COASTLINES

Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Information About Estuaries and Near Coastal Waters
Spring 1997, Volume 7, Number 2

Table of Contents

Center Insert

| Index to Other Editions of Coastlines |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

New Options for Dredging in Barataria-Terrebonne

Demonstrating Practical Tools for Watershed Management Through the National Estuary Program

Characteristics:

- The Barataria-Terrebonne Estuary includes over 4.1 million acres of wetlands, waterbodies, farmlands, and forests in 15 Louisiana parishes. Approximately 602,000 people live and work within its boundaries. The area contains a multitude of natural and man-made waterways, providing water access for industries such as oil and gas production and shipping.

- The wetlands surrounding the estuary are being lost at the remarkable rate of 21 square miles per year (one half-acre every 15 minutes). Extensive characterization and modeling of the Estuary and its wetlands as part of the Barataria-Terrebonne National Estuary Program has shown that one of the major causes of wetlands loss has been human modification of the hydrology of the system through such actions as construction of navigation canals and levees.

- Thousands of cubic yards of material are dredged throughout coastal Louisiana every year for the maintenance of oil and gas canals and navigation channels. The majority of this material is either prop-washed or placed on existing levees of dredged material in a manner not conducive to the propagation and enhancement of adjacent marsh vegetation.

- One of the most common methodologies employed by public and private entities for displacing dredged material is the use of bucket dredges, with which sediments are dug out and placed on the shore adjacent to the water body. The levees created with this dredged material, sometimes called "spoil banks", form impoundments or otherwise impede natural sheet flow hydrology.

The Problem:

The extensive wetland losses appear to be exacerbated by disruptions to the natural hydrology of the system. Impoundments, produced by dredged material levees, block water flow over land between marsh and water. They also disrupt the critical process of sedimentation on the surface of the marsh from tidal flooding.

The Project:

The purpose of the Alternative Dredging and Spoil Deposition Project was to determine the costs and benefits, both economic and environmental, of using a small hydraulic dredge for maintenance of oil field canals, as opposed to the traditional bucket dredge. The project was designed to place a thin-layer

deposition of dredged material over the marsh in order to create new marsh and/or restore habitat and to avoid creating impoundments.

The Barataria-Terrebonne Estuary lies between the Mississippi and Atchafalaya Rivers in south central Louisiana. It is rich beyond imagination in natural resources and cultural heritage, and provides billions of dollars of revenue to the region, the State of Louisiana, and the nation through industries such as commercial fishing, trapping, agriculture, tourism, shipping, and oil and gas.

Unfortunately, the Barataria-Terrebonne Estuarine System is facing a serious crisis. This nationally significant area is experiencing land loss at a faster rate than any other region in the nation, about 21 square miles per year. This translates to about one half-acre every 15 minutes. Studies have shown that over 445,000 acres of marsh converted to open water between 1932 and 1990, and conservative estimates are that an additional 163,000 acres of land will be lost by the year 2010.

The lowland swamps, marshes, and low ridges of Barataria-Terrebonne were built by accumulating Mississippi River sediment. As the river flowed through the area, it deposited sediment in deltas and during flood stages, deposited sediments on the surface of the wetlands themselves. Marsh plants quickly invaded these newly formed lowlands.

Periodically, the river would change course and find a shorter pathway to the Gulf. Without the continuing riverine deposits, soft marsh sediment compacted and the land sank below sea level. Meanwhile, new land built up along the repositioned channel. Before human intervention, sinking land in one spot was replaced with new land somewhere else.

Today, the rivers carry less sediment than a century ago. Additionally, levees constructed to prevent flooding funnel the flow straight to the Gulf where most of the sediment is lost in deep water. Consequently, new land is not forming. Additionally, impoundments resulting from dredging activities prevent sheet flow across the wetlands, precluding sediments from maintaining existing wetlands.

Over the previous century the Barataria-Terrebonne marshes have been criss-crossed with channels to accommodate navigation and the oil and gas industries. In order for these revenue-generating industries to continue to thrive, waterways must be maintained at sufficient widths and depths. This is typically accomplished through maintenance dredging, most often done with bucket dredges. The dredged material is placed on the marsh along the edge of the canal, forming levees which block the natural sheet flow of water, and sediments, over the marsh surface. Additionally, the material covers, and ultimately kills, the existing marsh vegetation.

When they become extensive enough, the levees form impoundments on the surface of the marsh which prevents sediments from reaching the marsh surface and maintaining its elevation. The impoundments can also flood from storm overwash or rising ground water which leads to standing water which also will kill marsh vegetation. This combination of loss of sediment and standing water leads to marsh compaction and loss of wetlands. Studies have shown that there is a direct correlation between the existence of canals, dredged material levee density, and land loss. Local erosion is often isolated around the levees or within areas partially or wholly impounded by them. For this reason, the Barataria-Terrebonne National Estuary Program believes that it is important to promote alternative techniques that will beneficially use dredged material to enhance adjacent marsh areas.

The amount of dredging done within the estuary (over 22 million cubic yards of material have been dredged in Lafourche Parish alone in the past fifteen years) and the resulting levees and impoundments make this a significant aspect of wetland loss.

Is hydraulic dredging a viable alternative to bucket dredging? Do the benefits outweigh the costs? Can new marsh be created by thin-layer deposition of dredged material over marshes? The Barataria-Terrebonne National Estuary Program thought so, but wanted to investigate.

Scientists recognize hydraulic dredging as a viable alternative to bucket dredging. This alternative has fewer detrimental impacts and is recognized as producing a more beneficial use of dredged material. Pumping fluidized dredged material over the marsh, rather than concentrating it in a levee, reduces the effects and degree of impoundment and in many ways mimics the natural deposition of sediment from river flooding. The hydraulic operation involves pumping dredged material from canal or channel water bottoms to a nearby containment area. Containment areas in shallow water require the construction of a minimal retention levee to hold slurry material until the water drains or evaporates out of the contained area.

The purpose of the Action Plan Demonstration Project was to compare the costs and benefits of using a small hydraulic dredge for maintenance of an oil field canal and placement of material in a thin-layer deposition in order to create new marsh and/or restore habitat.

To achieve the project's objectives, Texaco, Inc. and the Barataria-Terrebonne National Estuary Program entered into an agreement with the Lafourche Parish Coastal Zone Management Program for project design and implementation. Eight potential sites for deposition of dredged material were identified in the Leeville field in Lafourche Parish, Louisiana. The field is highly active with a number of canals and sections of deteriorating marsh sites. The sites vary in size, depth, percent of vegetation coverage, and degree of impoundment.

