

# **Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2004 to 2009**

## **Qs and As**

### **Q: What is this report?**

**A:** The U.S. Fish and Wildlife Service (Service) and the National Oceanic and Atmospheric Administration (NOAA) analyzed the status and recent trends of wetland acreage in the coastal watersheds of the United States along the Atlantic Ocean, Gulf of Mexico, Great Lakes and the Pacific coastline of Washington, Oregon and California.

The results state that coastal watersheds in the U.S. experienced a net loss in of about 80,160 acres per year from 2004 to 2009. This represents a 20,000 acre-per-year increase in the rate of wetland loss as reported by the Service and NOAA for the period between 1998 and 2004. The information presented provides data on the areal extent of wetlands, but does not assess wetland condition or other qualitative changes to coastal wetlands.

### **Q: Why are coastal wetlands important?**

**A:** Wetlands in coastal watersheds provide crucial habitat for wildlife by providing spawning grounds, nurseries, shelter and food for fish, shellfish, birds and other wildlife. These wetlands also help improve water quality by filtering and detoxifying runoff from residential, agricultural and urban areas. Furthermore, there is an increasing awareness of the important role these coastal wetlands play in buffering coastlines against storm and wave damage and in stabilizing shorelines in the face of climate change impacts. Wetlands also play an important role in our nation's economy from ecotourism- and outdoor recreation-related activities, and can form an economic foundation for many coastal communities.

Continuing losses of coastal wetlands have direct costs for people and longer-term resource implications for fish, wildlife and other natural resources.

### **Q: What are the findings of this report?**

**A:** The study found that in 2009 there were an estimated 41.1 million acres of wetlands in the coastal watersheds of the Atlantic, Gulf of Mexico, Great Lakes and Pacific. This represented 37.3 percent of the total wetland area in the conterminous U.S.

Between 2004 and 2009, wetland area in the coastal watersheds of the U.S. declined by an estimated 360,720 acres. The average annual rate of change was an estimated loss of 80,160 acres, a 20,000-acre-per-year increase from the previous reporting period of 1998 to 2004.

The Atlantic, Gulf of Mexico, and Pacific coastal regions experienced net wetland losses between 2004 and 2009 of 111,960 acres, 257,150 acres and 5,220 acres, respectively. The watersheds of the Great Lakes region experienced a net gain in wetland area of an estimated 13,610 acres. Seventy one percent of the estimated wetland losses were in the coastal watersheds of the Gulf of Mexico.

Saltwater wetlands sustained an estimated net loss of 95,000 acres as modest gains in marine and estuarine non-vegetated wetlands (flats, shoals and bars) were overshadowed by losses of estuarine vegetated wetlands, which declined by 2.4 percent. Most of the vegetated estuarine losses were to open saltwater deepwater habitats, and virtually all of these losses occurred in the Gulf of Mexico.

In the freshwater system, emergent marshes and shrub wetlands increased in area; however, freshwater forested wetlands declined by an estimated 405,700 acres resulting in a net loss of freshwater vegetated wetland area of 328,800 acres (1.0 percent) between 2004 and 2009. Forested wetlands lost to upland silviculture accounted for an estimated 179,080 acres, the largest percent (55%) of the freshwater wetland losses to upland land uses. Regionally, the Pacific coast sustained a small net loss (5,180 acres) of freshwater wetlands, while the Atlantic experienced larger net losses of 112,290 acres, the Gulf of Mexico sustained net losses of 161,870, and the Great Lakes saw a modest net gain of 13,610 acres in their coastal watersheds.

The area of freshwater ponds increased by almost six percent, although many were located in urban or suburban developments as likely water detention ponds or ornamental ponds as opposed to targeted wetland reestablishment projects. The vast majority of these new ponds (99 percent) were constructed in the watersheds of the Atlantic and Gulf of Mexico.

**Q: What is the overall conclusion of the report?**

**A:** The increase in the rate of wetland loss found in this study was attributed to losses of saltwater wetlands in the Gulf of Mexico resulting from coastal storms in combination with freshwater wetland losses in both the Atlantic and Gulf of Mexico. Large losses of freshwater forested wetland area were attributed to urban and rural development as well as silvicultural operations.

Wetlands in the coastal watersheds make up an increasingly fragile network of lands that continue to shrink in area. In coming years sea level rise threatens inundation or displacement of coastal lands, infrastructure and ecosystems. Dealing with the impacts of sea level rise will need to include a mix of engineering solutions and adaptive management strategies which may have substantial impacts on coastal wetland systems.

In the upper portions of the coastal watersheds, development or land use changes that alter wetland distribution and extent continue to constrict wetland area. Of particular concern is the continued loss of vegetated wetlands to human related causes.

In some parts of coastal watersheds, wetlands are vulnerable to both development on the landward side and coastal ocean processes from the sea. The study authors recognize that more needs to be done to curtail wetland losses and to effectively protect and restore wetlands in the coastal watersheds.

Federal agencies have been working collaboratively to understand how wetland trends are affected by land use practices and other factors, and how federal, state, and local programs can better address imminent threats to coastal wetlands. These efforts have been incorporated into activities under the National Ocean Policy Implementation Plan (National Ocean Council 2013), which describes the specific actions federal agencies will take to address key challenges and promote stewardship of coastal resources.

The data in this report provide new and more comprehensive information about coastal wetland trends and may be instrumental in further formulation of recommendations to improve the management of wetlands in coastal watersheds, reduce losses and ensure that coastal infrastructure and resources are protected.

**Q: How was this report created?**

**A:** In 2008, the Service and NOAA released a report documenting wetland trends in the coastal watersheds of the Atlantic, Gulf of Mexico and Great Lakes (Stedman and Dahl 2008). That study did not include the wetlands in the coastal watersheds along the Pacific coast. Findings from that study indicated that there was a net loss of an estimated 361,000 acres of wetland in the coastal watersheds of the eastern U.S. between 1998 and 2004. Attribution of these losses pointed to development and other human activities as the principle cause in the Gulf of Mexico, and salt water intrusion or inundation as the primary cause in the mid-Atlantic region. The release of that information stimulated discussion at the federal level centering on the need for increased wetland protection and restoration measures in the coastal watersheds and the role of federal, state or local mechanisms in protecting these coastal resources.

Working in conjunction with principal federal agencies the Service and NOAA have produced updated data on more recent trends of wetlands in the coastal watersheds to help prioritize conservation planning efforts and contribute additional information on coastal wetland trends. The information described in this report has been supported by the Federal Interagency Coastal Wetlands Workgroup -- a multi-agency group comprised of members from the Service, NOAA, the Environmental Protection Agency, U.S. Army Corps of Engineers, Natural Resources Conservation Service, the Federal Highway Administration and the U.S. Geological Survey.

This report updates and expands previous information on coastal wetland loss by incorporating new data for the coastal watersheds of the Atlantic, Gulf of Mexico and Great Lakes and in addition, providing information for the Pacific Coast along the States of Washington, Oregon and California.

To estimate wetland extent and change, this study used randomly selected 4-square-mile (2,560-acre or 1,036-hectare) sample plots and digital high-resolution imagery to identify change in wetlands, deepwater habitats and uplands. A total of 2,614 plots were used to sample the coastal watersheds. Wetlands and deepwater habitats were described using the Service biological definition of wetland and followed the procedural, quality control and

analysis protocols as have been developed for the National Wetlands Status and Trends reporting conducted by the Service.

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