

EPA Coastal Wetlands Initiative: Coastal Wetland Reviews

Background: Coastal Wetland Initiative

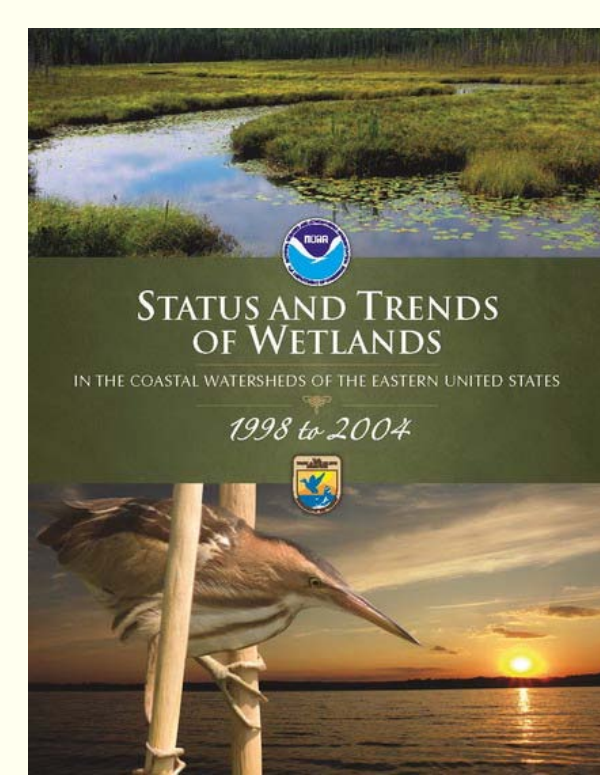


Figure 1. Cover of *Status and Trends of Wetlands in the Coastal Watersheds of the Eastern United States, 1998 to 2004*.

Growing awareness of severe threats to coastal areas posed by climate change, devastation caused by hurricanes over the last decade and two recently published reports on wetland loss have prompted the U.S. Environmental Protection Agency (EPA) to examine the nation's coastal wetlands.

The first report, released in 2008 by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish and Wildlife Service (USFWS), found that 361,000 acres of coastal wetlands were lost in the Eastern United States alone between 1998 and 2004. This amounts to an average net decrease of 59,000 acres each year. The 2008 NOAA and USFWS Status and Trends report did not examine the loss of wetland condition or function. The second report, released by the Association of State Wetlands Managers in 2009, recommends a national wetland and climate change initiative to reduce impacts to wetlands.

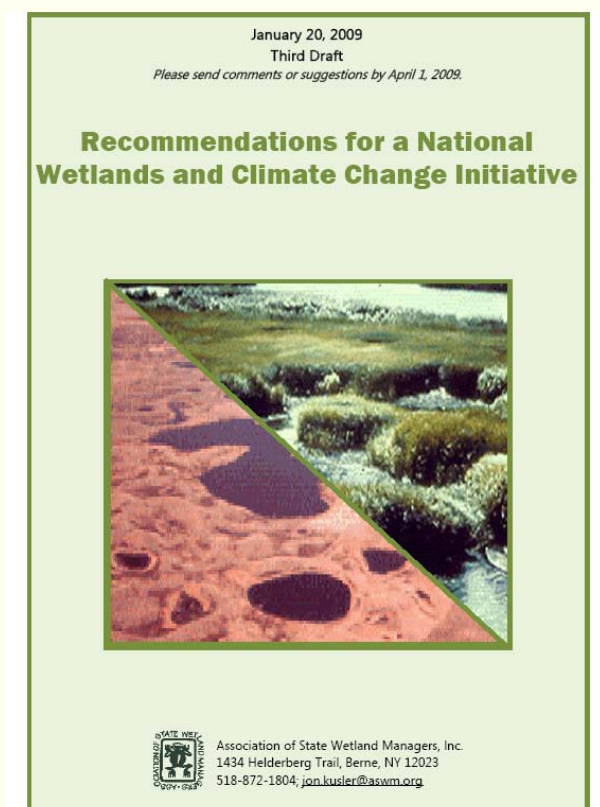


Figure 2. Cover of *Recommendations for a National Wetlands and Climate Change Initiative*.