Soil investigations found them to be a "Timbalier-Belle Pass associate" characterized by very fluid organic soils overlying a very fluid clay. A pre-construction over-flight provided current aerial photos of the area. The Parish subsequently entered into a professional service contract with Picciola and Associates, Inc. for surveying, technical specifications, advertisements, and administrative aspects of the project and contracted with Grillot Company, Inc. to dredge 26,600 cubic yards of material and deposit it onto four sites.

Before dredging commenced, retention levees were built, as needed, using a marsh buggy elevator, and monitoring stations were constructed by the National Biological Service of Lafayette, LA. The data to be obtained included: thickness of dredged material after deposition, diversity, compaction of the material over time, subsidence of pre-dredge pond bottom over time, subsidence over vegetation vs. subsidence over pond bottom, and changes of plant diversity/abundance/biomass over time as related to change in sediment cover.

The dredging itself took eight days to complete. The dredge, "Crown Point", was 85 feet in length and 24 feet wide and required a 4.5 foot draft. It had a 42-inch cutter head and could potentially dredge to a depth of 38 feet and discharge to a distance of 3,500 feet without a booster station. The dredge discharged at a 200 yd3/hr. rate through a 12-inch effluent line.

Although the project was designed to do a cost comparison of hydraulic vs. bucket dredging, it also provided the opportunity to study and determine if the environmental benefits of utilizing the bucket dredge method outweigh the additional costs. Monitoring of sites was conducted in June and October of 1996, and the sites were visited in January and March of 1997. A preliminary analysis of a small portion of the data collected at three ponds in Leeville, LA provided an indication of the amount of material accumulated and the levels of subsidence occurring. This admittedly preliminary analysis suggested that the deposited material did compact as expected. The material enhanced the sites and created new marsh in areas that were formerly covered by water. Existing vegetation appears to be thriving, and sprouting vegetation is visible throughout.

The project has shown that hydraulic dredging is a viable alternative to bucket dredging and can be effective not only in enhancing existing marsh but also in creating new marsh.

The Barataria-Terrebonne National Estuary Program believes that it is important to promote the use of hydraulic and other alternative dredging techniques that will beneficially use dredged material to enhance marsh areas. Thin layer deposition is one method that has fewer detrimental impacts than bucket dredging techniques and reduces the effects and degree of impoundment. Alternative techniques need to be explored as well. The costs associated with the dredging work may be slightly higher, at least initially, but the environmental benefits outweigh the costs in the eyes of many.

| Back to Index Page |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Sustainable Development

The phrase "sustainable development" and the concepts it embodies have, over the past ten years, become major factors in coastal management. To demonstrate the point, sustainable development will be one of the principal themes of Coastal Zone 97, a conference in Boston, MA in July of 1997.

The term was widely popularized internationally through the 1992 Earth Summit held in Brazil. Generally, "sustainable development" refers to the notion that we must utilize our resources in ways that will benefit the human and natural aspects of the environment, not only now, but also for the future.

We have dedicated the current issue of Coastlines to this theme. Many of the articles contained herein are taken from papers to be presented at Coastal Zone 97.

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Smart Development: Developers Are Seeing Green!

After countless stories of developers filling wetlands and bulldozing vegetation, it's easy to see why arguments often revolve around the environment versus development. Yes, there are occasions when developers replace Walden Pond with yet another strip mall. Development and urbanization have contributed to the degradation of natural systems worldwide, even affecting such distant areas as Antarctica. The demand for a choice between development or environmental protection obscures the fact that both are essential for society. Whether we like it or not, the urban landscape is changing and development continues to occur. The onus is on us, the planners and managers of resources, to strengthen the necessary link between quality or smart development and environmental protection.

Most people would agree that economic development is important for the survival and success of their community. At the same time, they may also advocate policies that promote environmental protection. This situation is complicated as the negative impacts of growth become more obvious and natural resources are depleted at exponential rates. This makes the balance between development and environment more difficult to achieve. "Smart development" or "smart growth" may make finding the

balance easier, as the design of communities and the built environment allow natural systems to function similarly to pre-development conditions.

There are many encouraging trends in the nation's development industry. The Michael T. Rose Development Company uses the concept of "eco-urbanism" in conducting their business. Eco-urbanism is an approach to land use and development that blends human habitat into the natural ecosystem. Recognizing that growth is necessary, eco-urbanism accommodates growth while minimizing land disturbance and maintaining the natural beauty of the land.

Buddy Milliken, a developer in North Carolina, believes that rather than being merely a place to live, work, shop, and play, neighborhoods should function within an ecological system. Milliken clusters development thus freeing land for wildlife habitat, forests, and agriculture. Clustering development also brings people physically closer together and encourages interaction, imperative for a functioning neighborhood.

The yet-to-be developed Haymount community in Caroline County, Virginia is planned with environmental and social goals in mind. For example, the site plan includes details about advanced wastewater treatment, including the use of constructed wetlands and other biotechnical measures. In order to increase sustainable agriculture in the region, Haymount will include a farmers' market and an organic farm. The 1,600 acre residential and commercial site will have playgrounds and parks in each neighborhood. Native plant species will be used in the landscaping and 70% of the land will be left in its natural state.

While examples such as those listed above are occurring at an increasing rate, much improvement is still needed to reconcile environmental protection with development. Presently, many incentives exist to build sprawling development fueled by federal and state highway expansion and guaranteed mortgages for single family houses, but not multi-family or mixed-use development. These incentives often result in low density development that eliminates public open space and natural areas.

Led by Peter Calthorpe and others, many planners advocate environmentally sensitive types of development. Calthorpe argues that nature should provide the order and underlying structure of the metropolis. Estuaries, mountains, and rivers form natural boundaries that can lend a unique character and identity to neighborhoods and communities, however, the building of sustainable communities cannot occur without long-term regional planning efforts. Planning predominately occurs at the local level where regional impacts of development are often ignored. Looking beyond political boundaries is essential in thinking about sustainable development.

Increasingly, the success of environmental protection efforts depends on the level of involvement and sophistication of local government. As the state of the knowledge improves and the causes of environmental problems are identified, it is clear that local government must participate in the improvement of natural systems. As this trend continues, many local governments, understanding the inflexibility of existing regulations, are amending local ordinances to provide developers with

opportunities to be innovative and creative.

There is a common misperception that environmentally sensitive development costs more money. As studies have shown, there is actually a savings to the developer to build higher density residential developments. These savings are realized through lower excavating, landscaping, grading, and paving costs, as well as savings in road building, storm drainage and water and sewer service. Similar cost savings are achievable in commercial development as well.

Prince George's County, Maryland actively promotes an innovative development technique they call "low impact development." Recognizing the difficulty in complying with numerous and complicated regulations and regulatory agencies as well as the fact that current development practices tend to create the mess and then clean it up, Prince George's County developed an environmentally sensitive approach to development. Low impact development promotes the preservation of natural resources and the hydrologic function of the site, maintaining water quality, and minimizing site disturbance. The county currently provides developers with opportunities to learn about how low impact development techniques can save time and money through workshops.

