
Habitat Hotline Atlantic

Issues of Concern for Atlantic Marine Fish Habitat

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Atlantic Coastal Wetlands Losses and the Economic Value of Fisheries: *A State by State Review*

The relationships between wetlands and fish production are an essential and important part of the ongoing debate on wetland regulation and policy. Unfortunately, the relationships are complicated and often unappreciated. For some fisheries, such as shrimp in the Gulf of Mexico, the connection between wetlands and productivity has been demonstrated through extensive research. For others, such as salmon in the Pacific northwest, the relationship between habitat loss and productivity has been shown principally through the failure of the fisheries themselves. For a few fisheries, such as American lobster, the connection to wetlands has been discovered only recently, and the primary influence on productivity is still being investigated. Because of the complexity of aquatic systems, it is difficult to quantify the exact loss or degradation of a particular acre of wetland on a fishery as a whole.

Nonetheless, the life cycles of most commercial fish and shellfish species are fairly well understood, and biologists have determined that wetlands play an important part in providing food, protection, and spawning areas for a number of species. Approximately 75% of the Nation's commercial fish and shellfish depend on estuaries at some stage in their life cycle. Estuaries themselves depend on their wetlands to maintain water quality and provide the basis for food chains that culminate in human consumption of seafood. Many estuarine-dependent species have even closer ties to wetlands in that they feed, take refuge, or reproduce in the wetlands themselves. Without wetlands, these fish and shellfish cannot survive.

Commercial marine fisheries contributed \$19.8 billion in value added to the U. S. Gross National Product in 1993. Commercial fishing in 1988 employed over 274,000 fishers and 90,000 shore workers. Fresh water and saltwater recreational fisheries in 1991 supported 924,6000 jobs, provided \$19.2 billion in earnings, and resulted in \$24

billion in expenditures. This industry also contributed \$1.1 billion in state sales tax, \$227 million in state income taxes, and \$2.1 billion in Federal income taxes.

The following summaries provide information about the contribution of commercial and recreational fisheries to local and state economies, and the status of wetland habitats. About 32% of the commercial fish and shellfish harvested in the northeast Atlantic are dependent on estuaries and the wetlands that are an integral part of estuarine ecosystems.

In the late 1970s and early 1980s, this country was losing wetlands at an estimated rate of 300,000 acres per year. The Clean Water Act and state wetland protection programs have helped to decrease wetland losses to an estimated 70,000 to 90,000 acres per year. Strong wetland protection must continue to be a national priority, otherwise fisheries that support more than a million jobs and contribute billions of dollars to the national economy are at risk.

Maine - Maine's extensive coastal rivers, bays and estuaries support both recreational and commercial fisheries for finfish and shellfish. Maine ranks in the top six states nationally in terms of total pounds and dollar value of commercial fish and shellfish landed. The dockside value of commercial fish landings in Maine exceeded \$261 million in 1995. In 1991, more than 488,000 anglers spent more than \$190 million fishing in Maine. This activity supported 6,340 jobs with \$106 million in earnings, and generated more than \$11 million in state sales tax.

Maine, while not subject to the intense development pressure of its neighbors (*continued on Page 2*)



(continued from Page 1) to the south, nevertheless had lost approximately 20% of its estimated original wetlands base by the mid 1980's. The Clean Water Act and that state's Natural Resources Protection Act have resulted in a decrease of the state's wetland loss rate, but wetlands in coastal states like Maine are still being lost to development at a higher rate than is occurring in inland wetlands. Strong wetland protection is needed to protect Maine's fisheries — an industry that contributes substantially to the state's economy.

New Hampshire - New Hampshire's relatively short coastline supports both recreational and commercial fisheries. In 1991, more than 319,000 anglers spent more than \$99 million fishing in New Hampshire. This activity supported 2,972 jobs with \$56 million in earnings. In 1995, the dockside value of the commercial fish and shellfish landings in New Hampshire was almost \$15 million.

New Hampshire's coastal wetlands have been under less development pressure than those of its neighbors. By the mid-1980s, New Hampshire had lost only approximately 9% of its estimated original wetlands base. The Clean Water Act and the state's wetland protection statutes are an important part of maintaining the quality and quantity of the state's wetlands, and the fisheries that depend on those wetlands.

Massachusetts - Massachusetts ranks third nationally in dockside value of commercial fish and shellfish landings, which in 1995 was more than \$224 million. Recreational fisheries also play a major role in the state's economy. In 1991, more than 650,000 anglers spent more than \$401 million fishing in Massachusetts. This activity supported 10,450 jobs with more than \$238 million in earnings, and generated over \$20 million in state sales tax. Communities such as Provincetown, Nauset, Chatham, Hyannis, Falmouth, Nantucket, and Vineyard Haven all depend on recreational fishing to support their local economies. Cape Cod is known as the capital of north Atlantic flyfishing.

Massachusetts, at the northern end of the industrialized corridor that extends to New York City, is under considerable development pressure. By the mid-1980s, Massachusetts had lost approximately 28% of its estimated original wetlands base. The Clean Water Act and the state's Wetlands Protection Act have decreased the state's wetland loss rate, but wetlands in coastal states such as Massachusetts are still being lost to development at a higher rate than is occurring in inland states. Consistent, long-term protection for wetlands at the Federal, state, and local level is essential for the protection of the fish habitats and fisheries that are so important to the Massachusetts economy.

Rhode Island - Rhode Island's Atlantic coast and

Narragansett Bay support both recreational and commercial fisheries for finfish and shellfish. In 1991, more than 170,000 anglers spent more than \$70 million fishing in Rhode Island. This activity supported 2,160 jobs with \$40 million in earnings, and generated almost \$5 million in state sales tax. In 1995, the dockside value of the commercial fish and shellfish landings in Rhode Island was more than \$68 million.

Rhode Island, as part of the industrialized corridor between Boston and New York City, is under considerable development pressure. By the mid-1980s, Rhode Island had lost approximately 37% of its estimated original wetlands. The Clean Water Act and the state's wetland regulatory statutes have decreased the state's wetland loss rate, but coastal states such as Rhode Island are still losing wetlands to development more rapidly than is occurring in inland states. Consistent efforts to conserve Rhode Island's remaining wetlands are needed to ensure the continued health of the state's commercial and recreational fishing industries.

