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Coastal Resources eFeature Article(s)

Bush Administration Releases National Wetlands Mitigation Action Plan *Pamela A. Welty, Esq.*

On December 27, 2002, the Bush Administration released a National Wetlands Mitigation Action Plan that "affirms its commitment to the goal of no net loss of the Nation's wetlands." The Action Plan outlines a series of steps intended to "improve the ecological performance and results of wetlands compensatory mitigation under the Clean Water Act

and related programs.” An interagency team, consisting of the U.S. Army Corps of Engineers (COE), Environmental Protection Agency (EPA), Department of Agriculture (USDA), Department of the Interior (DOI), Federal Highway Administration (FHWA), and National Oceanic and Atmospheric Administration (NOAA), will work together to guide the development and implementation of 17 “action items,” that fall within five broad categories.

The action item in the first category, “Clarifying Recent Mitigation Guidance,” has already been accomplished with the COE’s release, also on December 27th, of its “Regulatory Guidance Letter for Wetlands.” Among other things, the Guidance Letter emphasizes that wetlands impacts and mitigation projects should be evaluated with respect to the resource needs of the watersheds in which they occur, as well as the resource needs of adjacent watersheds. In addition, the Guidance Letter authorizes the use of a “functional measurement” when evaluating the value of wetlands replacement projects. Under the “functional” approach, as opposed to the traditional acre-for-acre approach, the ratio of new wetlands to lost wetlands “may be less than one-to-one where the functions associated with the area being impacted are demonstrably low and the replacement wetlands are of higher function.” Conversely, where lost functions are deemed to be high, more acres of wetlands may be required as mitigation than have been lost to development.

The second action category, “Integrating Compensatory Mitigation into a Watershed Context,” requires the federal agencies to work with the states and tribes to develop new guidance on the “use of on-site vs. off-site and in-kind vs. out-of-kind compensatory mitigation,” the “use of vegetated buffers as a potential component of compensatory mitigation,” the “appropriate use of preservation for compensatory mitigation,” and the criteria for and “use of compensatory mitigation within a watershed context.” The Action Plan requires most of these steps to be completed by 2004 or 2005.

The third category, “Improving Compensatory Mitigation Accountability,” requires the development of guidance on mitigation banking and on the protection of “wetlands for which mitigation, restoration, or creation is not feasible or scientifically viable.” In addition, to encourage states and tribes to “increase the success of mitigation in their jurisdictions,” the EPA will award Wetland Program Development Grants for programs intended to improve the performance of wetlands mitigation projects. EPA will also work with states to develop guidance clarifying the appropriate considerations for mitigating impacts to streams under Section 404 of the Clean Water Act.

Under the fourth category, “Clarifying Performance Standards,” the federal agencies will work with the states and tribes to develop a “model mitigation plan checklist for permit applicants” that will help applicants determine what information will be required during the permitting process. The federal agencies also will work to incorporate into the Section 404 program “guidelines for creating or restoring self-sustaining wetlands,” that were developed by the National Academy of Sciences’ National Research Council, and will develop “performance standards guidance on monitoring and adaptive management of mitigation sites.” In addition, EPA will perform an analysis of existing research on the “effectiveness of using biological indicators and functional assessments for evaluating mitigation

performance.”

Finally, the fifth category, “Improving Data Collection and Availability,” requires the federal agencies to work with the states and tribes to compile and disseminate information in existing databases pertaining to wetlands mitigation projects. Based on analysis of this existing mitigation data, the agencies will establish a shared mitigation database by 2005, by which time they will also begin to issue an annual public report on how well the goal of “no net loss” is being achieved.

Click [here](#) for more information on the National Wetlands Mitigation Action Plan.