In an attempt to promote the concepts of smart growth, the US EPA is in the process of organizing a workshop to highlight cost-effective, best management practices for infrastructure and development. The goal is to reach a non-traditional EPA audience that may not see itself as having a role in water quality issues or in delivering environmental services. Real estate developers, bankers, lenders, and other financiers; architects and landscape architects; transportation, urban, and environmental planners; engineers; port authorities; utilities; and historic preservationists will all be recruited for their participation in this workshop. Announcements with more detailed information will be available in late spring.

While the choice to continue to develop has been made, the type and quality of development is open for debate. Planners and natural resource managers should encourage smart development. By promoting environmentally sensitive development we can save our critical habitats and landscapes and encourage economic development.

For more information about the upcoming workshop, contact Jessica Cogan, US EPA OCPD, 499 South Capitol Street, SW, Washington, DC 20003, Phone: (202) 260-7154.

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Update on BIOWNET

We first reported on the Barrier Island Ocean Watch Network (BIOWNET) in our Fall 1994 (Vol.4 #4) issue. At that time the program had contacted 55 barrier island communities in 10 states, establishing a computer network to allow the exchange of ideas and discussions of problems common to such communities--water quality, protection of wildlife habitat, clean beaches, dune protection and rebuilding, and ways to live on barrier islands in a responsible and sustainable way. Since that time, the list of identified barrier island communities has expanded to almost 100. The group has also invited the participation of New England barrier beach communities.

For further information, contact Frederick L. Bach, BIOWNET, 44 Sunrise Drive, Montvale, NJ 07645, Phone: (201) 391-3902, Fax: (201) 391-4562, E-Mail: fbach@igc.apc.org.

Articles can be received from the BIOWNET computer bulletin board by transmitting the following e-mail message:
TO: majordomo@igc.org
Subject: [leave blank]
Body of Message: subscribe biownet-1

Articles can be posted by sending them to the following e-mail address: env. biownet@igc.apc.org

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

The Clean Water State Revolving Fund Program--An Innovative Partnership

The Clean Water State Revolving Fund program is an innovative method of financing a range of environmental projects. Under the program, the USEPA provides grants or "seed money" to all 50 states plus Puerto Rico to capitalize state loan funds. The states, in turn, make loans to communities, individuals, and others for high-priority water-quality activities. As money is paid back into the revolving fund, new loans are made to other recipients that need help in maintaining the quality of their water. Currently, the program has over $10 billion in assets.

The State Revolving Fund program is a powerful partnership between EPA and the states. It allows states the flexibility to provide funding for projects that will address their highest priority water quality needs. While traditionally used to build or improve wastewater treatment plants, loans are also used increasingly for:

- agricultural, rural, and urban runoff control
- estuary improvement projects

- wet weather flow control, including stormwater and sewer overflows
- alternative treatment technologies.

The program allows federal, state, and local agencies to leverage limited dollars. Because of the fund's revolving nature, the federal investment can result in the construction of up to four times as many projects over a 20-year period as a one-time grant.

A major benefit for municipalities and other loan recipients is the substantial financial savings they can realize. When funded with a loan from this program, a project typically costs much less than it would if funded through the bond market.

Many states offer low-interest-rate loans to small and disadvantaged communities, providing an additional boost to get projects started. For example, a state can make a zero-percent loan to a community for 20 years, saving the community 50 percent of the total projects costs over a similar loan at 7.5 percent.

The Clean Water State Revolving Fund program's primary mission is to promote water quality. Besides financial savings, loan recipients can realize significant environmental benefits, including protection of public health and conservation of local watersheds. Loans for such infrastructure projects also tend to stimulate local economies by encouraging commercial development and construction. **Eligible Projects: What's In It For You?**

Since the program is managed largely through state agencies, project eligibility varies according to each state's program and priorities. Eligible loan recipients may include communities, individuals, citizens' groups, non-profits, and others. Loan funds may be used to improve the quality of watersheds through a wide range of water-quality related projects. Loans may also be used for the protection of ground water resources.

Recently, state programs have begun to devote an increasing volume of loans to nonpoint source, estuary management, and other water-quality projects. Eligible nonpoint source projects include virtually any activity that a state has identified in its nonpoint source management plan. Such activities include controlling runoff from agricultural land, conservation tillage and other projects to address soil erosion, development of streambank buffer zones, and wetlands protection and restoration. Estuary management projects may include any of the activities above, as well as restocking fish, restoration of wildlife habitat, provision of marine sewage pump-out facilities, and others.

Recipients may use loans for the planning, design, and construction of publicly owned wastewater treatment facilities or to build or rehabilitate sewer collection systems. Urban wet weather flow control activities, including stormwater and sanitary and combined sewer control measures, are also eligible for funding.

The EPA encourages its state partners to use watershed planning and improved priority setting systems to

choose projects that address the greatest remaining environmental challenges. Because of its flexibility and its focus on environmental results, the State Revolving Fund program is a common-sense partnership to improve America's water resources.

For more information about the Clean Water State Revolving Fund, or for a program representative in your state, please contact Clean Water State Revolving Fund Branch, US EPA, 401 M Street, SW (Mailcode 4204), Washington, DC 20460, Phone: (202) 260-7359, Fax: (202) 260-1827, Internet: http://www.epa.gov.

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

This Just In...

On 19 March 1997, the EPA announced allotments of Drinking Water State Revolving Fund monies to states. Each state will be allotted at least one percent of the funds available.

The Revolving Fund was established by the reauthorized Safe Drinking Water Act, signed by President Clinton in August of 1996, authorizes $9.599 billion through fiscal year 2003. The budget for fiscal 1997 includes $1.275 billion.

To view the Federal Register Notice about the allotment, please visit this site:
http://www.epa.gov/docs/fedrgstr/EPA-WATER/1997/March/Day-18/w6827.htm

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Understanding Recreational Use on Barrier Islands

Since the Fall of 1992, researchers from the University of North Carolina at Wilmington, have been studying the relationship between recreational use and its long term impact on the physical features of Masonboro Island, a barrier island managed by the North Carolina Division of Coastal Management. Masonboro Island is one of four sites that comprise the North Carolina National Estuarine Research Reserve. The purpose of this effort is twofold: 1) to document (measure, photograph, and write a narrative description) the negative impacts on the physical features of Masonboro Island due to recreational use, and 2) to determine how well the island's natural processes (erosion, overwash, wind-blown sand, etc.) mitigate recreational impacts over time. Masonboro Island lies off the coast of southeastern North Carolina, situated between the highly developed barrier island communities of Wrightsville Beach to the north and Carolina Beach to the south. The island stretches eight miles in length and is over 5,000 acres in area. Masonboro's ecosystem is predominately made up of intertidal marsh (4,427 acres) and upland beach (703 acres).

