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Information About Estuaries and Near Coastal Waters Summer 1994, Volume 4, Number 3

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Challenge for Cape Cod Wetlands

What's a marsh worth?

To an ecologist, it's priceless. To an engineer, perhaps as much as \$100,000 per acre in flood control benefits. And to the average landowner, it's worthless unbuildable land.

But wait. Along comes the *Challenge for the Cape Cod Wetlands*, a two-year regional effort to identify and contact every private owner of wetlands in Barnstable County, Massachusetts, with the pitch that wetlands do have a value to landowners - as income tax deductions.



[About the Challenge logo](#)

"We wanted to do two things," said Mark H. Robinson, Executive Director of The Compact of Cape Cod

Conservation Trusts (see note below about The Compact), which sponsored the project. "First, we wanted to formally establish the fact that wetlands are crucial environmental assets with the people who most directly affect the fate of wetlands - wetland owners. Second, we wanted to encourage them to consider preserving wetlands through charitable donations to our non-profit land trusts. It's both an educational effort and a land acquisition program."

Robinson reports that this non-regulatory campaign has been seen as a model for the rest of the U.S. "We received grant funding for this project from the World Wildlife Fund, among others, because they liked the idea that we were using grassroots (volunteer land trusts) to reach out to other grassroots (landowners). It's not a complicated idea, but this was the first time in our region that wetland owners were solicited in a comprehensive, systematic manner."

Results to date, midway through the second year, are impressive. About 5,000 different owners have been contacted about the *Challenge*, representing more than two-thirds of Cape Cod's 64,500 acres of fresh and saltwater wetlands. Seven public workshops have been held across the county, attended by 350 people, and 17 new gifts of wetland were generated in 1993.

"We weren't expecting a flood of gifts of land, but we think that we planted a lot of seeds in a lot of minds. We'll get people thinking over time about donating their wetlands to our land trusts for permanent protection," said Robinson. The response has ranged from the one-line letter from an absentee landowner asking Robinson to draw up a deed immediately (which was done and signed), to the landowner who kept the readable, attractive brochure sitting on top of his desk for a full year before taking action. (For free copies of the brochure, contact The Compact.) Each of the Cape's land trusts prepared its own cover letter on its own stationery to emphasize the local angle, further encouraging recipients to respond to the appeal.

The *Challenge* employed a multi-pronged approach to get its message across. First, a targeted mailing was prepared and distributed to identified landowners. Local tax assessors' maps were cross-referenced with topographical maps showing wetland areas. Most town assessors were able to supply the land trusts with mailing labels of names and addresses of landowners from tax map and parcel numbers that were supplied to them by land trust volunteers.

The mailing not only included educational materials about wetlands, but enclosed a personal invitation to attend wetlands workshops in the community. Well-known biologists spoke at these workshops about the importance of wetlands as habitat, water quality filters, flood and erosion control areas, and their significance as recreational resources. The scientific pitch was supplemented by speakers from the land trust informing the audience of the tax advantages associated with gifts of land or conservation easements. (See *Coastlines* Vol. 4, No. 2.) Attendees were also invited to subsequent wetland field walks, led by trained naturalists, to reinforce the message that wetlands need strong protection (and to continue to cultivate the owners' interest).

"The local media was very supportive of our efforts," Robinson said. "They seemed to like the idea that

we were rallying around a theme such as wetlands protection and that it was our volunteers carrying the message, rather than a government agency." *The Cape Codder* newspaper editorialized that, by offering tax deductions for gifts of land, "...preservation and sound finance add up."

Wetland owners were targeted in the voluntary *Challenge* because they often feel imposed upon by regulatory strictures. In Massachusetts, wetlands protection laws are administered by federal, state, and town officials with overlapping jurisdictions. Wetland owners feel that they are repeatedly told by all of these government agents what they cannot do with their land: can't fill it, can't drain it, can't pollute it, can't develop it. The theme of the *Challenge* is to tell landowners what they can do with their land: donate it to charitable conservation groups and receive tax advantages for doing so.

Landowners were informed that while gifts of wetlands do not generate tax savings as large as gifts of buildable upland, they can still reward the donor. On Cape Cod, where salt marsh was historically important for pasturage and fodder, and inland swamps were cleared for intensive cranberrying, most wetlands have been carved into small lots. Therefore, many landowners could benefit from an income tax deduction generated by a gift of wetland, if they only knew about it. Analysis of lots in the town of Wellfleet, for instance, found that 13 percent of all parcels in the community contained at least some wetland.



Photo by Mark Robinson

Robinson reports that the most arduous component of the *Challenge* strategy has been the individual follow-up with specific landowners of priority wetland parcels. "Getting initial interest is easy; it's the phone calls, family interviews, and general handholding with donors, guiding them through the

conveyance process, that takes time, patience, and the gaining of their trust," he said. He believes, though, that the *Challenge's* theme and regional scope impresses many potential donors that they are part of a larger effort.

"Other people wonder why we are spending so much time worrying about seeking deeds and easements on essentially unbuildable parcels like wetlands," Robinson further explained. "If you can't do anything with wetlands anyway, why bother devoting wetlands to conservation purpose in a deed?, is a common question. My answer is that first of all, for all of our protective regulations, we are still losing wetlands, particularly around their edges. Owning them for conservation takes away any future temptation by private owners to try to make 'improvements' to the wetland. Secondly, we've seen efforts at the state and federal level in recent years to weaken wetland regulations, so what's not buildable now may become so in the future. Finally, by consolidating wetlands into land trust and/or government ownership, we can begin to design management plans for these critical areas in a more coherent fashion than when ownership is fractured into tiny private pieces."

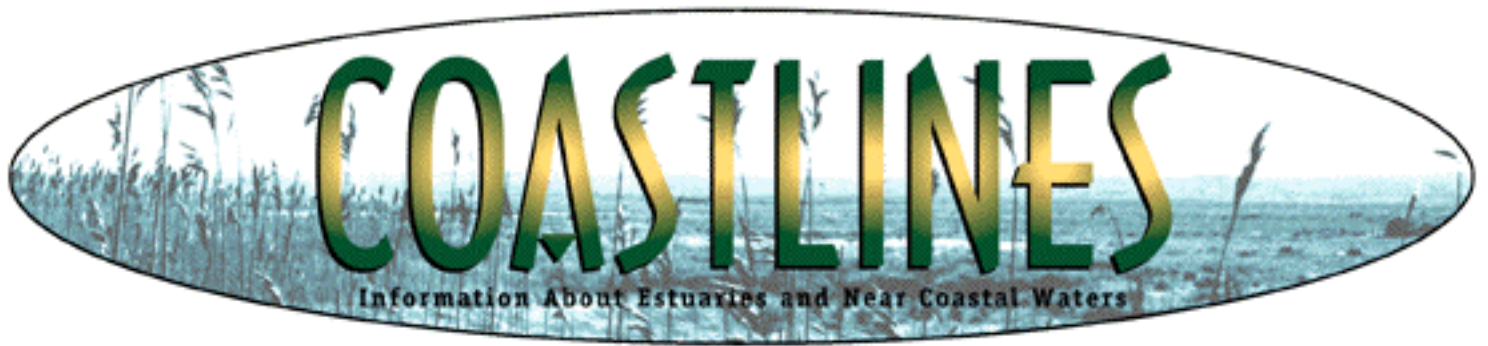
Asked if he encountered any surprises or mistakes in the *Challenge's* methodology, Robinson replied that he found some people who did not know that they owned wetlands. "Some of our summer residents are never here in the spring when the maple swamps are full of water and the peepers are out in force. By the time they open up their cottage in July, the swamps have dried and they look like any other woodland to the untrained ear and eye. They thanked us for telling them what they owned!"

"Also, we probably should not have advertised the fact that we could consider buying wetlands at bargain sale prices as one of the preservation options. Some of our shrewd landowners came out of the woodwork with no intention of making donations, but wanted top dollar for their marsh. When they found out we didn't have that kind of funding, they quickly disappeared."

As for the immediate future, the Challenge will continue with landowner follow-up and database refinement, and Robinson expects several more wetlands gifts by the end of the year.

