

The program is guided by the Coastal Policy Team which provides a forum for managing cross-cutting coastal resource issues. The Coastal Policy Team is comprised of the partner agencies listed above as well as:

Virginia Department of Agriculture and Consumer Services
Virginia Department of Forestry
Virginia Department of Historic Resources
Virginia Department of Mines, Minerals and Energy
Virginia Department of Transportation
Virginia Economic Development Partnership
Virginia Institute of Marine Science
Virginia Planning District Commissions (8 Tidewater regions)

The Virginia CZM Program is part of the national coastal zone management program, a voluntary partnership between the National Oceanic and Atmospheric Administration and U.S. coastal states and territories authorized by the Coastal Zone Management Act of 1972, as amended.

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Virginia Coastal Zone Management is published twice a year to highlight coastal resource management issues in the Commonwealth. Virginia Coastal Zone Management magazine is also available on the Web. Go to www.deq.virginia.gov/coastal/magazine. Please direct ideas for future issues or subscription requests to Virginia Witmer, editor and graphic designer, at Virginia.Witmer@deq.virginia.gov

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Visit us on the Web at: www.deq.virginia.gov/coastal/

*Cover Photo: Coral Honeysuckle winds around rail posts on the Willis Wharf Wildlife Observation Platform on Virginia's Eastern Shore. The honeysuckle is growing in a native plant demonstration garden planted around the platform, as part of the "Plant ES Natives" campaign (see story on page 8). Photo by Virginia Witmer, Virginia CZM.*

# Message from the Program Manager

Somehow more than a year and a half has passed since our last issue - so we have a lot to catch up on! Between two new staff being hired, the wrapping up of our Seaside Heritage Program, taking the first steps on a Seaside Management Plan, the launching of our Sustainable Communities focal area, our involvement in the new Mid-Atlantic Regional Council on the Ocean, a gearing up of offshore energy issues and development of our next 5 year Section 309 Strategy things have been hectic. But as a result we have a lot of good stories to tell and hope that you enjoy this issue.

We have many challenges before us, just like Lowell, the rescued sea turtle (see photo and caption at right). But like Lowell, we are anxious to go out and meet those challenges. When I pulled a rather limp and hot Lowell from his crate and turned him toward the Bay, he saw the wide open water and energy just welled up inside him. His flippers started paddling the air like mad to get to that water. A good lesson for all of us – no matter how tough the going has been, we must never lose our will to keep paddling like mad toward our goals!

Laura McKay

*Laura McKay, Program Manager, places Lowell, a Kemp's ridley sea turtle, into the Chesapeake Bay at the Cape Charles Town Beach last June. Lowell was rescued near Lowell Massachusetts last fall and rehabilitated at the New England Aquarium until last spring when he was moved to the Virginia Aquarium before being released. Photo courtesy of Virginia Aquarium.*

# *Virginia* Coastal Zone Management

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*The Virginia CZM Program Office welcomed two new staff since our last magazine! See page 28 to read more about the experience Beth and April bring to the office and their new roles. Appearing in photo (left to right) Virginia Witmer, Shep Moon, Laura McKay, Beth Polak, April Bahen, and Nick Meade.*

Virginia Witmer, Virginia CZM

Virginia Coastal Zone
MANAGEMENT PROGRAM

# Seaside Successes

## The Power of Dreams on Virginia's Eastern Shore

*By Laura McKay, Virginia CZM*

Sometimes dreams do come true, especially when you work hard and don't give up. Just ask Dr. Bob Orth of the Virginia Institute of Marine Science, or Barry Truitt of The Nature Conservancy. "I never thought I'd see the day when eelgrass would spread as far you could see," Barry said as he gazed across South Bay's calm, shallow waters that revealed fields of eelgrass waving in the water like wheat in the wind.

When the Virginia CZM Program first initiated the Seaside Heritage Program back in 2002, we and our partners barely dared to dream that we could bring back the once abundant fields of eelgrass that used to cover these Atlantic coast bays of Virginia's Eastern Shore, much less the blue-eyed bay scallops that used to thrive within them and the rare birds that rely on the Seaside's beaches and marshes. We also weren't sure how much we could help to build the Shore's shellfish aquaculture and ecotourism industries.

It is a lot to accomplish, but the dream is becoming reality. Six years, over 60 separate grants and $2.6 million in CZM funds later, along with additional funds our partners brought to the table, the Seaside has become quite a different place.

While $2.6 million is certainly a bundle, it pales in comparison to what has been spent on Chesapeake Bay. So why the difference in success? There are plenty of good reasons. The Chesapeake Bay drains a 64,000 square mile watershed through an 18 mile opening at its mouth. The Seaside Bays of the Eastern Shore drain about 300 square miles through at least eight openings to the Atlantic. Because of all these openings to the Atlantic, the Seaside temperatures are also cooler than in the Bay. This allows Seaside waters to retain more dissolved oxygen (critical for finfish and shellfish) and to support eelgrass which can't survive in waters that reach 95° F.

### The Good News

When we began the Seaside Heritage Program back in 2002, we had six main items on our "to do" list:

1. Restore oysters (they were decimated by diseases and over-harvesting).
2. Restore eelgrass (it disappeared in the 1930's due to storms and eelgrass wasting disease).
3. Map and control Phragmites (this invasive reed overtakes saltmarsh and other wetland habitats).
4. Improve the productivity of rare shorebirds and waterbirds (their numbers had plummeted due largely to predators).
5. Promote ecotourism (prior to the 1930's, hunting and fishing tourism had been a lucrative local industry).
6. Ensure the sustainability of shellfish aquaculture (this growing industry relies on clean water).

As we worked on each of these items, many resulted in mapped data layers that are now viewable on Coastal GEMS (*see page 28 and go to www.coastalgems.org*). For instance, you can see maps of eelgrass coverage, oyster reefs, Phragmites distribution, and the Seaside Water Trail. Eight years later, we have some very notable results to share.

*(photo below) View of a seaside marsh at the southern tip of the Eastern Shore as seen from a Northampton County kayak put-in adjacent to the Eastern Shore of Virginia Wildlife Refuge. The tranquility of the scene belies the dynamic nature of the Seaside's barrier island/lagoon system.*

Nick Meade, Virginia CZM

## Oysters

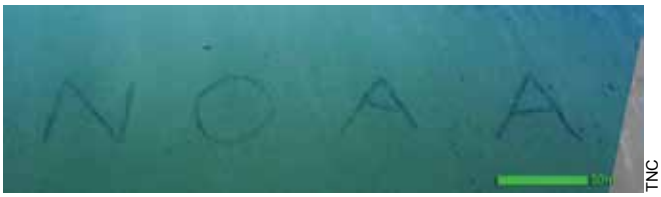
*"...a December 2008 inventory revealed 3.2 billion oysters on the Seaside..."*

Virginia Witmer, Virginia CZM

Even prior to the Seaside Heritage Program (since 1999) we've been funding Dr. Jim Wesson of the Marine Resources Commission (MRC) to construct oyster reefs on the Seaside. By summer of 2008, there were over 10 acres of CZM–funded reefs and over 11 acres of reef constructed with a combination of TNC-NOAA Community Restoration Program, Norfolk Foundation, and Virginia Aquatic Resources Trust Fund monies. Seaside oysters are a bit different from Chesapeake Bay oysters. They are saltier and often take on a more elongated shape. They also have found some refuge in the hard to navigate small creeks that wind through the Seaside marshes. A Seaside Heritage Program inventory of oyster biomass completed by Dr. Mark Luckenbach of VIMS in December 2008 revealed 3.2 billion oysters on the Seaside, a number that far exceeds recent population estimates for the Virginia portion of Chesapeake Bay (*spat within shell - photo above*). As far as oysters are concerned, "the Seaside rocks!"

## Eelgrass

*"...by 2007 those 200 planted acres had spread to over 3,800 acres and by spring 2010, almost 5,000 acres."*




TNC

Between fall of 2002 and fall of 2008 Virginia CZM provided for the planting of about 200 acres of eelgrass seeds under the direction of Dr. Bob Orth of the Virginia Institute of Marine Science (VIMS). With the help of The Nature Conservancy (TNC) and many volunteers, reproductive shoots of eelgrass were collected each spring, protected in tanks of circulating seawater over the summer, and then the seed was scattered overboard into the Seaside bays in various test configurations each fall. (After years of begging Bob to scatter the seed in the shape of the NOAA logo – since NOAA/CZM dollars had made this possible – he finally obliged with some creative "ecograffiti" – *photo above*).

Amazingly, by 2007 those 200 planted acres had spread to over 3,800 acres and by spring 2010, almost 5,000 acres. The two dispersal strategies of eelgrass (floating flowering shoots transported out of the bed with viable seeds to areas far from its source, and seeds that float on the surface with an air bubble when released from the plant) have contributed to its rapid spread in these Seaside bays where water quality has been good enough to support eelgrass.

*Continued on next page*

# Phragmites

*"From 2005 to 2008, over 4,630 acres of Phragmites were treated..."*

Kevin Heffernan, DCR-NH

Our grants to the Department of Conservation and Recreation's Division of Natural Heritage allowed for *Phragmites* on the Seaside to be censused and mapped in both 2004 (*photo above shows a patch of Phragmites outlined in red*) and 2008 using a small helicopter and a hand-held Global Positioning System (GPS) receiver. The largest patch was found on Wallops Island and covered 186 acres. About 2,000 acres of *Phragmites* was detected and mapped during each census, demonstrating that successful treatments and reductions are being offset by expansion of untreated patches and on-going establishment of new patches.

From 2005 to 2008, over 4,630 acres of *Phragmites* were treated by DCR; however, areas where no control measures were taken showed annual increases of up to 17% in *Phragmites* cover. Clearly this will be a constant battle. Priority areas for control will be those where rare bird habitat is most threatened since *Phragmites*-infested marshes become useless for many marsh-nesting birds.

These grants also provided for the development and delivery of *Phragmites* control workshops attended by 250 private landowners, a website (*http://www.dcr.virginia.gov/natural_heritage/vaisc/phragapp.htm*) that allows viewers to see the *Phragmites* distribution maps overlain with land parcel boundaries, a *Phragmites* Management Plan for the Seaside, and a helpful booklet titled, "Marsh Invader! How to identify and combat one of Virginia's most invasive plants: *Phragmites*."

# Shorebirds

*"One Whimbrel...left the Seaside in May 2009 and flew more than 17,000 miles in less than a year."*

Wikimedia

The Seaside's barrier islands and marshes provide hemispherically important habitat for many rare bird species that are in decline. One reason for declines of beach nesting birds on the barrier islands is predation, particularly by foxes and raccoons. Red foxes are not native, they were brought over from England and while raccoons are native, their population has grown as humans have provided more food. Both pose a severe threat to the birds' eggs and chicks. The Museum of Natural History, with grants from CZM's Seaside Heritage Program and help from The Nature Conservancy, was able to track the movements of these predators from mainland to islands and island to island through the use of radio collars. Once we identified islands with minimal "traffic," the USDA began removing predators from those islands. Almost immediately the numbers of surviving chicks increased. But like Phragmites control, predator removal is a constant battle.

Several grants to Dr. Bryan Watts at the Center for Conservation Biology have shown that Red knots and Whimbrels (*Numenius phaeopus - shown above*) are relying quite heavily on the Seaside as a "rest stop" where they feed heartily before migrating long distances. One Whimbrel, outfitted with a satellite transmitter on her back, left the Seaside in May 2009 and flew more than 17,000 miles in less than a year. She went from the Seaside of Virginia to Hudson Bay, on to Alaska and then on to the Virgin Islands for the fall and winter and then returned to the Seaside this April.

## Ecotourism

*"...constructed canoe/kayak floating docks at Wachapreague, Chincoteague, Quinby and Willis Wharf"*

Accomack-Northampton PDC

Through the Seaside Heritage Program the Accomack Northampton Planning District Commission and Southeast Expeditions mapped out the Seaside Water Trail and constructed canoe/kayak floating docks at Wachapreague, Chincoteague, Quinby and Willis Wharf. With help from the Department of Game & Inland Fisheries, we also built a Wildlife Observation Platform at Willis Wharf (*see cover photo*). As a way of educating the public and promoting the ecotourism value of the Seaside, we developed and installed interpretive signage in Chincoteague, Wachapreague, Willis Wharf and Oyster (*photo above - kiosk at Willis Wharf*).

One way to help make ecotourism sustainable is to have certified Ecotour guides leading trips. In 2003 and 2004 our grants allowed VIMS to offer certification classes to guides and to guide teachers. In Fall 2009 the guides class was offered again through the Eastern Shore Community College. ESCC has integrated the course into its "Hospitality" program of courses.

Southeast Expeditions

## Shellfish Aquaculture

*"...many birds seemed to be eating organisms that were growing on the nets used to cover the clams."*

Virginia Witmer, Virginia CZM

To promote the sustainability of shellfish aquaculture, we funded VIMS and Virginia Sea Grant to develop a set of "Best Management Practices" that were endorsed by the shellfish growers. The practices include 30 items such as proper disposal of nets used to cover clams to protect them from predation, proper disposal of material cleaned from nets, assurance that motorized equipment is not leaking oil into the water, ensuring sediments are not overly disturbed during harvesting, and inspecting shellfish regularly for signs of disease. Removal of derelict clam netting (and crab pots used in harvesting wild crabs) was helped by the efforts of the Eastern Shorekeeper, also funded in part by the Seaside Heritage Program.

We also wondered if shorebirds were being affected by the large tracts of intertidal and shallow water clam farms on the Seaside. After a year of studying abundance and distribution of shorebird prey in the mudflats with and without clam farming operations, VIMS concluded there was no observable negative effect on the birds. In fact many birds seemed to be eating organisms that were growing on the nets used to cover the clams – perhaps a mutual benefit to the shorebirds and the clam growers.

*Continued on next page*

*Seaside Success* *Continued from page 5*

## Using Social Marketing to Help Protect Our Investment

Although this topic was not specifically on our original "to do" list, we knew we needed to engage the public in helping with our Seaside restoration efforts. Since the Virginia CZM Program began working in 1990 on the Eastern Shore, it has been a growing conviction of mine that the one action people could take to make a significant impact on improving habitat protection and water quality is to simply plant more native vegetation. So as one of the last major projects of the Seaside Heritage Program we launched the Plant Eastern Shore Natives social marketing campaign (*see article on page 8*.)

## What's Next

Two major efforts have now followed the Seaside Heritage Program and our partners are hoping that even more will be done once these are completed if funds can be secured:

Perhaps in part due to the great success of the Seaside Heritage Program, NOAA awarded TNC, VIMS and MRC an American Recovery and Reinvestment Act of 2009 "Stimulus Grant" of over $2 million over two years to not only continue the eelgrass and oyster restoration but to begin restoring bay scallops to the Seaside. MRC had begun a few small scallop experiments during the Seaside Heritage Program years, but this grant is allowing MRC, VIMS and TNC to undertake a much more concerted effort. So far, the bay scallops are doing well as VIMS has ramped up its onshore hatchery/nursery capacity. Bay scallops have been placed out in cages in the restored eelgrass beds to serve as spawning stock for the next generation and approximately 15,000 scallops have been released into the eelgrass beds. But it would take several more years of effort to firmly establish this "ephemeral" species which has a short life span of only about two years (*photo below and above right*).

TNC

In fall of 2009 Virginia CZM began funding development of a new Seaside Special Area Management Plan that will attempt to create a new approach to how we manage the Seaside's water-based resources. In essence we are hoping to create a pilot "marine spatial plan" (*see page 16)* that will allow us to optimize both the economic productivity and the ecological productivity of the Seaside marine ecosystem.

These grants, totaling about $450,000 over four years will be undertaken with many of the same Seaside Heritage Program partners: MRC, VIMS, TNC, Eastern Shorekeeper and representatives of the shellfish industry. Data collected and maps created under the Seaside Heritage Program will be used as the foundation of the plan.

TNC

VIMS, TNC and the Shorekeeper are building on these maps by analyzing information on current resource locations and human uses as well as locations for potential future uses. Interesting facts have come to light through GIS analysis. About 30% (~50,000 acres) of the Seaside waters are set aside for public oyster grounds and 12% for private leases. 55% of the Seaside waters are designated as "unassigned." Eelgrass coverage as of 2007 was only about 2.5% (3,863 acres). As a result of the Seaside oyster inventory, we also know that the percentage of acres in "high "oyster density in public areas is only 0.7% while it is 1.2% in private leases.

The Shorekeeper is currently conducting aerial surveys and polling boaters at Seaside docks to determine areas most frequently used for boating. As we continue to collect data that helps us understand how the Seaside is currently being used and where the potential areas for conservation, shellfish aquaculture expansion, recreational fishing and other uses are, we will feed that into our mapping system.

Through our Section 309 funding (*see article on page 26*) we will begin a public process to explore whether we can increase the Seaside's economic and ecological productivity by engaging stakeholders in a marine spatial planning process that allows us to look at various use scenarios. Some scenarios may require changes to current policies so, as Section 309 funding requires, we will develop new policies as needed for consideration by the appropriate regulatory or legislative bodies.

# Expanding Coastal Public Access

## A New Oasis for Birds and Birders at Kiptopeke State Park

With the help of a generous donation from singer/songwriter James Taylor ($200,000), and NOAA grant funds from the Virginia CZM Program ($446,000), 26 acres was acquired to expand Kiptopeke State Park on the southern tip of Virginia's Eastern Shore. The Nature Conservancy (TNC) acquired the land initially and held it until the funds could be granted to the Department of Conservation and Recreation (DCR) for final purchase in December 2009.