Recreation has always been a traditional use of the island. Camping, sunbathing, beachcombing, fishing, picnicking, hiking, and nature study are all popular activities there. Current management of recreational use is accomplished primarily through the use of on-site signs, brochures, and public presentations which

describe the island and appropriate recreational behavior. Volunteers from a local non-profit group (The Society for Masonboro Island) also participate in various island management projects. As the state nears completion of acquisition of private property on the island, the development of a long range management plan has been initiated by staff of the Reserve. A critical component of this plan is management of recreational use and its associated impacts.

During the first two years (1992-94) of the study, baseline recreation impact data were collected in the fall of each year. This data collection was based on the assumption that most impact generated by recreation would be visible after the heavy summer use season. The following spring (prior to the summer use season), the impact sites identified in the previous fall were revisited to determine how well the island's processes had naturally mitigated the identified impact areas in the short term (6 months). Once the baseline pattern of recreational use and short term mitigation was documented, only spring data were collected (1995-97). The spring data provide researchers with information to help understand the long-term ability of the island to mitigate recreational impacts.

To date, the results of this study have identified patterns of recreational use on the island, specific areas that experience short-term or long-term recreational impacts, and those locations where natural processes are most active in mitigating the impacts. The specific benefit of this research is in its direct application in helping the management staff of Masonboro Island develop a recreational master plan for the Reserve. This plan will concentrate recreational activity on those sections where the physical processes of the island appear to be able to mitigate the impacts from the current level of recreational use.

As an example, the south end of Masonboro Island (approximately three miles in length) can be characterized as a low, narrow beach, 60 to 150 feet wide, with no dune field and backed up by a tidal marsh. As such, the area is very susceptible to complete overwash by storm surge, especially during the winter. The results of this study have shown that no long-term recreational impacts exist on this section of the island due to the mitigating natural forces that are constantly reshaping the beach environment. With this knowledge, managers may elect to encourage more recreational use on the southern end of Masonboro thereby reducing visitor pressure on those sections of the island more prone to long term impact.

Today's managers of coastal recreation resources increasingly find that balancing the dual mandate of providing a satisfying experience for the recreator and protection of the associated natural resources is a difficult, if not impossible, goal to accomplish. As such, the broader benefit of this study may be in assisting managers of coastal recreation resources in better understanding the relationship between recreational use, its associated impacts, and the ability of the resource base to accept and mitigate these impacts. Only when this occurs can managers begin to develop appropriate plans to meet their management objectives.

For more information, contact Robert Buerger, Jeff Hill, or John Taggart, Department of Health, Physical Education, and Recreation, University of North Carolina at Wilmington, Wilmington, NC 28403-3297. Phone: (910) 962-3259, Fax: (910) 962-7073, E-mail: BUERGERB@UNCWIL.EDU.

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Florida Yards & Neighborhoods Sustainable Thinking - Sustainable Actions

For the first time visitor or new resident, most of Florida's water bodies appear as beautiful and healthy as tourism ads depict. But those more familiar with the area realize that problems lurk below the surface. The same problems that have launched a thousand water studies across the land did not spare this paradise.

Struggling fisheries, restrictions on shellfish harvest, loss of water clarity, and species decline were some of the reasons that has led to four Florida estuaries (Indian River Lagoon, Sarasota Bay, Tampa Bay, and, in 1995, Charlotte Harbor) becoming part of the National Estuary Program (NEP). Each quickly realized that runoff from residential areas is a significant source of the nitrogen and other pollutants entering their respective estuaries. Enough of these materials were attributed to landscape practices to warrant a targeted effort at finding a solution. The Florida Yards & Neighborhoods Program was created with the goal of reclaiming paradise through sustainable landscapes.

The NEP program managers compared notes and decided to unify their efforts and work with the

University of Florida. As the land grant facility in Florida, the university was already in the public environmental education business through the Cooperative Extension Service and the Sea Grant College program. The result was a series of common teaching materials but with a customized approach and emphasis for each estuary.

By 1994, the Florida Yards & Neighborhoods Program was operating in 12 counties. The most notable difference between areas was that some were working with neighborhoods as an educational and action unit and others were targeting the individual homeowner. Successes and frustrations were noted in both approaches. Program emphasis was also influenced by priorities of funding sources.

The Florida Yards & Neighborhoods Program recognized a few fundamental truths about spreading environmental messages in the state. One of these truths is that most of the rapid population growth consists of adult migration from other states. Consequently, the educational lessons must be offered on a continuing basis. Another truth is that the landscape industry is big business in Florida and must have a sense of ownership in any program that tries to change landscaping practices. The third important truth is that the messages must reach and relate to each individual so that a collective consciousness results. With these truths in mind, a multi-faceted outreach program has evolved.

Specific groups of people are targeted for particular educational messages. The primary focus group is the resident population that makes landscape decisions. This includes both individual homeowners and property owners, and also managers that hire landscape contractors or maintenance services. A second target group is the landscape professionals. For landscape architects, contractors, nurseries, and maintenance companies to positively respond to changing consumer demand, they must be prepared to offer environmentally friendly materials and services. A third audience in this marketing strategy are those public agencies and private companies involved in land development and management and in real estate.

Two outreach projects involving private enterprise are particularly worth noting. Home Depot started a pilot project in 14 southwest Florida stores in 1996. Their participation includes Florida-friendly yard tips in both their advertising flyers and in-store displays. They are also offering Florida Yards & Neighborhoods educational programs in the stores once a week and are carrying several University of Florida horticultural publications. The Home Depot associates working in the garden centers and related areas are also receiving structured educational training by the Cooperative Extension Service. Another private concern that has embraced Florida-friendly landscaping concepts is the Walt Disney Company. During the 1996 EPCOT Spring Flower and Garden Show, Disney and the University of Florida created a model Florida Yard exhibit that was staffed by Master Gardeners and Extension personnel. This project is being repeated for the 1997 show from April 18 through June 1. The Disney organization also serves as a very visible example of a major landowner that uses E.L.M. (Environmental Landscape Management) in their everyday operations.

Support for the Florida Yards & Neighborhoods Program has primarily been from grants in its first four years. The National Estuary Program, Water Management Districts, and the Florida Department of

Environmental Protection have provided the majority of the funds. Within each area, additional funding has come from local governments, special districts, and partnership arrangements. The Cooperative Extension Service, on a local basis, has provided in-kind office assistance.

A transition is currently underway to institutionalize the Florida Yards & Neighborhoods Program so that funding is an ongoing budget item and not subject to constantly evolving grant priorities. The goal among those who have been working in and with the program is to secure funding for personnel at the county level to reach each community and also have multi-county coordinators to develop materials and work on program expansion and broaden outreach. Grants will probably still be used as support for special projects and new initiatives.