Connecticut - Connecticut's fisheries include not only recreational fishing in Long Island Sound, but also commercial fishing farther offshore. In 1991, almost 350,000 anglers spent more than \$200 million fishing in Connecticut's waters, generating almost \$13 million in state sales tax. The vast majority of the recreational fishing in Connecticut occurs in coastal waters. Saltwater recreational fishing in 1991 supported almost 4,000 jobs and more than \$1000 million in earnings for people in town such as Groton, Old Saybrook, Sachem Point, and numerous other towns along Connecticut's coast. During that same year, the dockside value of the commercial fish landings in Connecticut, most of which were brought into Stonington, was almost \$45 million. In 1995, that value was almost \$57 million.

Connecticut, as part of the industrialized corridor between Boston and New York City, is under considerable development pressure. By the mid-1980s, Connecticut had lost approximately 74% of its estimated original wetlands base, a higher rate of wetlands loss than any other New England state. The Clean Water Act and the state's wetland regulatory statutes decreased the state's wetland loss rate, but coastal states such as Connecticut are still losing wetlands to development more rapidly than is occurring in inland states. Continuing wetland loss will adversely affect Connecticut fisheries — an industry that contributes substantially to the state's economy, particularly in coastal towns.

New York - New York's coastal fisheries include not only recreational fishing in Long Island Sound, but also commercial and recreational fishing in Peconic Bay, Shinnecock Bay, Great South Bay, and in offshore waters.

In 1991, more than 1.8 million anglers spent more than \$800 million fishing in New York's waters, generating more than \$33 million in state sales tax. About one-quarter of the recreational fishing in New York occurs in coastal waters. Saltwater recreational fishing in 1991 supported 4,730 jobs and resulted in more than \$100 million in earnings for people in towns such as Montauk, Greenport, Shinnecock, and numerous other communities on Long Island. During 1992, the dockside value of New York's commercial estuarine-dependent fish landings, brought into Montauk, Blue Point, Brookhaven, Huntington, and other coastal towns, was almost \$26 million (landings for the state as a whole were about \$54 million.)

By the mid-1980s, New York had lost approximately 60% of its estimated original wetlands base. The effects of this wetland loss have been felt through the state's watersheds, from streams that support anadromous fish, such as herring, to coastal areas that suffer the cumulative effects of watershed degradation. For example, Great South Bay, one of the primary locations for the hard clam fishery, has suffered severe water quality problems related to wetland loss and other effects of intense development in its watershed. The Clean Water Act and that state's wetland regulatory statutes have resulted in a lessening of the state's wetland loss rate, but coastal states such as New York are still losing wetlands to development more rapidly than is occurring in inland states. Continuing wetland loss will adversely affect New York's fisheries — an industry that contributes substantially to that state's economy, particularly in coastal towns.

New Jersey - New Jersey generally ranks in the top ten states nationally in terms of total pounds and dollar value of commercial fish and shellfish landed. The dockside value of commercial fish landings in New Jersey was more than \$95 million in 1995. Recreational fisheries also play an important role in the state's economy. In 1991, about 950,000 people spent more than \$630 million fishing in New Jersey's waters, generating more than \$44 million in state sales tax, resulting in \$400 million in earnings, and supporting 16,750 jobs. Communities such as Point Pleasant, Tuckertown, Manahawkin, Brielle, Bellmar, and Cape May all depend on fishing to support their local economies.

New Jersey lost about 46% of its wetlands between the 1780s and 1980s. Since passage of the Clean Water Act and the state's wetland protection statutes, wetland loss in New Jersey has slowed. However, coastal wetlands remain particularly vulnerable to destruction due to development, and recent studies have concluded that coastal wetlands are lost to development at a rate three times higher than the rate of inland wetland loss to development. Due to its location near the urban center of New York City, New Jersey is under very intense development pressure. Strong wetland protection efforts are needed to avoid additional

wetland loss, which would adversely affect the fisheries that depend on wetlands, and the communities that depend on the fishing industry.

Delaware - Delaware has very close ties to the coast — no part of the state is more than 20 miles from Delaware Bay or the Atlantic Ocean. Although fisheries currently play less of a role in the state's economy than they did when the Atlantic menhaden fishery was strong (in the 1950s), the dockside value of commercial fish and shellfish landings in Delaware in 1995 was almost \$8 million. Recreational fishing is growing in importance to the state's economy. In 1991, about 155,000 people spent almost \$60 million fishing in Delaware's waters, resulting in \$29 million in earnings, and supporting 1,605 jobs.

The Delaware coast is under heavy development pressure. The state lost about 54% of its wetlands between the 1780s and the 1980s. Since the passage of the Clean Water Act and the state's wetland protection acts, the loss of wetlands in Delaware has slowed. However, wetlands in coastal states, such as Delaware, are currently lost to development at a rate three times higher than the rate of wetland loss to development in inland states. Continuing wetland loss will adversely affect Delaware Bay, the fisheries that depend on wetlands, and the communities that depend on the fishing industry.

Maryland - Maryland encircles the upper half of Chesapeake Bay, one of the nation's most productive estuaries, and also has an extensive coastline on the Atlantic Ocean. As a result of this abundant and diverse coastline, recreational fishing is a very important part of the state's economy. In 1991, more than 430,000 anglers spent more than \$275 million fishing in Maryland's waters, generating almost \$14 million in state sales tax. In excess of one-third of the recreational fishing in Maryland is saltwater sportfishing in the state's estuarine waters. Saltwater recreational fishing in 1991 supported about 5,000 jobs and resulted in more than \$103 million in earnings for people in town such as Baltimore, Ocean City, and numerous other communities in coastal Maryland. In 1995, the dockside value of Maryland's commercial fisheries was more than \$60 million, which contributed substantially to the economies of communities such as Baltimore, Ocean City, St. Michaels, Tilghman, Cambridge, Easton, Chestertown, Aberdeen, Pocomoke City, Annapolis, and Solomons.