Virginia Witmer, Virginia CZM

More than 1800 native canopy trees and understory shrubs, and native grasses, were planted last spring, with an additional $35,000 Virginia CZM grant, to restore food-rich, wooded stopover habitat. The grant also funded a native plants demonstration garden, wildlife observation blinds, and interpretive signage. A trail around a 5-acre freshwater pond on the site connects to other trails in the park.

The newly planted parcel is the last piece of a puzzle, connecting existing forest habitat areas of Kiptopeke State Park to the north, south and east and providing the 6-7 million migratory songbirds that use the southern tip as a rest stop during their fall migration a contiguous stretch of food and shelter. The parcel was identified as a strategic acquisition by the Southern Tip Partnership. Through this partnership Virginia CZM, along with the program's member agencies, DCR and the Department of Game and Inland Fisheries, work with TNC, the U.S. Fish and Wildlife Service, the Virginia Eastern Shore Land Trust, and Ducks Unlimited to protect and manage more than 24,000 acres on the southern tip of Virginia's Eastern Shore.


Virginia Witmer, Virginia CZM

*(left) The new native forest planting includes fruit-producing shrubs that serve as food and shelter for the birds. Midstory trees will also provide fruits.*

*(below) One of 5 new interpretive signs tells the story of migration.*


Virginia Witmer, Virginia CZM


Virginia Witmer, Virginia CZM

*(left) Eastern Shore Master Gardeners, important partners in the Plant ES Natives campaign, designed and helped install a native plant demonstration garden on the new parcel at Kiptopeke State Park*


Stephen M. Katz, The Virginian-Pilot

*(above) James Taylor spoke passionately about the need to preserve migratory songbird habitat during a press conference before his May 2008 benefit conference. "This is crucial habitat," he was quoted in an article in the Virginian-Pilot Lifestyles magazine. "Taxpayers need to know about this important work. Their song is the music of the biosphere."*


Virginia Witmer, Virginia CZM

*(right) The Taylor/CZM tract was dedicated on October 8. Shown in photo (l to r) are Fred Hazelwood, Virginia State Parks District Manager; Sam Sweeney, Park Manager; Steve Parker, Virginia Coast Reserve/TNC; Willie Randall, Northampton County Supervisor; Jack Humphreys, Eastern Shore Master Gardeners President; Laura McKay, Virginia CZM Manager; Dave Johnson, DCR Director; and, Dan Jordon, Natural Resource Specialist, Kiptopeke State Park.*

# Keeping the Shore Beautiful

## Plant ES Natives Social Marketing Campaign

*By Virginia Witmer, Virginia CZM*

Last spring, as Eastern Shore gardeners surveyed their properties, excited about the prospect of gardening and looking out on a beautiful, flourishing, low maintenance landscape, many more knew that they could get that satisfaction turning to plants native to Virginia's Eastern Shore. And what a selection!

Hundreds of gardeners in the last two years have purchased or plan to purchase Eastern Shore native plants as the result of a new Virginia CZM Program initiated campaign - "Plant ES Natives." The campaign, carrying the message "They're Shore Beautiful!," is reaching out to gardeners through radio ads, presentations to community groups, exhibits, and plant sales.


And it is working. Sales of natives at local garden centers have markedly increased since the campaign was launched in April 2009.

"The increase in sales at the garden centers is very encouraging after only one year into what we knew would be a multi-year effort," notes Dot Field, the Eastern Shore Natural Area Steward with the Department of Conservation and Recreation. "It is truly satisfying to see that we are successfully *engaging* Eastern Shore gardeners and communities in buying and planting native." Field is a member of the planning team that helped design and is now helping to implement the new campaign.

### Sowing the Seeds

Efforts to increase and protect the native vegetation especially critical to the Shore's ecological integrity did not begin with the Plant ES Natives campaign. Given the many virtues of native vegetation, the Virginia CZM Program and its partners have been working for almost 20 years on this issue. It began with a songbird study in 1989 which documented the critical importance of the lower Delmarva Peninsula as a major "stopover" or rest stop for neotropical migratory songbirds.

As a result of these findings, in 1991 the Virginia CZM Program began working with Northampton County on the Northampton Special Area Management Plan (SAMP). One goal of this SAMP was to protect bird and fish habitats and water quality by maintaining maximum vegetative cover, as well as demonstrate that there could be economic benefits to the Shore from ecotourism, *if the native vegetation so critical to bird habitat were protected*.

> *"...It is truly satisfying to see that we are successfully engaging Eastern Shore gardeners and communities in buying and planting natives..."*
>
> *Dot Field, Eastern Shore Natural Area Steward*

In 2003, vegetation ordinances were introduced in Northampton County which would have restricted the amount of existing native vegetation that a property owner could remove in order to protect water quality and quantity as well as bird habitat. It was close, but these ordinances were not adopted. Although adoption of enforceable policies did not happen, educational efforts at the time and since then have been somewhat successful in raising the public's awareness of the importance of the Shore's native habitat, including publication of *Migratory Birds of the Lower Delmarva – A Landowners Guide* and *Virginia Hospitality,* and creation of the annual Eastern Shore of Virginia Birding and Wildlife Festival. An increase in awareness however resulted in limited and scattered landowner use of native species, and the Shore-wide increases in native vegetation needed were not realized.

So in 2009, Virginia CZM took a new approach with the launch of the "Plant ES Natives" campaign.

How is this campaign different from earlier educational efforts? It is a *Social Marketing* campaign.

### Focusing on Behavior

*Information campaigns* assume the missing ingredient is information and focus on delivering that information," described Judy Landers in an article on social marketing in the Spring/Summer 2006 issue of ***Virginia Coastal Zone Management***. "They focus on the message and the product. What can we tell them that will achieve the desired result?" Judy, an expert in social marketing with AED and lead designer of the Chesapeake Club campaign (of "Save the Crabs Then Eat "Em" fame), helped introduce Virginia CZM to Social Marketing.

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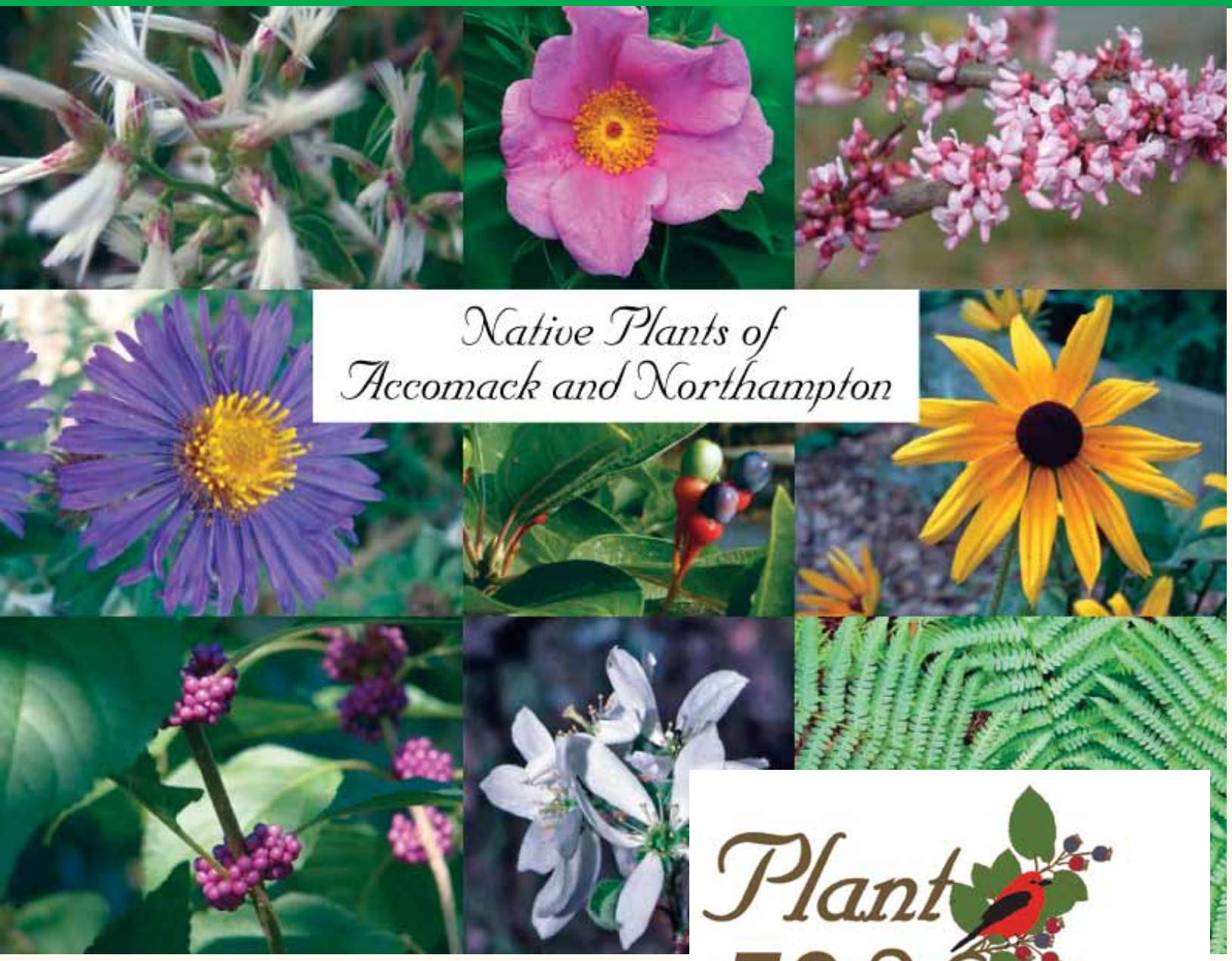



*"...more people are asking about natives at Maplewood Gardens, and several have come in carrying the native plant book..."*

*Jack Humphreys, employee*

*"Native Plants of Accomack and Northampton" (cover of guide shown above) is free and features beautiful color photographs – a rainbow assortment of 88 native flowers, ferns, vines, grasses, shrubs and trees. Included is a description of the species, its growing requirements, along with interesting facts about the plants.*

*An index in the guide provides a list of 199 native plants, determined by state botanists to pre-date Captain John Smith's arrival on the Shore. Eastern Shore natives not only have adapted over thousands of years to life on the lower Delmarva, they are an integral part of the Shore's ecology - its coastal forests, fields, salty marshes, sandy beaches. Whether residents have a shady, sunny, wet, dry or salty landscape to offer, this guide will direct them to the right plants for their property.*

*The guide is downloadable from the Plant ES Natives Campaign website at http://www.deq.virginia.gov/coastal/go-native.html.*

Plant ES Natives
They're Shore Beautiful!

*The Plant Eastern Shore Natives campaign logo depicts the Downy serviceberry – one of many beautiful Eastern Shore native plants that offer dark green foliage and colorful flowers and berries - and the Scarlet Tanager - one of many migratory songbirds that use the Shore as a rest stop and rely on native shrubs and trees for the berries and insects they need to fuel their long journeys.*

# Keeping the Shore Beautiful

*Shore Beautiful* *Continued from page 9*

Judy explained that Social Marketing focuses not on what people need to know, instead it focuses on learning what people *need and want* (blue crab on their plates).

## Survey Says

Social marketing campaigns ask who must do what differently, what benefits can we offer them for changing their behavior, and what barriers or obstacles are stopping them from engaging in the desired behavior. To answer these questions, it is key to talk and, most importantly, listen to the people you are trying to reach.

That is exactly what the Virginia CZM Program did during the summer and fall of 2008.

Prior to designing the "Plant ES Natives" campaign, Virginia CZM held focus groups and distributed a native plant survey in Accomack and Northampton counties to capture a Shore-wide perspective on the use of native plants. Understanding why residents choose to plant what they do was critical to developing an effective social marketing campaign.

Focus group participants indicated that there was a great deal of uncertainty about which plants were native to Accomack and Northampton counties, and suggested that a list of these natives would be helpful, as would an increase in the availability of these plants locally. Participants also revealed that they believed that native plants were generally scraggly and unattractive and therefore undesirable.

The majority of residents who responded to the written survey said that they plant and care for their trees, shrubs and other plants to beautify their property. There also was a strong response to environmental benefits, including feeding birds and butterflies and creating wildlife habitat. Using less water and fertilizer, and the subsequent savings in time and money, was also a factor in deciding what to plant. (*A full report on these findings is available on the campaign website.*)

## What They Need...and Want

Gardeners across Northampton and Accomack counties have received "Native Plants of Accomack and Northampton," a free guide published in December 2009 by the Virginia CZM Program with help from the Plant ES Natives campaign Planning Team. The new, full-color native plant guide embodies the campaign's slogan "They're Shore Beautiful!" The campaign gives Eastern Shore gardeners what they *want* - a choice of plants that

*"...we and an increasing number of our customers see the use of natives as a win-win - for us and for our environment."*
*Jeff Klingel, Appleseed Nursery*

offer unique beauty and color - and gives the Shore what it *needs* - an increase in native vegetation to help preserve the diversity, beauty and function of the Shore's unique ecosystems.

Not only that, using native plants will save gardeners money. Adapted to the Shore's coastal environments, native plants require less water, fertilizer and pesticides, and are longer-lived.

"Property owners on the Shore are becoming more interested in low maintenance landscapes," states Jeff Klingel of Appleseed Nursery - a landscaper, nurseryman, and garden center owner. "It's our business to meet that demand, so we and an increasing number of our customers see the use of natives as a win-win - for us and for our environment."

*Continued on page 12*

Dot Field, DCR-DNH


Dot Field, DCR-DNH

*Through the Plant ES Natives campaign, garden centers were provided a banner with the "Plant ES Natives" logo advertising they are native plant providers. Shore residents are encouraged to look for a green Plant ES Natives tag at the centers (photos above).*







Tell a Story - The campaign also repeats a story appealing to the many Eastern Shore gardeners who also enjoy birdwatching and who plant to attract these visitors. Millions of passerines, including songbirds, travel along the Atlantic coast each fall on their migration south for the winter and rely on the Eastern Shore as one of only a few rest stops on their journey. The Center for Conservation Biology at William and Mary estimates the number of migrating birds visiting each fall to be between 5 - 10 million[1]. The colorful little songbirds depend on the fruit, insects and protection from predation native vegetation provides during their stopover on the Shore. It is not uncommon to see fifteen or more species of warblers, like the Black-throated Blue Warbler (pictured), during the course of a late-September morning feasting on fruits and insects in the native understory. While Yellow-rumped Warblers gorge themselves on Wax myrtle (top right) and Poison ivy berries in October. *Photos (all photos by Dot Field unless otherwise noted): (left to right) Eastern tiger swallowtail enjoying butterfly weed nectar; Vaccinium corymbosum - Highbush blueberry; Callicarpa americana - American beautyberry; Morella cerifera - Wax myrtle; Celtis occidentalis - Common hackberry; Black-throated Blue Warbler - Robert Balogh; Lonicera sempervirens - Coral honeysuckle.*

## *Plant ES Natives Campaign Partners*

*Accawmacke Ornamentals*
*Accomack County*
*Accomack-Northampton County Planning District Commission*
*Alliance for the Chesapeake Bay**
*Appleseed Nursery*
*Barrier Islands Center**
*Bloomers Garden Center*
*Eastern Shore Alliance for Environmental Education**
*Eastern Shore Nursery of Virginia*
*Eastern Shore of Virginia National Wildlife Refuge*
*Eastern Shore Soil and Water Conservation District**
*Environmental Protection Agency*
*Garden Art*
*Giving Tree Garden Market*
*Hermitage Farm Nursery*
*Hortco Garden Center and Nursery*
*In Full Bloom Landscapers*
*Ivy Farms*
*Maplewood Gardens**
*National Oceanic and Atmospheric Administration*
*Northampton County*
*Southeast Expeditions*
*Tankard Nursery*
*The Nature Conservancy**
*Thomas Gardens*
*Town of Chincoteague*
*Town of Willis Wharf*
*University of Virginia Anheuser Busch Coastal Research Center**
*Virginia Coastal Zone Management Program**
*Virginia Cooperative Extension**
*Virginia Department of Conservation and Recreation - Eastern Shore Regional Office**
*Virginia Department of Environmental Quality- Office of Environmental Education**
*Virginia Department of Game and Inland Fisheries**
*Virginia Eastern Shorekeeper*
*Virginia Master Gardeners**
*Virginia Master Naturalists**

*(* Representative on campaign planning team)*



[1]According to Bryan Watts, CCB Director, the actual number likely has a great deal of year to year variation due to weather patterns, productivity (reproduction), changes to breeding ground habitat and other factors effecting their numbers prior to their arrival on the Shore.

# KEEPING THE SHORE BEAUTIFUL

*Shore Beautiful* *Continued from page 10*

The Plant ES Natives campaign focuses on supporting the local economy by encouraging residents to ask for and purchase native plants at local garden centers, helping to increase demand and supply.

## Seeing, and Hearing, is Believing

The pre-campaign research not only identified barriers that have inhibited planting of natives but also what multi-media approach would be most effective in reaching Eastern Shore gardeners. It was during the focus groups that gardeners were unanimous in expressing their need for a guide specific to plants native to Virginia's Eastern Shore (see sidebar on page 9). Focus group participants also stressed that the campaign use the radio to convey information. Participants also suggested the need for public demonstrations of the use of native plants. These observations were validated by residents in the written survey.

The launch of the Plant ES Natives campaign was marked with a media event on Arbor Day, April 24, 2009, in Willis Wharf Harbor at the site of the new Virginia CZM funded wildlife observation platform and a "shoreline" native plant demonstration garden. Since then, the campaign has helped install 5 demonstration gardens, and is currently planning several others to showcase the beautiful variety of Eastern Shore native plants, many of which are highlighted in the new guide (see side bar on page 13). What is really encouraging is how communities have welcomed and embraced these gardens. Local residents, community groups, landscapers, garden centers and nurseries have all contributed to planting and maintaining the gardens.