The Florida Yards & Neighborhoods Program is growing and strengthening. Currently, over 20 counties are using some parts of the program and availability is expanding. Through this effort and related programs, sustainability is becoming a frequently used word in the Florida vocabulary. For sustainability to become a collective action, the concepts must become as universally recognized as the importance of brushing teeth for oral hygiene. This is how the journey to "Paradise Reclaimed" is being traveled in Florida.

For more information on this program in Manatee County, contact Allen Garner, University of Florida Cooperative Extension Service, 1303 17th Street West, Palmetto, FL 34221-2998, Phone: (941) 742-5986, Fax: (941) 721-6608.

Or in Sarasota County: University of Florida Cooperative Extension Service, 4600 Beneva Road, Sarasota, FL 34233, Phone: (941) 316-1200, Fax: (941) 316-1203.

Sidebar (163 words)

The Florida Yards & Neighborhoods Program has developed a number of materials and techniques to spread their message. They include:

- Publications
  - Florida Yards & Neighborhoods Handbook (a 60-page design and maintenance guide)
  - Florida Yard Stick poster
  - Brochures

- Audio/Visual Productions
  - "Reclaiming Paradise", the Florida Yards & Neighborhoods video (28 minutes)
  - Short video and audio promotional tapes for public service announcements
  - Specific topic video presentations

- Speakers Bureau
  - Presentations and classes by Cooperative Extension and Estuary Program staff, Master

Gardeners, and other volunteers

- Demonstration Landscapes
  - Conveniently located, publicly accessible demonstration landscapes have been
  - constructed in several communities
  - School yard projects
  - Temporary landscape displays for specific events
  - "Certified Florida Yards" designated in many neighborhoods

- Yard Advisors
  - Master Gardeners evaluate and certify yards
  - Master Gardeners provide answers and advise through Cooperative Extension Service offices

- Displays
  - Permanent educational displays or interpretive stations at demonstration
  - landscapes and government facilities
  - Temporary or seasonal displays in cooperation with private enterprise and community events

- News Releases

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Michigan's Great Lakes Coast: Revitalizing Urban Waterfronts

As in cities across the nation, Michigan urban areas experienced neglect and deterioration in the middle of the twentieth century. Not only have large numbers of city residents relocated, but industries and retail stores have also left their urban location for greener pastures. What is left behind in the cities is abandoned commercial property, under-utilized infrastructure, a reduced tax base, and urban decay.

Everyone knows that revitalizing urban areas is expensive and complex, but as more planners and managers are becoming aware, redeveloping within population centers, with existing infrastructure, is actually less expensive in the long run than sprawling into the countryside, and is a good investment in our cities. Urban problems become opportunities if examined from the right perspective. The most successful endeavors are the result of community leaders and residents recognizing and capitalizing on the history, location, and other attributes that make their city special. Professional associations and planning centers provide good forums for exchange of ideas and information on techniques that work. Many state and federal programs also provide technical and monetary assistance to local communities.

The Michigan Coastal Management Program, administered by the Michigan Department of Environmental Quality, provides grant funds for a wide variety of coastal-related projects, including re-development of urban waterfronts. Hundreds of projects have been funded since Michigan's program received federal approval in 1978 under the authority for the federal Coastal Zone Management Act. Planning, site design, low-cost construction, and historic preservation/restoration projects are all eligible for these matching grants. The following is a sampling of urban waterfront projects supported with Coastal Management Program Funds:

L'Anse: Waterfront Parkway

The Village of L'Anse is situated along the shore of L'Anse Bay within Lake Superior's Keweenaw Bay. Historically, the L'Anse waterfront was industrially oriented. A large dock, constructed in the 1870s, accommodated ore and freight shipments. This dock is no longer usable and the harbor has not served local industries for many years. The L'Anse community has implemented several phases of a master plan to revitalize its waterfront by re-constructing the boat launch and marina basin, acquiring property and developing a public park and picnic facilities, and creating green space and a pathway along the shoreline. The pathway and park developments have helped to enhance the quality of life for local residents and increase the number of visitors to L'Anse. Local business are expanding, and new investments are being realized. Future projects may include acquisition of additional shoreline property and extension of the waterfront pathway.

City of Essexville: Essexville Waterfront Assessment

The City of Essexville's commercial and industrial facilities are located along the Saginaw Bay of Lake Huron. This stretch of mixed-use waterfront has provided water access for Great Lakes freighters, recreational boating, and shoreline fishing. A majority of the city's waterfront is occupied by several large industrial developments, three of which utilize freighter transport of materials. Over the years, several waterfront businesses have relocated, leaving vacant or under-utilized properties. This presents a special opportunity for economic redevelopment of the city's waterfront, along with public access development.

In 1997, the city will complete a waterfront assessment with funding assistance from the Coastal Management Program. The assessment will include: preparation for a real estate market assessment; review of vacant and under-utilized properties for appropriate re-use options; preparation of a cost estimate to re-utilize buildings based on the market assessment; delineation of unoccupied waterfront property and assessing the potential for development; and completion of an implementation strategy for private and public waterfront development.

Muskegon: Historic Restoration/Adaptive Re-use of the Union Depot

Several recreational and economic development projects have been implemented along the city's waterfront. In 1993, Coastal Management Program funding assisted Muskegon County, in cooperation

with the City of Muskegon, to complete a restoration plan for a train depot. The Union Depot is a beautiful, historic building on the shore of Muskegon Lake, which is navigable to Lake Michigan via a shipping channel. Train cars were historically loaded onto a car ferry at this location, and transported across Lake Michigan to Milwaukee, Wisconsin. The Union Depot property is owned by the county and is adjacent to a county park. The plan included historic restoration and adaptive re-use of the depot for office and meeting space, and a visitors information center with a small concession. Grant funds were secured through the Michigan Department of Transportation for the actual restoration and construction work. The Union Depot has been restored as planned and is now open to the public.

For more information, contact Maureen Houghton, Michigan Department of Environmental Quality, Land and Water Management Division, Great Lakes Shorelands Division, P.O. Box 30458, Lansing, MI 48909-7958, Phone: (517) 373-1950.

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Challenges Associated with Watershed Management

During the past decade, we have witnessed tremendous growth in the number of watershed management initiatives around the United States. Numerous federal and state programs currently facilitate the development, and implementation, of watershed planning and management efforts. Local governments and non-governmental organizations have been active in this area as well. The goal of much of this work is to ensure the sustainable development of watersheds and their resources.

Why has there been this expansion of watershed management? In part, it stems from the recognition that programs in previous decades often focused on specific issues and locations rather holistic approaches to ecosystems, watersheds, or other resource systems. Fragmented authorities and inconsistent policies developed as early attempts evolved. Current programs have recognized these issues and attempted to resolve them. But will these watershed management initiatives result in the sustainable development of watersheds and their resources?