In response to these two reports, EPA established a Coastal Wetlands Initiative, that resulted in the creation of an EPA Coastal Wetlands Team and a Federal Interagency Coastal Wetlands Workgroup.

EPA Coastal Wetlands Team

The goals of the EPA Coastal Wetlands Team are: 1) confirming wetland loss and better understanding contributing stressors; 2) identifying and disseminating tools, strategies, policies, and information to protect and restore coastal wetland resources; and 3) raising awareness of the functions and values of coastal wetlands, threats to these resources, and opportunities to protect and restore coastal wetlands.

Federal Interagency Workgroup

The Federal Interagency Coastal Wetlands Workgroup, which is comprised of members from EPA, NOAA, USFWS, the U.S. Geological Survey, the U.S. Department of Agriculture's Natural Resources Conservation Service, the U.S. Army Corps of Engineers (Army Corps), and the Federal Highway Administration both advise the Coastal Wetlands Team, and directly support efforts to better understand and explore opportunities to address losses of coastal wetlands.

Introduction: Coastal Wetland Reviews

To achieve its goals, the Coastal Wetlands Team is meeting with stakeholders in the Mid-Atlantic, South Atlantic, North Atlantic, and Gulf Coast Regions (see figure 4).

For each of these Coastal Wetland Reviews (CWRs), the team identifies key stressors: examines regulatory and voluntary efforts at the federal, regional, state, and local level to reduce or reverse coastal wetland loss; and assesses whether successful strategies can be replicated elsewhere.

The CWR findings are being captured in regional reports. The team also intends to share review results at regional or national workshops, where participants will exchange information and discuss potential strategies to avoid future losses.

The Coastal Wetlands Team intends to use findings from the reviews to help inform policy decisions, influence program direction, and develop projects to reduce or reverse coastal wetland loss nationally.

Coastal Wetland Review Process

The process for the coastal wetland reviews is intended to be flexible and encourage participation from a diverse and representative group of stakeholders in each of the focal watersheds. Four steps will be followed for each of the coastal wetland regional reviews:

1. Identify focal watersheds.
 - USFWS has identified candidate watersheds for the CWRs based on observed wetland loss in the USFWS/NOAA Status and Trends report.
 - The focal watershed selected for analysis are based on existing wetland conditions assessments, available data, a variety of efforts to protect and restore coastal wetlands, and the willingness of local stakeholders to participate.
- Data for Focal Watershed Selection**
Data from the NOAA/FWS Status and Trends report was used in combination with other resources such as the Coastal Change Analysis Program (C-CAP) to identify focal watersheds for CWRs. C-CAP produces a nationally standardized database of land cover and land change information for the coastal regions of the U.S. C-CAP products provide inventories of coastal intertidal areas, wetlands, and adjacent uplands with the goal of monitoring these habitats by updating the land cover maps every five years.
-
- Figure 3. Example of C-CAP coastal land cover data.