By the 1980s, Maryland had lost 73% of its original estimated wetlands base. The Clean Water Act and the state's two wetland statutes have slowed the state's wetland loss rate, particularly in tidal areas. The Chesapeake Bay Program, a federal-state partnership, is currently promoting protection and restoration of the bay's wetlands and other aquatic habitats. Consistent, long-term protection for wetlands at the Federal, state, and local level is

essential for the protection of the fish habitats and fisheries that are so important to the economy of Maryland.

Virginia - Most of Virginia's coastal waters are part one of the nation's most productive estuaries: Chesapeake Bay. In 1991, more than 1 million anglers spent more than \$365 million fishing in Virginia's waters, generating almost \$13 million in state sales tax. About one-third of the recreational fishing in Virginia occurs in the state's estuarine waters. Saltwater recreational fishing in 1991 supported 4,000 jobs and resulted in more than \$76 million in earnings for people in towns such as Chincoteague, Wachapreague, and numerous other communities in coastal Virginia. In 1995, the dockside value of Virginia's commercial fisheries was more than \$113 million, which contributed substantially to the economies of towns such as Hampton, Portsmouth, Newport News, Reedville, and Saxis.

By the 1980s, Virginia had lost 42% of its original estimated wetlands base. The Clean Water Act and the

states' tidal wetlands act have slowed the state's loss of tidal wetlands, but loss of inland wetland is still occurring. Strong wetland conservation is essential to the protection of the bay and its Virginia tributaries, the fisheries that depend on the wetland habitats, and the Virginia communities that depend on the area's fisheries.

North Carolina - North Carolina contains one of the largest and most productive aquatic systems in North America: Albemarle-Pamlico Sound. It represents the state's key resource base for commercial fishing, recreational fishing, and tourism. The dockside value of commercial landings of fish and shellfish at Beaufort, Morehead City, Wanchese, Stumpy Point, and other North Carolina seafood centers exceeded \$110 million in 1995. Recreational fisheries also contributed substantially to the state's economy, generating more than \$25 million in state sales tax in 1991. During that same year, about 600,000 anglers spent more than \$200 million on saltwater recreational fishing in North Carolina, mainly in the coastal communi-

Wetlands for Clean Water: How Wetlands Protect Rivers, Lakes, and Coastal Waters From Pollution

While the Clean Water Act has forced significant progress over the past twenty-five years in controlling water pollution from point sources such as industrial outfall pipes, one entire class of significant water pollution remains largely unaddressed. This major water quality problem is known as polluted runoff, the phenomenon in which pollutants on agricultural fields, city streets, and suburban lawns are carried into rivers, lakes, and coastal waters by runoff from rain or snow.

Polluted runoff comes in various forms and causes a series of problems. Soil sediment in runoff from sources such as plowed fields, construction sites, and logging areas can destroy fish habitat and kill aquatic life by clogging fish gills and suffocating fish eggs. Pesticides swept from fields and lawns into water bodies can increase the risks of cancer and birth defects in human beings. Excess nutrients, such as nitrogen and phosphorus from fertilizers applied to lawns and crops, feed algae blooms that can prevent people from swimming and can kill fish and other aquatic life by robbing the water

of oxygen. Heavy metals such as lead and copper, which can come from mining and industrial processes, along with bacteria and pathogens from various sources also make their way into waterways through polluted runoff, where they can cause a variety of human health problems.

Wetlands are a vital line of defense in protecting water quality from polluted runoff. Because of their crucial position between water and land, wetlands function as a buffer zone that intercepts and filters polluted runoff before it can degrade rivers, lakes, and coastal areas. Dense wetland vegetation improves the clarity and health of receiving waters by trapping sediment and pollutants. Wetland microorganisms and plants remove excess nutrients from water and store them in cell tissue, which ultimately decomposes into soil rich in organic matter, or return them to the atmosphere as harmless gas. Wetlands also filter pesticides and heavy metals from water, and microbial action taking place on wetland bottoms can reduce water-borne bacterial contamination significantly. By filtering these pollutants from America's water, wetlands help to safeguard drinking water sources. They also

improve the ability of rivers, lakes, and coastal waters to support other important uses, such as safe and clean swimming and fishing.

Despite their importance for protecting and restoring water quality, wetlands are an endangered resource in America. We have lost more than half our original wetlands in the lower forty-eight states, and these losses continue today. Legislation introduced in the last Congress would have accelerated wetland loss by dramatically weakening the Clean Water Act's protection for wetland, thus compromising safeguards for water quality in America's rivers, lakes, and coastal areas. To protect and restore the quality of America's water, we must protect and restore America's wetlands.

Adapted from a document of the same title, which was published by the Clean Water Network and Natural Resources Defense Council. It is available from the Clean Water Network by calling 202/624-9357.

ties surrounding the Albemarle-Pamlico Sound. Together, the state's commercial and recreational fisheries provide thousands of full-time jobs to coastal towns.

Fortunately, Albemarle-Pamlico Sound is a relatively healthy estuary. However, recently it has begun to show signs of stress, such as increased fish kills and shellfish bed closures. Some of that stress may be the result of coastal wetland loss and loss of the water quality functions wetland perform. By the mid-1980s, North Carolina had lost approximately half of its estimated original wetlands acreage. The Clean Water Act and the state's Coastal Areas Management Act have decreased the state's wetland loss rate, but coastal states such as North Carolina are still losing wetlands to development more rapidly than is occurring in inland states, particularly in the southeast United States. Continuing wetland loss will adversely affect Albemarle-Pamlico Sound, the fisheries that depend on the Sounds' habitats, and ultimately may affect communities, such as those in Carteret County, that depend on the area's fisheries.