What Are Some of the Challenges of Watershed Management?

Clearly, a number of challenges are associated with developing and implementing watershed management initiatives. Such programs tend to be resource-intensive requiring significant funding to develop computer models and geographic information systems, monitor environmental conditions, conduct research, implement demonstration projects, encourage public participation, and formulate and implement management actions. A second challenge is the cost of information. Existing data are often widely dispersed and expensive to gather. There may be a high price associated with monitoring and evaluating the effectiveness of management actions or with interpreting this information. As a result, scientists, agency officials, interest groups, and the public may disagree on the nature of problems and associated management actions. Consequently, it may be necessary to discover low-cost mechanisms to facilitate communication, make decisions, and resolve conflicts between major stakeholders.

As a result, many watershed management initiatives use collaborative decision-making. However, the process itself can pose formidable challenges. Some participants lack the flexibility to negotiate or view compromise as watering down their organization's mission. Some may have been bitter adversaries in the past and are reluctant to cooperate with one another. There may be ideological differences among participants. All of these factors can complicate the process of defining problems, setting priorities, and determining management actions.

Determining the appropriate scale of a watershed management effort is another challenge. There must be a close "fit" between the geographic scope of the watershed and the problems being addressed which typically requires working across administrative and political boundaries--a situation which brings its own administrative challenges. Similarly, there must also be a means of coordinating between different levels of government.

These coordination problems illustrate a classic "collective-action" problem. While improved management may result from interagency collaboration, there may be greater incentives not to cooperate. Different programs have different statutory and budgetary responsibilities. This can lead to differing priorities and constraints on agency action. Agencies may need to change their policies in order to implement management plans, something that may come about only at great political cost. Finally, sharing information and coordinating program efforts can be expensive. Unless there are clearly apparent benefits, such efforts may be resisted.

To overcome these problems, a watershed management program must maximize the incentives to cooperate and minimize those leading to non-cooperative behavior. Watershed management programs must also have a means of reconciling differing values and objectives among a wide array of stakeholders. Likewise, decision-makers should be capable of incorporating new information and responding to changing conditions. Watershed management programs need to encourage learning and must adapt to changes in environmental, political, economic, and socio-cultural conditions. Administrative arrangements resistant to change are unlikely to succeed.

Can Programs Overcome these Challenges?

Watershed planning efforts of prior decades, like the Clean Water Act's Section 208 program and the federal river basin planning program, were largely unsuccessful because they could not surmount the challenges described above. What remains to be seen is whether current watershed management initiatives will meet with greater success. While the challenges appear formidable, there is cause for a great deal of optimism.

There have been major advances in our understanding of how ecological systems function. We now have a greater comprehension of both the causes and effects of water quality and habitat degradation. Moreover, the current round of watershed management initiatives is focusing more attention on addressing issues on an ecosystem-wide basis, with emphasis on public participation and collaborative decision-making.

As mentioned above, there are a number of promising federally-funded watershed management initiatives currently underway around the country. The EPA's National Estuary Program (NEP) has approved management plans for 10 estuaries and facilitated the implementation of numerous demonstration projects. The EPA has also funded a number of watershed management projects pursuant to the Section 319 Nonpoint Source Management Program. Ohio, for example, has used Section 319 funding to facilitate the development of local watershed management plans around the state.

A number of notable watershed management efforts have also been initiated at state and local levels. Vermont has developed a management plan for the Lake Champlain Basin. Rhode Island has developed special area management plans for the Salt Ponds and Narrow River watersheds. New Jersey has had considerable success in improving water quality the Navesink River and Passaic River watersheds. North Carolina is in the process of developing management plans for each of the state's 17 river basins and has developed a nutrient trading program in the Tar-Pamlico Basin. These are just a few of the many examples of watershed management initiatives currently underway around the country. Only time will tell whether these programs are able to make the types of administrative and institutional changes necessary to ensure the sustainable development of these watersheds. However, the experiences of these programs certainly give cause to be optimistic.

For more information, contact Mark T. Imperial, School of Public and Environmental Affairs, Indiana University, Bloomington IN 47405. Phone: (812) 855-7980, Fax: (812) 855-7802, E-mail: mimperia@indiana.edu. **Sidebar**

Some Worldwide Web Sites that Disseminate Information on Watershed Management

http://www.epa.gov/ecosystems
http://www.epa.gov/surf/
http://www.epa.gov/epahome/programs.html
http://www.epa.gov/glnpo/
http://www.great-lakes.net/
http://www.glc.org

http://www.chesapeake.org
http://web.gmu.edu/bios/
http://www.bae.ncsu.edu/bae/programs/extension/wqg/ http://www.h2osparc.wq.ncsu.edu/
http://www.ctic.purdue.edu/kyw/kyw.html

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Agricultural Community & Padilla Bay NERR Team Up to Address Nonpoint Source Pollution

Though it was springtime, and they might have been out planting, a group of commercial farmers shared coffee and doughnuts with agency staff, researchers, and others involved in the farming industry, hammering out a plan to use 100 acres down the road to demonstrate sound farming practices. Through months of biweekly, early-morning meetings, the group collaborated to prioritize issues, develop a mission, and create a plan for researching the connections between farming and water quality.

The Padilla Bay Demonstration Farm

The Padilla Bay National Estuarine Research Reserve is located in a northeastern bay of Puget Sound, WA, and encompasses one of the largest intertidal beds of eelgrass on the west coast of the U.S. This shallow estuary, cut off from the Skagit River which formed it, receives much of its fresh water from a relatively small watershed of residential, industrial, timber, and agricultural lands. Surface water enters the bay through a series of sloughs and ditches which drain the flat, low-elevation farmland which was diked in the late 1800s.

Not only is Padilla Bay bordered by drained, diked cropland to the south and east, but over half of its 23,000 acre watershed is in high-intensity, row crop agriculture. Agriculture is a major industry in the fertile Skagit River delta, the most important crops being peas, grains, seed crops (beets, cabbage, spinach), flower bulbs, potatoes, and other vegetables. Researchers in Padilla Bay have long been interested in the effects of agricultural practices on water quality and ecosystem health in the bay, and have hoped to address long-term solutions to these problems using the Reserve and adjacent farmland as a research site.

In 1993, a study was commissioned by the Reserve to investigate the feasibility of a research/education program centered around a demonstration farm. Conducted by Washington State University (WSU), the study evaluated the environmental issues associated with commercial agriculture and proposed problem-solving strategies and educational methods. In March 1994, the Reserve purchased a farm adjacent to the southeastern portion of Padilla Bay. It proved to be an ideal site for research and education, representative of the typical reclaimed tidelands of the delta and highly visible to the public. It consists of 100 acres of low-lying farmland, 2.5 acres of buildings, drainage sloughs, and a sea dike. The sea dike, constructed initially by hand in the late 1870s, protects the site from tidal inundation and serves as a part of a very popular public walking trail. Artificial drainage systems and dredged sloughs convey the farm's field drainage to the bay.