In spring and fall of 2009 and of 2010 a series of radio ads aired on WESR 103.3 "The Shore" urging Eastern Shore residents to buy plants native to Accomack and Northampton counties - highlighting the beauty, ecological and economic benefits of the shore's native plants - "They're Shore beautiful! Eastern Shore native trees, shrubs, flowers and grasses offer lovely foliage and colorful flowers! And, they're easier to care for! They grow beautifully here in their native environment and usually require less fertilizer, water and pesticides." Visit the campaign website to listen to the ads.

## A Growing Norm

Early indicators of the campaign's influence are very encouraging. One Eastern Shore garden center reported that native plants sales are up 8-10% since the campaign was implemented in April 2009. Another center/nursery is currently growing 40 native plant species in anticipation of greater demand, while a local nursery indicated that they planned to focus future planting on native shrubs and asked the campaign for advice on species. A new garden center opened since the campaign began which planned to offer an Eastern Shore native plant section.

*"From my perspective the "Plant Eastern Shore Natives" campaign has been well received by the community.. more customers are inquiring about native species that may be more adaptable, longer lived, and might require less maintenance."*

*Jeff Klingel, owner, Appleseed Nursery*


Jane Corson Lassiter, NRCD

Virginia Witmer, Virginia CZM

*An oval static cling decal, displaying the campaign logo, slogan and website, is being widely distributed to help market the campaign (left). An exhibit helps spread the message about the campaign at popular local events (below).*

"This spring more people are asking about natives at Maplewood Gardens, and several have come in carrying the native plant book so I am encouraged that the campaign is off to a good start," observes Jack Humphreys, an employee at the center. Jack is also a former president of the Eastern Shore Master Gardeners and the current president of the Eastern Shore Master Naturalists. Working with these local community groups, and

Virginia Witmer, Virginia CZM

## Native Plant Demonstration Sites

*Demonstration gardens are an excellent way to show the beauty of Eastern Shore native plants. They illustrate how easy it can be to create a landscape or garden that meets the gardener's expectations, feeds wildlife, and promotes the native diversity of the Eastern Shore.*

*Demonstration gardens installed to date through the campaign include a "shady garden" on the Chincoteague Island Nature Trail, a "maritime forest" at the Anheuser-Busch Coastal Research Center in Oyster, "shoreline habitats" in the Town of Oyster and at the Willis Wharf Wildlife Observation Platform, and "pollinator gardens" at the Eastern Shore of VA National Wildlife Refuge and Kiptopeke State Park (see page 7).*

*A number of other demonstration sites are in various stages of completion, including a "healing garden" in Onley at the new Rural Health Center, a "seaside" garden in Wachapreague, also to be funded by Virginia CZM, and a series of gardens in Onancock.*

*(left) A wide variety of Virginia native plants attract pollinators to two gardens at the Eastern Shore of Virginia National Wildlife Refuge.*

making the connections between people, is extremely important to the success of the community-based "Plant ES Natives" campaign.

Results from a mid-campaign evaluation survey of residents were equally encouraging. The survey confirmed that the campaign's messaging – "They're Shore Beautiful" is on track. Over 90% of respondents indicted that they plant and care for their trees, shrubs, flowers and other plants to "beautify (their) property", while 81% said it was to "feed birds/butterflies." 84% responded that "beauty" was the primary characteristic they look for when selecting plants and 84% said "easy to care for." 88% of respondents say they look to "create habitat for wildlife" when they purchase their plants, while 66% responded "native to the Shore" as an important characteristic - up slightly from the 57% who selected this as a characteristic on the pre-campaign survey.

The survey was particularly useful in helping to gage early response to the campaign's multi-media efforts and the response was very encouraging:

- Of the 27% who responded that they have visited a native plant demonstration site, an estimated 98% said that it influenced their purchase of native plants or plan to purchase native plants.
- Of the 41% of respondents who heard the Plant ES Natives radio ads, an estimated 96% recalled the ads' messages - the highest recall was that "migratory birds need native plants" followed by "native plants are easy to care for" - and an estimated 93% said that the ads influenced their purchase or plan to purchase native plants.
- 39% of survey respondents received a copy of the new Eastern Shore native plant guide and an estimated 95% said that the guide influenced their purchase or plan to purchase native plants. The remaining 60% who did not receive a copy of the guide have provided their mailing address to receive a hard copy or indicated that they would go on-line to download the guide.
- 33% of respondents saw the native plant tag at their local garden centers and 10% purchased the plant because it had the tag. Although 31% said they did not see the tag, 30% said "if I see a tag in the future it will help guide my plant purchase."

## Passing the Spade

The Plant ES Natives campaign is, most importantly, a community-based social marketing campaign. A lapel pin recognizes gardeners who are taking a leadership role within their communities, sharing the campaign's message and their knowledge of ES native plants. Virginia CZM will continue working with its campaign partners and current and prospective leaders to expand the campaign's "Community Leader" program, including development of an education/outreach module to help leaders continue to spread the word about the campaign and the value of native plants to their friends and neighbors. It is this neighbor to neighbor interpersonal communication that will ultimately help establish a social norm for the use of native plants and make the campaign a success.

# Exploring New Territories Beyond Our Coast

*By Laura McKay, Virginia CZM*

Although coastal states "claim territory" only out to the 3 nautical mile limit, recent events have given coastal states an opportunity to expand their influence far out across the broad continental shelf, down the continental slope cut by cavernous canyons encrusted with cold water corals, to the deep sea floor and the 200 nautical mile U.S. Exclusive Economic Zone boundary.

The impetus for states to become more involved in ocean management can be traced to the Pew Oceans Commission's 2003 report, "America's Living Oceans: Charting a Course for Change," and the U.S. Commission on Ocean Policy's 2004 report, "an Ocean Blueprint for the 21st Century." Both of these reports called for the formation of regional ocean governance structures to better involve local and state governments in what has always been federal territory and federal responsibility.

It was clear that all Americans need to better understand their connection to, dependence on and responsibility for protecting the ocean and its many functions on which life itself depends. The decline in ocean health, so well-documented in these reports, may stem from that lack of understanding.

So, states heeded the call and began organizing. In the fall of 2008, the Mid-Atlantic States' CZM Managers and Policy Advisors began talking and organizing what was to become known as the Mid-Atlantic Regional Council on the Ocean (MARCO). By June of 2009, the Governors of Virginia, Maryland, Delaware, New Jersey and New York signed a MARCO Ocean Conservation Agreement and an Action Plan was laid out for taking the next steps in meeting our 4 major goals:

1. *Promoting Renewable Offshore Energy*
2. *Protecting Critical Ocean Habitats*
3. *Preparing for Climate Change Impacts*
4. *Improving Water Quality*

MARCO held a Stakeholder Conference in New York in December 2009 to gather stakeholder input on the Action Plan and gather additional ideas.

## Promoting Renewable Offshore Energy

As a region, the Mid-Atlantic may be best poised to be the U.S. leader for offshore wind development. Our region has some of the strongest winds and a very broad, shallow continental shelf. We also have the highest human population density as a region, and therefore electrical demand. The Mid-Atlantic is home to some of the country's largest cities: New York City, Philadelphia, Baltimore, Washington D.C., Richmond and Hampton Roads. A quick look at National Geographic's Map of Night Lights[1] tells the story.

It makes sense for the Mid-Atlantic to produce its own green, energy nearby, rather than transport it from far away. To help in that effort MARCO is looking for the best locations for offshore wind farms that will minimize use conflicts and is finding ways to streamline the permitting process.

MARCO could help position Virginia and the Mid-Atlantic as the premier offshore wind location. One state alone is probably insufficient to create an offshore wind industry, but the Mid-Atlantic states working together could be very powerful. The MARCO states are also participating in the Atlantic Offshore Wind Energy Consortium hosted by the US Department of Interior.

Hans Hillewaert

The attractiveness of the Mid-Atlantic for offshore wind development has not gone unnoticed by major corporations. Google recently announced that it and its partner, Good Energies, have agreed to invest heavily in a proposed $5 billion transmission backbone for future offshore wind farms. A transmission cable would run along the Mid-Atlantic coast from Virginia through New Jersey. The cable would have a capacity of 6,000 megawatts and would run in trenches along the sea floor

1. *http://maps.nationalgeographic.com/maps/print-collection/earth-at-night.html*


Matt Fleming

about 15 to 20 miles offshore. Trans-Elect (the Maryland-based company proposing the cable) hopes to begin construction in 2013. So the MARCO states have no time to lose in preparing for this new development.

One of the studies Virginia CZM recently funded on behalf of MARCO helps us understand how to avoid potential use conflicts with wind farms such as bird migration corridors. Dr. Bryan Watts at the Center for Conservation Biology wrote the report, "Wind and Waterbirds, Establishing Sustainable Mortality Limits within the Atlantic Flyway" (www.deq.virginia.gov/coastal/description/2007projects/2-03-07.html). For bird species for which we have sufficient data, it points out which bird species are most vulnerable given their current population size, reproductive rates, survival rates and other factors.

The Department of Interior's new Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) is also funding studies on the Atlantic coast using acoustic monitoring and high definition aerial imagery to identify important bird migration corridors.

## Protecting Critical Ocean Habitats

MARCO recognizes offshore canyons; migratory corridors for fish, marine mammals, sea turtles and birds; cold water corals and coral reefs; and sand shoals as some of the critical offshore habitats in our region. Our commercial and recreational fisheries as well as our growing ecotourism industries rely on the protection of these habitats.

MARCO is teaming with the Mid-Atlantic Fishery Management Council on efforts to protect the canyons and other fish habitats from destructive uses. Three canyons occur about 50 miles off Virginia's coast: Norfolk, Washington and Poor Mans Canyons. Little is known about these canyons except that they do provide habitat for fish, marine mammals and cold water corals.

Much more research and mapping is needed in order to identify the locations of some of these critical ocean habitats – especially the locations of coral reefs and migration corridors. Once we know more about these habitats and their sensitivity, we can better mange human use of these areas to minimize negative impacts.

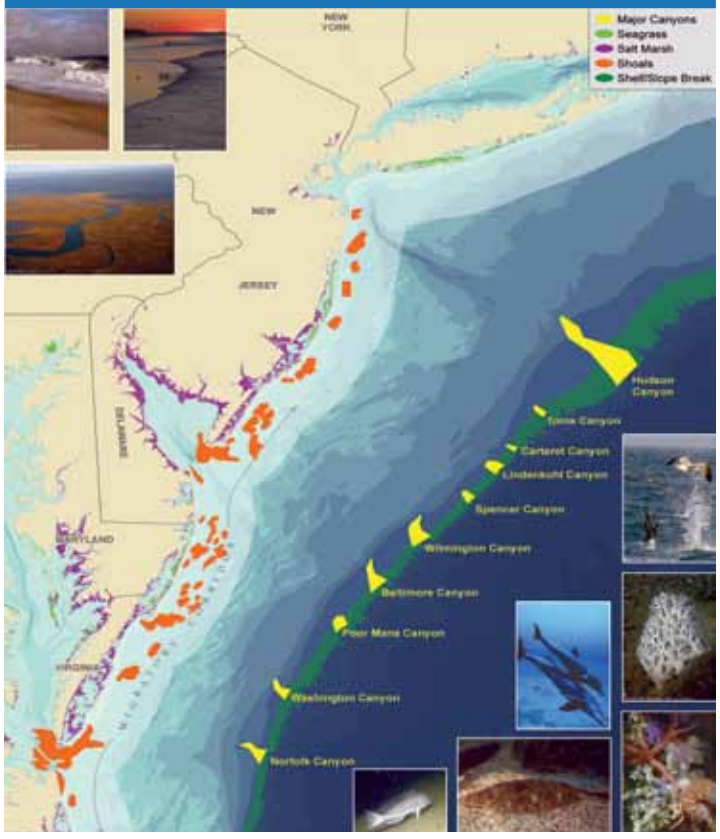
## Preparing for Climate Change Impacts

The Mid-Atlantic is extremely vulnerable to rising sea levels and coastal storms due to its very low elevations. Flooding and storm surges threaten vast areas of valuable human and natural (green) infrastructure in the Mid-Atlantic including the aforementioned major cities, some of the countries most extensive military bases and vast areas of tidal wetlands.

MARCO is working to identify data gaps that need to be filled and opportunities to promote adaptation and planning measures.

*Continued on next page*

Canyons, Migration Corridors, & Other Habitats of the Mid-Atlantic Ocean



Andreas Trepte, www.photo-natur.de

*Northern Gannet - Morus bassanus. Breeding in only a few large colonies along the North Atlantic, the Northern Gannet spends most of its life at sea. Flocks engage in spectacular bouts of plunge-diving for fish, with hundreds of birds diving into the ocean from heights of up to 40 meters (130 feet).*

A report is nearly complete that compiles each state's climate change planning and policy approaches and identifies best practices to enhance adaptation at the regional scale. MARCO hopes to develop consistent communications and messaging to convey information on climate change impacts to residents in the Mid-Atlantic.

## Improving Water Quality

When clean and safe, Mid-Atlantic beaches and shores generate billions of dollars in tourism-related revenue. Fish and wildlife also depend on clean water. Although the states have all been working on water quality improvements, some issues may benefit from a regional approach.

Malik Naumann/Marine Photobank

MARCO's immediate priorities for this topic include: 1) reducing the amount of human-derived debris and floatables that enter the Mid-Atlantic Ocean; 2) improving and expanding the water quality data collected so we can better predict impairments and assess effectiveness of water quality improvement efforts; and 3) addressing atmospheric sources of nitrogen and toxins that reach the Mid-Atlantic.

MARCO is working with the Mid-Atlantic Coastal and Ocean Observing Regional

*Ocean Management* *Continued from page 15*

Association (MACOORA) to help identify data gaps and with the Mid-Atlantic Sea Grant Directors as they develop a regional research plan.

In order to address the four major goals of MARCO it became clear early on that we would need to develop the capability of housing, viewing and manipulating a large number of mapped data layers in a Geographic Information System that would be accessible to all and allow the user to see the entire Mid-Atlantic region. So Virginia CZM funded The Nature Conservancy to create a MARCO Mapping & Planning Portal.

## Virginia CZM Helps MARCO Delve Into Coastal and Marine Spatial Planning

The portal is expected to go online in fall 2010 and will be accessible through the MARCO website (*www.midatlanticocean.org*). The portal currently features five categories of data: administrative, biological, geophysical, human uses and decision support tools. Much like our Coastal GEMS portal, the MARCO Portal's features include: a choice of three different base maps including satellite imagery; panning and zooming to areas of interest; selection of any combination of layers to create customized maps; transparency adjustment for data layers; saving and printing maps; search and identify tools; drawing and measurement tools and concise, user-friendly fact sheets for each data layer.

A second grant from Virginia CZM to The Nature Conservancy beginning in fall of 2010 is providing for development of sophisticated decision support tools that will allow users to create their own marine spatial plan options – with specific boundaries for conservation areas, wind farms, etc wherever they want and the portal will then calculate the "output" of that scenario in terms of kilowatts generated, acres conserved, etc. That plan option can then become a viewable data layer on the portal for all to see and discuss.

So the MARCO Mapping and Planning Portal is a big first step in Coastal and Marine Spatial Planning (CMSP) that will allow stakeholders to see current conditions and plan for future uses.

## MARCO and the Executive Order on Stewardship of the Ocean and Our Coasts

On July 19, 2010 President Obama issued an Executive Order which capped off and institutionalized the national Interagency Ocean Policy Task Force's final recommendations:

1) Create the nation's first ever National Policy for the Stewardship of the Ocean, Our Coasts and the Great Lakes;

2) Create a strengthened governance structure to provide sustained, high level attention to these issues;

3) Develop a targeted implementation strategy that identifies and prioritizes nine categories for action; and

4) Develop a framework for effective coastal and marine spatial planning (CMSP) that establishes a comprehensive, integrated, ecosystem-based management approach to address conservation, economic activity, user conflict and sustainable use of ocean and coastal resources.

Existing regional ocean governance structures like MARCO are expected to help in carrying out the Executive Order and the marine spatial planning efforts. Exactly how that will occur, will unfold in the coming months. But given the progress made on the Mapping & Planning Portal, MARCO should be in a great position to help address the Executive Order.

## What's Next?

At its recent Management Board meeting in September 2010, MARCO reorganized itself into 5 Action Teams: one team for each of the four MARCO priority areas and a fifth for Coastal & Marine Spatial Planning. Virginia CZM is serving as the lead for the CMSP Action Team and as the co-lead for the Habitat Action Team along with New York. In addition Virginia CZM is developing a five year Section 309 Strategy (see page 26) to allow Virginians to weigh in on and develop a marine spatial plan that lays out what type of uses they want to see in our offshore areas and where they want uses to be located. This input would then be fed into the Mid-Atlantic Regional CMSP required by the Executive Order.

This will be an ambitious task that will take several years. If you are interested in becoming involved, let us know. We'll need lots of help!

