Committee on Resources

Subcommittee on Fisheries Conservation, Wildlife and Oceans

Statement/Testimony

WRITTEN TESTIMONY OF

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BEFORE THE SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS

UNITED STATES HOUSE OF REPRESENTATIVES

REGARDING REAUTHORIZATION OF THE

COASTAL ZONE MANAGEMENT ACT

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ON BEHALF OF THE FOLLOWING ORGANIZATIONS:

American Oceans Campaign, DC and California

Center for Marine Conservation, DC and California

Clean Ocean Action, New Jersey

Coast Alliance, Washington DC

Gulf Restoration Network, Louisiana

Natural Resources Defense Council, New York, DC, California

Northwest Environmental Advocates, Oregon

Ocean Advocates, Maryland

Save Our Shores, California

Sierra Club National Marine Wildlife and Habitat Committee

Sierra Club, Midwest Office, Wisconsin

Introduction

The Coast Alliance welcomes the opportunity to submit testimony to this Subcommittee on the reauthorization of the Coastal Zone Management Act. The Alliance leads a network of over 400 organizations along all four United States coasts, including the Great Lakes. Together we work to protect this nation's priceless coastal resources.

Coast Alliance has a long history of work to support the Coastal Zone Management Act and has been very active in its

reauthorizations. We look forward to working with this Subcommittee to reauthorize the Act again.

Since the Act was originally passed in 1972, there has been little respite from human impacts in coastal areas. The latest population estimates suggest that by 2015, the coasts will be home to nearly 25 million more people. Where will our already crowded coasts put these 25 million people? What impact will these new residents have? What will be left of our precious marshes, beaches and woodlands? How will our coastal bays, lakes and estuaries fare?

The answers, and our greatest hope for the coasts, lie in a carefully crafted and well-defined Coastal Zone Management Act. Coast Alliance believes strongly that the Coastal Zone Management Act has been a very important program, providing much needed attention to coastal issues, and ensuring interagency coordination and comprehensive solutions. Through reauthorization we can give it a chance to be effectively implemented.

As Congress embarks on this important task, the Coast Alliance and its affiliated organizations believe that in order to achieve its goals, the Act must reflect the following principles:

1) Since polluted runoff is the number one cause of water quality impairment, threatening coastal economies, and aquatic resources and habitats, the Coastal Nonpoint Pollution Control Program in its current form must be integrated into the Act, and sufficient funds must be authorized for its support.

2) The ProgramÕs penalty provisions and its requirements for enforceable mechanisms must be maintained and the Program must be funded if the Act is to achieve its goals.

3) Any new projects or grant programs supported through appropriations under this act must be environmentally protective, maintaining the natural biological, chemical and physical integrity of coastal ecosystems. While the impacts of some projects such as beach renourishment, dredging and shoreline stabilization may be a subject of debate, there are certainly many sources of funding available for such programs. Therefore, the financial resources made available through the Coastal Zone Management Act should focus on projects that provide agreed-upon benefits to coastal resources, and not those with definite or potential ecological risks.

Background

Population growth on the coasts simultaneously barrages the area with additional sources of pollution and robs the coast of its resilience or its ability to withstand stress. Marshes, forests, and grasslands, for example, are replaced with impervious surfaces that cause polluted water to speedily rush to near-shore habitats. The result is not just a degraded habitat, but in many cases the loss of fisheries and other coastal resources worth billions to the economy. Such impacts should be minimized, not facilitated, by a new Coastal Zone Management Act.

The extensive benefits of these ecosystems have consistently been under-appreciated since today's cost-benefit studies are not equipped to measure the intrinsic values of wetlands, rivers or the ocean. Where they are considered, generally only those goods that can actually be bought or sold are included in the equation. Besides the obvious market-based values such as fisheries and transportation, coastal ecosystems quietly provide us with more varied life-supporting services. These ecological services, such as the roles a forest plays in producing oxygen, or preventing runoff, are almost never considered in cost-benefit analysis. Careful consideration of the values of these ecological services provided by coastal resources can help understand and demonstrate the need for conservation.