Collaborative Approach to Developing the Operational Plan

With funding from NOAA's Office of Ocean and Coastal Resource Management staff from the Reserve used a collaborative approach to develop an operational plan for the farm. An informal steering committee was formed, including representatives from federal agencies, Washington State Department of Ecology, the local conservation district, WSU Cooperative Extension, WSU's Research Division, the diking and drainage district, a local environmental group, farmers, and grower cooperatives. From the outset, including the farming community in the project was the highest priority. Reserve staff solicited input from farmers who both represented and were respected by the mainstream agricultural community.

Farmers were involved on the steering committee, but Reserve staff also held special meetings with individual farmers to solicit their opinions and input to the project. Concerns of the farmers were noted and addressed. Farmers were concerned that they have been increasingly perceived as "bad guys" by the public in regard to environmental issues. They felt that the public was unaware of all the efforts they were making on a regular basis, and that there was a lack of appreciation for the economic limitations under which they work. They expressed concerns about the effects of urban development, escalating land prices, and adjacent non-farming land uses on their operations. They were excited about the possibility of using the Demonstration Farm to educate the public about the efforts of the agricultural community to address water problems, and saw the project as being mutually beneficial to agriculture and public resource management.

While the Reserve approached the project from the standpoint of water quality and estuarine resource management, the "agenda" quickly grew to assimilate the concerns and interests of the committee

members. The final list of issues includes water quantity (flooding, erosion, low summer flow, drainage costs); water quality (septic systems, sedimentation, animal waste, residential use of hazardous products, nonpoint source pollution from row crop agriculture); forestry practices; farmland protection; and on-site impacts (nutrient loading, pesticide use, specific drainage practices).

The work for 1997 is scheduled to include:

- the establishment of sites for annual water quality and quantity measurement both on and off-site;
- development of a hydrologic model and design solutions to address drainage impacts on the Demonstration Farm and surrounding farmlands;
- establishment of conservation practices on the Demonstration Farm, including use of cover crops, and buffer zones;
- and, development of promotional/educational information about the Demonstration Farm for presentation to the public and special interest groups.

The partnership approach, though perhaps not a quick or painless way to plan a project, was highly effective in assuring the support and participation of the agricultural community. Through collaboration, beginning with the earliest phases of the project and continuing through implementation, local farmers have a stake in the process.

For more information, contact Terry Stevens, Padilla Bay NERR, 1043 Bayview-Edison Road, Mount Vernon, WA 98273, Phone: (360) 428-1558, Fax: (360) 428-1491, E-Mail: tstevens@padillabay.gov.

sidebar

Mission Statement for Padilla Bay Demonstration Farm

Utilize the Padilla Bay Demonstration Farm to improve water quality and individual awareness about the importance of water quality and quantity within Padilla Bay, its watershed, and the Puget Sound Basin by:

- monitoring and evaluating nonpoint pollution impacts to Padilla Bay , its watershed, and Puget Sound;
- minimizing nonpoint pollution impacts through demonstration, education, and research projects which evaluate production agriculture and innovative agricultural techniques;
- considering the economic and informational needs of local farmers;
- emphasizing agriculture's value and importance to the community; and
- encouraging public participation and education about nonpoint pollution and farming practices.

| Index to Coastlines Spring 1997, Issue 7.2 |

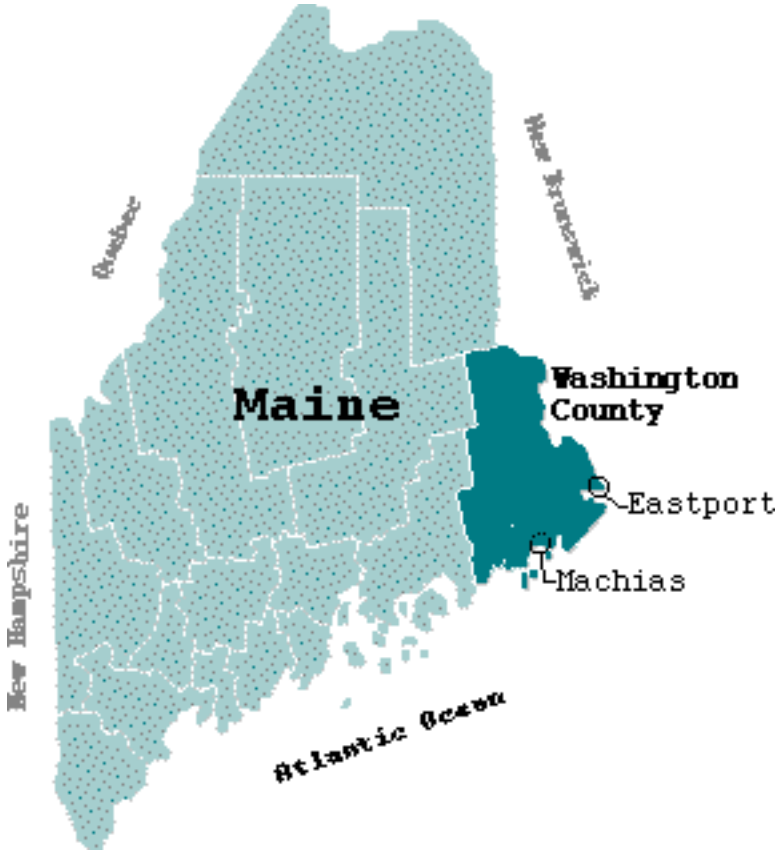
COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

The Other Maine: Investing in Coastal Washington County



The bumper stickers on the full-size pickups favored here read: I'M FROM THE OTHER MAINE---WASHINGTON COUNTY. "The other Maine" refers to the long-held notion that there are two Maines: the more populous, wealthy south and the remote, poor, sparsely settled north. Within the latter is Washington County, an impoverished coastal county in a state where economic growth and wealth is concentrated in the coastal zone. Physically, Washington County is vast, encompassing 2,500 square miles of blueberry barrens, wetlands, lakes and forests. Yet its population numbers only 35,000 and hugs the long and intricate coastline. Theirs is an almost purely natural resource economy with a few bright spots: salmon aquaculture, wild blueberry production, and forest products. Nearly four times as many Washington County residents work in the agriculture, forestry, and fishing sectors as do Mainers as a whole, with many of the jobs seasonal. The county's unemployment rate (currently around 10%) is routinely twice the national average or more and a considerable percentage of its citizens live in poverty. With only eight firms employing more than one hundred people, Washington County is a place of small businesses and self-employment. Like many poor places, it must overcome the dual hardships of remoteness and lack of capital.