South Carolina - About two-thirds of South Carolina's coast is part of the "Sea Island Coastal Region," an area characterized by wide expanses of salt marsh punctuated by numerous inlets, sounds, and bays. Forested wetlands along rivers such as the Savannah, Santee, and Pee Dee, are also important elements of South Carolina's coastal region. These extremely productive coastal wetlands provide the resource base for the state's commercial and recreational fishing, and tourism. The dockside value of commercial landings of fish and shellfish at Charleston, Beaufort, Port Royal, Hilton Head, Georgetown, Myrtle Beach, and other South Carolina seafood centers exceeded \$37 million in 1995. Recreational fisheries also contributed substantially to the state's economy, generating more than \$18 million in state sales tax in 1991. During that same year, about 842,000 anglers spent more than \$366 million on recreational fishing in South Carolina. This activity supported 13,550 jobs with more than \$216 million in earnings.

By the mid-1980s, South Carolina had lost approximately 27% of its estimated original wetlands acreage. The Clean Water Act and the state's coastal wetland statute have slowed the state's wetland loss rate, but wetlands in coastal states continue to be lost to development at a higher rate than is occurring in inland wetlands, particularly in the southeast United States. Strong wetland protection efforts are needed to avoid additional wetland loss, which would adversely affect the fisheries that depend on wetlands, and the communities that depend on the fishing industry.

Georgia - Georgia's entire coast is part of the "Sea Island Coastal Region." Wide expanses of salt marsh punctuated by numerous inlets, sounds, and bays are characteristic of this region, as are the forested wetlands

along rivers such as the Savannah, Alamaha, and St. Mary's River. These extremely productive coastal wetlands provide the resource base for the state's commercial and recreational fishing, and tourism. The dockside value of commercial landings of finfish and shellfish at Brunswick, St. Simons, Savannah, and the many smaller fishing communities along Georgia's coast exceeded \$35 million in 1995. Recreational fisheries also contributed substantially to the state's economy, generating almost \$18 million in state sales tax in 1991. During that same year, about 1,106,200 anglers spent more than \$448 million on saltwater recreational fishing in Georgia. This activity supported 14,700 jobs with nearly \$229 million in earnings.

By the mid-1980s, Georgia had lost approximately 23% of its estimated original wetlands acreage. The Clean Water Act and the state's coastal wetlands statute have slowed the state's wetland loss rate, but wetlands in coastal states such as Georgia continue to be lost to development at a higher rate than is occurring in inland states, particularly in the southeast United States. Consistent, long-term protection for wetlands at the Federal, state, and local level is essential for protection of the fish habitats and fisheries that are so important to the economy of Georgia.

Florida - Recreational fisheries are a big business in Florida, generating \$115 million in state sales tax in 1991. During that same year, more than 2.5 million people spent almost \$2 billion fishing in Florida's waters. Florida's sport fishing industry supported 58,000 jobs which resulted in more than \$1 billion in earnings in 1991. Commercial fishing is also an important industry in Florida. The dockside value of commercial fish and shellfish landed in ports such as key West, Tampa Bay, and Fort Meyers, totaled almost \$200 million in 1995.

By the mid-1980s, Florida had lost approximately 46% of its estimated original wetland acreage. The Clean Water Act and that state's wetland protection statutes have slowed the state's wetland loss rate, but wetlands in coastal states such as Florida continue to be lost to development at a higher rate than is occurring in inland states, particularly in the southeast United States. Consistent, long-term protection for wetlands at the Federal, state, and local level is essential for protection of the fish habitats and fisheries that are so important to Florida's economy.

Excerpted from "Habitat Connections," by Susan Marie Stedman and Jeanne Hanson; published by the Office of Habitat Conservation, National Marine Fisheries Service, 1315 East West Hwy, Silver Spring, MD 20910. For further information, please call 301/713-2325.



New Jersey Legislators Introduce Federal Clean Water Enforcement Bills

On April 24, 1997 Representative Frank Pallone (D-NJ) introduced H.R. 1453, the "Clean Water Enforcement and Compliance Improvement Act of 1997." Frank Lautenberg (D-NJ) introduced a companion bill, S. 645, in the Senate. Some elements of the bills include:

Amending the Federal Water Pollution Control Act to require any person subject to the requirements of the Act (currently, owners or operators of point sources) to maintain records, make reports, and allow access to information by the Environmental Protection Agency (EPA) with respect to carrying out such Act;

Directing States to post signs containing information concerning water quality and environmental and health effects at each major point of public access to a body of navigable water that does not meet an applicable water quality standard or that is subject to a fishing ban or consumption restriction due to fish or shellfish contamination;

Raising the ceiling on the amount of administrative penalties allowed to be assessed for violations;

Removing provisions that permit State enforcement actions to serve as a bar to Federal enforcement actions.

Senator Frank Lautenberg stated, "This important bill will put real teeth in the enforcement provisions of the Clean Water Act, and will help restore and preserve our Nation's already stressed lakes, rivers and coastal areas. As we approach the 25th anniversary of the Clean Water Act, and after several substantial revisions since its

enactment, the Act has failed to meet all of our goals.

While the Act has resulted in significant progress and water quality is improving, our waters are not clean. In 1988, over one-third of our rivers, lakes and estuaries surveyed throughout the country were either failing to achieve designated water quality levels or were threatened with failing to achieve those levels. In my State of New Jersey, a survey of roughly 10 percent of the State's rivers showed that only 15 percent were safe for swimming."

The Clean Water Network stated that illegal water pollution is so widespread because the law has simply not been enforced effectively. EPA and state agencies routinely ignore serious and chronic violations. According to the Network, when actions are taken against violators, the penalties rarely outweigh what companies gain from permit violations. In addition, courts are chipping away at the rights of citizens to bring enforcement suits, blocking communities who want to make polluters pay, and, citizens do not have access to the information they need to hold polluters and government accountable. Finally, federal facilities have the worst compliance records of all because they are protected from penalty actions.

But the Network doesn't consider the situation bleak. If passed, the Clean Water Enforcement Act (H.R. 1453) will make polluters pay for their violations, strengthen the right of citizens to hold polluters accountable, and expand citizens' right to know about water pollution violations. This bill is modeled after the successful New Jersey Clean Water Enforcement Act. For further information contact the Clean Water Network at 202/289-2395. [Source: *Clean Water Network, Status Report, May 1997*].