**Nine Proposed Regional Planning Areas and Corresponding Minimum State Representation**

**Alaska /Arctic:** AK
**Caribbean:** PR, US VI
**Great Lakes:** IL, IN, MI, MN, NY, OH, PA, WI
**Gulf of Mexico:** AL, FL, LA, MS, TX
**Mid-Atlantic:** DE, MD, NJ, NY, PA, VA
**Northeast:** CT, ME, MA, NH, RI, VT
**Pacific Islands:** HI, Commonwealth of the Northern Mariana Islands, AS, GU
**South Atlantic:** FL, GA, NC, SC
**West Coast:** CA, OR, WA

## *Learn More About Ocean Management*

NOAA

***America's Living Oceans - Charting a Course for Sea Change***:
http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf

***An Ocean Blueprint for the 21st Century Final Report of the U.S. Commission on Ocean Policy:***
http://oceancommission.gov/documents/full_color_rpt/welcome.html)

***Mid-Atlantic Governors' Agreement on Ocean Conservation:***
http://midatlanticocean.org/agreement.pdf

***Actions, Timelines, and Leadership to Advance the Mid-Atlantic Governors' Agreement on Ocean Conservation:***
http://midatlanticocean.org/summary-actions.pdf

***President's Executive Order--Stewardship of the Ocean, Our Coasts, and the Great Lakes:***
http://www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes

***The White House Council on Environmental Quality - Final Recommendations of the Interagency Ocean Policy Task Force - July 2010:***
http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf

***Developing a conceptual framework for evaluating the impacts of wind farms on migratory birds along the mid-Atlantic Coast:***
http://www.deq.virginia.gov/export/sites/default/coastal/description/2007projects/2-03-07.html

# Crow's Nest Protected in Perpetuity

## National CELCP Funds Help Establish New State Natural Area Preserve

*By Beth Polak, Virginia CZM*

"Crow's Nest" peninsula is an environmental crown jewel in Stafford County, an unrivaled ecological treasure in the capital area, and a natural gem in Virginia's coastal zone. Thanks in part to funding from the Coastal and Estuarine Land Conservation Program (CELCP), a 2,870-acre portion of unfragmented habitat on the peninsula will be protected forever as Virginia's 54th Natural Area Preserve.

The new preserve's grand expanse of coastal plain hardwood forest is framed by Accokeek and Potomac Creeks and enclosed by the Potomac River, 60 miles upstream of the Chesapeake Bay. The U. S. Fish & Wildlife Service considers the mature forest stand on Crow's Nest to be one of the finest examples remaining in the Virginia Coastal Plain. Crow's Nest boasts two globally rare forest communities, and is home to significant occurrences of rare, endemic, threatened and endangered species. More than 700 acres of tidal and non-tidal wetlands and extensive streams make Crow's Nest an idyllic setting for diversity — sustaining scores of migratory and resident song birds, waterfowl, wading birds, fish and other aquatic species. The pristine marshes of Crow's Nest represent 60 percent of all Stafford County tidal wetlands and provide some of the finest examples of wetland habitats in the Potomac River basin and the state.

It is not surprising then that Crow's Nest ranked number one on the list of national priorities for FY2009 CELCP funding. This ranking resulted in a $3 million CELCP grant award to DCR through the Virginia CZM Program for acquisition of 1,170 acres of the preserve in July 2009 (completing the second phase in acquiring the 2,870-acre preserve area). The $11.2 million dollar balance towards the acquisition was provided by Stafford County, DCR, Virginia Land Conservation Foundation, the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers. The first phase of acquisition - 1,770-acres - was completed in April 2008, and supported in part by Stafford County and the Department of Environmental Quality Clean Water Revolving Loan Fund with $9.5 million. Efforts to protect this area have been ongoing for over 30 years.

The earliest recorded owner of the "Crow's Nest" property was Colonel Gerard Fowke. In 1662, the property was deeded to Rawleigh Travers, whose daughter married Peter Daniel (1706-1777). The Travers-Daniel family owned the property for 200 years. By the mid-1800s, the Peninsula was a thriving plantation with a brick and wood manor house called "Tranquility." The large plantation was fully outfitted with livestock, game fowl, a tannery, a blacksmith, and shoe and textile shops. The Daniel family also owned a black three masted schooner called the "Crow." Because the Crow was docked at the peninsula, it took on the name "Crow's Nest."


Nick Meade, Virginia CZM

### Crow's Nest Partners Win Governor's Award

*The partners in the acquisition of Crow's Nest were presented a 2010 Governor's Environmental Excellence Award. Stafford County, Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, The Nature Conservancy, the U.S. Army Corps of Engineers, the Northern Virginia Conservation Trust, the Virginia Land Conservation Foundation and the Virginia CZM Program, were recognized as environmental and conservation leaders in land conservation.*

*Speaking at the 2010 Environment Virginia Conference about the award recipients, Governor McDonnell remarked, "It is critical that all Virginians work to better protect our environment. This begins with promoting green initiatives and conservation throughout the state. The Governor's Environmental Excellence Awards represent some of the best activities in Virginia that focus on protecting our natural resources."*


DCR-DNH


Hal Wiggins, ACOE


Gary Fleming, DCR-DNH


DCR-DNH


Irv Wilson, DCR-DNH

*Views of the natural beauty and splendor of the new Crow's Nest Natural Area Preserve. Staff from the Department of Conservation and Recreation conduct a natural heritage survey of the property (photo right). Funding through the Virginia Coastal Zone Management Program from the Coastal and Estuarine Land Conservation Program (along with several other sources) made this new preserve possible.*

Guided field trips of the new Crow's Nest Natural Area Preserve are offered periodically by DCR. Significant funding, including dedicated staff, is needed to make the preserve more frequently available to the public, with public access facilities, such as road improvements, parking areas, a small boat launch, hiking trails, wildlife observation areas and interpretive signs. For details on the next field trip opportunity see *http://www.dcr.virginia.gov/natural_heritage/spevents.shtml*.

## CELCP Update

CELCP, which is administered by NOAA's Office of Ocean and Coastal Resources Management, protects important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural state. The program gives priority to lands with significant ecological value and those that can be effectively managed and protected. Similarly, Virginia's CELCP plan focuses on conserving the best remaining coastal resources under the greatest threats of conversion, and serves as a vehicle for state agencies, planning district commissions, localities, and non-profit conservation organizations to identify coastal conservation priorities and help meet strategic conservation goals.

Since 2002, Virginia CZM has received more than $12 million in CELCP funds to help protect over 2,100 acres in Virginia's Coastal Zone. Guiding the selection of which proposals are submitted to NOAA to compete nationally for these funds, the Virginia CELCP Plan relies on the most up-to-date conservation data. Virginia CELCP Priority Conservation Areas were recently updated to include Virginia Department of Game and Inland Fisheries priority wildlife diversity conservation areas and VCU information on healthy streams. Although the priorities data do not currently incorporate the value of all adjacent "blue infrastructure" – especially estuarine and marine blue infrastructure, this data layer - was recently developed by the Virginia Institute of Marine Science with funding from Virginia CZM. "Priority estuarine conservation area" maps will be incorporated into a final "PCA" map by January 2011, and this will likely result in land areas adjacent to high value estuarine waters receiving a higher state and national ranking.

In March 2009, the President signed into law the Omnibus Public Land Management Act of 2009. The law contains new authorization for CELCP, among several other measures benefiting the nation's oceans, Great Lakes and coasts. Congress passed the bill (H.R. 146), which combined more than 150 public lands measures into a single package by a vote of 285-140.

New provisions in the law translate to new requirements and revisions to the Virginia CELCP plan, which outlines the process that Virginia CZM follows in selecting proposals to submit for national CELCP funding. The Virginia CELCP Plan can be viewed on the web at *www.deq.virginia.gov/coastal/vaczmlandconservation.html*

### *Websites*

***NOAA CELCP website -***
http://coastalmanagement.noaa.gov/land/welcome.html

# 2008 - 2010 Virginia CZM Focal Area

*By Shep Moon, Virginia CZM*

October 2008 saw the beginning of the Virginia CZM Program's third "focal area" – Sustainable Coastal Community Planning. The focal area concept began in 1999 when it was decided that focusing on a particular resource or a special geographic region for a three-year period would enable the program to more effectively concentrate its financial and policy efforts to make a significant and notable improvement.

The first focal area, from 1999 - 2001, supported the Virginia Oyster Heritage Program (VOHP). This initiative involved significant coordinative effort and funding to help protect and restore native oyster populations in the Rappahannock River and seaside of Virginia's Eastern Shore. Between 2001 and 2003 Virginia CZM invested over $1.5 million in the VOHP, a public-private partnership initiated by the Program. This partnership constructed over 80 sanctuary reefs and 1000 acres of harvest area in Virginia's coastal waters.

In 2001, the Coastal Policy Team chose to concentrate CZM efforts on the Seaside of Virginia's Eastern Shore by initiating the Virginia Seaside Heritage Program (VSHP). (*See page 2.*) The Seaside effort proved to be extremely successful, and the Coastal Policy Team decided to continue that focal area for an additional three years through 2008.

After extensive input from stakeholders at the 2007 Coastal Partners Workshop and through discussions of the Coastal Policy Team, Sustainable Community Planning was chosen as the next focal area. This focal area began in 2008 with grants going to state agencies and coastal PDCs to help coastal localities adopt more sustainable land use practices. The Policy Team chose to concentrate on two key topics:

- protecting blue and green infrastructure, and
- adapting to sea level rise.

These topics were selected as priorities because of their critical importance to local land management decisions and because of the long-term implications for coastal resource protection. Over the three year period, the Virginia CZM Program is providing $990,318 to support the Sustainable Communities Focal Area. For a list of individual projects, please visit our website at *www.deq.virginia.gov/coastal/08-10czmfocalarea.html*.

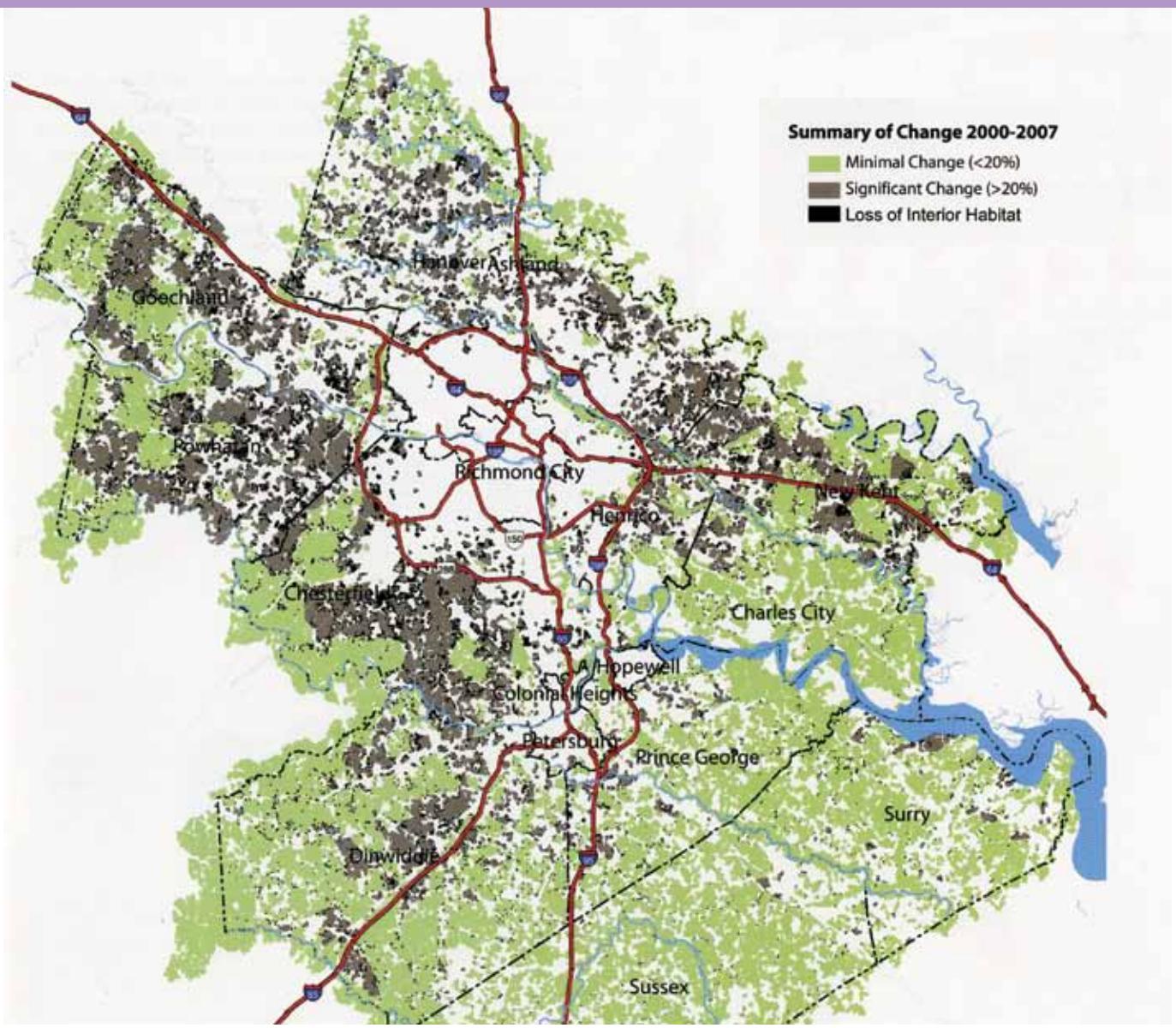
## Blue and Green Infrastructure

Blue and green infrastructure (BGI) includes those natural features on the land (e.g. forests, wildlife habitat, wetlands, etc.) or in the water (e.g. anadromous fish use areas, oyster reefs, underwater grass beds, etc.) that are critical to maintaining ecosystem and human health and survival. This part of the Sustainable Communities Focal Area has its roots in previous efforts to develop conservation corridors in the Hampton Roads area through a series of projects funded by the Virginia CZM Program. Used in conjunction with the Sustainable Communities focal area projects, these initiatives will result in a locally endorsed, coastal zone-wide network of significant land and water resources.

The concept of Blue and Green Infrastructure planning stems from the recognition that habitat loss, fragmentation, and degradation represent the most significant threats to conservation of wildlife species and natural, communities. When coupled with the fact that a significant amount of land conservation occurs locally, it became clear that priorities needed to be established to help inform local land use decisions and to best allocate limited conservation resources.

Although state agencies had worked for years, often with the assistance of VA CZM funds, to identify these important areas, there was no single source that combined datasets and prioritized conservation areas. In order to synthesize this information, a key first step in the BGI portion of the focal area has been to fund a collaboration between the Virginia Department of Game and Inland Fisheries, Virginia Department of Conservation and Recreation – Division of Natural Heritage, Virginia Commonwealth University – Center for Environmental Studies and the Virginia Institute of Marine Science. The result of this effort is a single source of conservation information and priorities in a unified dataset of Priority Conservation Areas.

Another identified need in prioritizing BGI conservation efforts was the capability to assess vulnerability to development. In response, a Composite Vulnerability Model was developed and tested in Northampton County using Community Viz software. This allowed local planners to visualize various planning scenarios and evaluate current and proposed zoning regulations with regard to their impact on BGI. In order to transfer the results of the project to other regional planners and to provide experience using Community Viz software, a workshop was held at VCU.




## *Sustainability of Aquatic Priority Conservation Areas Under Rising Sea Level Conditions*

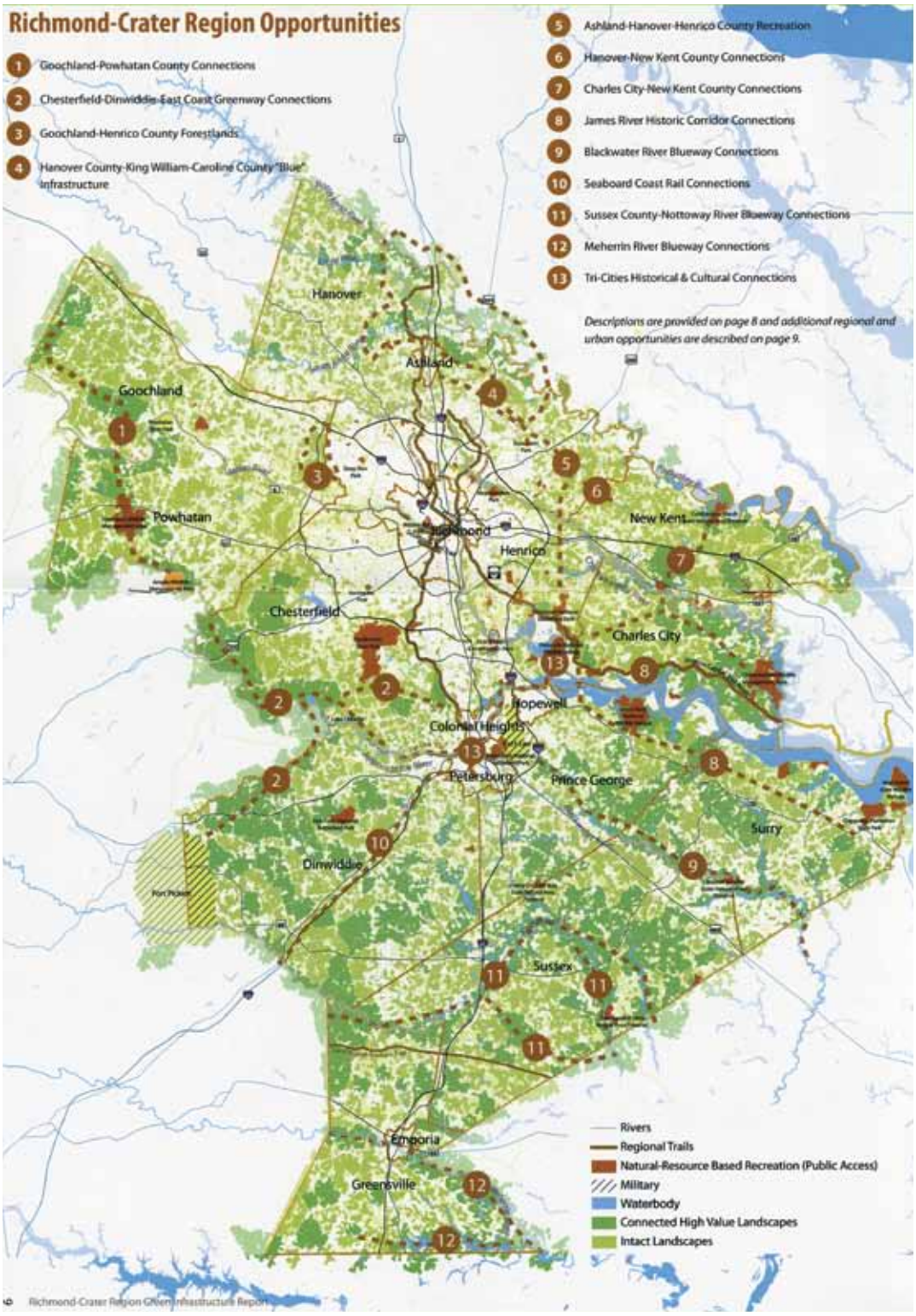
*From the Richmond and Crater Region's joint BGI project the map above illustrates the impacts to natural lands during the period from 2000 to 2007. Changes in land cover like these are common in transitional areas experiencing suburban growth and demonstrate the need for effective planning and protection of blue and green infrastructure.*

Beyond improving and consolidating state level data, the majority of projects in the Blue-Green Infrastructure planning portion of the focal area have been conducted by coastal planning district commissions. The goal of these projects has been to "localize" the data by incorporating it into local comprehensive plans and land management ordinances. The projects are being undertaken by two Eastern Shore localities – Accomack and Northampton Counties, and four planning districts – George Washington Regional Commission, Northern Neck PDC, and a joint project between Richmond Regional and Crater PDCs. Local government and PDC staff have worked to inform policy-makers of the BGI concept by presenting state-generated maps to local stakeholder groups, planning commissions and boards of supervisors. In each case the goal is to compare the state data with local land management plans and ordinances and to revise the maps to best meet local needs.