The economic revival of Washington County is a perennial conundrum for Maine governors and one that is routinely addressed with state and federal subsidies, but many believe that the county's natural resources hold further potential in the areas of marine resources, agriculture, and nature-based tourism. Beginning in 1995, the Maine Coastal Program chose to test this proposition by establishing a working relationship with people and institutions in Washington County. In the past, the Program has made investments in specific coastal projects--such as waterfront facilities--but never focused on improvements to an entire regional economy. It has become clear that the approach must be based on the character of the place and the people who live and work there. And there's no substitute for having a

trusted, competent local partner in this work.

The work with Washington County began with two intense planning sessions to determine the best sectors of the economy for state investment. Residents smelled in this the strong aroma of "strategic" planning and were impatient to get underway. The Coastal Program, several other state agencies, and the Sunrise County Economic Council, Washington County's fledgling non-profit economic development organization, agreed on a Coordinated Investment Strategy for the county. It includes measurable outcomes such as increases in acres in cranberry cultivation, jobs in aquaculture, areas open to shellfish harvesting, tons of cargo shipped, and restaurant and lodging sales.

To date, the venture has taken two tacks; financial investment and creating better working relationships between Washington County and agencies of Maine state government. The first year's investments of roughly $250,000 have been made in a variety of ways. A contract between the Coastal Program and the Economic Council includes several tasks oriented at building capacity in the organization and the region. Also, the Council funded over a dozen small projects based on the Coordinated State Investment Strategy (See sidebar). Two other organizations were funded directly for shoreline surveys, production of cultured softshell clams, and outreach to local shellfish committees related to stock enhancement (the Beals Island Regional Shellfish Hatchery) and for the purchase and repair of historic McCurdy's Smokehouse (Lubec Landmarks).

Another task of the Coastal Program has been to serve as an advocate for Washington County to state agencies to ensure that they know what this region of Maine needs from its government. To this end, many agencies have appointed liaisons who serve as an initial point of contact for Washington County interests. This kind of simplified access to government can do a lot to overcome the barrier of sheer physical distance. Further, the Maine Coastal Program and the Sunrise County Economic Council meet quarterly with Governor Angus King's Economic Development Cabinet to apprise these policy makers of progress on the project.

Focused financial investments, better access to state government, and an honest working relationship with people in a distressed region of Maine is the formula for economic development. Although, at reduced levels, the Coastal Program plans to invest in the region for at least another two years. It may be awhile before it is known whether this support has made a difference in Washington County. The lingering question is, "Will the relationships that have been formed and the capacity that has been built sustain the region long after the infusion of capital dries up?"

For more information, contact Stephen A. Cole, Maine Coastal Program, 38 State House Station, Augusta, ME 04333-0038, Phone: (207) 287-8057, Fax: (207) 287-8059, E-Mail: steve.cole@state.me.us; or Katrina Van Dusen, same address, Phone: (207) 287-1497, Fax: (207) 287-8059, E-Mail: katrina.van.dusen@state.me.us. *****Sidebar*****

Maine Coastal Program
Sunrise County Economic Council Washington County Investments

- Sea Scallop Aquaculture Feasibility Study
- Marine Technology Business Development Strategy
- Several cranberry cultivation innovation pilots
- Cranberry Cultivation Web Page
- Development of the Washington County Leadership Training Institute
- Grand Lake Stream Trails Project
- Nash Lake (Calais) Conference Center Land Use Study
- Washington County Collaborative Tourism Development Project which includes: support for a fledgling museum;
    - compilation of an historic sites bus tour;
    - hospitality training for local employers/ees;
    - several kinds of facilities inventories;
    - formation of a heritage tourism network; and,
    - related marketing.

| Index to Coastlines Spring 1997, Issue 7.2 |

COASTLINES
Information About Estuaries and Near Coastal Waters

Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

Coastlines 7.2 Spring Issue

Hawaii Coral Card Available Free

To help celebrate the International Year of the Reef, staff at the Hawaiian Islands Humpback Whale National Marine Sanctuary on Maui created the Hawaii Coral Card. This waterproof card features the most commonly encountered coral species in Hawaiian waters, as well as tips on coral conservation.

The Hawaii Coral Card is available free at the Hawaiian Islands Humpback Whale National Marine Sanctuary, 726 South Kihei Road, Kihei, Maui, HI 96753, Phone: (808) 879-2818.

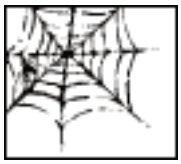
Urban Watershed Problems???

Watershed Protection Techniques, published by the Center for Watershed Protection, focuses on urban watershed restoration and protection tools. Hard science and "real world" applications are combined in articles prepared by experts and working professionals. Each issue features a series of technical notes that summarize BMP performance and longevity, wetlands research, and various other watershed protection tools. Feature articles summarize research in terms of its application to various locales, and an open forum section provides lively discussion on controversial watershed issues.

For a sample of their offerings, visit their website at http://www.pipeline.com/~mrrunoff/ or contact the Center for Watershed Protection at Phone: (301) 589 1890, Fax: (301) 589 8745, or 8737 Colesville Road, Suite L-105, Silver Spring, MD 20910.

The Center for Watershed Protection is a non-profit (501 (c)(3)) corporation "dedicated to finding new, cooperative ways of protecting and restoring watersheds".

| Index to Coastlines Spring 1997, Issue 7.2 |



Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

Disclaimer: The information in this website is entirely drawn from issues of newsletters published between 1994 and 2002 and these issues will not been updated since the original publication date. Users are cautioned that information reported at the time of original publication may have become outdated.

COASTLINES

Information About Estuaries and Near Coastal Waters

Coastlines is a publication of the Urban Harbors Institute at the University of Massachusetts, Boston; Richard F. Delaney, Director. The environmental services firm of Horsley & Witten, Inc. Of Barnstable, MA produces *Coastlines*.

It is prepared in cooperation with the US Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds under cooperative agreement #X-824-602-01-0.

The contents of this document do not necessarily reflect the views and policies of EPA or the Urban Harbors Institute, nor does mention of trade names or commercial products constitute endorsements or recommendations of use.

Please let us know how we are doing, if you have something you would like to include in an issue, or what we can do to make *Coastlines* even better as we go along. You can contact us at:

Coastlines Editor, P.O. Box 7, Barnstable, Ma 02630
Phone: (508) 362-5570 Fax: (508) 362-5335

e-mail: ed_coast@horsleywitten.com

To subscribe to Coastlines, send email to:

coastlines@umbsky.cc.umb.edu

| Index to Coastlines Spring 1997, Issue 7.2 |