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Environment



U.S. Wetlands Acreage Falling Despite Regulatory Program

WASHINGTON, DC, June 27, 2001 (ENS) - The amount of wetlands in the United States is continuing to fall, despite a government program that allows developers to fill in wetlands in exchange for restoring or creating others nearby. That program needs to be improved to meet the goal of "no net loss" in size and function of wetlands, says a new report from the National Academies' National Research Council.

American wetlands are losing ground.
(Photo courtesy USFWS)



Before granting permits to fill natural wetlands, regulators should give greater consideration to how restored or newly created wetlands can replicate the ecological functions of naturally occurring wetlands and become a sustainable part of the larger watershed, said the committee that wrote the report.

"A broader geographic area needs to be considered when deciding which wetlands to restore and where to place new wetlands so they continue to serve the ecological needs of the entire watershed and have a higher chance of long term survival," said committee chair Joy Zedler, professor of botany and Aldo Leopold chair of restoration ecology at the University of Wisconsin, Madison.

Wetlands are complex ecosystems such as marshes, swamps and bogs that sometimes serve several ecological functions including improving water quality, controlling floods, diminishing droughts and stabilizing shorelines. They also are home to many rare and endangered species of plants and animals as well as species of commercial and recreational value.

Before the ecological value of wetlands was recognized in the 1970s, they were often destroyed indiscriminately to promote agriculture, build homes and businesses and control mosquitoes. By the 1980s, the wetland area in the contiguous United States was about half what it had been in the 1780s.

Between 1986 and 1997, a net of 644,000 acres of wetlands was lost, the U.S. Fish and Wildlife Service reported to Congress in 1997.



Wetlands help prevent flooding in coastal areas (Three photos courtesy U.S. Environmental Protection Agency)

The Clean Water Act prohibits the discharge of soil and sand into waters of the United States - which by definition include most wetlands, according to the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (EPA) - unless authorized by a permit issued under Section 404 of the act.

Only the Corps and some EPA approved state programs can issue such permits.

The Corps requires permit applicants first to steer clear of, and at least minimize damage to, wetlands. If unavoidable damage cannot be minimized, the Corps requires the permit holder, or a third party paid by the permit holder, to restore, create, enhance or preserve nearby wetlands as compensation for the damage.

This "compensatory mitigation" is intended to comply with the general goals of the Clean Water Act, and the more specific goal of "no net loss" of wetlands that the White House called for in 1989. An agreement between the Corps and EPA emphasizes that no net loss means no loss in acreage or ecological function.

From 1986 to 1997, the annual rate of wetland loss in the contiguous United States decreased by 77 percent from the previous decade, and some of this decrease may come from developers being deterred by the Section 404 permit process, the NAS committee said. However, despite progress in the last 20 years, the goal of no net loss for wetland function is not being met.

From scientific literature, expert presentations and site visits, the committee found that some required mitigation projects are never undertaken or are not completed. Of those completed, most are not fully evaluated, and in the ones that are, the committee and other scientists found shortcomings compared to nearby natural wetlands.

Many seasonal wetlands only contain water in the



spring

The magnitude of the loss of wetland function is not precisely known since not enough data are kept on the ecological status of wetlands that are lost or those that are restored or created, the committee reported.

Likewise, because of insufficient data, it was impossible for the committee to determine whether there has been no net loss of wetland acreage. From 1993 to 2000, about 24,000 acres of wetlands were allowed to be filled, and 42,000 acres were required as compensatory mitigation, meaning almost two acres should have been gained for every one acre lost.

However, the lack of data prevented the committee from determining if the required compensation was ever initiated or if it resulted in wetlands that would be recognized as such under federal guidelines.

To better understand the usefulness of the mitigation program, the Corps should create a national database to track the wetland area and functions gained and lost and to encourage the establishment of organizations to monitor mitigated sites, the committee recommended.

Whenever possible, restoration of a natural wetland should be chosen over creation of a new one, the committee said. It emphasized that wetland restoration or creation will be most successful when properly integrated into the larger watershed.

Current federal guidelines express a preference for putting new wetlands as close as possible to degraded ones. But the committee concluded that this is not always the best choice.



Wetlands come in many forms. This bog is a common feature of northern regions

Rather, creating new wetlands in areas with proper water levels and flow rates is the key to achieving a self sustaining wetland that will stand the test of time. Adaptive management practices should be followed, allowing changes to be made to the wetland based on results of early monitoring.

Some types of wetlands, particularly bogs and fens, cannot yet be effectively restored, so the agencies should not allow any part of them to be filled, the committee said.

Whether mitigation is carried out by the permit holder or a third party, restoration or creation of a wetland should occur

simultaneously or before the filling of the natural wetland, the committee said. Mitigation should also proceed according to established design criteria that are better monitored and enforced.

To ensure long term stewardship similar to that accorded to other publicly valued assets, like national parks, the permit holder or third party should provide a stewardship organization, such as a state agency or private organization like the Nature Conservancy, with an easement on or title to the wetland site and funds for the long term monitoring and maintenance of the site.

It may take 20 years or more for some restored or new wetlands to achieve functional goals, the committee noted.

Wetlands like the Copper River Delta in Alaska can support thousands of nesting waterfowl (Photo courtesy National Wildlife Federation)



"Enforcement of these requirements by the Corps and other responsible agencies is needed to ensure that mitigation projects begin on time, meet the design criteria outlined in the permit, and are monitored long term," said committee vice chair Leonard Shabman, a professor at the Virginia Polytechnic Institute and State University, and director of the Virginia Water Resources Research Center.

The report was sponsored by the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

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