Funding for the \$18,000 campaign was provided through local, state, and national foundations, including the World Wildlife Fund, National Fish and Wildlife Foundation, the Massachusetts Bay Program, the Sweet Water Trust, the Community Foundation of Cape Cod, Cape Cod Five Cents Savings Bank, and the Edward Bangs Kelley and Elza Kelley Foundation.

For more information about the Challenge for Cape Cod Wetlands, send a self-addressed, stamped envelope to the Compact of Cape Cod Conservation Trusts, P.O. Box 7, Barnstable, MA 02630. NOTE: The Compact of Cape Cod Conservation Trusts, Inc. is a regional, non-profit service bureau serving a coalition of 15 local land trusts and two watershed associations on Cape Cod. Founded in 1986, The Compact represents, through its member groups, almost 8,000 households in Barnstable County and has preserved over 2,000 acres of open space. Land trusts are non-profit conservation landholding organizations dedicated to acquiring and managing natural and scenic areas as protected open space.



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Reopening Shellfish Beds in Puget Sound

Editor's Note: In the February-March issue of Coastlines, there was a question in the Information Exchange department asking for information regarding shellfish bed reopenings. The following article highlights some successes in Puget Sound. We thank the [Puget Sound National Estuary Program](#) for contributing information used in the article, and encourage others to send related information for future stories.

Thanks to the effort of scores of people, from public officials to farmers to homeowners to volunteers, clam and oyster harvesting has recently been allowed again in at least four areas of Puget Sound. Although more than 20,000 acres of Washington's commercial shellfish beds still remain closed, there has been success in reducing pollution in some areas that had been closed for as long as 12 years.

Some of the most significant improvements have come from steps taken to reduce pollution from farm animal wastes and failed septic systems. Farms of all sizes cover extensive areas along the Sound, and each has several potential sources of contamination that contribute to pollution. Some of the mitigation measures employed include covering manure piles, constructing fences along streams to keep animals

out, rotating grazing areas to reduce runoff, and re-routing stormwater runoff from buildings so that it doesn't end up in surface waters. In the Burley Lagoon watershed (see accompanying map), at least 100 farmers have cooperated with the Kitsap Conservation District to make these kinds of improvements.

Also in the Burley Lagoon watershed, failed septic systems have been identified by inspectors from local health districts, and scores have been upgraded either voluntarily or, most often, by orders forcing them to make improvements. Inspectors have been examining up to 200 septic systems per year in the Burley Lagoon watershed, with 150 homes and businesses having made upgrades since the mid-1980's.

"Homeowners and farmers have worked hard to improve their sewage systems, farm management practices, and to stop the pollution that was damaging Burley Lagoon," stated Eric Slagle, an Assistant Secretary of the Washington Department of Health. "This process required a major commitment of time and money, and it's great to see that effort pay off."



[Map of Puget Sound](#)

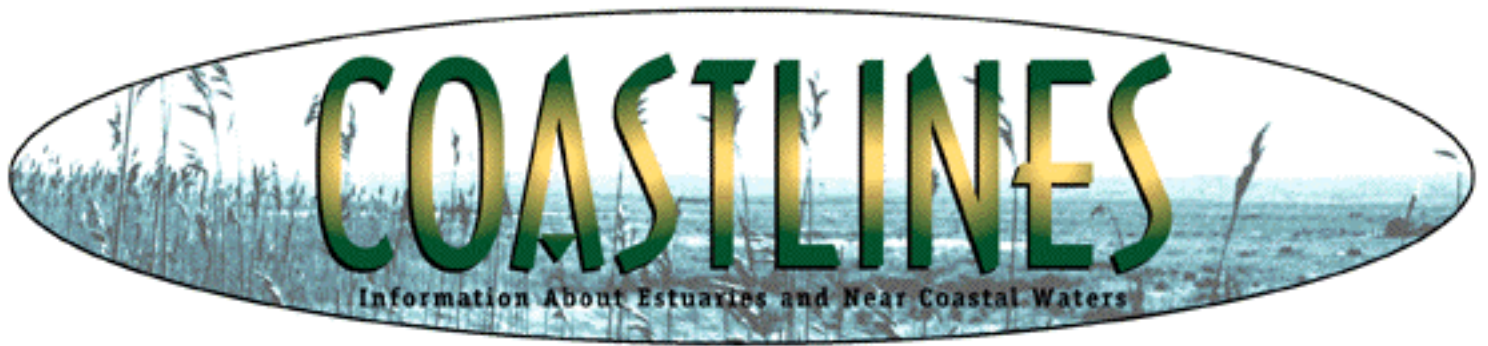
The improvements even extend to an unusual local source of contaminants. On the tideflats of Dosewallips State Park on Hood Canal, harbor seals had been using a stretch of beach, causing pathogen contamination. A raft was constructed offshore for the seals to use, while the beach they had been using was fenced off. The result was that contaminant levels dropped and the stretch of beach was reopened to shellfishing.

New government regulations have contributed to the environmental improvements as well. An ordinance intended to reduce impacts in sensitive wetland environments was passed in Pierce County, along with growth management laws. Also contributing to this effort is the Puget Sound Management Plan. According to Nancy McKay, Executive Director of the Puget Sound Water Quality Authority, "the Burley project followed many elements emphasized in the Puget Sound Management Plan, including local action with state oversight, public/private partnerships, habitat restoration, and public education and involvement. This upgrade shows us that the plan is working, and can be used as a model for action in watersheds elsewhere in Puget Sound."

Representative Ron Meyers, D-South Kitsap, congratulated local officials and residents for their accomplishments in the Burley watershed at a community celebration in late 1993. "The people in this

area took the environment to heart and made things better by working together to clean up the water," said Meyers. "Now we have something positive to show for it."

For further information, contact Sheryl Hutchison, Public Information Officer, Puget Sound Water Quality Authority, (206)407-7330.



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The Clean Air Act and Chesapeake Bay Water Quality

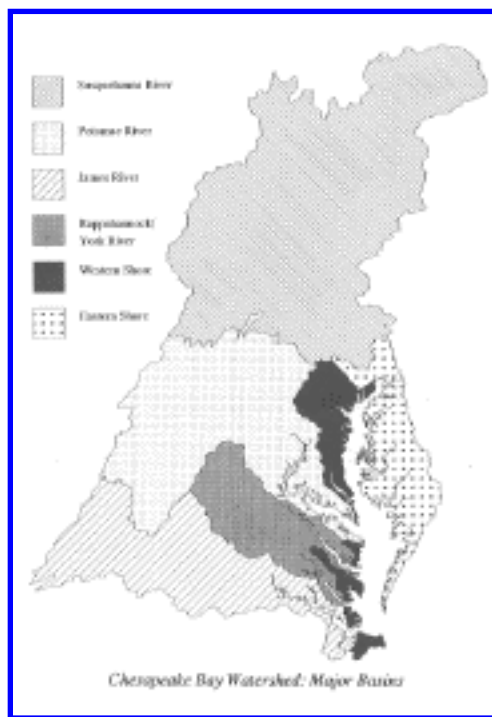
by Lewis C. Linker

With atmospheric nitrogen levels among the highest of any area in the country, Chesapeake Bay is an excellent study area for a problem that affects the entire country to one degree or another. Recognizing that excess nutrients are the primary reason for the Chesapeake Bay's decline in water quality, the Chesapeake Bay Program (CBP) partnership of federal, state, and local government entities signed the 1987 Chesapeake Bay Agreement, committing to a 40 percent reduction of controllable nutrients by the year 2000.

Using water quality models as decision- and policy-making tools to guide the cleanup and restoration, the partnership is in the midst of an extensive effort to achieve the reduction goal and then maintain that nutrient load as a cap for the future.

The watershed model stimulates the nutrient load from agriculture, urban lands, forests, point sources, and atmospheric sources throughout the watershed. In a holistic approach to regional air and water quality issues, the watershed model is linked to an estuarine model that stimulates the water quality of the

Bay. Coupled to the estuarine model is a sediment model that provides simulation of sediment nutrient sources and sinks, an ocean boundary model that stimulates the coastal input of loads under different nutrient management scenarios, and a hydrodynamic model that stimulates tidally averaged movement of Bay waters.