Economists estimate that the global ecosystem provides $33 trillion each year in services to humankind. The coasts, which include oceans, estuaries, the continental shelf, lakes, rivers, seagrass beds, wetlands, and coral reefs were valued around $27 trillion, making up 80 percent of the total value of the earth's ecosystem services.

Coastal ecosystems prevent runoff, support fisheries, and regulate the gases in the atmosphere that maintain global temperature, shield us from harmful solar radiation, and allow us to breathe. Ecosystem services also include purification of water, mitigation of floods and drought, pollination, pest control and generation of fertile soils (Nature 1998). There are also the obvious benefits: recreation, cultural opportunities, and the provision of resources like lumber, fuel and food (Costanza et al. 1997). All we need to do to realize these immense benefits is to protect the coasts, and the $27 trillion figure provides a clear indication of the importance of doing so.

Development and pollution, the two greatest threats to the coasts, need to be addressed by the Coastal Zone Management Act. Whether the source is agricultural runoff, sloppy forestry practices or uncontrolled urban runoff, control over the continued onslaught from polluted runoff is long overdue. Besides contributing to the closure of nearly three million acres of the nation's shellfish beds, polluted runoff is also credited with degrading at least a third of surveyed rivers and streams, and causing a "Dead Zone" covering more than 6,000 square miles in the Gulf of Mexico. Polluted runoff also promoted the toxic *Pfiesteria* outbreaks on the Mid-Atlantic Coast, made bathers sick on beaches in California, and clogged important shipping channels in the Great Lakes and elsewhere. The most common source of pollution, runoff comes from thousands of diffuse sources, such as farms, logging areas, new and existing developments, natural waters, marinas, septic systems, dams and other sources. Together they create a serious and ubiquitous water pollution problem.

However, compared to factories and sewage treatment plants, runoff pollution remains essentially unregulated.

In spite of the prevailing myth that the sources are too diffuse to address, the truth is that there are proven methods of controlling polluted runoff. Like point source pollution, polluted runoff can be managed and the time has come to level the playing field.

The Coastal Nonpoint Pollution Control Program can help us begin to solve these problems. This policy tool that Congress created can stop runoff from taking its toll on local waterways. Coast Alliance has been working closely with state and federal government agencies to ensure that the federal investment in this program is well spent. We also have worked hard to help ensure adequate funding for the program; however, to date the funding level does not reflect the need, or the degree to which runoff harms ecosystems.

As Congress embarks on its reauthorization process, we would like to draw your attention to this important problem. This week, Coast Alliance released a report entitled *Pointless Pollution: Preventing Polluted Runoff and Protecting America's Coasts.* The report compiles information on the states of the coasts with respect to polluted runoff problems and summarizes coastal states' efforts to address the problem through the Coastal Nonpoint Pollution Control Program. A summary of our findings follows.

The Need to Prevent and Control Polluted Runoff

America's coastal waters are a critical resource providing food, drinking water and recreational opportunities to all of its citizens. However, those are not all of the benefits. According to a recent economic analysis, coastal ecosystems such as wetlands, estuaries, and coral reefs provide us with billions of dollars worth of services such as air and water purification, flood prevention, and provision of habitat. When these ecosystems are destroyed by pollution or unmanaged development, we lose more than a pretty place. It costs us our air filtering system, flood control, natural water filters - losses we may never recoup - and this does not include marketable resources we extract from the coasts. Recognizing the need to ensure sustainable use of our fisheries and other coastal resources, Congress created the Coastal Zone Management Act.

Recent studies show that the Act holds promise (Hershman et al. 1999). Yet our coasts are increasingly subject to diverse sources of stress. As a result of the ever increasing population and pollution pressure, the coasts endure constant challenges such as harvesting forests and draining wetlands, which would otherwise contribute to coastal resilience. As our population grows, the coasts' allure may also be their detriment, and already the impacts are becoming clear.