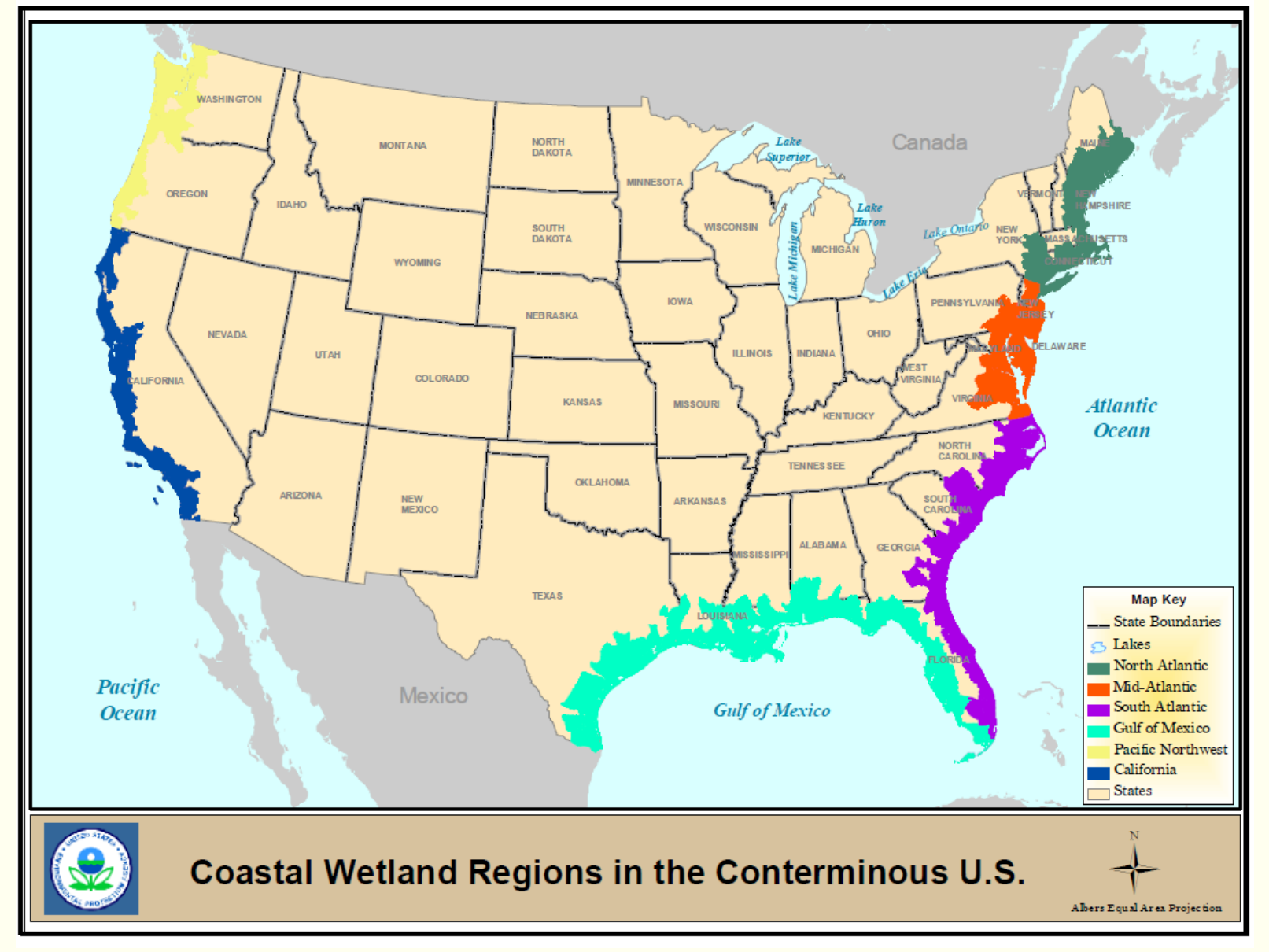


Figure 4. Coastal wetland regions identified in EPA's Coastal Wetlands Initiative.

Defining Coastal Wetlands
Consistent with other federal agencies, EPA is defining "coastal wetlands" as tidal and freshwater wetlands within HUC-8 watersheds that drain to the Atlantic, Pacific, or Gulf of Mexico. "Coastal wetland loss" is defined as "a decline in the areal extent and/or ecological integrity of wetlands in coastal watersheds"

Coastal Wetland Review Status

- Mid-Atlantic – completed; report available
- South Atlantic – completed; report being finalized
- North Atlantic – workshop held in Woods Hole, MA Oct 2010; report being drafted
- Gulf of Mexico – In planning; focus on action planning to reverse losses

Coastal Wetland Review Findings

Stressors

Direct and indirect impacts contribute to loss and degradation.

Immediate impacts

- Residential and commercial development and associated infrastructure
- Degraded ecosystems due to invasive species, salt marsh die-back, habitat fragmentation, and lack of buffers causing loss of diversity, structural loss, changes in nutrient cycling, and habitat changes
- Hardening structures along shorelines including seawalls, bulkheads, and other armoring responses
- Agriculture and forestry
- Coastal erosion
- Point and nonpoint source pollution and associated impacts such as eutrophication
- Hydrologic alterations such as dredging, ditching, channelizing streams, mosquito control practices, salt marsh hay impoundments, stormwater runoff, impervious surfaces, and water supply withdrawals.
- Lack of coordination among regulatory programs and partners creating redundancy and inconsistency in interpretations or creating regulatory barriers
- Limited enforcement programs including low penalties and fees and inconsistent enforcement