[Chesapeake Bay Watershed](#)

To determine the controllable nutrient load and to evaluate the efficacy of nutrient control strategies, the entire 64,000 square miles of the Chesapeake Bay watershed were simulated with the integrated set of water quality models of the watershed.

The total inventory of pollutant loads includes, to a significant degree, atmospheric deposition of nitrogen. The models were used to provide estimates of the proportion of the total delivered nitrogen load contributed by the atmosphere for all of the major basins. Then, estimates of the reductions of atmospheric deposition that are attributable to the 1990 amendments to the Clean Air Act (CAA) were made.

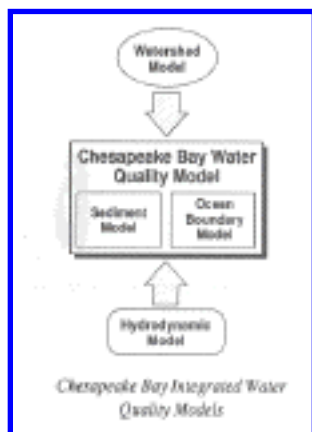
Atmospheric deposition of nitrogen arises from combustion processes that oxidize the normally inert atmospheric nitrogen gas to nitrogen nutrient forms. Processes such as automobile engine combustion and electric power generation create the nutrient form of nitrogen, chemically symbolized as NO_x. This form of nitrogen can be washed out of the atmosphere (known as wet-fall deposition) to be deposited on land and water surfaces by rainfall. Alternately, atmospheric NO_x can settle on land and water surfaces, a process called dry-fall deposition.

Atmospheric loads of wet-fall nitrate and ammonia were input into the model from National Atmospheric Deposition Program (NADP) sampling station data. The NADP stations, located across the country, provide actual data for the wet-fall component and, in the Chesapeake Bay watershed, the dry-fall component is estimated to contribute an equal load.

Because some of the nitrogen that falls on land acts as a fertilizer, some is denitrified (changed to nitrogen gas by bacteria in the soil), and some is taken up by algae in water, the model is programmed to estimate the contribution of atmospheric deposition to the actual delivered load to the Bay.

Model scenarios have determined that the reduction of delivered atmospheric nitrogen that can be attributed to implementation of CAA amendments of 1990 is 3.3 percent of the entire nitrogen load to the Bay. This reduction in load is significant because it will be counted over and above the point and nonpoint source nitrogen load reductions of 19.7 percent called for in the 1987 Chesapeake Bay Agreement.

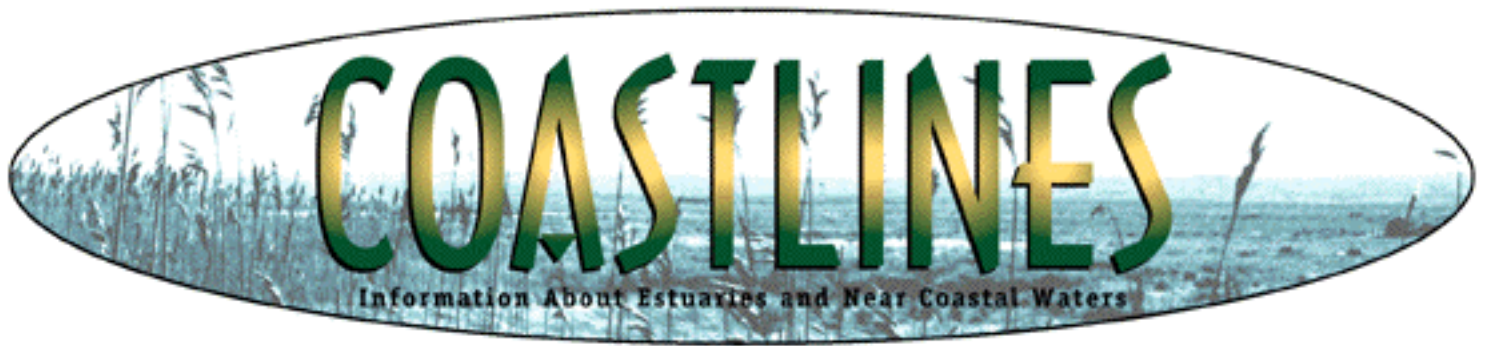
Work is now underway to improve the estimates of atmospheric nitrogen reductions based on the use of the Regional Acid Deposition Model (RADM). The RADM Model is a predictive model, while the current data are obtained exclusively by measurements of precipitation samples. With these model refinements, it will be possible to determine the efficacy of controlling the atmospheric sources of nutrients and the relative costs as compared to point source and nonpoint source controls. Also, the size of the Chesapeake Bay airshed can be determined - a key component in understanding all of the dynamics at work in nutrient loadings to the Bay.



[Chesapeake Bay Water Quality Models](#)

Applying these regional air and water quality models to the Bay area allows researchers to look at the total inventory of nutrient loads and therefore take a holistic approach to dealing with the issue. And because nitrogen has multiple effects on the environment by contributing to ozone depletion, acid rain, and water pollution, understanding the intricacies of nitrogen loading dynamics has the potential to pay big dividends in the future.

Lewis Linker is the Environmental Modeling Coordinator for the Chesapeake Bay Program. He can be reached at (410)267-5741.



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Note from Bob Wayland

Director of EPA's Office of Wetlands, Oceans and Watersheds

What is ecosystem protection? What is the watershed approach? How do they differ? How are they the same? These are questions I am hearing more and more. I would like to take this opportunity to provide a perspective from my EPA corner, and describe recent developments that should help clarify these questions.

Let me begin with ecosystem protection. At least from EPA's perspective, we made a giant leap forward when, on March 5, 1994, a group of assistant administrators and senior managers from EPA met in Edgewater, Maryland, to define ecosystem protection and to discuss strategies for ensuring that EPA programs worked to protect ecosystems. This high energy meeting, which I attended, resulted in a proposed strategy - the Edgewater Consensus - for ecosystem protection at EPA.

The Edgewater Consensus states that ecosystem protection is place-based environment management that is driven by the key environmental problems that occur in particular geographic areas. It relies on stakeholders in those places to define the problems, to set priorities, and to help with the solutions. As envisioned, such place-based environmental management would integrate the goals for long-term ecosystem health with those for economic stability.

I want to emphasize that the Edgewater group's view of ecosystems includes both human and nonhuman living systems. We agreed that protecting human health and welfare and protecting natural systems are integral to ecosystem management. Threats to people and natural systems from contaminated ground water, hazardous waste disposal, and air pollution are all included in our idea of essential elements of ecosystem protection. In the long term, sustaining healthy ecosystems will help us protect both the human and natural environment.

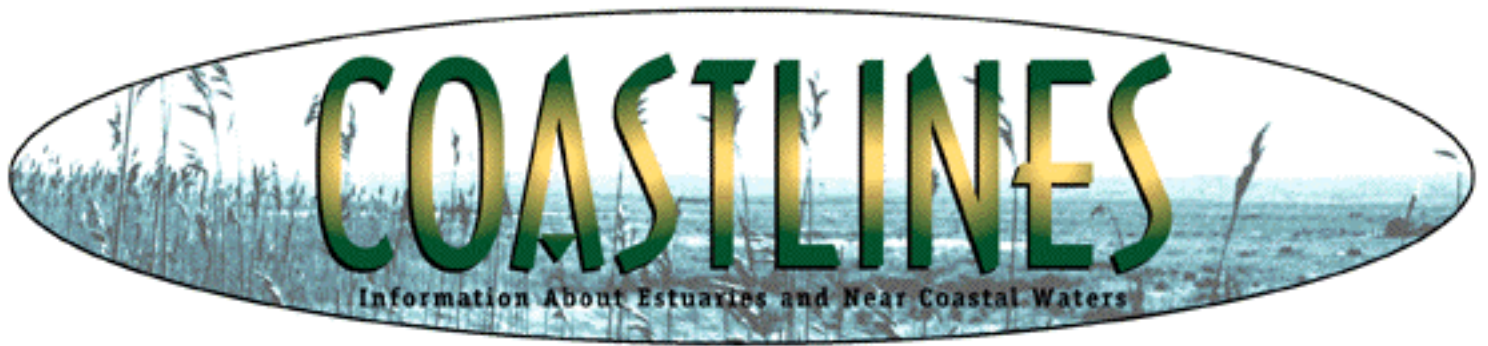
Let me now turn to the watershed approach, and how it is related to ecosystem protection. I like to describe the watershed approach as "ecosystem management within watershed boundaries." EPA's 1991 Watershed Protection Approach Framework Document states that the watershed approach provides a framework for the development of "watershed-specific plans that prevent, reduce, or abate environmental degradation and risks to ecological systems and public health from all stressors and all sources..." The framework document also describes the watershed approach as dependent upon good coordination of federal, state, tribal, and local governmental and nongovernmental programs; involvement of interested and affected parties (stakeholders); and an iterative process whereby the problems within watersheds would be identified, appropriate actions selected and implemented, success evaluated, and revisions made, as needed. EPA Administrator Carol Browner has reinforced our vision for watershed management. In congressional testimony advocating adoption of the watershed approach during Clean Water Act reauthorization, the Administrator said "The Clinton Administration envisions an approach to water resource protection that looks first to the ecosystem itself, evaluates its needs based on risk, and then tailors workable solutions to those needs through the participation of stakeholders in every phase of the process."