Polluted runoff continues to rob coastal economies of billions of dollars that might otherwise be generated by tourism, fishing, and wildlife-watching. Coastal resources such as wetlands, oceans, and estuaries, are significant income generators and have tremendous ecological values. These coastal resources offer us many services that are lost as the resources diminish. Increasing populations will cost the coasts dearly unless runoff is prevented.

Coastal program managers agree. A recent evaluative study (Hershman 1999) found that one failure of the program according to its senior managers was that it has not adequately addressed water quality protection, watershed management, or nonpoint source pollution.

The Coastal Nonpoint Pollution Control Program, passed by Congress in 1990, was designed to address growing concerns about polluted runoff from sources as diverse as agriculture, forestry, development, roads, dams and marinas. The Program requires states to develop plans for managing these problems. To date, all coastal states with federally approved Coastal Zone Management Programs have done so. While plans are not yet finalized, much has been invested in their development. To ensure that the investment pays off, Congress must incorporate the Coastal Nonpoint Pollution Control Program into to the Coastal Zone Management Act and provide the funding for its implementation.

As a result of the purely voluntary nature of other runoff control programs, little significant progress has been made in cleaning up polluted runoff into America's coastal waters over the past decade. The Coastal Nonpoint Pollution Control Program requires that, while plans may include voluntary programs, they also must have back-up measures that are mandatory and enforceable to be used if and when the voluntary programs do not work.

As a result, the Coastal Nonpoint Pollution Control Program offers a ray of hope in controlling and preventing polluted runoff. Failure to implement the Coastal Nonpoint Pollution Control Program will result in the costly degradation of America's most valuable ecosystems.

State of the Coasts

According to the Environmental Protection Agency (EPA), most, if not all of the estuaries in the National Estuary Program identify nutrient enrichment as a primary environmental problem (Wayland 1996). Nationally, only about six percent of the nitrogen comes from point sources (Wayland 1996). The remainder results from runoff, and other nonpoint sources. In many areas such as Chesapeake Bay, nearly two thirds of the load originates as traditional nonpoint sources: agriculture, forestry and development (Boesch 1996).

- Runoff Closes Shellfish Beds, Destroying a Livelihood

In 1995, 3.5 billion acres, or nearly one in every seven acres of classified shellfish beds were not approved for harvest due to poor water quality. The causes - failing septic systems, pollution by marinas and boating, agricultural runoff and feedlots - are precisely the sources that can and should be reduced by the Coastal Nonpoint Pollution Control Program.

According to data from the National Oceanic and Atmospheric Administration (NOAA), nonpoint source pollution was a cause of 85 percent of these shellfish bed closures overall[(1)]. In 14 of the 21 coastal states included in the National Shellfish Register, more than 95 percent of the area closed to shellfishing was impaired by nonpoint sources. This includes eight states where 100 percent of the acres closed were attributed, at least in part, to polluted runoff.

- Runoff Leads to Low Oxygen Conditions, Threatening Fisheries

Scientists have shown that hypoxia caused by nutrients carried in runoff may affect fisheries resources by killing fish, reducing the habitat or food that is available, or by making them more susceptible to their predators, including humans (Rabalais et al. 1996).

While hypoxia is generally a temporary condition, long-term low oxygen trends have been observed in lakes and estuaries around the country. In places like the Gulf of Mexico, there is little respite from continuous loads of nutrients fed into the waterway from agriculture, urban runoff, wastewater treatment, air deposition, and other sources. Annual cycles occur, and in many areas summertime low oxygen levels are commonplace.

The most vivid example is an area in the Gulf of Mexico known as the Dead Zone, a 16,000 square kilometer (more than 6,000 square miles) area in the Gulf of Mexico, near the mouth of the Mississippi River. Roughly 40 percent of the continental United States drains its fertilizers, pesticides, and other runoff into the Mississippi, contributing to the Dead Zone. The size of the Dead Zone varies from year to year depending on weather conditions and runoff volume among other factors.