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The Clean Water and Coastal Zone Management Acts after 30 Years: Many Successes, More Challenges
Linnea McCaffrey, Land Use Analyst

Looking Back

These two landmark bills were passed just over thirty years ago. When Congress overrode President Nixon’s veto and passed the 1972 Federal Water Pollution Control Act Amendments, commonly known as the “Clean Water Act”, it was responding to public outrage over environmental degradation of the nation’s waterways. To appreciate the impacts of this legislation on its 30th anniversary, consider the following examples of conditions that led to its passage. In 1969, the Cuyahoga River was engulfed in flames sparked by a passing rail car and fueled by oil and industrial waste. Unchecked pollution of inland waterways resulted in record fish kills. Lake Erie was considered virtually a “dead zone”. Industrial discharge of 10-20 pounds per day of mercury to the Detroit River exceeded by a factor of six the Public Health Service limit. Fishing or swimming in 60-70 percent of our rivers and lakes was a health hazard. Fewer than one in ten U.S. watersheds were considered only moderately polluted or not polluted.

The Clean Water Act (“CWA”) was intended to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” It had two goals: eliminate the discharge of all pollutants into navigable waters of the U.S. by 1985 and achieve interim water quality levels by July 1983 to protect fish, shellfish, wildlife and recreation (the “swimmable, fishable” goal). To achieve these goals, the Act established the National Pollutant Discharge Elimination System permit program (“NPDES”), authorized funding to states to construct sewage treatment plants and set technology-based effluent limits, leaving states to establish water quality standards.

In contrast, the Coastal Zone Management Act (“CZMA”), also enacted in October of 1972, created a very different regulatory program, based on voluntary state participation with federal funding for coastal planning and implementation as an incentive. An additional incentive for state participation was the “federal consistency” requirement, a reverse

preemption policy to ensure that, with certain exceptions, activities sponsored by the federal government would be consistent with state coastal management plans.

The intent of the CZMA was “to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation’s coastal zone for this and succeeding generations.” The CZMA defined the coastal zone as state ocean waters under the Submerged Lands Act and adjacent lands “to the extent necessary to control shore lands, the uses of which have direct and significant impact on the coastal waters.” This definition leaves to each state the area to be covered, including the inland limits, for purposes of its management program.

CWA Accomplishments

The Clean Water Act is regarded as one of the most successful U.S. environmental laws. It has doubled the number of Americans served by sewage treatment plants. The EPA estimates that 60 percent of streams and 55 percent of lakes are safe for swimming and fishing, compared to just 30 percent and 40 percent, respectively, in 1972. Lake Erie, proclaimed “dead” in 1970, has seen a rebound in its fish population. The Hudson River supports spawning stocks of its historic migratory species, supporting fisheries along the Atlantic Coast. In Tampa Bay, sea grass has recovered and 1,500 acres of marsh and mangrove habitat have been restored. In Boston Harbor, once a dump for sludge, and poster child for ecosystem destruction, seals, porpoises and lobsters are back and it is a tourist attraction. Wetlands loss is estimated to proceed at one quarter the rate that prevailed in 1972.

CZMA Accomplishments

The federal consistency provision is considered by many to be one of the CZMA’s great strengths, supporting states’ rights to stop undesirable projects (e.g., federal prison barges in New York City), bring all agencies to the table (as with The Michigan Light House Project), and have a say in balancing competing claims to coastal resources (as in the offshore drilling and fisheries interests of Alaska). The CZMA also established the National Estuarine Research Reserve System in which federal and state authorities work to establish, manage and maintain representative estuarine ecosystems which serve as “living laboratories” for research and education. With 34 states with coastal zone management programs and 25 Estuarine Research Reserves established, the level of state participation is another significant measure of success. For more information on state coastal zone management programs, go to [the National Oceanographic and Atmospheric Administration’s CZM website](#) and [the National Estuarine Research Reserve website](#).

Remaining Challenges

Despite promising gains, the goals of the CWA have not been fully achieved. The EPA estimates 40 percent of America’s waters fail to meet federal clean water standards and do not fully support aquatic life, largely due to excessive nitrogen and phosphorous levels attributable to nonpoint sources. Various interest groups and the EPA are calling for a shift from the over-prescriptiveness of the federal pollution control program to performance standards implemented and enforced by the states. EPA is hoping that a new emphasis on watershed planning, water quality trading program (see article below) and the continuous planning process under Section 303(e) will address nonpoint source pollution. Everyone

agrees that a new focus, if not a new regulatory paradigm, is needed to address the following unresolved issues.