Of course, watershed boundaries are not always the most appropriate ones for ecosystem management. For certain living resources or ecological concern (e.g., migratory bird flight paths), other boundaries are more appropriate. In some cases an ecosystem may be a large geographical area (e.g., the Great Plains, the Mississippi Delta) within which smaller watershed management projects may contribute to broader ecosystem goals. Overall environmental objectives will determine the most appropriate "place" on which to focus.

EPA's role in place-based management may be less influenced by the place than by the commitment, capabilities, and concerns of the other organizations and the opportunity to complement and further them in a team approach. As described by the Edgewater participants, the EPA role in "place-based" environmental management will often be that of catalyst or enabler. For any given place, EPA would establish a process for determining environmental needs and would orient its work to meet those needs. EPA would help to define the vision, assist in convening collaborative efforts, bring to bear its expertise and authorities, and provide financial and technical assistance. I want to stress the importance of collaboration. EPA will not always be the lead but will frequently be a participant in an ecosystem management project convened by another entity such as another federal agency. Successful ecosystem management requires that all stakeholders play a role. At the federal level, a number of federal agencies will need to work together and build on each others' expertise and program responsibilities in order to assist locally-based efforts. In our work with watershed protection we have found these types of

partnerships to be very valuable, and I am sure the same will continue to be true for ecosystem management efforts that employ other ecosystem boundaries.

To conclude, the Edgewater Consensus reinforces and provides a further impetus for continuing our watershed efforts. Indeed, our watershed efforts provide a foundation for achieving the vision articulated in the Edgewater Consensus.



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From Marine Debris to Ecosystem Awareness

Focusing on public/private partnerships to reduce debris generated from marine vessels, several communities in the Gulf of Maine have begun programs to develop a comprehensive approach to collect and dispose of waste that is typically dumped into the marine environment.

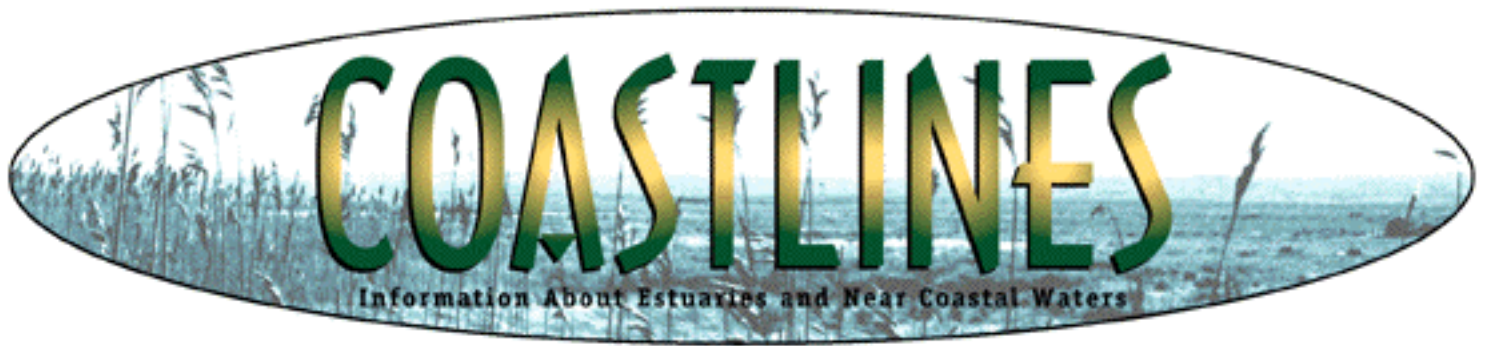
The Gulf of Maine Council has identified marine debris reduction as a priority, and the cities of Portland and Rockland, Maine; Portsmouth, New Hampshire; and Provincetown, Massachusetts, have begun programs. "The main reason that this program has received priority status is because it lends itself so well to public awareness and public involvement opportunities," said Craig Freshley, Senior Planner with the Gulf of Maine Council. "It is very tangible to people when they see a gull strangled by plastic, or dead fish washed up on the shore. Everybody can help by participating in shore cleanups and putting waste oil in collection containers."

So while marine debris is not the biggest environmental issue of the Gulf, it gets the public involved. And the hope is that as the public awareness of this program increases, it also means that overall awareness of the Gulf of Maine as an ecosystem increases. "We have to stop throwing trash in the Gulf

of Maine and respect it instead," said Freshley.

Many businesses have also gotten involved in the program. Donations of in-kind services like trash hauling, providing dumpsters, and posting signs on piers and along the coast have been provided by local businesses. One of Portland's largest radio stations has produced public service announcements and has done broadcasts live from the shore during cleanup days. And even a local dairy got into the act by donating five-gallon buckets that were used for oil collection.

For further information, contact Craig Freshley at the Gulf of Maine Council, (207)287-3261.



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An Epidemiology Study for Santa Monica Bay

Since it began five years ago, the Santa Monica Bay Restoration Project (SMBRP) Management Conference has worked on many fronts to carry out its mandate to build a clean and healthy future for Santa Monica Bay. The SMBRP has focused much of its energy on finding the answer to a fundamental human health question; "How safe is it to swim in [Santa Monica Bay](#)?"

Over the years, a considerable amount of anecdotal evidence has been collected that points to the existence of potential health risks linked to swimming in the Bay. Reports have been received of ear, eye, wound and intestinal infections, skin rashes, and other more serious illnesses that have allegedly resulted from swimming in Bay waters.

Investigations of possible sources and pathways have pointed to pathogens (enteric viruses and possibly pathogenic bacteria) that may be carried by urban runoff through storm drains into the Bay.

The magnitude of the problem is heightened by the fact that an estimated 40 million people visit Santa

Monica Bay beaches and more than 70 major storm drains empty directly into the Bay. Effluent from all these drains washes onto beaches or into the surfzone without treatment, potentially affecting thousands of beachgoers.

In response to public concern, SMBRP has been conducting research to establish the potential health risks posed by urban runoff in the surfzone waters. This research involves two phases: confirming the actual presence of human pathogens in stormwater effluent; and, conducting epidemiological studies of health effects on swimmers.

The first phase, carried out between 1989 and 1992, detected human enteric viruses at three storm drain locations, indicating contamination of supposedly separate storm drains by human sewage. As a result of the findings, signs have been posted near storm drain outlets on Bay beaches since 1992, cautioning bathers to swim at least 100 yards away from flowing drains.



Photo by the SMBRP

The next step will be to conduct an epidemiological survey ("epi-study") to correlate health effects, such as gastrointestinal illness, eye/ear/sinus infections, and skin rashes or lesions, with exposure to stormwater runoff in the surfzone. Exposures of primary interest are pathogens. Sufficient data will also be collected to allow a preliminary analysis of the effects of pollutants and possible interactions between pollutants and pathogens.