Scientists have studied this area over a series of years and found that below certain critical oxygen levels shrimp fishermen rarely catch shrimp in their trawl nets. Mobile organisms such as fish disappear as the oxygen levels drop (Harper and Rabalais 1996); they have likely left these areas in search of more oxygen-rich waters. Animals such as crabs and anemones, that are incapable of escaping, have been observed to die on the bottom. Since the natural scavengers have died or fled, the corpses are not consumed as they normally would be (Harper and Rabalais 1996). They simply lie on the bottom as a testament to the lifelessness of the Dead Zone.

Estuaries and lakes on all four coasts have suffered from low oxygen due to nutrient enrichment. Management measures in the Coastal Nonpoint

Pollution Control Program guidance (EPA 1993), if applied in watersheds like the Mississippi River and its tributaries, could begin to shrink "dead zones" and bring back the fisheries.

• Runoff Stimulates Harmful Algae Blooms

Pollution problems begin to really hit home when they threaten public health. The summer of 1997 saw an extremely frightening environmental disaster: fish kills that could sicken humans. A toxic micro-organism called *Pfiesteria* came onto the scene. That year alone, Pfiesteria killed more than a million fish, and caused human health problems including memory loss, reduced ability to solve simple math problems, and skin lesions resembling those found on dead and dying fish. Other algae species that can cause similar effects on fish communities and humans have caused blooms in other coastal areas as well.

Since Pfiesteria was first found in nature in 1991, it has caused major fish kills in North Carolina's Neuse and Pamlico Rivers and in Maryland's Pocomoke River. In the summer of 1997, besides the million fish killed in North Carolina, an additional kill (10,000 fish) followed in the Pocomoke River in Maryland (Burkholder and Glasgow 1997). An outbreak of *Pfiesteria* also was documented in the Indian River in Delaware (EPA 1998).

According to Dr. JoAnn Burkholder:

"*Pfiesteria piscicida* has been implicated as the causative agent of about 50 percent of the major fish kills (affecting one thousand to one billion finfish and shellfish) in North Carolina's estuaries and coastal waters alone" (Burkholder 1996).

"All the evidence that we have suggests that this dinoflagellate began to become highly active in toxic outbreaks within the past ten to fifteen years as pollution has continued to increase in many of our waters and as wetland areas to filter the pollutants have been eliminated" (Burkholder 1996).

The excessive non-point source loads of nitrogen and phosphorus in coastal North Carolina and Maryland are undeniable. While the poultry and swine industries have been quick to deny that their wastes could be contributing to this problem, scientists have acknowledged that reducing nutrients would likely reduce the Pfiesteria problem (WRRI 1998, Boesch 1997, Boesch et al. 1997). In spite of industry's claims, according to a scientific consensus, the benefits of reducing nutrient pollution are clear:

"There can be little question that decreases in nutrient loading (both organic and inorganic forms of nitrogen and phosphorus) will reduce eutrophication and thereby, lower the risk of toxic outbreaks of Pfiesteria-like dinoflagellates, hypoxia and fish kills." *Findings of the Raleigh Report, 1998 (WRRI 1998).*

There is no time to waste in addressing harmful algae blooms like Pfiesteria. The facts are in, and the Coastal Nonpoint Pollution Control Program is poised to fulfill this immediate water quality need.

• Runoff Clogs Harbors, Costing Taxpayers Millions

The mouth of the Maumee River in Ohio demonstrates yet another costly problem resulting from insufficient environmental controls. The tremendous plume of sediments that washes into Toledo Harbor clogs channels and challenges the Lake Erie ecosystem. In total, about 6.4 million tons of soil are eroded from cropland during rainstorms. While much of this soil remains on land, 1.3 million tons of sediment flows into the Harbor[(2)] (Sohngen 1998).

Toxic metals in Toledo Harbor and Lake Erie contaminate these new sediments after they enter the river. As a result, most sediments dredged from the area are contaminated and must be confined in a facility designed to prevent toxics from escaping into the environment.

Reducing sediment runoff from farms could significantly reduce dredging and disposal costs. By slowing the flow of sediments into the river, and reducing the amount of material to be dredged by about two million cubic yards, the Army could prolong the life of the disposal facility and postpone its construction by about two years. These outcomes would save taxpayers as much as $1.3 million each year (Sohngen 1998). In addition, spawning habitat for fish and other aquatic life would be improved, costs would be saved in treating drinking water, and recreational opportunities in the area would improve.