Future impacts

- Climate change and sea level rise exacerbates other stressors such as erosion, changes in salinity, sediment deficits, and conversion of vegetated wetlands to open water due to inundation.
- Increased storm intensity (as a result of climate change)

Tools and Strategies

- Low impact development and stormwater retrofitting
- Local ordinances (e.g. buffers, smart growth)
- Gov't and NGO conservation and protection programs and mitigation banks
- Invasive species control programs including volunteer-based efforts
- Best management practices for specific sectors
- Education and outreach
- Use of "living shorelines"
- Water-shed based planning (e.g. nutrient management strategies)

Important considerations:

- Planning with understanding of both near-term and long-term stressors
- Collaboration and partnerships



Figure 5. Coastal shoreline erosion. Photo courtesy of Amie Howell, US EPA Region 3.

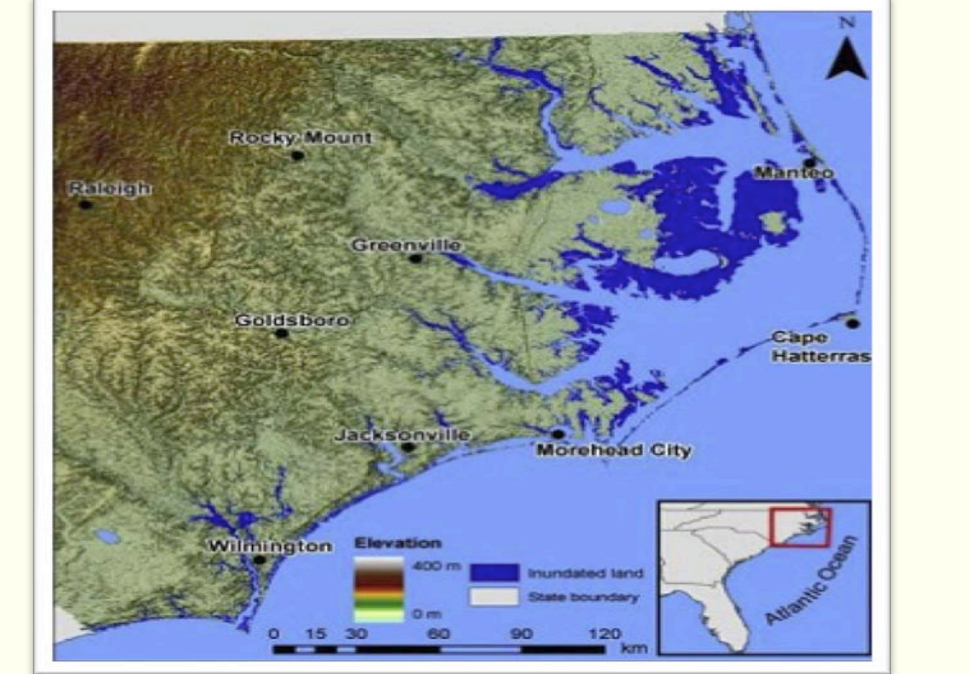


Figure 6. Dark blue shading represents land that is predicted to be under water with approx 1 meter rise in sea level (in 65-200 years) (Poulter et al., 2009).

Gaps and Needs

- IT and mapping such as comprehensive and integrated databases using common temporal and geographic scales and consistent categorization methodologies
- Additional ecological service information to make assessments about project impacts
- Monitoring and assessment data (both obtaining it as well as managing it)
- More targeted outreach
- Proactive planning and management that is clear and consistent and incorporates sustainable or low impact measures
- Increased interagency collaboration
- Funding and more targeted focus on coastal wetlands

For Further Information

For more information please contact:

- Clay Miller (miller.clay@epa.gov)
- Nancy Laurson (laurson.nancy@epa.gov)
- Jennifer Linn (linn.jennifer@epa.gov)



Figure 7. Example of living shoreline, Beaufort, N.C. (Photo Courtesy of Arleen O'Donnell, ERG)



Figure 8. North River Farms restoration project (Source: North Carolina Coastal Federation website)