EPA Publishes Toxic Release Inventory

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act) provides for the collection and public release of information about the presence and release of hazardous or toxic chemicals in our nation's communities. The EPCRA requires manufacturers to report releases of nearly 650 designated toxic chemicals to the environment. The Environmental Protection Agency (EPA) compiles the Toxics Release Inventory (TRI) data in an on-line, publicly accessible national computerized database.

On May 20, 1997 the EPA released the 1995 TRI data. According to the Clean Water Network, there is some apparent good news to be found in the 1995 report:

Releases of pollution decreased by 4.9 percent, from 1.75 billion pounds in 1994 to 1.66 billion pounds in 1995.

Reported air emissions were down by 88.8 million pounds, or 7 percent; Reported discharges to surface water were down 4.1 million, or 10 percent;

Releases to land were down by 17 million pounds, or 6 percent.

Only underground injection releases increased, by 24.5 million

pounds, a 19.5 percent increase.

Further information on the TRI is available in public libraries or on-line at www.epa.gov/opptintr/tri/; or by calling the EPA Hotline number at 800/424-9346.

NC Lawsuit Seeks Tougher Pollution Limits

Tougher pollution limits could be placed on all North Carolina waters if an environmental group is successful in pushing the U.S. Environmental Protection Agency to enforce the federal Clean Water Act.

In a lawsuit filed against the EPA, the Neuse River Foundation says the federal agency is lax in enforcing the law and lets the state avoid setting firm thresholds on waste dumped into the Neuse.

The EPA admits that there are problems with North Carolina's programs and is negotiating with the foundation to avoid a long legal battle.

The group decided to sue after the state repeatedly refused to add firm waste thresholds to its Neuse River Plan, according to Rick Dove, the river keeper. *Adapted from Coastal Review, North Carolina Coastal Federation, Spring 1997.*

Rhode Island Dredging Study Leads to Action

Dredging has been a problem for Rhode Island for the past twenty-five years, during which time little of it was allowed. In 1996, the State made a renewed effort to provide focused direction to the work to resolve this long standing issue.

The Governor's Commission on Dredging was established by Executive Order on March 13, 1996 and charged with developing statewide procedures for the assessment of dredging requirements and disposal options. In September 1996, the Commission submitted its final report to RI Governor Almond. The extensive report provides descriptions of the various approaches to dredging and dredged material disposal, a survey of dredging in other states, and the final findings and recommendations of the Commission. Also included are discussions on the economic and environmental impacts of choices to dredge (or not dredge), recent changes in laws affecting dredging, the financial aspects of dredging, and the

status of the Army Corps of Engineers project for the Providence Harbor shipping channel.

Among the nine recommendations made in the report, four were implemented during the course of the commission's work. The remaining five recommendations are: continued leadership from the Governor to assure that dredging remains a priority; prompt establishment of the Advisory Committee mandated by the Marine Infrastructure Maintenance Act of 1996; continued meetings of the Technical Working Group under the aegis of the Coastal Resources Management Council (CRMC); adequate professional, technical and program resources to support the State's dredging needs; and the inclusion of ports and marine facilities in state transportation plans. Pursuant to these outstanding recommendations, the CRMC has continued to sponsor meetings of the Technical Working Groups, has established the required advisory committee, and contin-

ues to support adequate funding for the State's dredging program. In addition, the recent overwhelming support of a state bond referendum for infrastructure improvements to service the port of Quonset Point/ Davisville demonstrates a state effort to integrate ports into the overall transportation network.

With the work of the Governor's Commission complete, the CRMC is now leading the State's dredging efforts in accordance with the Marine Infrastructure Maintenance Act of 1996. In these efforts, the work of the Governor's Commission will serve as a foundation for the development of a long-term solution to Rhode Island's dredging problems.

Copies of the Report of the Governor's Commission on Dredging are available at the CRMC and may be obtained by calling its offices at 401/277-2476 during business hours (8:30 -4:00, M-F). *Adapted from Coastal Features, Winter 1997.*

American Sportfishing Association Announces Clean Water Effort

On June 25, the American Sportfishing Association (ASA), based in Alexandria, VA, announced its Congressional campaign to make good on the original goal of the Clean Water Act — to make American waters fishable once again.

According to ASA Board member Helen Sevier, "Today, 40 percent, I repeat, 40 percent of the nation's rivers, lakes and estuaries are not clean enough to meet basic uses such as fishing. Clean water means more fish, and more fish mean more fishing opportunities, and more fishing opportunities means growth in the sportfishing industry."

The Fishable Waters Coalition (FWC), created by ASA, has developed a set of five key principles that will drive their efforts to revise the Clean Water Act (CWA). Those principles include:

- **Improving Community-Based Watershed Restoration.** Watershed erosion, dewatered streams, denuded stream banks, and other poor land management practices produce diminished fisheries and hurt local economies throughout America. Rather than propose a centralized federal prescriptive solution to ensure watershed health, the coalition members are recommending that the CWA be amended to provide financial and technical assistance and incentives that encourage and support community-based watershed conservation and restoration
- **Addressing Non-Point Sources of Pollution.** To reduce the impact of "non-point" sources of water pollution, the FWC is

proposing that the Environmental Protection Agency focus more pollution control grants on this problem.

- **Maintaining Sufficient Instream Flow for Fisheries.** The coalition proposes that incentives be provided for more efficient water use — for example for irrigation purposes — and that the CWA allow for subsequent allocation by state of the water savings to accomplish instream flow objectives.
- **Reconnecting Rivers and Their Floodplains.** The coalition members agree that America must adopt a new policy for protecting capital investments in river flood plains. The FWC supports amending the CWA to provide possible incentives to landowners and their heirs so that these lands can be farmed during non-flood periods. Such a program, as envisioned by the FWC, would allow certain agricultural lands to be inundated during years of high flood flows, greatly benefiting river fisheries by allowing some portion of fertile bottom lands to reconnect with our great river systems.
- **Increasing Emphasis on Urban Waters.** The FWC also recommends a new push to provide healthy and attractive surface water resources in urban and metropolitan areas while appropriately managing storm water runoff.

For further information contact: Norville Prosser of the American Sportfishing Association at 703/519-9691. *Adapted from Habitat Hotline, No. 33, August 1997.*

Good News for Wetlands: It's Ba-a-ack!!