Preventing runoff can also save money for farmers. Besides topsoil, runoff carries valuable nutrients away from farm fields and into nearby waterways. By minimizing nutrient losses, farmers can save money on nutrient inputs, such as fertilizer and feed.

The measures needed to achieve these significant benefits for taxpayers, ports, farmers and the environment are precisely the type that would be provided by the Coastal Nonpoint Pollution Control Program. EPA's guidance contains management measures that could prevent sedimentation in rivers and harbors everywhere.

• Runoff Contaminates Beaches, Making Swimmers Sick

A study conducted by the Santa Monica Bay Restoration Project (SMBRP) identified health threats at prime swimming and surfing spots on the Southern California coast that were not previously under a swimming advisory (SMBRP 1996).

Santa Monica is a popular swimming and surfing area near Los Angeles in Southern California. On a typical day, storm drains carry runoff from more than 400 square miles, releasing from 10 to 25 million gallons of stormwater into the bay. When it rains, more than 10 billion gallons of runoff may wash into the ocean (Knudson and Vogel 1996). With the runoff come waste products of millions of residents in one of the most densely developed areas of the country. Besides toxic chemicals from anti-freeze, brake pads, leaking oil, urban lawn chemicals and the like, bacteria and viruses creep in, from leaking sewage systems, animal waste, and fertilizers. These viruses can cause illness and render waters unsuitable for swimming.

The study found that people who swam near storm drains had increased incidence of fever, chills, vomiting, coughing with phlegm, ear discharge, respiratory disease, and gastrointestinal illness among other ailments. These problems were especially pronounced in swimmers who swam closest to the drains. When the total coliform counts were high, swimmers encountered the same problems more frequently, even when they swam further away from the storm drains (SMBRP 1996).

Certainly the severe problems experienced in Santa Monica Bay and places like it should be considered by those charged with planning new development in coastal areas. This calls for strong management measures for new and existing development in states' coastal runoff plans.

The Coastal Nonpoint Pollution Control Program

The prevalence of shellfish bed closures, beach closures, algae blooms and Òdead zonesÓ are a legacy of our historic inattention to the issue and serve as a stark reminder of the challenge at hand. By 1990, Congress recognized that earlier efforts to control the polluted runoff problem had not been successful and that coastal areas were especially vulnerable to this type of pollution. To ensure that states and federal agencies worked together to deal with this increasingly serious problem, Congress created the Coastal Nonpoint Pollution Control Program.

The Coastal Nonpoint Pollution Control Program focuses exclusively on efforts to prevent and control polluted runoff in coastal watersheds. As more and more people move to the coasts, disproportionate impacts, including runoff-related water quality degradation, make the focused attention to these areas not only appropriate, but essential.

The Coastal Nonpoint Pollution Control Program is the only federal program designed to address runoff in an accountable, targeted and enforceable manner, stressing coordination among agencies as well as local solutions. Run jointly by the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA), the Program requires coastal states to develop and implement plans to prevent polluted runoff. Its requirements initially allow the use of voluntary measures, but require back-up enforceable means to insure implementation where voluntary measures fail. This is the first time that a federal runoff control program has moved beyond voluntary efforts that have proven insufficient to solve the problem.

By issuing technology-based guidance, EPA and NOAA have provided states with measures that are known to be effective in preventing or controlling each major source of runoff (EPA 1993). These management measures address the most prevalent sources of runoff. Most of the measures recommended by EPA are cost-effective, and some will even save money for those who put them in place. As a result, the coastal program could serve an excellent model for the rest of the country. Since states are to seek final approval of their plans by early 2000, this program needs

Maintaining the Enforceable Nature of the Coastal Nonpoint Pollution Control Program

We often forget that we are surrounded by enforceable laws, created and implemented for the common good. For example, our traffic system is enforceable. When one person runs a stoplight, many stand to be hurt, therefore we need rules to protect the public's interest. Enforceable measures also have been the cornerstone of successful environmental programs. For example, the Clean Water Act has enforceable regulations for controlling the discharge of pollution from point sources into waterways that are used by everyone. As a result, a factory or wastewater treatment plant would require a permit to discharge the amount of pollution that runs unregulated off of farms and developments every day.