*Continued on next page*

## *Strategic Green Infrastructure: A Base Map for Regional Planning*

*Using state-generated BGI data as a starting point, localities in the Richmond – Crater Region identified opportunities for improved BGI protection. The report contains BGI Protection Strategies that correspond to the opportunities shown on this map.*

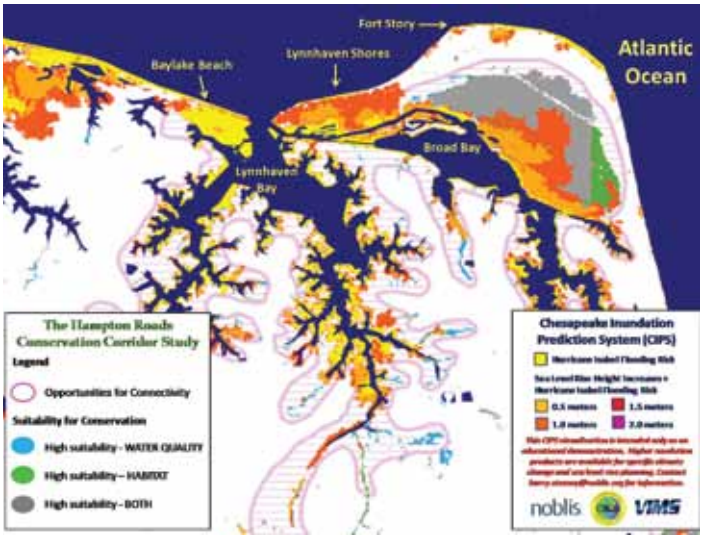


Outcomes of regional blue-green infrastructure work to date have included:

- Inclusion of BGI data in local comprehensive plan updates
- Validation of existing locally identified conservation areas
- New tools to evaluate building plans and rezoning requests
- Opportunities for connecting BGI between regions
- Using spatial analysis tools to identify trends in BGI impacts

As shown with earlier Virginia CZM conservation corridor planning efforts in the Hampton Roads area, the benefits of blue and green infrastructure planning may take a while to develop, but will likely help protect critical coastal resources for years to come. Even in its initial stages, the effort has helped emphasize to local officials the need to consider BGI, like more traditional "grey" infrastructure, such as roads and sewer lines, in their daily land management activities.

### *Hurricane Isabel Flood Risk + 1 Meter Sea Level Rise*




*(Map above) Adding one meter of sea level rise to an Isabel strength hurricane in the Lynnhaven Bay area of Virginia Beach shows the extent of potential flooding in identified conservation corridors. This map was prepared by NOBLIS and VIMS as part of the Chesapeake Bay Inundation System, and is a demonstration of the capability of running high resolution inundation models using hypothetical conditions. According to the HRPDC Report Climate Change in Hampton Roads: Impacts and Stakeholder Involvement, over 84,000 acres or 16.5% of the region's green infrastructure network will be at risk of inundation or more frequent flooding due to climate change.*

## Sea Level Rise

Adapting to rising sea levels will be a concern for Virginia's coastal localities for the foreseeable future. As part of the Sustainable Communities Focal Area, localities are encouraged to address sea level rise and storm surge in all their planning efforts.

Climate change adaptation projects are underway in three planning districts: the Hampton Roads Planning District Commission (HRPDC), the Middle Peninsula Planning District Commission (MPPDC), and the Northern Virginia Regional Commission (NVRC). Each of the projects is unique in that it has been designed to meet the particular needs and interests of its respective region. They all share a focus, however, on the impacts of sea level rise and storm surge, as these are considered to present the highest potential impacts to both natural and cultural coastal resources.

There are also some similarities in the process undertaken in the three regions. They have all sought to assess potential impacts through data collection, policy review and by developing analytical tools. They have also each assembled advisory workgroups of relevant stakeholders, including local elected officials and appointees, planners, business representatives, state and federal agencies (including the military) and nonprofit advocacy groups. In each case the goal has been to assist planners, decision-makers, and individual residents living along the shoreline proactively adapt to rising sea levels and storm surge flooding in a way that limits risks to human safety and sustains coastal resources.

Outcomes to date from this part of the Focal Area include:

- evaluation of adaptation responses from other states and nations;
- use of Geographic Information System (GIS) based mapping that highlights and quantifies the potential impacts to environmental features, public infrastructure and private property;
- a framework for local policy to deal with those impacts, working in concert with the hazard mitigation planning process;
- communication strategies for local officials and the general public, including presentations and outreach materials; and,
- analysis of the legal authority of Virginia's local governments with regard to adaptation strategies.

*Continued next page*

## *Sea Level Rise* *Continued from page 23*

In order to help coordinate climate adaptation efforts and share experiences among state and regional agencies, the Virginia CZM Program hosted a meeting in August, 2009. The three PDCs involved in climate change adaptation planning attended, as well as staff from the Virginia NEMO Program, Sea Grant, Chesapeake Bay National Estuarine Research Reserve, NOAA-Chesapeake Bay Office, and the Virginia Institute of Marine Science.

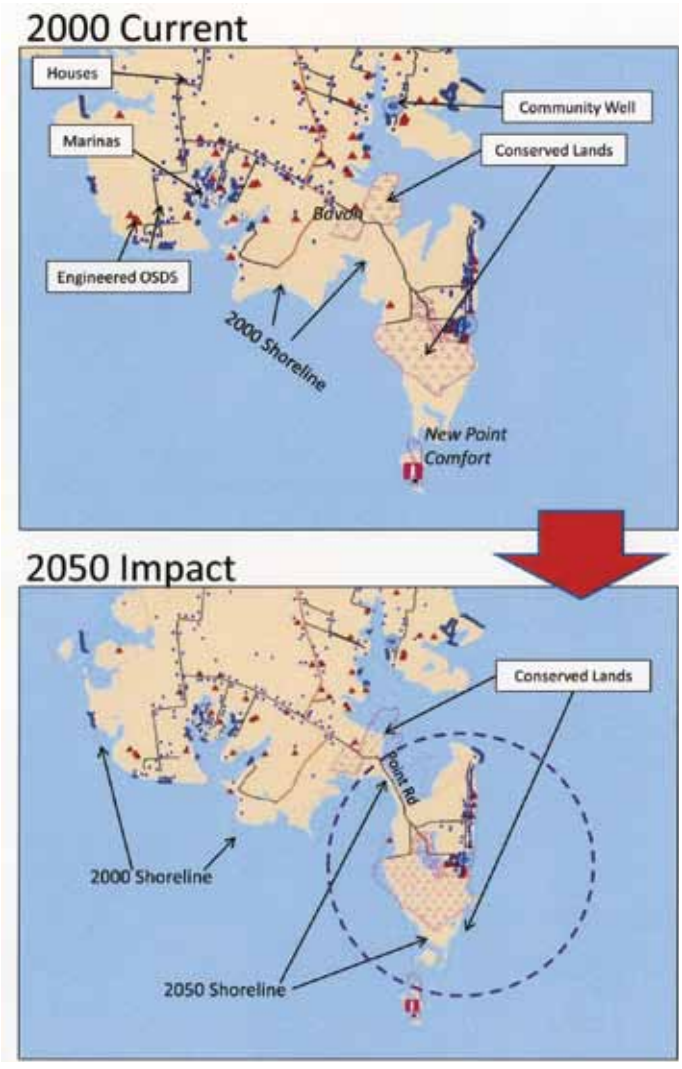
### Partnering with Virginia NEMO

The Virginia Network for Education of Municipal Officials (VA NEMO) Program is also playing an important role in the Sustainable Communities Focal Area by providing assistance with both BGI planning and climate change adaptation. The Program, which was developed in part with CZM funding, seeks to provide a coordinated, collaborative service that delivers information and tools to localities to build local capacity and support conservation-based land use decision making. Virginia NEMO staff have worked closely with PDC staff and have helped acquire higher resolution elevation data (LiDAR) for portions of the coastal zone from the Department of Defense. (*See map at right.*)

### Next Steps

Information from the CZM focal area projects is available to stakeholders involved in ongoing efforts to make coastal communities more sustainable, as well as to the general

## *New Point Comfort: Infrastructure Impacted if Point Road Floods*




*(Maps at left) MPPDC staff generated county wide maps and assessed the impacts of 1 ft. sea level rise by 2050 and a 1.5 ft. rise by 2100. The PDC conducted an ecological and economic impact assessment that revealed that a potential* **loss of between $187 and $249 million worth of infrastructure** *(i.e. roads, houses, on-site disposal systems, etc) and wetland function due to sea level rise by 2050.Maps, like these for the New Point Comfort area of Mathews County, provide a visual for local officials to consider the public policy implications of climate change with regard to issues such as roads and bridges, septic tanks and wells, shoreline management, relocation of residential structures, as well as revenue considerations.*

*In considering the New Point Comfort graphics, stakeholders were asked to consider the potential impacts of sea level rise on access to and from their residences, and on their wells, septic systems, roads, emergency services and public access points.*

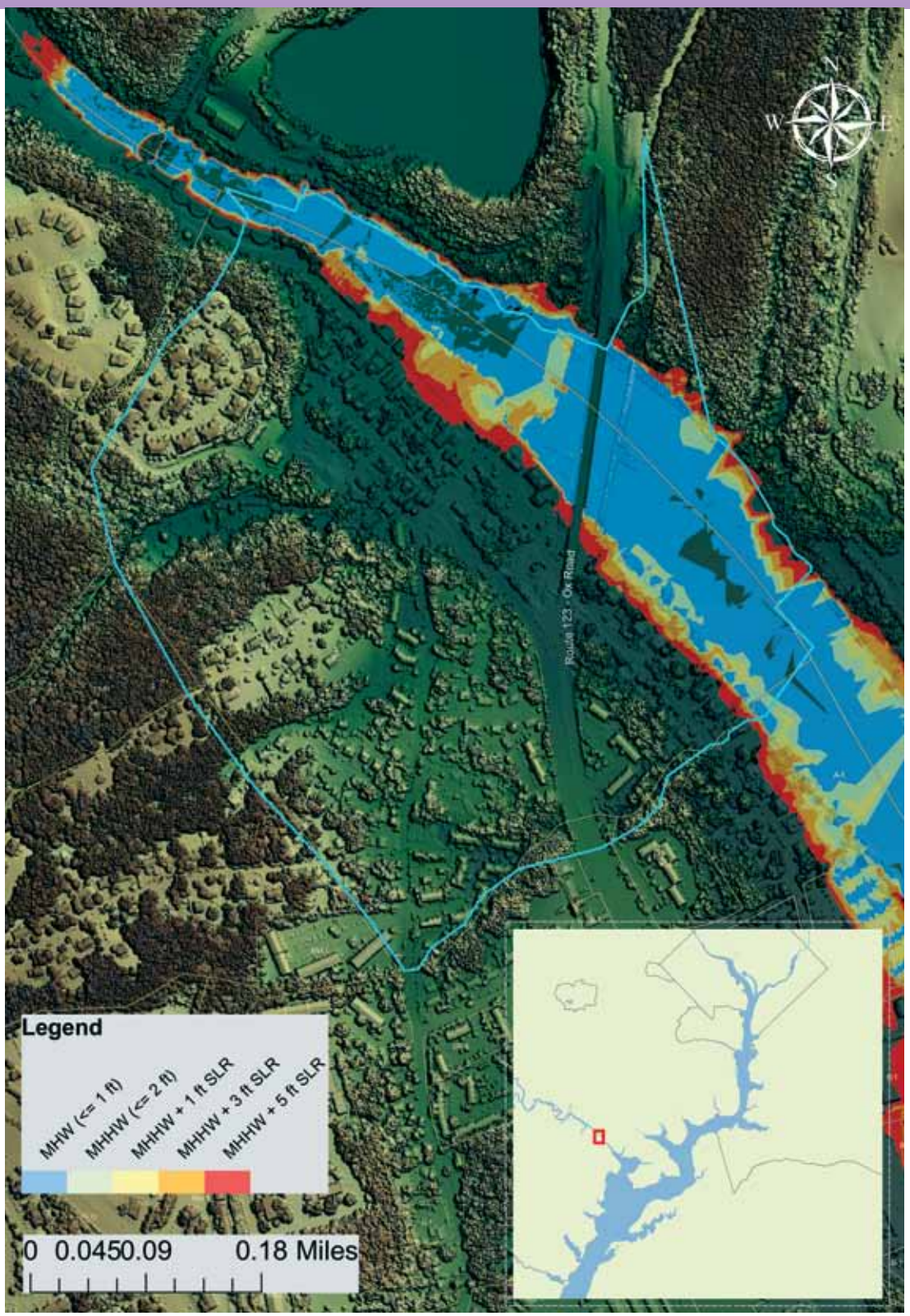
| Infrastructure | Number of Structures Impacted | Average Cost | Total Cost |
|---|---|---|---|
| Houses | 72 | $228,669<br>Estimated median house or condo value in 2007 (City-Data.com) | $16,464,168 |
| Engineers OSDS | 20 | $18,000<br>(MPPDC Regional Estimate) | $360,000 |
| Conventional OSDS | 52 | $4,000<br>(MPPDC Regional Estimate) | $208,000 |
| Community Well<br>(with 41 connections) | 1 | $40,000<br>(MPPDC Regional Estimate) | $40,000 |
| Private Wells | 31 | $3,000<br>(MPPDC Regional Estimate) | $93,000 |
| Shoreline Hardening | 658.122 ft. of riprap | $60/ft.<br>(University of Minnesota) | $39,487.37 |
| VDOT Road Segments | 1,250.67 ft. | Short term: $149/sq. ft.<br>Long term: $745/sq. ft.<br>Additional right away acquisition and when raised 10 ins (VDOT Estimate) | Short term: $186,349.83<br>Long term: $931,749.15 |
| **TOTAL** | | **Short term: $17,391,005.20<br>Long term: $18,136,404.52** | |

public, through Coastal GEMS, the Virginia CZM Program's Geospatial and Educational Mapping System. New data will be added as it becomes available.

Focal Area projects have already resulted in significant gains in local sustainable community development efforts, and more successes are certain to come. But as with all initiatives involving local land use, the projects have often faced real challenges. An economic downturn has caused localities to focus more on budget cuts, job creation and economic development and resources available for land conservation have been increasingly limited. There has also been increased scrutiny on the effect of government planning initiatives on private property rights. The Focal Area has, however, succeeded in raising the visibility of important land planning issues and laid the groundwork for expanded protection of blue and green infrastructure and climate change adaptation planning.

## *High Resolution LiDAR Data in Northern Virginia*

*(Map right) The Virginia NEMO Program assisted the Northern Virginia Regional Commission in acquiring LiDAR data for determining more accurate elevations and developing vulnerability maps for the region. This graphic shows various levels of sea level rise / storm surge for the Town of Occoquan in Prince William County.*



# Virginia CZM Partners Strategize to Address Coastal Needs

*By Beth Polak, Virginia CZM*

The Virginia CZM Program recently completed an assessment of nine coastal management, or "enhancement," areas to evaluate changes, progress, needs and emerging issues in public access, coastal hazards, ocean resources, wetlands, marine debris, cumulative and secondary impacts of growth and development (CSI), special area management planning (SAMP), energy and government facility siting and aquaculture.

To be eligible for match-free funding under the Coastal Zone Management Act (Section 309), NOAA requires that coastal states with an approved CZM program complete this assessment every five years, and then rank the need in each enhancement area as high, medium, or low priority. Only high and medium priority areas are eligible for support. Once they have been identified, five year strategies are then developed that will help the state make improvements in the coastal enhancement areas of highest need. Ultimately, these strategies must lead to or propose adoption of new enforceable coastal policies.

In February, Virginia CZM's "Coastal Policy Team" identified three priority areas: Ocean Resources, CSI and SAMP. The program then conducted two stakeholder meetings to begin developing strategies to address each highly ranked issue. Each strategy includes one or more projects to be conducted each year between October 2011 and September 2016.

