



# National Wetlands Inventory

## 2019 National Wetlands Status and Trends Report

*New report finds that wetland loss increased substantially between 2009 and 2019.*

### Project Overview

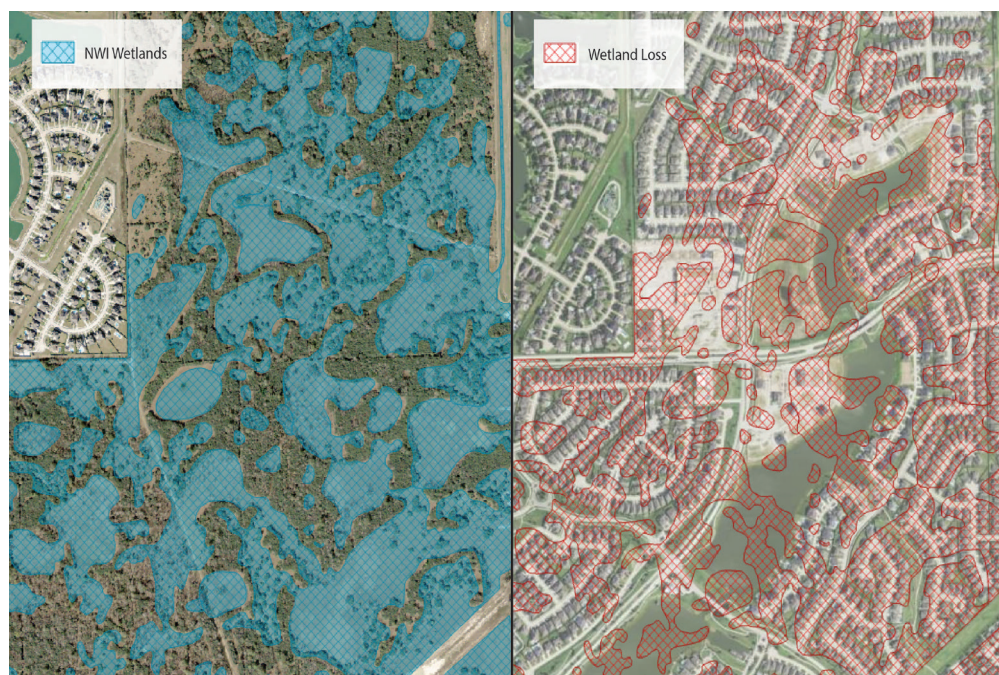
As mandated by the Emergency Wetlands Resources Act (Public Law 99-645), the U.S. Fish and Wildlife Service (Service) National Wetlands Inventory (NWI) Program produces decadal Wetlands Status and Trends reports to Congress. These reports provide robust scientific estimates of the extent of seventeen wetland and deepwater habitats, as well as change in their area over time.

Six national reports have been published to date, covering the years 1954 through 2019. Each report builds on the last, providing an invaluable historical perspective and increasing our understanding of landscape patterns and processes. The most recent report covers the years 2009 through 2019.

Wetlands Status and Trends reports have catalyzed policy actions that substantially slowed wetland loss and continue to influence wetland policy and management by driving collaboration and cooperative planning between federal, Tribal, state, and local partners. Within the Service, the reports are used to guide wetland restoration, habitat availability assessments, strategic habitat conservation planning, species listing decisions under the Endangered Species Act, and ecosystem management.

### Study Design

Over 5,000 randomly distributed four square mile sample plots were assessed to support the 2019 National Wetlands Status and Trends report. For each plot, imagery was analyzed for 2009



*Two true color remotely sensed images side by side, one from 2008 (left) and one from 2019 (right). The image from 2008 shows a natural landscape including wetlands interspersed within upland shrubs. The image from 2019 shows the same area after wetlands were lost and a housing development and lake were constructed.*

and 2019 to assess land cover, and in some cases land use. Change over the 10.5-year study period was determined by comparing data from 2009 and 2019, and statistical estimates of wetland and deepwater areas and change were calculated for the nation.

Wetlands were identified using a biological definition (FGDC-STD-004-2013), which differs from the federal regulatory definition. All major wetland types were examined, including freshwater (palustrine) and saltwater (marine and estuarine). Wetland types were further divided into thirteen subcategories based primarily on vegetation cover. Data quality was ensured through a multi-step process involving expert quality control, field verification, automated logic checks, and strategic technological improvements.

### Study Results

There were an estimated 116.4M acres (ac) of wetlands in the conterminous U.S. in 2019, accounting for <6% of the conterminous U.S. by area. Net wetland loss increased substantially (>50%) since the last study period (2004–2009), resulting in the loss of 221K ac of wetlands between 2009 and 2019, primarily to uplands.