Nonpoint sources of pollution (stormwater runoff from urban, forestry, construction and agricultural lands) are not adequately addressed by the Clean Water Act. Under the Clinton administration, the EPA attempted to address these diffuse sources of pollution with two rulemakings. The total maximum daily load (“TMDL”) rule indirectly brought certain forestry and agricultural practices under CWA permitting. A concentrated animal feeding operation or "CAFO" rule would have regulated the practice of spreading waste over adjacent fields. Opponents have appealed these rules, arguing that they exceed the authorization of the CWA. EPA is now pursuing strategies and best management practices to be implemented at the local level rather than a federally imposed program to address this issue.

Deterioration of collection systems and wastewater treatment facilities is reversing the gains achieved since passage of the CWA. The EPA predicts that, absent increased investments in sewage treatment, pollutant loadings from domestic sewage in 2025 will be as high as they were in 1968. The EPA recently estimated that water and wastewater infrastructure funding faces a gap of \$270 billion over the next two decades. Without a long-term, federally funded program of investment, the water quality gains of the last 30 years will be lost. This year, Senate Bill 1961, authorizing \$40 billion over five years to assist local government with the problem of sewer overflows failed to pass.

Loss of wetlands remains a major concern. The U.S. Commission on Ocean Policy has found that about 40,000 acres of coastal wetlands are disappearing each year. Recent court cases and a proposed amendment to narrow the definition of the “waters of the United States” to exclude non-navigable tributaries, adjacent wetlands and so-called “isolated wetlands” will affect the scope of the CWA wetland regulation. Click [here](#) for more information on the definition of "waters of the United States."

In addition, lax enforcement is often viewed as an economic development incentive, so that states may be reluctant to pursue offenders while neighboring jurisdictions “look the other way.”

In a recent survey, CZMA managers had the following suggestions for improvements to the program (1) create a national marketing plan to increase public awareness of coastal issues, (2) elevate NOAA’s political authority, (3) focus on regional issues, (4) improve interagency cooperation and (5) integrate environmental statutes. The current focus is on better measuring coastal management performance, a difficult task for a program whose goal is so broadly defined. Click [here](#) for more information.

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EPA Adopts Final Water Quality Trading Policy

Keane Callahan, Environmental Analyst

On January 13, 2003, EPA adopted its final water quality trading policy in an effort to advance the goals and objectives of The Clean Water Act (CWA). The CWA was enacted in 1972 to restore and maintain the chemical, physical, and biological integrity of the nation's waters and established a national policy to eliminate the discharge of pollutants and protect water quality for fish, wildlife and recreational uses. The CWA also established regulatory permitting and compliance programs to control point and nonpoint sources of pollution.

Through the use of various technological applications and water quality based requirements, the National Pollutant Discharge Elimination System (NPDES) permit program has been successful in controlling point source pollution and restoring the nation's waters. Sources of nonpoint pollution such as urban storm water, agricultural runoff and atmospheric deposition continues to be a concern with EPA and the states. Therefore, the EPA and states have been looking for alternative or innovation regulatory methods to improve water quality, and the "water quality trading policy" is one such method.

Water quality trading is a market-based approach to improve and preserve water quality. The purpose of the policy is to encourage states, interstate agencies and tribes to develop and implement water quality trading programs as a cost-effective way of reducing water pollution from nutrients, sediments, and other substances. More specifically, the policy is intended to encourage voluntary trading programs that facilitate implementation of TMDLs, reduce the costs of compliance with CWA regulations, establish incentives for voluntary reductions and promote watershed-based initiatives. According to EPA's policy, trading can provide greater efficiency in achieving water quality goals in watersheds by allowing one source to meet its regulatory obligations by using pollutant reductions created by another source that has lower pollution control costs. Trading capitalizes on economies of scale and the control cost differentials among and between sources. EPA believes that market-based approaches such as water quality trading provide greater flexibility and have potential to achieve water quality and environmental benefits greater than would otherwise be achieved under more traditional regulatory approaches. Market-based programs have demonstrated that water quality goals can be achieved at a substantial economic savings. For example, nitrogen trading among publicly owned wastewater treatment works in Connecticut that discharge into Long Island Sound resulted in (1) the required reductions under a TMDL, (2) a 20 percent increase in the reduction of nitrogen over original projections, (3) achieving nitrogen reduction goals six years ahead of schedule, and (4) saved over \$200 million dollars.