In early July, the D.C. Circuit Court stayed the district court's invalidation of the Tulloch rule, the 1993 regulation that prohibits unpermitted draining of wetlands (see *Habitat Hotline Atlantic* No. 18, February 1997 for details). As a result of this order, the Tulloch Rule is back in place as the D.C. Circuit considers the merits of the government's appeal of the district court's ruling against the rule. A briefing of the case on appeal will be completed in the fall, with oral argument to follow sometime thereafter.

Issuance of this stay is *great* news for wetlands protection, especially since stays are so hard to come by. While victory at this stage does not ensure victory on the merits argument (particularly since the panel of judges that

issued the stay was an especially progressive one, and a different panel will likely decide the case on the merits) it certainly is a good sign. The stay should also take considerable steam out of special interest group efforts to use the invalidation of the Tulloch Rule as an excuse for Congress to legislate on wetlands.

Immediately following the announcement of the stay, the U.S. Army Corps of Engineers sent out a notice to its districts that the Tulloch Rule was back in effect. This means that the Corps is once again regulating excavation activities. For more information, contact Grady McCallie, National Wildlife Federation, at mccallie@nwf.org or 202/797-6832. *Adapted from Clean Water Network Status Report, July 1997.*

Comments on Dioxin due to EPA by September 5

The EPA has extended the public comment deadline on adding dioxin to the Toxics Release Inventory list of chemicals. The new deadline is September 5, 1997. However, the EPA probably will not require industries to report any dioxin emissions unless the agency also lowers the threshold at which emissions must be disclosed. [Source; *Greenwire*]. Environmental groups support adding dioxin to the TRI list with an adjusted reporting threshold of zero.

Dioxin is a highly toxic organochloride and is typically emitted at much lower concentrations than other substances under the TRI program. Sources of dioxin include the manufacture of chlorine bleached paper, herbicides, burning of plastics, and other products. Studies on lake trout have show dioxin concentrations as low as parts per trillion affecting egg and sac fry mortality.

The May 7 *Federal Register* summary (Volume 62, Number 88, pp. 24887-24896) on the proposed rule states: "In response to a petition filed under

section 313(e)(1) of the Emergency Planing and Community Right-to-Know Act of 1986 (EPCRA), EPA is proposing to add a chemical category that includes dioxin and 27 dioxin-like compounds to the list of toxic chemicals subject to the reporting requirements under EPCRA section 313 and section 6607 of the Pollution Prevention Act of 1990 (PPA). EPA believes that dioxin and the dioxin-like compounds that are included in the petition, meet the criteria for addition to the list of toxic substances as established in EPCRA section 313(d)(2)(B). EPA is also proposing to modify the existing EPCRA section 313 listing for polychlorinated biphenyls (PCBs) in order to exclude those PCBs that are included in the proposed dioxin and dioxin-like compounds category.

To obtain a copy of the *Federal Register*, visit you local library; or on the Internet, go to www.epa.gov/fedrgstr/. Written comments should be submitted in triplicate to: OPPT Docket Clerk, TSCA Document Receipt Office (7407), Office of Pollution Prevention and Toxics,

Environmental Protection Agency, 401 M St, SW Rm. G-099, Washington, DC 20460, Attention: Docket Control Number OPPTS-400109. **Comments must be received by September 5, 1997.**

For further information on this proposed rule, call the Environmental Protection Agency's Emergency Planning and Community Right-to-Know hotline at 800/535-0202; in Virginia and Alaska call 703/412-9877. *Adapted from Habitat Hotline, Number 33, August 1997.*



Wetland Protection Options for Local Governments

County options for wetlands protection vary depending on state laws and regulations; environmental and institutional conditions; and community needs. Regulatory approaches must be coordinated with existing federal and state regulations. In Connecticut, Florida, Massachusetts, New York, Virginia, Washington, and Wisconsin, different state laws require local regulation of wetlands activities. More than 3,000 local governments have adopted wetland regulations in these states.

A short overview of wetlands protection techniques available to counties has been prepared by the National Association of Counties (NACo), and is presented below. This review is by no means comprehensive, but is intended to provide county officials with a starting point.

Several guides and handbooks are recognizing the important role local governments play in wetlands protection have been recently published by national organizations and states (see references). These and other resources describe local government wetlands protection techniques in greater detail.

Wetlands and Watershed Planning

A watershed is an area of land that drains into a lake, river, or ocean. Watershed protection is a comprehensive approach to managing land and water resources. The approach allows for the integration of a broad range of objectives, such as floodplain management, stormwater management, source water protection, nonpoint source pollution control, and wetlands protection. Implementing watershed management plans may include regulatory and non-regulatory techniques to meet protection goals.

A local wetlands plan can outline a community's vision for growth and development; provide more predictability; and lead to a better understanding of state and federal regulations. For a plan to be an accepted framework for guiding growth, it must be based on the community's goals and objectives for the future. The initial stages of the planning process should include a mechanisms for all interested parties (also known as "stakeholders") to voice issues, concerns and develop the community's vision. Other types of plans include: comprehensive land use plans, special area management plans, and state wetland comprehensive plans.

Regulatory and Planning Techniques

The following regulatory and planning techniques for wetlands protection are currently being used by local governments on either an interim or long-term basis:

Wetlands Policy - local governments can adopt a wetlands policy to incorporate wetland protection and restoration goals into overall government decision making. For example, the City of Boulder, Colorado, adopted a wetlands policy with a no net loss of wetlands goal.

Zoning - special wetlands protection districts or overlays often

prohibit activities in wetlands. Some also contain density control, setback or buffer requirements; or transferable development rights for wetlands.

Subdivision controls - may include requirements for homes to be "clustered" together; dedicated open space or parks; and stormwater detention.

Floodplain regulations - may prohibit filling or altering floodways, floodplains, wetlands and other flood storage areas.

Codes and Ordinances - including building codes, sediment and erosion control ordinances, grading ordinances, tree cutting and other vegetation removal ordinances.