The costs of polluted runoff to fisheries and tourism economies, not to mention the impacts on the ecological services otherwise provided by coastal areas, certainly justify the use of enforceable measures when voluntary measures fail. In the reauthorization of the Coastal Zone Management Act, for the sake of the coastal resources that the Act is to protect, the enforceability of the program should not be lost or weakened. Since the Coastal Nonpoint Pollution Control Program is the only program with enforceable provisions, if anything, these provisions should be strengthened and used as a model for other programs.

Consistency of Federal Projects with State Runoff Plans

The Coastal Nonpoint Pollution Control Program is strengthened by a provision of the Coastal Zone Management Act that requires federal actions in states' coastal zones to be consistent with state coastal zone programs. Since this includes the Coastal Nonpoint Pollution Control Program, the consistency provision will ensure that federal projects adhere to states' pollution control requirements, preventing such projects from undermining the states' efforts to protect their coastal zones.

Considered by many to be one of the most critical aspects of the Coastal Zone Management Act, the consistency provisions serve an important purpose and must not be weakened.

Conclusions

The deluge of people living on and near the coasts is not merely a fad that will soon yield to favor more inland locations. It is largely a result of rampant population growth combined with the beauty and economic promise of coastal areas. For this reason, coastal managers must find a sustainable way to accommodate larger populations, or risk losing coastal resources and creating unlivable communities. A carefully crafted Coastal Zone Management Act together with the Coastal Nonpoint Pollution Control Program provide a covenant for protecting our limited coastal resources at a time of great need.

In summary, Coast Alliance and its affiliated organizations strongly recommend that the Act should embody the following principles in order to achieve its goals:

1) The Coastal Nonpoint Pollution Control Program in its current form must be integrated into the Act, and sufficient funds must be authorized for its support.

2) The ProgramÕs penalty provisions and its requirements for enforceable mechanisms must be maintained and the Program must be funded.

3) Any new projects or programs supported through appropriations under this act must be environmentally protective, maintaining the natural biological, chemical and physical integrity of coastal ecosystems.

Since runoff is the primary cause of aquatic habitat degradation, achieving the goals of the Act requires preventing runoff through the Coastal Nonpoint Pollution Control Program. Without a doubt, the success or failure of the Coastal Nonpoint Pollution Control Program depends on three factors: adequate plans to control the true causes of polluted runoff, the presence of enforceable mechanisms to make sure those sources are reduced, and adequate resources to implement these plans. To date, states and the federal government have invested in the development of runoff prevention and control plans that are on the verge of completion. The pay-off from that investment should be realized by ensuring the program's completion. Congress can continue its efforts to protect the coasts by ensuring that the

Coastal Nonpoint Pollution Control Program is reauthorized and funded as part of the Coastal Zone Management Act Reauthorization this year. Coast Alliance looks forward to working with this Subcommittee toward that end.

1. [i] Acreage affected by nonpoint sources were calculated by the Coast Alliance based on data provided by the National Marine Fisheries Service. These values represent only areas where waters were closed due to water quality concerns as documented in the database. To estimate percentage closed, Coast Alliance included areas where shellfishing is prohibited, restricted, or conditionally restricted, but not areas where shellfishing is conditionally approved or approved. Areas were considered impacted by nonpoint sources if nonpoint sources were documented in the NMFS database as an "actual" or "probable" cause of closures. Nonpoint sources are listed as probable causes where it is the best professional judgement of the agency that they are a contributor, but where no corroborating data are available.

2. [ii] The primary source of this information was the United States Department of Agriculture, Soil Conservation Service 1993 report: Erosion and Sediment Dynamics of the Maumee River Basin and their Impact on Toledo Harbor.

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