The epi-study will be conducted during the summer of 1995. Surveys at selected beaches will include asking beachgoers questions such as: "Have you been in the water at this beach? Have you experienced any itching in your eyes, pain in your ears, burning on your skin? Have you experienced any diarrhea, sneezing, or a sore throat?" Following the interviews, respondents will be asked about their health condition via telephone twice over the next 12 days. Concurrent with the beachgoer survey, water samples will be collected near storm drain outlets and analyzed for a group of indicator organisms, including enteric viruses. Analysis of survey results will allow researchers to determine if there is a correlation between swimming in waters contaminated by storm drains and the incidence of illness.

Support for conducting the epi-study appears promising. The California State Legislature passed a bill mandating state agencies to participate in the study, and many local cities and agencies have agreed to provide financial and in-kind services as well. On a larger scale, the epi-study and various follow-up actions are presented in the newly released Santa Monica Bay Comprehensive Conservation and Management Plan. These actions have the specific goals of:

- Identifying and eliminating the sources of contamination;
- Preventing the contaminated substances from impacting human health;
- Accurately assessing potential human health risks;
- Effectively informing the public of potential risks; and
- Improving the regulatory/management framework is needed.

The expectation is that, when the epi-study is concluded and follow-up actions are carried out, researchers at the SMBRP may well be able to answer once and for all the question, "How safe is it to swim in Santa Monica Bay?"

For further information on this study, contact Ms. Karen Caesar, Public Information Coordinator of the SMBRP, (213)266-7569.



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Sustainable Futures

Sustainable Development and the Delaware Estuary Program

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs," is how the [Delaware Estuary Program](#) (DEP) defines sustainable development. Deciding what that definition really means and how it can be translated into action in the Estuary were discussed at a recent forum in Philadelphia.

Forum participants agreed that there was one common theme or vision: conserving and working more efficiently with natural resources so that we may pass on to future generations a cleaner, healthier, safer environment; but agreeing on a definition of sustainable proved to be more of a challenge. The Global Tomorrow Coalition, one of the participants, has 64 definitions of its own.

In order to move beyond definitions, the participants developed a series of actions to be incorporated into the Comprehensive Conservation and Management Plan that are designed to work towards changing unsustainable practices, including:

- Build consensus on the environment, the economy, and community by assembling a panel of experts to hold workshops for state and local governments, public interest groups, and the business community;
- Make education about sustainable development a high priority;
- Gather and assimilate information on constraints to growth and the amount of growth the region can sustain;
- Identify indicators of sustainability that could be used to measure success over the next 20 years; and
- Use existing examples of work being done in the Estuary and urge their continuation and broad application.

Another forum is planned for the spring of 1995 to continue working on meaningful steps towards the integration of economic development and environmental protection at all levels of decision-making in the Estuary.

For further information, contact James Walsh, Pennsylvania Coordinator for the DEP, Division of Coastal Program, Department of Environmental Resources, (717)787-2529.

A Sustainable Future in the Netherlands

In the Netherlands, people are taking sustainability pretty seriously - a government was voted out of office because it didn't see the need for a fully integrated environment policy plan. A new government was elected to make it happen.

A compact of four cooperating government ministries, industry, professional and citizen groups is now working together to spell out the responsibilities of each sector as the nation strives to achieve the principles and goals that have been established (see note below).

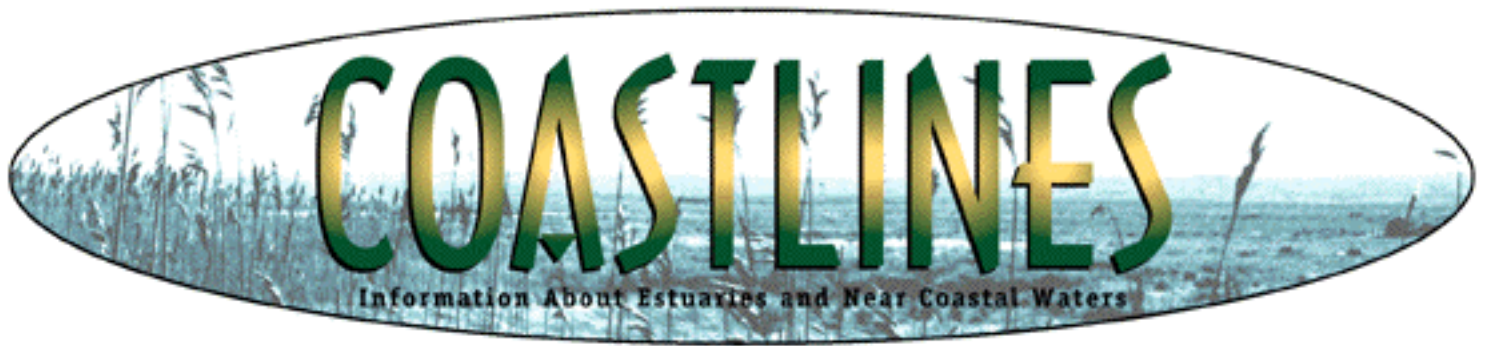
Results have been impressive - in just five years, 70 percent of the goals set for that period of time have been met, and the plan still meets with broad support from all sectors of society.

For instance, significant acreage of reclaimed land is being allowed to revert to marshes to restore historical wildfowl populations. Dairy farmers who have land along the banks of rivers have been given the option of returning 15% of their land back to water in exchange for a subsidy from the Common Market. This would help reduce the oversupply of milk in the Common Market and might eventually involve one to two percent of the total land area of the Netherlands.

For further information, contact Steve Howard, Director of Special Projects at the New Jersey

Highlights of the Plan:

- Improve air, water, and soil pollution so that by 2010 there will be no pollution-related disease;
- Reduce the number of automobile commuters by spending millions on more and better bikeways;
- Prevent overall pollution from increasing, and do not reduce it in one area by worsening it in another;
- Put pollution abatement at the source rather than at the end;
- Make the polluter pay;
- Use the best available technology;
- Motivate people to practice good environmental behavior;
- Close "substance cycles" so that the least possible amount of material is lost between manufacture and recycling; and
- Conserve energy.



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Coastlines Information Exchange

Update on Questions

In the February-March issue of Coastlines, we began a new feature called Information Exchange, and printed two questions. Derek Busby, Director of the [Indian River Lagoon National Estuary Program](#), asked about existing data and research methodology regarding any known cause and effect relationship between septic discharges and estuarine water quality impacts. Peyton Fleming, Outreach Coordinator for the Narragansett Bay Project, was looking for information related to the successful reopening of shellfish beds after long periods of closure. (See the article "Reopening Shellfish Beds in Puget Sound" in this issue.)

Derek and Peyton both reported that they have received several responses to their questions from people around the country. They were surprised and very pleased at the amount of response, and are thankful to the Coastlines readership for contributing helpful information to their respective programs.

We would like this feature to continue to grow and serve our readership as a true networking tool for people involved in estuarine and near coastal water issues, and so we encourage your participation (especially in the form of questions!).

Thanks for your support.

Please send your questions or ideas to:

Coastlines Information Exchange

P.O. Box 7

Barnstable, MA 02630

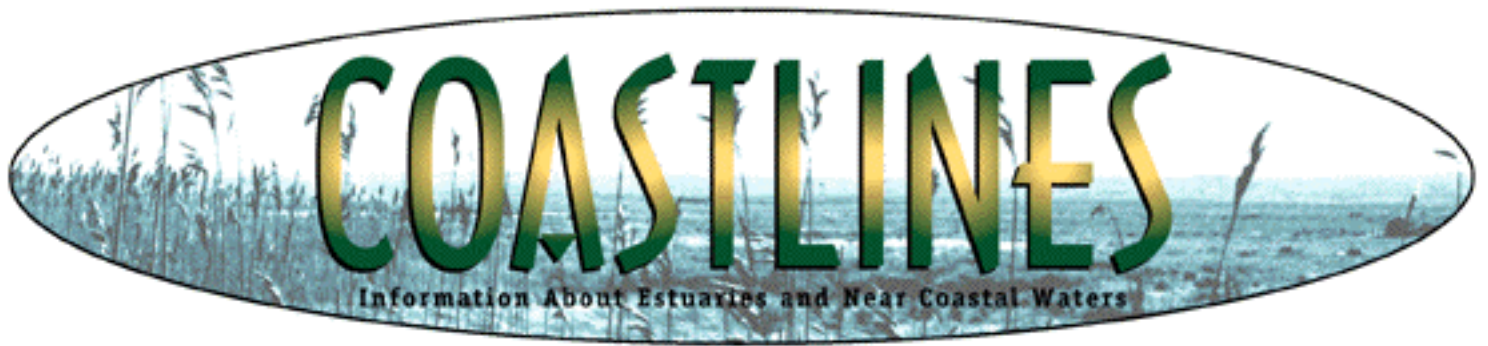
telephone (508)362-5570;

facsimile (508)362-5335.