Voluntary/Incentive-based Options

These approaches may assist public and private protection of wetlands. They are not required, but provide incentives for implementation.

Educational Materials and Activities - including brochures, manuals, workshops, conferences, video/films, interpretive sites and centers and school programs.

Public or Private Acquisition - in fee or easements, through gift or purchase devices for parks, greenways, open space, and public works projects.

Conservation Easement of Deed Restrictions - in perpetuity for specified period of time.

Real Estate Tax Incentive - reducing real estate tax rates and special assessments.

References

The following documents supplied information for this article. Many wetlands publications, covering these topics and more, are available. Contact EPA's Wetlands Information Hotline (1-800-832-7828) for more information.

Protecting Wetlands: Tools for Local Governments in the Chesapeake Bay Regions (Chesapeake Bay Program, April 1997). Price: free. To order, call Wetlands Workgroup Fellow at 1-800-YOUR BAY.

Texas Coastal Wetlands: A Handbook for Local Governments. Claire Randle, et al. (Texas General Land Office, 1996). Price: free. To order, call Dorothy Browne 512/475-1468.

Our National Wetland Heritage: A Protection Guide. Jon Kusler and Teresa Opheim. (The Environmental Law Institutes, 1996). Price: \$29.95. To order, call 1-800-433-5120, or email orders@eli.org

EPA Wetlands Fact Sheets (U.S. Environmental Protection Agency, 1995). Price: free. To order, call 1-800-832-7828 or email wetlands-hotline@epamail.epa.gov.

For more information on NACo's Wetlands Protection Project, please contact Abby Friedman at NACo, 202/942-4225, or email afriedma@naco.org. Adapted from *County Environmental Quarterly*, Spring 1997

Maryland Coastal Bays National Estuary Program Focuses on Habitat

Assawoman, Isle of Wight, Sinepuxent, Chincoteague, and several smaller bays collectively make up the estuarine system known as Maryland's coastal bays. Bordered by Assateague Island and Ocean City to the east and the eastern shore of Maryland to the west, the coastal bays estuary is small but significant. In fact, the bays' national significance was recently recognized when this estuary was added to the EPA's National Estuary Program. Upon designation, a partnership among federal, state and local governments, businesses, environmental groups agricultural and fishing interests, scientists and citizens was formed to cooperatively identify the bays' problems and determine the best management solutions. This partnership is called the Maryland Coastal Bays Program (MCBP).

The MCBP has recently completed a detailed characterization of the condition of the coastal bays. Eutrophication, habitat loss, chemical contamination and growth were among the problems determined to need attention. Representatives of the many stakeholder groups within the watershed are currently assessing potential corrective actions which may be included within the MCBP Comprehensive Conservation and Management Plan.

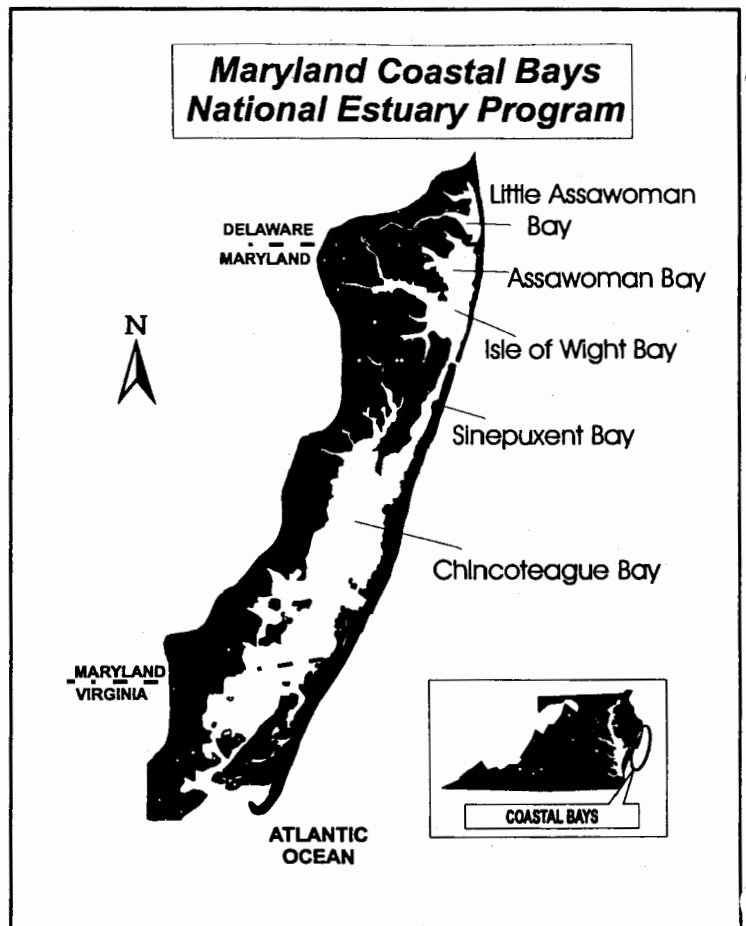
Maryland's coastal bays support a variety of plant and animal species, many of which contribute to the local and regional economies. Over 125 fish species have been documented to use the bays. The forests and wetlands of the bays watershed provide important wintering and breeding habitats for more than 360 resident and migratory bird species. In fact, the coastal bays have been called the most significant estuarine area in Maryland for colonial water birds and many other estuarine dependent bird species.

A primary component of the watershed's economy is tourism; the resort town of Ocean City draws more than 300,000 visitors a week each summer. Many of the natural attractions which draw visitors to the region also encourage permanent residence. The coastal bays watershed is the fastest growing area in the entire state of Maryland; growth in the watershed alone is projected to exceed 30% in the next 10 years. Unfortunately, the residential and commercial development that accommodates such rapidly increasing population growth often threatens the wetlands, forests and aquatic habitat so crucial to the bays' living resources.

More than half of the wetlands and forests within the coastal bays watershed have been lost to residential and commercial development and agricultural production since colonial times. Additional losses of wetlands occur due to increased use of bulkheads and "hard" erosion control devices. Eutrophication,

sedimentation and chemical contamination, due largely to land based activities, threaten aquatic habitat. Decreases in pollution-sensitive species such as black sea bass and Atlantic menhaden have been attributed to changes in aquatic habitat quality in the northern bays. Water-based activities like boating, recreational clamming and navigational dredging may also adversely affect aquatic habitats within the bays.