While the trading policy is targeted primarily at nutrients and sediments, which typically come from nonpoint sources of pollution, the policy allows EPA to consider trades of other pollutants. For example, trades involving other pollutants may be allowed if they are approved through a NPDES permit, through a TMDL plan to clean up an impaired water, or through a pilot trading project supported by the state. Also, "cross-pollutant" trades, whereby increases in one type of pollutant may be offset by reductions in another, will be allowed in some situations. However, the trading policy does not allow trades of persistent

bioaccumulative toxics such as mercury, but they may be allowed at a later date. The policy also outlines the specific instances for when pollution credit trading may occur. For example, it can be used to maintain water quality standards or be done to help meet TMDL objectives. In addition, trading programs would have to comply with Clean Water Act program requirements and could be included in water quality management plans, continuous planning processes, watershed plans, and in NPDES permits.

There is some skepticism concerning the trading policy. Some critics of the policy suggest that the trading program should be restricted to those that involve pollution caps and require reductions in the targeted pollutant. Without pollution caps, it is claimed that dischargers can evade their compliance responsibilities by buying credits instead of reducing their levels of pollution, thus simply reallocating pollution among the different sources. In addition, pollution reduction by trading is difficult to quantify. For example, quantifying the pollution reduction benefit of a water quality trade between, say a industrial point discharger for a vegetated buffer strip on a farm is difficult to ascertain. In addition, the trading policy may have little practical use or value for private industrial wastewater NPDES dischargers since they are not likely to enter into a trading contract where they could ultimately be held liable for the actions or inaction of another party over which they have no control. However, municipal wastewater treatment officials fully support the policy because it will allow for trades among publicly owned treatment works, which are point sources, within the same watershed. For example, Association of Metropolitan Sewerage Agencies are encouraged by the fact that the trading policy can be applied on an intra-plant basis within a single publicly owned treatment works, on an inter-plant basis between point sources, and between point and nonpoint sources.

Summarizing, EPA's Water Quality Trading Policy is designed to (1) reach early reduction and progress towards water quality standards pending development of TMDLs for impaired waters, (2) reduce the cost of implementing TMDLs through greater efficiency and flexible approaches, (3) establish economic incentives for voluntary pollutant reductions from point and nonpoint sources within a watershed, (4) reduce the cost of compliance with water quality-based requirements, (5) offset new or increased discharges resulting from growth in order to maintain levels of water quality that support all designated uses, (6) provide ancillary environmental benefits beyond the required reductions in specific pollutant loads such as the creation and restoration of wetlands, floodplains and wildlife and/or waterfowl habitat, (7) secure long-term improvements in water quality through the purchase and retirement of credits by any entity, and (8) combine ecological services to achieve multiple environmental and economic benefits, such as wetland restoration or the implementation of management practices that improve water quality and habitat. Click [here](#) to access a complete copy of the trading policy.

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Underwater Electrical Generator Turbine Prototype Proposed for Cape Cod Canal

Keane Callahan, Environmental Analyst

An engineering professor at Northeastern University in Boston, Massachusetts has developed an intriguing new electrical turbine for generating power from tidal waters that could revolutionize tidal power technology as well as create a viable renewable energy resource. According to various published reports in the Christian Science Monitor and U.S. Water News On-Line, Dr. Alexander Gorlov's the new "double-helical" turbine with its long, helical airfoil blades is faster and more efficient than standard straight blade models and is ideally suited to harness the low velocity energy of tidal currents and tides in estuaries and other coastal waters since it works regardless of the direction of water flow. According to some estimates, the double-helical turbine in flowing water captures 35 percent of the water's energy, compared with 20 percent for a conventional turbine. This renewable energy technology has the potential of fostering underwater "power farms" that could generate electricity from hundreds or even thousands of the devices anchored underwater and linked to each other in a grid. Although some time off in the future, the turbines may also have the capability of converting seawater into hydrogen and oxygen through electrolysis. The hydrogen created by electrolysis could then be stored in pressurized hydrogen tanks in vessels offshore. The stored hydrogen could then run through a generator to make electricity, just as a gasoline or diesel generator would.