Please include your name, address, and daytime phone number (for verification).

Painting the Town Red

Volunteer painting crews are taking the country by storm (drains, that is) by painting messages like "Clean Streets, Clean Beaches", or "Don't Dump, Drains to Ocean" next to storm sewers. In addition to the Delaware Estuary and Santa Monica Bay projects described in the April-May Coastlines, many other areas have implemented similar programs. Scout troops and other volunteers have stenciled more than 100 drains in Falmouth, Massachusetts; in addition, about 3,000 drains in Milford, Connecticut, have been painted by the Concerned Harbor Users of Milford. The New York and Connecticut Sea Grant programs loan stencils to groups interested in painting drains, and Save the Bay, a nonprofit organization in Rhode Island, provides stencils with the support of a grant from the Stanley Works Foundation. Altogether, within the past three years, an estimated 20,000 drains have been stencilled in Massachusetts and New York alone.



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Publications

Response of the Chesapeake Bay Water Quality Model to Loading Scenarios. (April 1994). Prepared by the Modeling Subcommittee of the Chesapeake Bay Program and published by EPA, this document reports the findings from the application of the integrated models to evaluating the technical aspects of various load reduction scenarios. The report is designed to be a resource for a diverse technical and managerial audience. Scenarios have been applied to develop the tributary loading allocations of a 40 percent reduction of controllable nitrogen and phosphorus. Other scenarios annually track the loads to compare annual reductions with the year 2000 goal. For a copy, please contact the Chesapeake Bay Program at 1(800)968-7229, and ask for the Communications Department, or call Kate Bennett at (410)267-5743.

Deposition of Air Pollutants to the Great Waters, First Report to Congress. (May 1994). This report detail the role of air deposition of toxics in the Great Lakes, Lake Champlain, Chesapeake Bay, and other U.S. coastal waters. The report is a compilation of existing information and is the first time EPA has analyzed such information in a single document. The study is the first in a series of biennial reports that will assess the contribution of atmospheric deposition to these waters, the environmental and public health effects caused by the deposited pollutants, the sources of these pollutants, and the water quality standards violations that may have resulted from deposition of air pollutants. Copies are available by

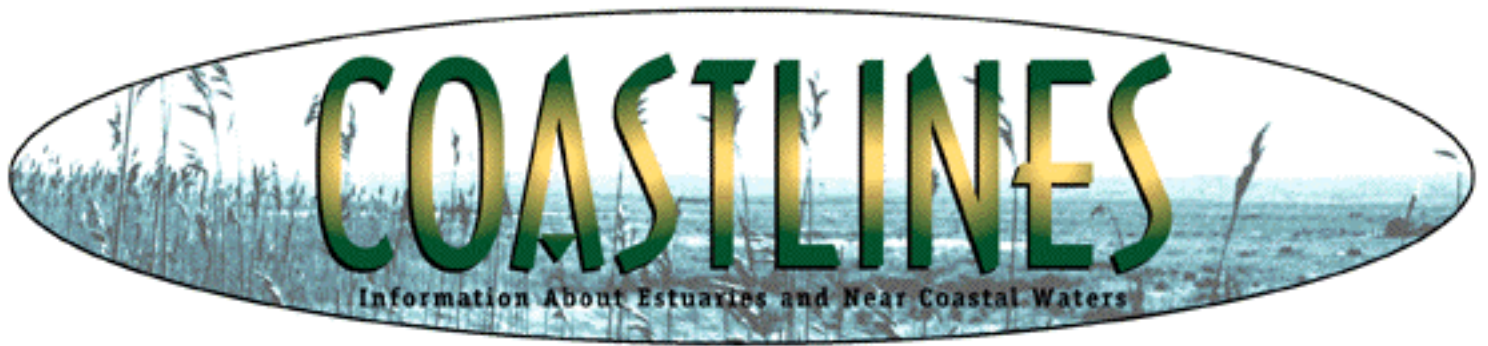
calling (919)541-5648. Ask for document EPA-453/R-93-005. For further technical information, contact Amy Vasu at (919)541-0107.

How Estuaries are Polluted. Understanding the causes of coastal contamination is the first step to finding solutions to pollution. This eye-catching, full-color poster shows how industries, farms, residential areas, and motor vehicles all contribute to the pollution of estuaries. The sturdy 11" by 17" poster was adapted from a graphic by 'U.S. News and World Report' and produced by Connecticut Sea Grant in conjunction with the Maritime Center at Norwalk. It's an excellent resource for teachers and environmental groups. Available for \$2 from Connecticut Sea Grant, University of Connecticut, 1084 Shennecosset Road, Groton, CT 06340-6097.

Stemming the Tide of Coastal Fish Habitat Loss. (\$20,258 pp., 1991). By the National Coalition for Marine Conservation. "Stemming the Tide" is a review of the science and status of coastal fish habitat and its importance to U.S. fisheries. This volume contains papers presented at 1991 symposium covering critical habitat areas, major threats, critiques of federal environmental law, and an agenda for strengthening our national habitat conservation program. Available from the National Coalition for Marine Conservation, 3 North King Street, Leesburg, VA, 20176. Please add \$1.00 for shipping.

Toward a Watershed Approach: A Framework for Aquatic Ecosystem Restoration, Protection, and Management. (22 pp., January 1994). This Coastal America publication answers the question: What is a watershed? How do we affect watersheds and their living resources? What is being done now to protect and restore natural resources on a watershed level? How can this restoration and protection be done more effectively? and, What can individuals do to protect their watershed? Available free of charge from the Coastal America Office, (202)482-5483; fax (202)482-0714.

Geochemical Techniques for Identifying Sources of Ground-Water Salinization. (\$59.95, 272 pp., 1993). By Bernd C. Richter, Charles W. Kreitler, and Bert E. Bledsoe. This book offers a comprehensive look at the threat to the U.S.' freshwater resources due to salinization and outlines techniques that can be used to study the problem. Some of the topics covered are: the seven major salt water sources that commonly mix and deteriorate our fresh ground water, characteristics of saltwater sources, geochemical parameters, and basic graphical and statistical methods that are frequently used in saltwater studies. Available from CRC Press, 1(800)272-7737; fax 1(800)374-3401.



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Calendar of Events

July 31 - August 4

National Association of Counties 59th Annual Conference. Bally's Casino & Resort, Las Vegas, Nevada. The conference provides five days of workshops, activities, and presentations on critical county issues from unfunded mandates to reclaiming wastewater to growth management and environmental regulations. One of the workshops, entitled "Counties Managing Coastal Watersheds", will be moderated by Nancy McKay, Executive Director of Puget Sound Water Quality Authority. For information, contact Horatio Gavilan, conference coordinator, (202)942-4220.