The Habitat and Living Resources Subcommittee of the Maryland Coastal Bays Program is working on the problems contributing to habitat loss and developing solutions to those problems. The subcommittee is comprised of representatives from a variety of stakeholder groups within the watershed. The subcommittee meets monthly on the third Wednesday of the month, and all meetings are open to the public. For more information on this subcommittee or other details about the MCBP, please call the program office at 410/213-BAYS.



Calendar

National Urban and Community Conservation Conference is scheduled for November 2 - 5, 1997 in Columbus, Ohio. The Conference is sponsored by the National Association of Conservation Districts, with cosponsorship from federal and state agencies, as well as conservation groups and professional societies. The conference is structured to focus public attention on the social, economic, and environmental issues inherent with urbanization. Conference topics include: sustainable development - meeting present needs without compromising the ability of future generations to meet their own needs; discharge standards; urban water quality standards; and wetland restoration and protection, among others. For further information, contact Karl F. Otte, NACD Urban Conference Coordinator, 509 Capitol Court, NE, Washington, D.C. 20002-4946 - Phone or Fax, 703/440-8611, or email washington@nacdnet.org.

Water Quality International 1998 - The International Association on Water Quality (IAWQ) will hold its Nineteenth Biennial Conference, entitled "Water Quality International 1998" on June 21-26, 1998 in Vancouver, BC. The mission of IAWQ is to promote internationally the professional advancement of the science and practice of water quality management. Technical papers and posters are currently being invited on all topics relating to water quality. Manuscripts for oral presentations must be received before July 1, 1997, while manuscripts for poster presentations are due February 15, 1998. For a description of the conference or details about submitting a paper, write or call: WQI '98 Conference Secretariat, 645-375 Water Street, Vancouver, BC V6B 5C6, Canada; phone 604/681-5226; fax 604/681-2503.

Practical Watershed Protection - This seminar is a state-of-the-art how-to guide for protecting growing watersheds. It is presented by the Center for Watershed Protection and sponsored by the National Association of Counties. It is being held November 20 & 21 at the Quality Hotel, 8727 Colesville Rd, Silver Spring, MD 20910. For more information, visit their websites: www.naco.org and www.pipeline.com/~mrrunoff/

Fourth Marine and Estuarine Shallow Water Conference - Users and Regulators Seeking Consensus - For the past several years, scientists and regulators from around the world have met at the Marine and Estuarine Shallow Water Conferences to discuss the multiple issues surrounding this important ecological region which they have previously defined as the shallow water zone - the zone of maximum interaction between human activities and biological resources: the intertidal zone to four meters below mean low water. The conference, to be held in Atlantic City, NJ from March 15-19, 1998, continues the dialogue and seeks to raise and discuss the issues, noting the conflicts between and pursuing consensus among the varied users and regulators. Abstracts should be tailored so they are relevant to a diverse group of users and should include a discussion of one of the following: critical habitats, scientific research, users' needs, policies and regulations, and management practices. For further information, contact: Ralph Spagnolo, 215/566-2718 (spagnolo.ralph@epamail.epa.gov) or Ed Ambrogio, 215/566-2758 (ambrogio.edward@epamail.epa.gov).

Fisheries, Habitat and Pollution 1997 - This conference, held November 6-8 in Charleston, SC, will explore population and ecosystem level effects of pollution and environmental degradation in the following areas: pollution, habitat quality and ecological issues associated with fisheries; watershed and coastal management; restoring degraded environments; and policy, management, and communication. Sponsors include National Marine Fisheries Service, Coastal Services Center, South Carolina Department of Natural Resources, TerraAqua Environmental Science and Policy, and the Atlantic States Marine Fisheries Commission, among others. For additional information, please contact Elaine L. Knight, Conference Coordinator, at the South Carolina Sea Grant Consortium, 803/727-2078 or knightel@musc.edu.

Clean Water 97 - The Clean Water Network's annual meeting is scheduled for October 18-20, the weekend of the Clean Water Act's 25th birthday. The goal of the meeting is to look at the progress that has been made, and to plan for the future of the Clean Water Act. The conference will be held at the Radisson Barcelo Hotel, 2121 P Street, NW, Washington DC. To reserve a room at the hotel, call 1-800-333-3333 and mention the Clean Water Network. Reservations must be made by September 17. For airline travel, contact Personalized Travel at 1-800-237-6971 and identify yourself as Clean Water Network conference attendee to receive the discount. The registration fee is \$30, payable to NRDC. For more information or to register, contact Merritt at 202/289-2421.

Pfiesteria Implicated in Chesapeake Bay Fish Kills

Tens of thousands of fish have been killed in a stretch of Maryland's Pocomoke River. The chief suspect is *Pfiesteria piscicida*, a micro-organism held responsible for the deaths of billions of fish in North Carolina's Neuse River and Pamlico Sound since it was first identified in 1988.

Two of the key questions in the mystery of this organism are: what induces its proliferation, and what are the human impacts? Both North Carolina State researcher Dr. Joanne Burkholder and her research associate have suffered

symptoms such as memory loss which have been attributed to the micro-organism. U.S. Senators and the Governor of Maryland have requested assistance from the Centers for Disease Control to determine human health impacts. Although a 7 mile stretch of the river has been closed to protect human health from the direct impacts of *Pfiesteria's* toxins, at a recent press conference Governor Parris Glendening ate Chesapeake Bay oysters and crabs to demonstrate that the state's seafood is still safe.

The influx of excess nutrients to

estuarine ecosystems has been implicated as the primary cause for recent episodes of *Pfiesteria* proliferation. This area is still under scientific investigation. For further information, see North Carolina State University's homepage on the organism, http://www2.ncsu.edu/unity/lockers/project/aquatic_botany/pfiest.html.



Atlantic States Marine Fisheries Commission
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Habitat Hotline Atlantic

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