Wetland loss disproportionately affected vegetated wetlands, resulting in the loss of 670K acres of these wetlands, approximately the land area of Rhode Island. Salt marsh experienced the largest net percent reduction of any wetland category (2% or -70K acres) while freshwater forested wetlands experienced the largest loss by area (-426K acres).

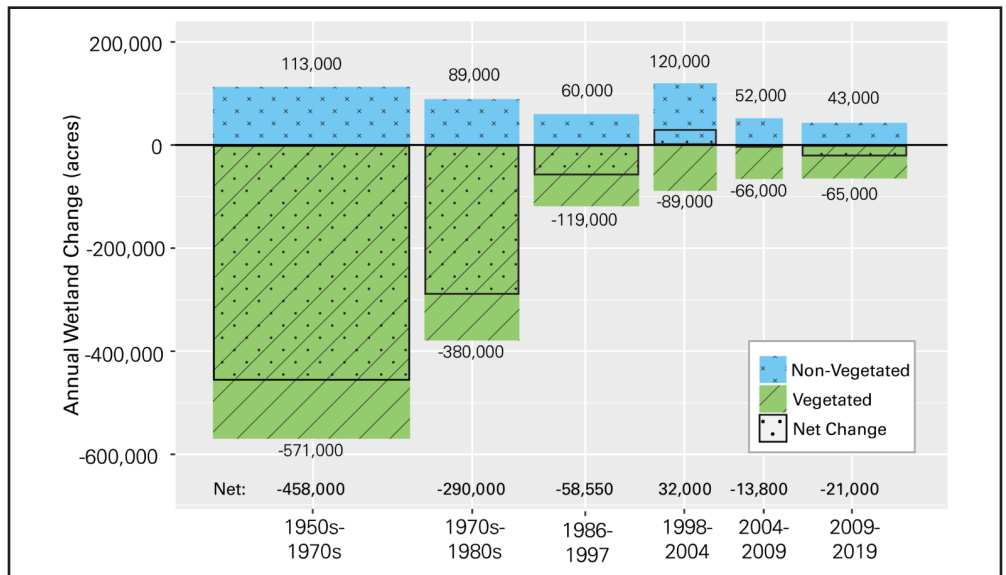
There was a net gain in non-vegetated wetlands of 488K acres, including a >7% increase in pond area. This pattern of vegetated wetland loss and non-vegetated wetland gain has been ongoing for ~70 years (see figure to right).

### Implications of Wetland Change

The substantial loss and alteration of wetlands documented by this study, including the long-term shift towards decreasing vegetated wetlands and increasing non-vegetated wetlands, reduces the prosperity, health, and safety of communities. This occurs through the increased susceptibility of people and infrastructure to natural disasters like flood, drought, and wildfire, decreased food and water security, increased harmful algal blooms, and greater vulnerability to sea level rise. Wetland loss patterns have also affected and are likely to continue to substantially affect plant and animal populations. This includes rare as well as commercially, culturally, and recreationally valuable species. When the effects of changes in wetland condition are considered, even greater loss of wetland functions and services are indicated. These impacts can happen rapidly and are often difficult to reverse.

### Recommendations for Reducing Wetland Loss

To achieve no net loss of all wetlands, including vegetated wetlands, a strategic update is needed to America's approach to wetland conservation. Achieving this goal will require a collaborative approach that includes federal, Tribal, state, local, and private partners to ensure the lasting health of America's people, environment, and economy.



Annual non-vegetated (positive values) and vegetated (negative values) wetland change within the conterminous United States between the mid-1900s and 2019. Width of bars represents length of study period.

The following strategies are suggested to support this recommendation:

1. Achieve “No Net Loss” of wetlands and robust coordination with government and non-governmental partners.
2. Produce a contemporary NWI Geospatial Dataset and spatially explicit information on wetland function.
3. Develop and implement enhanced wetland conservation and management approaches based on a holistic review of current and past actions.
4. Commit to long-term adaptive conservation, management, and monitoring.

Implementation of this recommendation is especially important because most wetlands in

the conterminous U.S. have already been lost, wetland loss has recently accelerated, and future declines will likely be magnified by the effects of climate and land use/land cover change. Scientific information, like this report, is foundational to the strategic implementation of all natural resource policy actions and will be critical to the success of this effort.

Visit [www.fws.gov/wetlands/status-and-trends](http://www.fws.gov/wetlands/status-and-trends) to learn more and access Status and Trends reports. To contact NWI, please email [wetlands\\_team@fws.gov](mailto:wetlands_team@fws.gov).

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Moosehorn National Wildlife Refuge in Maine contains more than 4,500 acres of wetlands. Photo by Keith Ramos, USFWS.