August 17 - 19

Environmental Issues Affecting the Forestry and Forest Products Industries of the Eastern U.S. To be held at the Hyatt Regency Hotel on Baltimore's Inner Harbor. The conference will provide a forum for leaders in industry, government, the environmental community, academia, and private landowners to discuss a myriad of environmental issues affecting today's forestry and forest products industries in the Eastern U.S. Featured speaker will be Vice President Al Gore. Sponsored by the Carolinas - Chesapeake Section of the Forest Products Society and Virginia

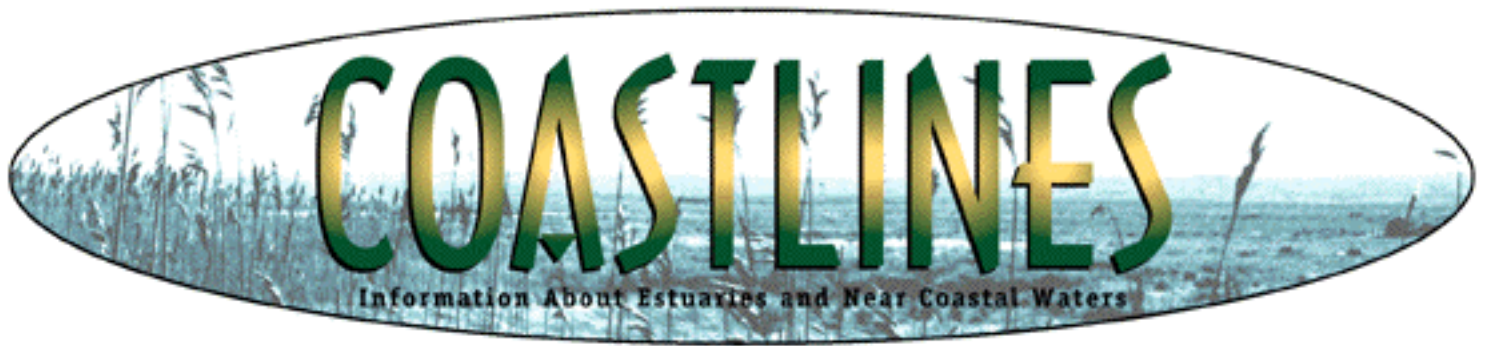
Tech. For additional information, contact J. Daniel Dolan, (703)231-8839, or Angela Riegel, (703)231-7107.

September 7 - 9

Celebrating the Year of the Coast: Innovations in Coastal Management. Wilmington Hilton, Wilmington, North Carolina. Designed for a broad national audience, this conference will feature Governor Hunt, plenary speakers, presentation sessions, field trips, and exhibits, and will facilitate a dialogue between all major participants in coastal resource management. As we approach reauthorization of the federal Coastal Zone Management Act, the conference will help develop new management strategies for the protection of estuaries, barrier islands, wetlands, and other critical natural habitats. For further information, contact Allison L. Ballard at Jordan McColl, Inc., (910)762-6711, or (800)258-6711.

September 7 - 10

Citizens Advisory Committees Workshop. Georgetown University, Washington, D.C. The meeting is designed for and by Citizens Advisory Committees (CACs), with an orientation toward solving the real world problems that National Estuary Programs and CACs are confronting. The proposed format is a mix of presentation and discussion. CAC chairs or vice chairs and public outreach coordinators are the target audiences for the workshop. For further information, please contact Ms. Fran Flanigan at the Alliance for the Chesapeake Bay, (410)377-6270; fax(410)377-7144.



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Using Non-profit Organizations to Advance Estuary Program Goals

The goal of every National Estuary Program (NEP) is to develop a Comprehensive Conservation and Management Plan (CCMP) that outlines strategies for protecting, remediating, and conserving an estuary's natural resources.

For CCMP implementation, programs are expected to seek funding under Titles II and VI and Section 319 of the Clean Water Act, and, most importantly, from state and local governments and other public and private partners. To help identify funding sources for implementation, U.S. EPA's Oceans and Coastal Protection Division has published a document entitled "Using Nonprofit Organizations to Advance Estuary Program Goals." The report includes information on specific types of Nonprofit Organizations (NPOs) and how they can attract and disburse funds. Also addressed are the roles of institutions already involved in estuary programs.

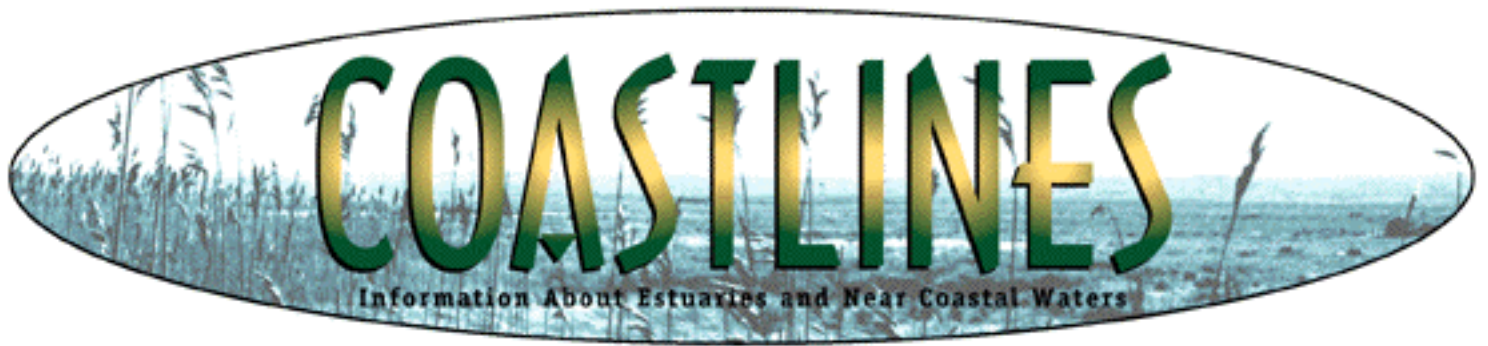
NPOs are defined as organizations that accrue no profits to their individual members but expend resources in pursuit of a particular purpose. They are divided into five basic types that vary considerably in their ability to act as a conduit of funds and in the activities that they can undertake. The five include:

- state agencies and departments;
- special purpose government institutions;
- interstate trust funds;
- private foundations; and
- public charities.

NPOs can access funds from both the private and public sectors, disburse funds for implementation activities, and undertake estuary-related activities themselves.

The EPA document highlights issues that must be resolved before an estuary program can establish an NPO, and provides a list of references for further information. It also briefly studies eight organizations as examples of operating practices, and examines the advantages and limitations of each in advancing environmental program goals.


To obtain a free copy of this report, write to NCEPI, 11029 Kenwood Road, Building 5, Cincinnati, OH 45242. Ask for document EPA 842-B-093-008.



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Haunted Waters, Fragile Lands

Haunted Waters, Fragile Lands, Oh What Tales to Tell!, a one-hour videotape documentary by the [Barataria-Terrebonne National Estuary Program](#),  breaks new ground by taking a cultural geographer's approach to ecology and a storyteller's view of the environment. The documentary introduces the varied ecosystem of Barataria-Terrebonne, Louisiana, through interview clips, wildlife photography, visits to local landmarks, and archival images that conjure up the region's past. Video graphics and computer imagery help explain concepts like delta formation, natural levees, and backwater swamps.

Viewers will experience first-hand how life was lived on sugar cane plantations, in trappers' cabins, and on shrimp-drying platforms. The centerpiece of the documentary tells how 100 years ago in Barataria Bay, a diverse mix of ethnic groups lived on stilt villages (a Filipino architectural legacy) that were built of cypress and palmetto (a Native American building material) and sailed in luggers (a boat type imported by the French). In summer they fished shrimp and dried them using ancient techniques of the Chinese among them, and in winter harvested oysters as Croatians living there taught them.



Photo courtesy of the Louisiana State Library, circa 1890s

The essence of that cooperative, neighborly spirit highlights a concluding look at the troubles besetting the Barataria- Terrebonne ecosystem today and the path citizens must take to solve them. For national audiences, the documentary uses Barataria-Terrebonne as a case study to examine the historical issues that affect current discussions of wetlands policy, and to provide an exemplary introduction to the field of historical ecology.

"This is a unique and fascinating region," said Executive Producer Lynn Woods, "but it's an ecosystem under stress. We hope that by looking back and analyzing how people changed this area, we can set the stage for addressing the environmental problems we face today. Those early immigrants ... all had to deal with how to draw a living from these fragile lands without destroying those lands. It's the same issue we're wrestling with today."