## Ocean Resources

Through this strategy the Virginia CZM Program will develop a marine spatial plan for the waters off Virginia's coast in concert with the Mid-Atlantic Regional Council on the Ocean (MARCO) and the "regional planning body" to be set up by the new National Ocean Council as recommended by the July 19, 2010 Final Recommendations of the Interagency Ocean Policy Task Force. The plan will engage stakeholders to develop a plan that maximizes the economic and ecological value of Virginia's Atlantic Ocean area taking into account competing spatial demands for offshore energy development, habitat protection, fishing, transportation, national security, etc. Marine debris was identified as an important component of addressing ocean resource issues, and the ocean strategy includes creation of a Virginia marine debris plan. Virginia CZM has established a marine debris advisory panel to reflect the cross-cutting nature of this topic. This panel will help convene a marine debris summit to engage all stakeholders. The summit will inform development of the Virginia marine debris plan to guide coordination of marine debris management activities and prioritize future actions. Funding in years four and five of the ocean strategy is set-aside to implement key recommendations from the marine debris plan.

## Cumulative and Secondary Impacts

Cumulative and secondary impacts is a broad and sweeping issue, but for coastal management purposes in Virginia stakeholders have concentrated on land use planning, water quality, shoreline management, and retention of working waterfronts. Strategies for land use planning and water quality involve defining decision-support tools and providing technical assistance to best equip local governments in addressing various land use decisions. These include policies for alternative on-site sewage systems and adaptation measures for Bay TMDL requirements.

Barry Truitt, TNC

The shoreline management strategy will build upon successes attained through the previous 309 funding cycle by providing support for development of local shoreline management plans. These plans are widely recognized as the most effective policy to promote living shorelines. In addition, funds in the first year will be targeted at implementing the recommendations of a study mandated by the Virginia General Assembly to find ways to streamline the regulatory process for living shorelines and promote this method of shoreline management. For working waterfronts, the strategy will develop a consensus definition of working waterfronts among stakeholders in Virginia's coastal zone, define the infrastructure necessary to sustain working waterfronts and develop policy tools to facilitate working waterfront preservation.

Larry Chowning

## Special Area Management Planning

The strategy for special area management plans (SAMPs) includes continuing coastal spatial planning efforts on the Seaside of Virginia's Eastern Shore. The Seaside SAMP Strategy proposes to develop a marine spatial plan for the Seaside's barrier island lagoon system. Various management options will be investigated through a public participation process that takes advantage of mapped data and decision support tools that help quantify the value of different management options. Ultimately a new management plan will optimize space available for shellfish cultivation, commercial fishing areas, habitat conservation, recreation and any other identified needs.

## Projects of Special Merit

Projects of special merit are new to the coastal zone enhancement grants program this cycle, offering competitive funds up to $200,000 each for selected projects each year beginning in 2012. Proposed in this funding cycle are three projects supporting shoreline management. These projects are designed to 1) develop a database and reporting process for tracking wetlands in Virginia; 2) develop a Virginia Erosion Vulnerability Assessment and 3) develop additional local shoreline management plans. Also envisioned are five projects of special merit for the Ocean Resources enhancement area. These involve data collection and analysis, decision support, facilitation services and production of educational or social marketing materials.

A draft of the Virginia Coastal Needs Assessment for 2011 – 2016 was submitted to NOAA on September 29, 2010 for review and approval, and is available on the Virginia CZM Program website at http://www.deq.virginia.gov/coastal/assess.html. NOAA comments are due back to Virginia CZM on December 1, 2010 with the final 309 Assessment and Strategy to be completed by February 1, 2011. The Virginia CZM program expects to receive approximately $540,000 during the first year of funding in October 2011 and $486,000 the four successive years to implement its approved strategies. The ten percent reduction will allow NOAA to conduct the competitive process for projects of special merit in FY12-15.

*Please contact Beth Polak at (804) 698-4260, or Laura McKay at (804) 698-4323, with questions.*

### *Section 309 Assessment and Strategy Public Comment Period*

**December 1 - December 30, 2010**

Draft Virginia Coastal Zone Management Program Coastal Needs Assessment and Strategy available at *www.deq.virginia.gov/coastal/assess.html*

*Submit written comments via e-mail to Beth.Polak@deq.virginia.gov or mail to:*

Beth Polak
Virginia CZM Program
629 East Main Street
Richmond, VA 23210

# Coastal GEMS Enhancements

## New Layers in Coastal GEMS

*By Nick Meade, Virginia CZM*

For several years now, Virginia CZM's Coastal Geospatial and Educational Mapping System - *Coastal GEMS* - has provided the Commonwealth with a gateway to information on the location, value, and management of Virginia's most important coastal resources. As a reader of the Virginia Coastal Zone Management Magazine, chances are, you've heard of Coastal GEMS before and perhaps even used the site yourself. Even if you've never heard of Coastal GEMS or just haven't gotten around to visiting the site, we hope this article will inspire you to check it out.

Like the GEMS application itself, which was designed with all levels of geospatial data users in mind, this article aims to include content of interest to new users and old pros alike. The topics to be covered are threefold: first, for potential new users, a brief background on Coastal GEMS and its features, second, a quick look at some recent Coastal GEMS updates, and third, a focus on one of the newest data layers available on the site.

### Origin of Coastal GEMS

The idea for Coastal GEMS was spawned during a Virginia CZM partners workshop in 2001 when our partners expressed a need for an extensive inventory of Virginia's coastal resources. They agreed it was important to identify and map the best remaining blue (water-based) and green (land-based) natural resources. This idea grew into the concept of providing a portal to a comprehensive collection of coastal resource information from all of our coastal partners.

In 2006, Coastal GEMS was born through a partnership between Virginia CZM, Virginia Commonwealth University's Center for Environmental Studies and WorldView Solutions.

Some of the data you'll find on Coastal GEMS is available elsewhere online and some is exclusive to Coastal GEMS, but a major advantage of this internet GIS application, is that it allows

### New Layer Focus: PCA

One of the newest layers on Coastal GEMS is the Priority Conservation Areas (PCA) dataset. A joint project of the Virginia Department of Game and Inland Fisheries, the Virginia Department of Conservation and Recreation - Division of Natural Heritage, and Virginia Commonwealth University - Center for Environmental Studies, the PCA is a synthesis of priority natural resource datasets from these entities and other partners that identifies areas important for conservation of the state's wildlife, plants, and natural communities. The dataset highlights areas of unfragmented habitat and potential links between contiguous patches, as well as wetlands, identified habitat for rare species, special wildlife features, and exemplary freshwater aquatic communities.


Local planners, faced with limited time and resources, previously had to evaluate multiple datasets to inform land protection efforts. The PCA was developed to provide these local users with a unified tool to guide conservation planning and green infrastructure efforts. It's not being used solely at the local level though; Virginia CZM has also incorporated the dataset into our CELCP plan. To learn more about the PCA, check out the fact sheet on Coastal GEMS or to download the GIS data directly, go to *www.dgif.virginia.gov/gis/gis-data.*

## Coastal GEMS Layers as of October 2010

### Water Features
- Fisheries Management Areas
- Baylor Grounds (Public Oyster Grounds)
- Private Oyster Leases
- State Constructed Oyster Reefs
- Commercial Shellfish Aquaculture Sites
- Oyster Gardening Sites
- Submerged Aquatic Vegetation (SAV)
- Seaside SAV Planting Sites
- Anadromous Fish Use Areas
- Threatened & Endangered Species Waters
- Seaside Oyster Density
- Healthy Streams

### Shoreline Features
- Beaches Above High Water
- Chesapeake Bay Dunes
- Wetlands (Tidal & Non-Tidal)
- Restored Riparian Buffer Sites

### Land Features
- Conservation Lands
- Forest Cover
- Barrier Island Ownership

### Wildlife Features
- Essential Wildlife Habitat
- Important Bird Areas
- Migratory Songbird Stopover Habitat

### Recreational Features
- VDGIF Boat Ramps
- Scenic Rivers
- Birding & Wildlife Trail Sites and Loops
- Seaside Eastern Shore Water Trail
- Public Access Sites

### Conservation Planning Tools
- Clam/Oyster Aquaculture Suitability Models
- Accomack County Buffer Classification
- Seaside Invasive Reed (*Phragmites*)
- Historic & Cultural Value Model
- Predicted Growth Model
- Ecological Cores & Landscape Corridors
- Marina Siting Suitability Model
- Impediments to Fish Movement
- Impaired Waters
- Biotic Stream Assessment (INSTAR) Locations
- Recreational Value Model
- Watershed Integrity Model
- Agricultural Value Model
- Forest Economics Model
- Tidal Flushing Rates
- Clam/Oyster Aquaculture Vulnerability Models
- Benthic Index of Biotic Integrity
- Condemned Shellfish Areas
- Potential Wetland Restoration Sites

### Conservation Planning Examples
- Special Area Management Program Boundaries
- Hampton Roads Conservation Corridors
- Priority Conservation Areas

### Reference Layers
- 3 Nautical Mile State Limit
- 12 Nautical Mile U.S. Territorial Sea Boundary
- Watershed Boundaries (HUC)
- Virginia Place Names
- County Boundaries
- Detailed Streams
- Roads

natural resource managers, decision-makers, and the public to select and overlay data layers from multiple Virginia agencies, localities, and academic institutions in one web mapping application. You don't need to be a GIS or coastal resource expert to use Coastal GEMS. The site is easy to navigate and each layer has an informative fact sheet which explains what the data is, where it came from, and why it is important. If applicable, the factsheet also includes information on how the resource depicted is managed and what agency or entity manages it. All of these features make Coastal GEMS a great starting point for planning efforts and management decisions in the coastal zone.

## Recent GEMS updates

Since the last CZM magazine was published, several new data layers have been added to Coastal GEMS. See the current, but always growing, layer list above. GEMS now also includes 2006/2007 VBMP aerial imagery in addition to the 2002 imagery that was already available on the site. We retained the 2002 imagery to allow users to toggle back and forth between both sets and observe changes on the ground over that five year period of time.

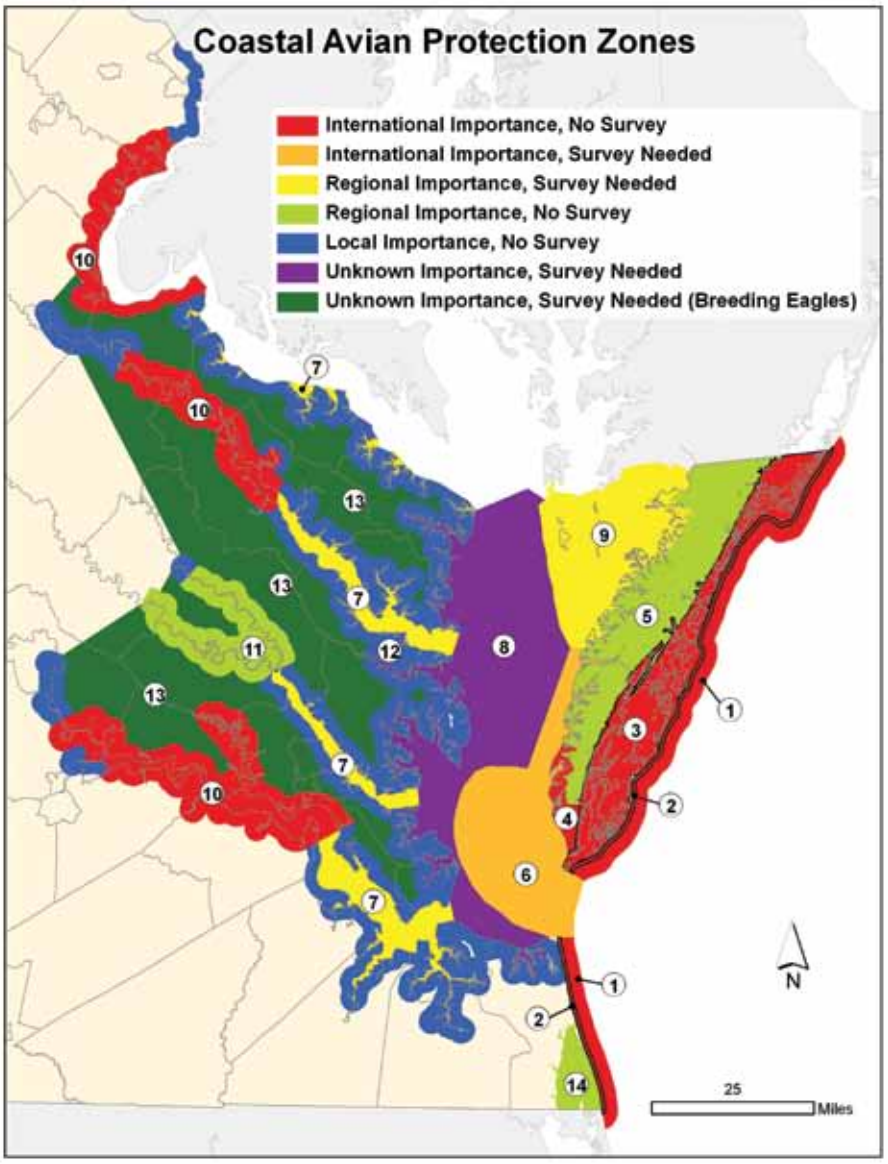
*Continued on next page*

## *Coastal GEMS* *Continued from page 29*

While Coastal GEMS was created to cater to in-state users, we won't turn down some out-of-state recognition. The International Coastal Atlas Network (ICAN) showcased the GEMS application at their annual workshop in September this year as one of four existing robust coastal web atlases. Find out more about ICAN, whose mission in short is "promoting web atlases around the world for coastal conservation, management, and governance," by visiting them on the web at *http://ican.science.oregonstate.edu*.

### Need Training?
### Have a GEM of an Idea or Story?

If you are interested in scheduling a GEMS training session, have ideas about how we could improve the site to better suit your needs, or want to share a story about how you have used GEMS in your work, contact Nick Meade at *Nick.Meade@deq.virginia.gov*.




## New Regulatory Use for Coastal GEMS

The Department of Environmental Quality's new Wind Energy Permit by Rule Regulation lists Coastal GEMS as one of the online data portals which developers of proposed wind energy projects in Virginia's coastal zone must utilize. The regulation is expected to become final and effective either in late 2010 or early 2011. At that time, Coastal GEMS will house the Coastal Avian Protection Zone (CAPZ) spatial data created as part of the new regulation (see CAPZ map at left).

The CAPZ dataset was created through a collaborative effort among the Center for Conservation Biology at W&M and VCU, Virginia Department of Game & Inland Fisheries, and Virginia Department of Conservation & Recreation (Division of Natural Heritage). The data include a narrative which describes the characteristics of each zone (numbered 1-14 on the map). In combination, the Wind Energy Permit by Rule Regulation and the CAPZ map explain how mitigation for avian-resource impacts are to be addressed for wind projects that might be located in these coastal areas.

In developing and approving the regulation and the CAPZ map, both the Regulatory Advisory Panel and DEQ recognized the critical importance of Virginia's coastal areas to migratory and other avian resources.

# Governor Signs Executive Order Continuing the Virginia CZM

*By Laura McKay, Virginia CZM*

On June 29, 2010, Governor McDonnell signed Executive Order 18 (2010) continuing Virginia's CZM Program through June 2014. Executive Orders have always been the legal mechanism for establishing and continuing the Virginia CZM Program.

A few changes have been made since the original executive order was signed in 1986. In 2002 the goals of the program were streamlined from 25 down to the ten listed below. This time around our Coastal Policy Team recommended and Governor McDonnell approved these changes:

- Addition of "beaches" to types of habitats protected in Goal 1.
- Addition of "marine spatial planning" as a tool in Goal 10.
- Addition of the Virginia Department of Mines, Minerals and Energy as a cooperating agency

Kendall Jenkins

To view the entire Executive Order, visit the Governor's website at *www.governor.virginia.gov/Issues/ExecutiveOrders/2010/EO-18.cfm*

## *Virginia CZM 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, beaches, 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 waterdependent 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 including the use of new tools such as marine spatial planning.

Paula Neely, Carter's Cove Marina

*(left) A healthy marsh at Carter's Cove Marina helps filter pollutants and provides habitat for marine life.*

# Boating Green to Keep it Blue

*By Anne Smith, VIMS Marine Advisory Services*

Two programs, the ***Virginia Clean Marina Program*** and the Virginia Clean Boater Program are designed to give marina operators and boaters resources to become good stewards of the marine environment.

The Virginia Clean Marina Program is housed at the Virginia Institute of Marine Science in the Virginia Sea Grant Marine Extension Program. The program is a voluntary compliance program that stresses environmental stewardship and best management practices (BMPs) designed to protect the marine environment. Facilities that meet all regulatory requirements and at least 80% of the recommended BMPs are eligible for Clean Marina Certification. The Virginia Clean Boater Program, also voluntary, is designed to provide boaters with environmental BMPs.

Inaugurated in 2001, the Clean Marina Program was supported by a full time position until 2004 when funding restrictions reduced the position to part time. Virginia CZM provided funding to develop, establish and implement the program through 2008. In 2007 the VA General Assembly recognized the importance of the program and approved full time funding. Currently 62 marinas in Virginia are certified as Clean Marinas and another 35 have taken the pledge and are working towards certification.

As a Virginia Clean Marina, a facility is given a Clean Marina flag or burgee, they receive recognition through the program website and various publications and they are permitted to use the Clean Marina logo for promotional purposes. "I use it in every newsletter (the logo) and on every ad I place. We display the flag for all visitors and customers. It works!" says Ken Knull of Yankee Point Sailboat Marina in Lancaster County.

At Cobb's Marina in Norfolk, Peggy Duval feels that "in this age of 'Green' anything marketing your business as such is the smart way to go…if you can back the claim." Cobb's Marina stresses the message to their customers that they are doing their best to support the comeback of the Chesapeake Bay. Keith Knowlton, a Certified Marina Manager who operates marinas in several states, including Carter's Cove marina in Lancaster, feels that "people seem to be recognizing the program more and more."