The helical turbine, inspired by double-helix of DNA, consists of two or more Teflon-coated aluminum blades arranged in a helix and secured at both ends by two disks, to form an open cylinder. The turbine rotates and produces electricity in response to low velocity water current. Tests conducted over the last few years have demonstrated that the double-helical turbine can successfully transform the forces of oceans, tidal rivers and bays into electricity.

Helical Turbine of Massachusetts, Inc., the first company to officially test the double helical turbine in 1996 and 1997, is now poised to take Dr. Gorlov's invention one step further. Helical Turbine of Massachusetts, Inc. has proposed to install a prototype of the helical turbine in coastal waters in Cape Cod Canal near the U.S. Army Corps of Engineers Cape Cod Canal Visitors' Center in Sandwich, Massachusetts. The helical device is considered a "structure" and therefore regulated by the U.S. Army Corps of Engineers under Section 10 of the Rivers and Harbors Act of 1899, which provides for federal regulation of any work in or affecting navigable waters of the United States.

According to an U.S. Army Corps of Engineers public notice, the purpose of the project is to examine the feasibility of the generator for production of low-cost hydroelectric power generation. The helical turbine generator would consist of six 10-foot-tall helical turbines installed within a 20-foot long by 8-foot wide by 6-foot high modified shipping container and would be turned by tidal currents of up to 5 miles per hour. The container would be covered at both open ends by a 1.5 inch mesh grating to prevent entrainment of fish and other aquatic organisms within the generator and the helical turbine blades. The generator would be equipped with four hydraulic leveling jacks and secured with galvanized steel chains to the adjoining canal bank to ensure proper anchorage and stability. As water flows

through the container, the turbines will generate roughly 500 kilowatt hours daily, enough to power more than a dozen homes. The generator would be installed in the canal for about 12 months. Go to [the U.S. Army Corps of Engineer's New England Division web page](#) and click on the "Massachusetts" and "Public Notices" links for more information on this project.

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EPA Announces Availability of Technical Guidance Manual on Nutrient Criteria For Estuaries And Coastal Marine Waters

On January 6, 2003, EPA published a notice of availability regarding a new technical guidance document entitled "Nutrient Criteria Technical Guidance Manual: Estuarine in Coastal Waters". (Federal Register Vol. 68, Pg. 560, January 6, 2003). This document is intended to give state, tribal and other water quality managers' guidance on how to develop nutrient criteria for estuaries and coastal marine waters. While the document does not contain site-specific-numeric criteria for any waters it does contain scientific recommendations regarding defensible approaches for developing regional nutrient criteria. Interested parties may obtain copies of the completed document from EPA's National Service Center for Environmental Publications by phone at (513) 489-8190 or toll free at (800) 490-9198, or by [email](#).

Estuary Habitat Restoration Council Adopts Strategic Plan

The Estuary Habitat Restoration Council, consisting of representatives from Department of the Army, National Oceanic and Atmospheric Administration, the Environmental Protection Agency, U.S. Fish and Wildlife Service, and the Department of Agriculture, was established to oversee implementation of The Estuary Restoration Act of 2000 (Title I of P.L. 106-457), and charged with developing an estuary habitat restoration strategy. The Act has four purposes (1) promotion of estuary habitat restoration, (2) development of a national strategy for creating and maintaining effective estuary habitat restoration partnerships, (3) provision of Federal assistance for estuary habitat restoration projects, and (4) development and enhancement of monitoring and research capabilities to ensure that estuary habitat restoration efforts are based on sound scientific understanding and innovative technologies.

The strategy is designed to ensure a comprehensive approach to maximize benefits derived from estuarine habitat restoration projects, provide incentives for the creation of new partnerships between the public and private sectors, and foster coordination of Federal and

NON-FISCAL ACTIVITIES RELATED TO RESTORATION OF ESTUARINE HABITAT. THE GOAL OF THE STRATEGY IS TO restore 1,000,000 acres of estuary habitat by the year 2010.

The strategy also provides guidelines for estuary management or habitat restoration plans, promotes a “self-sustaining” and ecosystem level approach to estuary habitat restoration, encourages public-private partnerships to achieve restoration goals, and promotes innovative technology. Click [here](#) to access a complete copy of the strategy.

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