Haunted Waters, Fragile Lands, Oh What Tales to Tell! was produced for the [Barataria-Terrebonne National Estuary Program](#) [EXIT disclaimer](#) in association with the Louisiana Nature and Science Center. Funding was provided by U.S. EPA, the Louisiana Department of Environmental Quality, and the Louisiana Endowment for the Humanities. For more information, contact Ms. Lynn Woods (504)447-0868; fax (504)447-0870.



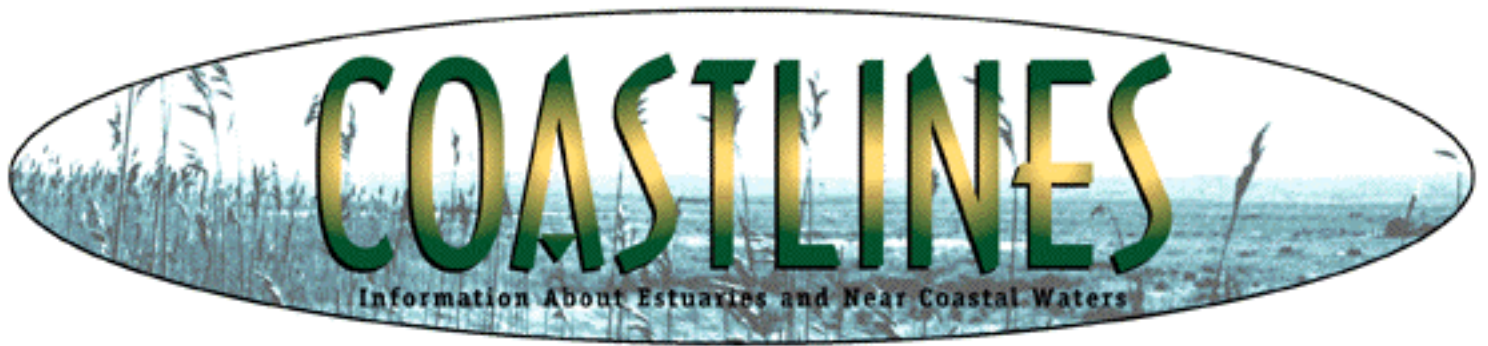
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About Coastlines

Coastlines is a publication of the Alliance for the Chesapeake Bay, Inc. It is produced in cooperation with the U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, under grant #CX-816-857-913. The contents of this document do not necessarily reflect the views and policies of EPA, nor does mention of trade names or commercial products constitute endorsements or recommendations of use.

The Executive Director of the Alliance is Frances H. Flanigan. To make address changes, additions or comments, please write to the Alliance at 6600 York Road, Baltimore, MD 21212.



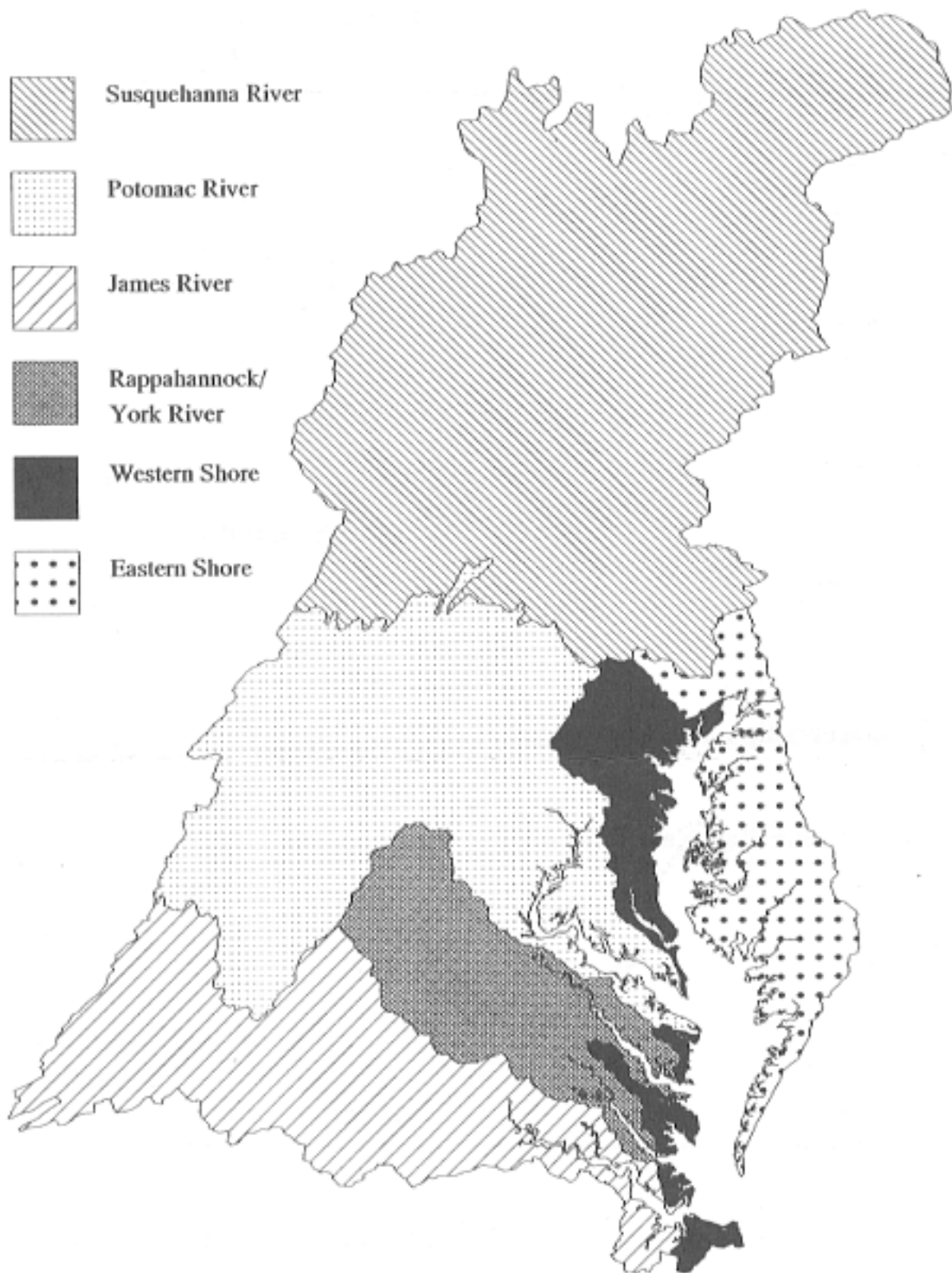
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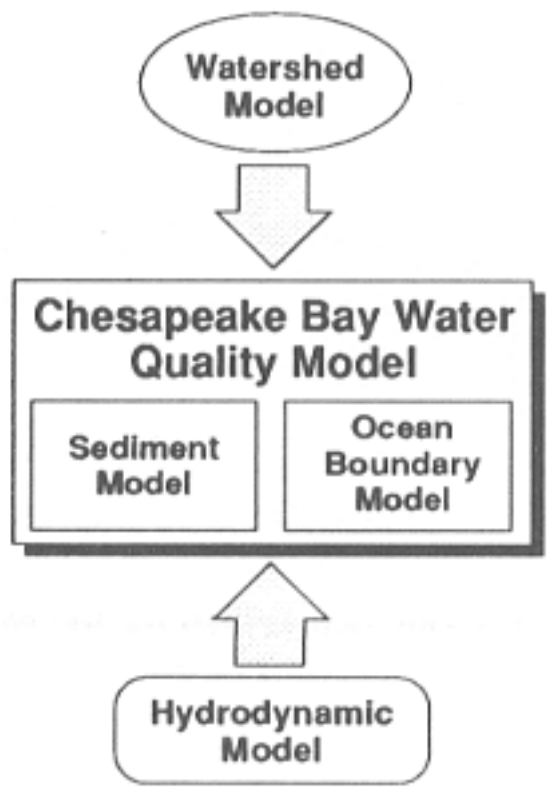
About the Challenge Logo

This bold, attractive logo was designed by the U. S. Fish and Wildlife Service to be loaned out free of charge for local groups wishing to use it. It served as the unifying logo for the Challenge, appearing on its brochures, invitations, and press releases.





Chesapeake Bay Watershed: Major Basins



Chesapeake Bay Integrated Water Quality Models