The Virginia Clean Boater Program takes the green message a step further and provides boaters with the tools and information they need to become stewards of the environment. In 2008, grant funds from the Chesapeake Bay License Plate Fund, Virginia Coastal Zone Management Program and the National Oceanic and Atmospheric Administration were used to develop an educational DVD, "Bling My Boat." The DVD, produced by Crewstone Productions for the Virginia Sea Grant Marine Advisory Program, focuses on environmental BMPs that boaters can implement to minimize their impact on the marine environment.

In addition, the Virginia Clean Boater Program brochure is distributed at boat shows, to boating groups, at marinas, and through summer education programs each year. The brochure offers clean boating tips, from proper fueling techniques to litter control, and invites the boater to take the Clean Boater Pledge. Each boater who takes the pledge is recognized as a steward of the marine environment and given a Clean Boater decal.

Both the Clean Marina and the Clean Boater programs are voluntary and are designed to provide needed resources to minimize pollution in the marine environment.

*For more information on either program, or to request a copy of "Bling My Boat", contact Anne Smith, annesmith@vims.edu.*

# Chesateach: Putting the Bay in the Classroom

*By Sarah McGuire, CBNERRS*

Seventh grade students in Gloucester and Mathews County have had a hands-on approach to studying the Chesapeake Bay for the past five years through a NOAA B-WET grant titled "Chesapeake Studies: Linking Field Trips with the Classroom." The grant has enabled the ***Chesapeake Bay National Estuarine Research Reserve in Virginia*** (CBNERRVA) to reach over 3,000 local middle school students since the program started to receive this annual funding in 2005. The purpose of the "Chesateach" project is to give students a "meaningful watershed experience" - a deeper understanding of the Chesapeake Bay by connecting field trips to classroom preparation before and after the hands-on outdoor experience.

Students began the year with an introduction to the Chesapeake Bay with Education Specialist, Sally Upton. "While many of these students live on or near the water, a large majority have never been to the Bay, have never seen a live blue crab, and did not know that seahorses were real creatures!," explains Sarah McGuire, CBNERRVA Education Coordinator. "Sally does a great job of introducing the students to this tremendous natural resource."

Water quality is introduced at the beginning of the school year and students take measurements throughout the Chesateach project. Aquaria are set up in each classroom so that students always have a little bit of the Bay and its inhabitants with them through the year. They observe the species in the aquarium and conduct investigations, meeting several Virginia Standard of Learning (SOLs) requirements.


CBNERRVA/VIMS

*Students in the Chesateach Program monitor the water quality of the aquaria in their classroom.*

CBNERRVA/VIMS

CBNERRVA/VIMS

*Students in the Chesateach Program collect organisms by seining in the lower York River and then sift through their 'catch' on the beach next to VIMS in Gloucester Point.*

The students then visit CBNERRVA on the campus of the Virginia Institute of Marine Science in Gloucester Point. In a marine lab, the students are exposed to microscopes, classification of animals and plants, and techniques to collect organisms. On the beach and in the water, students collect and study animals. Some of the animals may go back to the classroom aquarium for further study. Most are collected and studied at the beach near VIMS. "This is a lasting memory for the students," describes McGuire. "It is not uncommon to hear a student say that the trip to the beach is 'the best field trip ever!'"

Combining a hands-on field experience with applied classroom lessons ensures that the students retain the knowledge learned. During the field trip and in the classroom, the students also discuss human impacts on the Chesapeake Bay and what they can do to make a difference.

"Many students finish the program with a newfound respect not only for the Bay but all the natural environment around them," notes McGuire. "Next year, the first group of students to participate in the Chesateach program will graduate. We feel confident that they will take with them a desire to continue learning about the Bay and have a hands-on role in improving the Bay and Virginia's environment."

CBNERRVA widened its reach in the 2010-2011 school year by expanding into York County. A free teacher-training workshop was provided to York County teachers in July.

*For more information on Chesapeake Studies, visit www.vims.edu/cbnerr or contact Sarah McGuire, Education Coordinator at mcguire@vims.edu ; 804-684-7878.*

# FOLAR Delivers: Regional Cooperation and Teamwork = Success

*By Shep Moon, Virginia CZM*

Many Virginia CZM grants result in very tangible, predicted products, such as new data, maps or recommended policy changes. Other results are more subtle and may take years of sustained effort, but the ultimate outcome is certainly no less important.

*The fall line in Petersburgh along the Appomattox River.*

An excellent example is the work of Victor Liu, Principal Planner at the Crater Planning District Commission *(photo right)* and his support of the Friends of the Lower Appomattox River representing community leaders and citizens, FOLAR began in 2001 and was formed as a result of the Appomattox River Corridor Plan (1999) developed by Crater PDC and funded by Virginia CZM.

The group's mission is to promote and enhance the Appomattox River from the dam at Lake Chesdin to its confluence with the James River at Hopewell. Six jurisdictions: the Counties of Chesterfield, Dinwiddie and Prince George, and the Cities of Colonial Heights, Hopewell and Petersburg border the River along this section.

A portion of Crater PDC's annual Coastal Technical Assistance grant from Virginia CZM has been dedicated to providing staff support to FOLAR since its beginning. Other CZM funds have supported specific projects, such as the Lower Appomattox River Trail Guide *(at right)*.

Although the Virginia CZM Program's investment in this effort has been relatively small, it has been consistent over time and has paid major dividends for coastal resources.

FOLAR has many dedicated volunteer leaders, but it has no permanent staff. Liu acts as a liaison, coordinating volunteer projects, managing the donated funds, and planning for future projects. With his assistance, FOLAR volunteers conduct spring and fall river cleanups, trail clearing and building, and public access advocacy. They also sponsor an annual 10 mile "Battle or Paddle" canoe and kayak race from Petersburgh to Hopewell to raise the profile of the organization and highlight the importance of the Lower Appomattox.


All photos on page 34 and 35 are courtesy of FOLAR

*"FOLAR...has received over $1.5 million in donations..."*

*Many FOLAR hands make light work when enhancing public access, cleaning the shoreline and restoring vegetation.*

With Liu's help, FOLAR has been able to apply for, and manage, grants that further leverage their work. FOLAR has been especially successful in obtaining corporate support and has received over $1.5 million in donations, including cash, use of equipment and labor. "After a project is completed FOLAR always gives credit to all donors," states Liu. "We have learned that businesses and corporations love to associate their names with a successful tangible project."

The group has also benefited from the work of volunteers from the military, and its growing regional presence at Fort Lee.

The results so far are impressive. FOLAR has been responsible for construction of over 5 1/2 miles of trails, 5 bridges with one bridge spanning over seventy-eight feet, 3 overlooks, and 2 fishing piers, most of which are handicap accessible. "The success of FOLAR may be attributed to its 'one doable project at a time' approach," explains Liu.

Plans for that next doable project are already underway, and it's sure to be as well received by visitors to the river. Watch for the opening of the Appomattox River Natural Resources Education Center including an outdoor classroom in Prince George County in 2011.

*For more information about FOLAR visit www.folar-va.org or contact vliu@craterpdc.org.*

*(photo left and below) The Battersea Dam Canal Breakout Crossing in Petersburg was one of FOLAR's largest projects.*

# New Database of Local Ordinance Provisions Released

*By David Sacks, DCR*

On August 5, 2010, the Virginia Department of Conservation and Recreation (DCR) launched an online Water Quality Ordinance Provision Search Tool. The tool is a searchable database of local ordinance provisions from codes of 84 Tidewater localities subject to the Chesapeake Bay Preservation Act. The database contains development standards to minimize impervious cover, preserve indigenous vegetation and lessen land disturbance.

The search tool is a by-product of ongoing advisory reviews of local government programs that DCR staff is conducting. This online database will be updated as DCR staff completes the reviews of all 84 Bay Act localities, a process that will continue through spring 2011.

The database is derived from ordinance provision questionnaires used during the advisory reviews. The questionnaires covering approximately 100 possible provisions were approved last year by the Chesapeake Bay Local Assistance Board for the "Phase III" advisory reviews of local codes and ordinances.

DCR staff expects that Virginia localities incorporating new development standards for water quality protection in their ordinances will find the new tool a valuable resource as their staffs use the interface to find others' code provisions that provide similar standards.

The new interface and instructions can be found at:

*http://www.dcr.virginia.gov/chesapeake_bay_local_assistance/requirements_search.cfm*

For more details, please contact DCR's Division of Chesapeake Bay Local Assistance at (804) 225-3440 or (800) CHESBAY.

# News Around the Zone

## Communicating Behavior Change

The use of Web advertising is not a new concept for companies that market products and goods, but is it effective in selling behavior change?

To answer this question, the Northern Virginia Clean Water Partners (NVCWP) – representing 11 Northern Virginia localities, two independent water and sanitary sewer authorities and the **Northern Virginia Regional Commission** - conducted a pilot study in 2009 to test the use of online advertising during their annual Regional Stormwater Education Campaign - 'Only Rain Down the Drain" (*visit www.onlyrain.org).* The campaign seeks to change the three most common stormwater pollution-causing behaviors in urban areas: the over-use of fertilizer, the disposal of oil down storm drains, and not picking up dog waste. The campaign has employed traditional radio advertising since it began in 2005.

While the campaign's use of traditional radio advertising has proven effective, current budget constraints restrict the amount of funding available for radio ad placement. The methods by which residents receive their information also is changing at a rapid rate. Online information is easily accessible, particularly in the techno-savvy Northern Virginia region.

NVCWP wanted to know whether complementing their radio advertising with online advertising, through well-known search engines, (Google and Yahoo) and social networking websites (MySpace and Facebook), would be more cost-effective in raising awareness about the impact of these behaviors and engaging residents in correct behaviors. The NVCWP contracted with Water Words that Work to coordinate the pilot study, including research, message development, ad design and improvements to the campaign website.

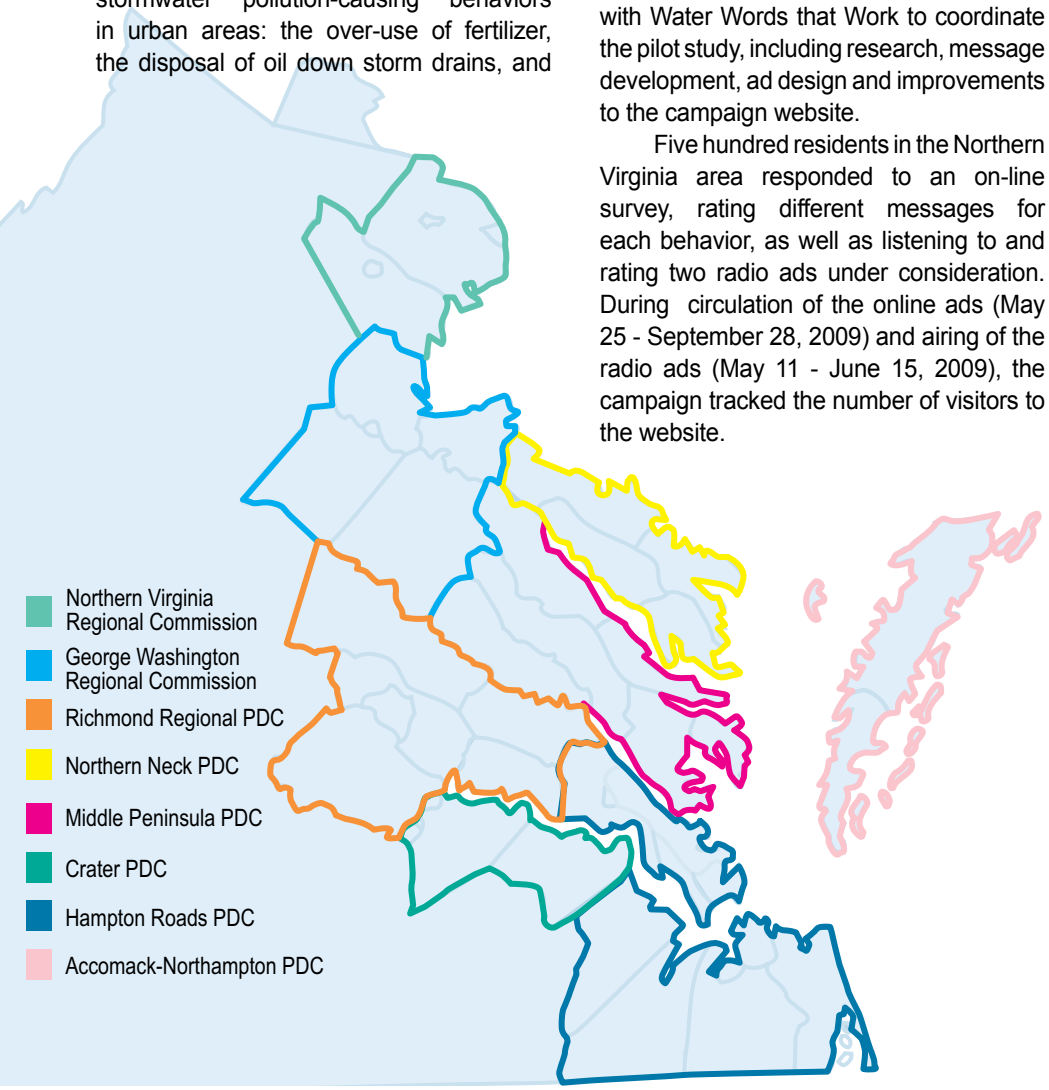
Five hundred residents in the Northern Virginia area responded to an on-line survey, rating different messages for each behavior, as well as listening to and rating two radio ads under consideration. During circulation of the online ads (May 25 - September 28, 2009) and airing of the radio ads (May 11 - June 15, 2009), the campaign tracked the number of visitors to the website.

NVCWP found that the investment in on-line ads achieved greater results (visitors to the campaign website) than radio advertising. On-line ads generated 7,996 clicks and visits to the campaign website at a cost of $7,633 (average .95 per click). Radio ads, at a cost of $80,000 (six radio stations, 651 spots) exposed approximately 355,446 people to the campaign but resulted in only an estimated 676 website visits (that's a cost of over $115 for each resulting click).

The campaign will however continue radio ads on four stations it determined is reaching its target audiences and unpaid media is an important facet to the campaign, which received approximately $150,000 in negotiated unpaid media through interviews, web banners, and additional PSAs.

NVCWP's is already applying lessons learned from the Web 2.0 campaign to a Web 2.1 campaign.

*Contact Laura Grape at 703.642.4625 or lgrape@novaregion.org.*




## Regional Wastewater Systems

In fall 2009, the **Accomack-Northampton Planning District Commission (ANPDC)**, Delegate Lynwood Lewis, the Virginia Department of Housing & Community Development (DHCD), and the Virginia CZM sponsored two wastewater summits on the Eastern Shore. The public summits were held to convey the impact and current status of wastewater issues on the Shore, and to bring stakeholders together to discuss options for the development of regional wastewater systems. The Virginia Departments of Health and Environmental Quality and the Virginia Water Environment Association, presented as well as several localities and organizations with collection and treatment systems, who shared their experiences, costs, and challenges.

Several agencies including the Virginia Resources Authority, USDA Rural Development, and the Department of Housing and Community Development provided information about grant or loan programs addressing wastewater issues.

An engineering company presented information on wastewater technologies, costs, options, and benefits. A private wastewater management company presented on economies of scale, management of municipal wastewater collection and treatment systems, and self-sustainability practices.

In October 2009, a new Virginia Department of Environmental Quality regulation was passed for wastewater disposal on the seaside of the Eastern Shore, which ensures that the most effective, environmentally-sensitive methods be evaluated.

Northampton County and the towns of Cape Charles, Cheriton, Exmore and Nassawadox secured regional planning grants from DHCD, and have restructured and revitalized the Eastern Shore of Virginia Public Service Authority (*www.co.northampton.va.us/gov/wastewater_project.html).*

In Accomack County discussion currently centers on wastewater management needs in the towns of Chincoteague and Parksley and the Captains Cove development.

*Contact Curtis Smith at 757.787.2936 x114 or csmith@a-npdc.org.*

## Green Tourism

The **George Washington Regional Commission (GWRC)** is encouraging local businesses in the region to become members of the Virginia Green program and help the Fredericksburg area brand itself a "green destination."

Virginia Green, a partnership between the Virginia Tourism Corporation (VTC) and the Office of Pollution Prevention (OPP) at the Virginia Department of Environmental Quality, recognizes tourism-related businesses who follow eco-friendly business practices and take steps to reduce their impact on the environment, e.g. reducing their use of Styrofoam, implementing recycling, becoming more energy efficient, or sponsoring "green" events.

In 2009, GWRC became a Virginia Green organization, setting an example for area businesses and organizations. To help promote the program throughout the region, GWRC gave presentations at tourism meetings and, with Virginia CZM funding, developed a regional Virginia Green brochure. GWRC also arranged for staff from the OPP to speak at the monthly Fredericksburg Regional Hospitality Council meeting and outline the benefits of the VA Green Lodging program. As a result, the Council has decided to form a committee to encourage their members to become VA Green Lodging participants. GWRC staff will assist the Council in this initiative.

GWRC's next step is to reach out to local restaurants to encourage participation in the Virginia Green Restaurants program.

*Contact Laurel Hammig at hammig@gwregion. or John Broughton at jabroughton@comcast.net.*


*The Middle Peninsula Public Access Authority and Virginia Sea Grant have launched a new website to aid communities as they address issues related to water access. Visit Accessing the Virginia Coast (screenshot left) at www.virginiacoastalaccess.net.*

## Waterfront Use Conflicts

As the Middle Peninsula transitions to a more suburban community, waterfront use conflicts are beginning to surface. The **Middle Peninsula Planning District Commission (MPPDC)**, in partnership with Virginia CZM and the Virginia Sea Grant Coastal Community Development Program, conducted a study to help local governments identify waterfront issues and conflicts. The York River Use Conflict Committee was established to explore the connection between future development and coastal-related opportunities and identify public policies that might coincide. The study area was the north shore of the York River from the George P. Coleman Bridge to the Guinea Marshes. Committee recommendations will serve as a reference for development of future public policy in Gloucester County.

The committee unanimously agreed that Gloucester County must preserve the coastal cultural identity that makes it a special waterfront community and recommends that the Board of Supervisors:

- *develop a Coastal Living Policy to educate residents about coastal living in Gloucester from an economic, cultural, social, environmental, and regulatory perspective;*
- *map and identify the County's Land, Air and Water Jurisdictional boundaries to frame the basis for managing conflict by establishing spatial areas for management consideration;*
- *take no action at this time to manage or regulate the aquaculture industry within its jurisdiction until it's known whether new state aquaculture regulations resolve use conflicts;*
- *develop a policy for the protection of working waterfront infrastructure;*
- *write a Waterfront Outdoor Lighting Ordinance;*
- *adopt an ordinance managing floating homes; and,*
- *Ensure equal water access by developing a master plan for public access infrastructure.*

In February 2009, the Gloucester County Board of Supervisors unanimously approved these recommendations and the County is now working to implement them.

*For a copy of the York River Use Conflict Study go to www.MPPDC.com.*

# 2010 Virginia CZM Projects

## Where Do Those Dollars Go?

*By Laura McKay, Virginia CZM*

In May 2010, the Virginia CZM Program submitted to NOAA its final application for FY10 federal funding under the Coastal Zone Management Act. In August NOAA approved these projects which will run from October 1, 2010 through September 30, 2011. (See *table next page*.)

Much of the program's funding is used to help its network of agencies implement Virginia's coastal laws and policies. This includes everything from Virginia CZM staff salaries to environmental impact review, environmental education, a habitat locality liaison, coastal permitting, submerged aquatic vegetation mapping, and coastal land acquisition (Tasks 1-10). Every year the program also gives technical assistance grants to the eight coastal Planning District Commissions (PDCs) and funds the Virginia Aquarium's marine mammal and sea turtle stranding program (Tasks 41-49; *see photos below*).

This year marks the last year of the Sustainable Community Planning 'Focal Area" (Tasks 11 - 12.08). These grants go to state agencies and coastal PDCs to help coastal localities plan for rising sea levels and increased coastal storms due to climate change, and to protect blue and green infrastructure. Blue or green infrastructure comprises those natural features on the land (e.g. forests, wildlife habitat, wetlands, etc.) or in the water (e.g. anadromous fish use areas, oyster reefs, underwater grass beds, etc.) that are critical to maintaining ecosystem and human health and survival. (*See an overview of this work on page 20.*)

Longwood University

*Dr. Mark Fink of Longwood University and undergraduate researchers sample nekton (shrimp, small fishes, etc.) within the newly created marsh on the Hull Springs Farm's shore. Here, they use a throw-trap to capture animals, then use a dip net to randomly sample the animals.*

This year also marks the last of current 5-year Section 309 strategies aimed at developing new enforceable policies to better protect coastal resources (Tasks 91-97.03).

In these more challenging economic times, the Virginia CZM partners remain particularly grateful for the funds we receive from NOAA through the federal Coastal Zone Management Act. Protecting our coastal resources is a wise investment in our ecological and economic future.

*Responding to a dead stranded Fin whale (directly below); rescuing a live stranded Common dolphin (below right); tending a Pygmy sperm whale calf (direct right). All photos courtesy of Virginia Aquarium and Marine Science Center.*

### Table Acronym Key:

***BBRF:*** Back Bay Restoration Foundation
***DCR***: Department of Conservation and Recreation
***DCR-NH***: DCR Division of Natural Heritage
***DEQ***: Department of Environmental Quality
***DGIF***: Department of Game and Inland Fisheries
***RC and PDC***: Regional Commission and Planning District Commissions
***VAMSC***: Virginia Aquarium and Marine Science Center
***VCU:*** Virginia Commonwealth University
***CES***: Center for Environmental Studies
***VMRC***: Virginia Marine Resources Commission
***VIMS:*** Virginia Institute of Marine Science
***TNC:*** The Nature Conservancy

## TOTAL FEDERAL AWARD: $2,566,000

| Task | Grantee | Title | Federal $ | Match $ | Total $ |
|---|---|---|---|---|---|
| **Virginia CZM Administration** | | | | | |
| 1 | DEQ | Virginia CZM Program Administration | $279,800 | $0 | $279,800 |
| 1.01 | VIMS | Virginia CZM Program Administration Support | $100,591 | $0 | $100,591 |
| 1.02 | VCU-CES | Coastal GEMS Administration | $87,200 | $0 | $87,200 |
| 1.03 | DEQ | Virginia CZM Program Outreach | $98,200 | $0 | $98,200 |
| 2 | TBD | Quick Response Tasks | $14,405 | $0 | $14,405 |
| 2.01 | BBRF | Back Bay Conference | $3,000 | $0 | $3,000 |
| 3 | DEQ | Environmental Impact Review & Federal Consistency | $200,500 | $0 | $200,500 |
| 4 | DEQ | Environmental Education in Virginia's Coastal Zone | $92,038 | $0 | $92,038 |
| 5 | DEQ | WQIF Match - Wastewater Treatment Plant Upgrades | $0 | $908,064 | $908,064 |
| 6 | VMRC | Permit Review and Compliance | $160,000 | $204,613 | $364,613 |
| 7 | DCR-NH | Habitat Conservation/Locality Liaison | $50,000 | $60,997 | $110,997 |
| 8 | VIMS | Tidal Wetlands Management Technical Support | $42,000 | $42,000 | $84,000 |
| 9 | VIMS | SAV Mapping | $60,000 | $60,000 | $120,000 |
| 10 | DEQ Subcontract | Eastern Shore Land Acquisition | $200,000 | $100,000 | $300,000 |
| **Sustainable Community Planning Focal Area Projects** | | | | | |
| 11 | DCR | Final PCA Map and Outreach Efforts | $35,000 | $35,000 | $70,000 |
| 12.01 | Accomack Co. | Blue-Green Infrastructure Planning | $35,000 | $35,000 | $70,000 |
| 12.02 | Northampton Co. | Blue-Green Infrastructure Planning | $20,000 | $20,000 | $40,000 |
| 12.03 | GWRC | Blue-Green Infrastructure Planning | $27,756 | $29,522 | $57,278 |
| 12.04 | HR PDC | Climate Change Adaptation in Hampton Roads | $40,000 | $40,000 | $80,000 |
| 12.05 | MP PDC | Assessment of Potential Ecological & Anthropogenic Impacts of Climate Change | $38,000 | $38,000 | $76,000 |
| 12.06 | NN PDC | Blue-Green Infrastructure Planning | $35,000 | $35,000 | $70,000 |
| 12.07 | NVRC | Preparing Shorelines for Sea Level Rise | $60,510 | $64,444 | $124,954 |
| 12.08 | RR PDC/Crater | Blue-Green Infrastructure Planning | $50,000 | $50,000 | $100,000 |
| 41 | AN PDC | Coastal Technical Assistance Program | $30,000 | $30,000 | $60,000 |
| 42 | Crater PDC | Coastal Technical Assistance Program | $30,000 | $30,000 | $60,000 |
| 43 | HR PDC | Coastal Technical Assistance Program | $60,000 | $60,000 | $120,000 |
| 44 | MP PDC | Coastal Technical Assistance Program | $30,000 | $30,000 | $60,000 |
| 45 | NN PDC | Coastal Technical Assistance Program | $30,000 | $30,000 | $60,000 |
| 46 | NV RC | Coastal Technical Assistance Program | $30,000 | $33,053 | $63,053 |
| 47 | GW RC | Coastal Technical Assistance Program | $30,000 | $33,296 | $63,296 |
| 48 | RR PDC | Coastal Technical Assistance Program | $30,000 | $30,000 | $60,000 |
| 49 | VA Beach/VAMSC | Marine Mammal and Sea Turtle Stranding Response | $31,000 | $31,011 | $62,011 |
| **Coastal Enhancement (Section 309) Projects (no match required)** | | | | | |
| 91 | VIMS | Virginia CZM Program Administration Support | $30,000 | $0 | $30,000 |
| 93.01 | TNC | Mid-Atlantic Regional Ocean Council (MARCO) - On-Line Marine Mapping Portal | $75,000 | $0 | $75,000 |
| 93.02 | TBD | Coastal GEMS Layer Development for Policy Decisions | $23,000 | $0 | $23,000 |
| 94.01 | VIMS | Shoreline Inventories (York & Newport News) | $100,000 | $0 | $100,000 |
| 94.02 | VIMS | Shoreline Evolution Reports | $50,000 | $0 | $50,000 |
| 95 | MP PDC | Dragon Run Special Area Management Plan | $25,000 | $0 | $25,000 |
| 96 | TNC/VIMS | Seaside of Eastern Shore Special Area Management Plan | $80,000 | $0 | $80,000 |
| 97.01 | MP PDC | Conservation Corridors | $40,000 | $0 | $40,000 |
| 97.02 | NVRC | Conservation Corridors | $55,000 | $0 | $55,000 |
| 97.03 | DCR | Support for Virginia NEMO (Network for Education of Municipal Officials) | $58,000 | $0 | $58,000 |
| **GRAND TOTAL** | | | **$2,566,000** | **$2,030,000** | **$4,596,000** |

# CZM People

## Welcome New Staff!

### Coastal Planner

Nick Meade, Virginia CZM

*Beth and April (below) kayaking on the Dragon Run surveying one of our priority conservation areas that has been the focus of a multi-year special area management plan.*

Beth Polak joined the Virginia CZM Program as a Coastal Planner in May 2009. Beth previously worked with the Department of Conservation and Recreation's Division of Natural Heritage as the coastal locality liaison as well as the piedmont/western liaison.

Beth has a bachelor's degree from the University of Georgia, a post graduate diploma in Environmental Economics and Environmental Management from the University of York, and a Master's Degree in Earth and Environmental Resource Management from the University of South Carolina. Beth's conservation experience began in the Virgin Islands where she led a non-profit environmental education and advocacy organization in efforts to increase awareness and support for protection of coastal resources. She also worked for The Nature Conservancy's Virgin Islands and Eastern Caribbean Program as a grants specialist. While at Natural Heritage, Beth assisted localities, PDC's, state and federal agencies, private organizations and individuals in using natural heritage information for conservation planning and project screening.

As a coastal planner for the Virginia CZM Program, Beth's primary responsibilities are to manage federal coastal grant awards; assist in the development and administration of Virginia's Coastal and Estuarine Land Conservation Program (CELCP) and assist in the overall strategic planning and evaluation for the Virginia CZM Program. The regions Beth works most closely with are Northern Virginia, George Washington and Middle Peninsula.

### Coastal Grants Coordinator/ Outreach Specialist

Nick Meade, Virginia CZM

April Bahen joined the Virginia CZM Program as Grants Coordinator and Outreach Specialist in September of 2009.

April graduated from Rollins College in 1993 with a Bachelor of Arts in Environmental Studies, Science Track and a Minor in Biology. April worked in a variety of environmental internships in New Mexico, Florida, and Massachusetts from 1993-1997, before moving to Hampton, Virginia for the position of Assistant Education Coordinator for the Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERRVA) at the Virginia Institute of Marine Science. While with CBNERRVA, April attended graduate school at the College of William and Mary and received her Masters in Education in 2001. She then went to work for the public school system at Cesar Tarrant Elementary School and Christopher Kraft Elementary School in Hampton, Virginia, teaching at the 1st and 4th grade level.

In her present capacity with Virginia CZM, April coordinates grant-related activities, including federal reporting and maintaining financial and performance data for the program. She also assists fellow staff with communicating the mission and goals of the program through publications, exhibits and web page development.

### Coastal Natural Heritage Liaison

Virginia Witmer, Virginia CZM

Alli Baird joined the Department of Conservation and Recreation Division of Natural Heritage Program as the coastal locality liaison in November of 2009.

Alli has a Masters in Landscape Architecture from the University of Virginia and is licensed to practice in the Commonwealth of Virginia. Prior to joining Natural Heritage, Alli worked as the Riparian Buffer Specialist in the Division of Chesapeake Bay Local Assistance at DCR, where she provided technical advice on riparian buffers and native plants. Alli serves on the Plant Eastern Shore Natives Campaign Team and is a member of the Chesapeake Bay Program's Forestry Work Group.

With funding from Virginia CZM, Alli works with agencies, private individuals and consultants to assess the potential for proposed activities to impact natural heritage resources, and recommends ways to avoid or minimize these impacts. Alli also provides training for coastal locality staff on tools such as the Natural Heritage Data Explorer mapping program, and consults with planners on incorporating natural heritage resource concerns into local comprehensive plans and permitting processes.

# CZM People

## Public Access Advocate Retires

DCR

In May 2010, John Davy retired from the Department of Conservation and Recreation after 37 years of exemplary service to Virginia and its citizens.

John's career centered on protecting and expanding public outdoor recreation across the Commonwealth. John played a role in establishing the Virginia CZM Program in 1986 and served on the program's Coastal Policy Team (CPT), representing the DCR Division of Planning and Recreation Resources. Firmly believing that a citizen's level of environmental stewardship was reflected in the availability of public access, John spearheaded numerous Virginia CZM public access projects, including establishment of Kiptopeke State Park on Virginia's Eastern Shore (*see related story on page 7*). He directed preparation of eight Virginia Outdoor Plans (VOP) over a 30 year period.

John's place on the CPT will be filled by Danette Poole, new Director of the Division of Planning and Recreation Resources.

John's legacy will forever be found in Virginia's State Parks and the Commonwealth's abundant outdoor recreation resources. In retirement, we know John will remain a tireless advocate for a day at the beach, in the mountains and on the water!

Thank you, John!

*- by Beth Reed, DCR*

## Long-Time Marine Animal Advocate Receives Award

Mark Swingle, Director of Research and Conservation at the Virginia Aquarium & Marine Science Center, and long-time partner and grantee of the Virginia CZM Program, received the Virginia Beach Rotary Outstanding City Employee Award in 2009. Mark is a champion of the marine environment and its inhabitants. Mark helped create the original Virginia Marine Science Museum in the early 80's and is the most tenured staff with 27 years of service.

Mark's scientific efforts focus on bottlenose dolphin, humpback whale and loggerhead sea turtle research. His expertise is sought by many organizations including Virginia CZM, NOAA Fisheries, The Nature Conservancy, the Atlantic Coastal Cooperative Statistics Program, and the Atlantic States Marine Fisheries Commission. Mark is the President and Stranding Committee Chair for the Alliance of Marine Parks and Aquariums – an international association dedicated

VAMSC

*Mark Swingle holds a Kemp's Ridley sea turtle, nursed back to health at the VAMSC stranding facility.*

to the highest standards of care for marine mammals and to their conservation in the wild through public education, scientific study, and wildlife presentations. Among his recent endeavors - Mark led the charge to create a sustainable seafood program, Sensible Seafood, in conjunction with 18 oceanfront restaurants in Virginia Beach, and he worked with Virginia Wesleyan College to create a 45 ft. marine research vessel that will be jointly owned and operated by the Aquarium and the College.

Congratulations Mark!

## Marine Habitat Management Helm Passed

In June, the post of Chief of the Virginia Marine Resource Commission's (VMRC) Habitat Management Division passed from Bob Grabb to Tony Watkinson, both long-time leaders in the Virginia CZM Program. Bob has retired after 30 years of dedicated service at VMRC. Tony has been with VMRC since 1984 and has been deputy habitat chief since 1988. He is responsible for managing the state's marine conservation programs, state-owned submerged lands, tidal wetlands and coastal primary sand dunes and beaches.

Tony also will take Bob's place as Commissioner Steven Bowman's official appointee to Virginia CZM's Coastal Policy Team (CPT). Tony has been attending CPT meetings as an alternate member for many years. Chip Neikirk, new Deputy

VMRC

*Tony Watkinson, VMRC's new Habitat Management Division Chief.*

Chief of the Habitat Management Division will act as Tony's alternate on the CPT.

Thank you, Bob!

Congratulations, Chip and Tony!

# Save the Date!

## Coastal Partners Workshop

**December 7 - 9, 2010**

Department of Environmental Quality, 2nd floor

Coffee and Networking Hour: 9:00 - 10:00 a.m.

Sessions: 10:00 a.m. - 4:00 p.m.

***No registration fee***

but you will need to register!

### *Topics:*

Selecting Virginia CZM's Next "Focal Area" for Funding
Protecting Blue and Green Infrastructure
New Mapping Tools
Adapting to Coastal Hazards
State Threatened and Endangered Species
Coastal and Marine Spatial Planning
Shellfish Aquaculture
Working Waterfronts
Coastal Wind Energy Development
Mid-Atlantic Regional Council on the Ocean
Seaside Eastern Shore Special Area Management Plan
Protecting Shoreline Properties and Habitats
Managing Marine Debris
Land Acquisition
Habitat Restoration
Public Access Construction

***www.deq.virginia.gov/coastal/2010partnersworkshop.html***

*"Ospreys" by Wesley Bosman, Nandua High School - winner of the 2010 Eastern Shore of Virginia Birding and Wildlife Festival Poster Contest. For the October 2011 festival keep an eye on the new website: www.esvafestivals.org.*

Virginia Coastal Zone
MANAGEMENT PROGRAM

**www.deq.virginia.gov/coastal/**

**Virginia Coastal Zone Management Program**
**Virginia Department of Environmental Quality**
**P.O. Box 1105**
**Richmond, VA 23218**

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