

# MassDEP Researches and Maps Wetlands

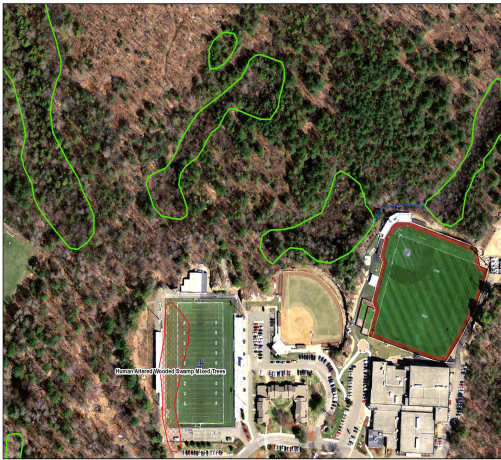


MASSDEP  
WETLANDS AND WATERWAYS  
PROGRAM 2017

**MassDEP uses research and technology to expand our understanding of wetland ecosystems and to guide how we protect them.**

MassDEP’s ongoing mapping of wetland resources throughout Massachusetts helps to provide the best science on which to build successful wetland policies, and provide important tools for project planning. MassDEP has a variety of existing maps that are now available on our website for public use. There are also new products under development as described below. These maps are important tools for implementing the Wetlands Protection Act. They help us to locate wetland resource areas in the state, determine the size and types of inland and coastal wetlands, and study the role of wetlands in our landscape. The following link provides a list of available wetland maps. [www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#8](http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#8)

## MassDEP Wetland Maps Updated



The MassDEP Wetland Conservancy Program is preparing to release an update of the original MassDEP Wetlands Data layer. The original MassDEP Wetlands Data layer was based on 1990-2001 aerial photography. The updated MassDEP Wetlands Data Layer is based on 2005 aerial photography and depicts existing wetlands, new and expanded wetlands, and wetlands that have changed due to natural events or human activity. Once released, the new maps can be displayed on the MassDEP Wetlands Data Viewer which is available at <http://maps.massgis.state.ma.us/images/dep/omv/wetviewer.htm> The data layers for the maps will be available for download at MassGIS. [www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/](http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/). The original wetlands data layer will **still be** available for display or download at those links.

## Wetland Status and Trends

Coming soon...First Status and Trends Study based on Updated Massachusetts Wetland Mapping

The MassDEP Wetlands Program is working on the first ever Massachusetts ‘Status and Trends’ Analysis. This analysis will be similar to the traditional status and trends reports prepared by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish and Wildlife Service; however it will be based on MassDEP’s detailed wetland mapping and will focus specifically on Massachusetts. The original MassDEP Wetlands data layer has proved to be an invaluable tool for identifying wetlands and planning development to avoid significant impacts to wetlands resources. However, wetlands are not static resources. As the maps became outdated, MassDEP initiated an update to the original wetlands map layer. This spring, MassDEP will release the new “2005 Wetlands Datalayer” that will enable MassDEP to track changes in wetlands extent and classification in order to document the current status and overall trends of wetlands across Massachusetts, to correct known errors and to improve the accuracy and precision of the map data. The Status and Trends Analysis is expected to be released in the Fall of 2017 and will summarize the natural and anthropogenic changes since the original Wetland Baseline Datalayer was published.<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/>



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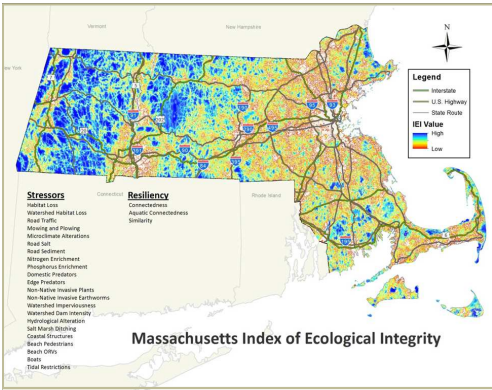




# Wetlands Monitoring and Assessment Program



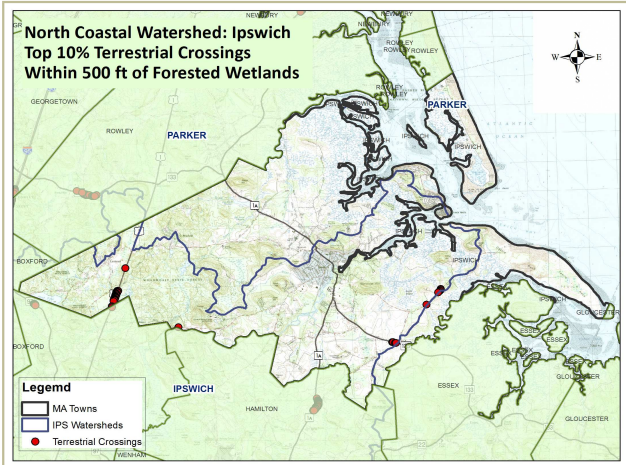
## Research on Forested Wetlands In Massachusetts



The MassDEP Wetlands Program monitors wetlands throughout Massachusetts to assess wetland condition and to provide the best science on which to build successful wetland policies. This effort, funded by EPA, is being conducted to comply with reporting requirements pursuant to Section 305(b) of the Clean Water Act (CWA). In 2015 and 2016, MassDEP conducted two studies in watersheds selected to coincide with the MassDEP 5-year basin cycle for water quality sampling and reporting. The 2015 study assessed the condition of forested wetlands within the Northeast Basin Reporting Group and the 2016 study assessed the condition of forested wetlands within the Central Basin Reporting Group. Based on EPA's three-level concept for wetland monitoring and assessment, the studies used the Conservation Assessment and Prioritization System (CAPS) model to conduct a landscape level assessment of the Ecological Integrity (IEI) to predict the health of wetlands and the surrounding

area; a Site Level Assessment Method (SLAM) for sampling plant communities in forested wetlands; Indices of Biological Integrity (IBI's) that are tools for quantifying changes in wetland condition – in this case developed specifically for forested wetlands - and used to determine actual wetland condition based on sampling data; and a Continuous Aquatic Life Use (CALU) framework to analyze the IBIs to determine whether individual each site exceeds, meets, or fails to meet the expected condition predicted by the CAPS model. For further information visit our web page [www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2](http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2) and [www.umasscaps.org/](http://www.umasscaps.org/).

## Forested Wetlands in Northeast Basin Reporting Group



The 2015 Northeast Basin study area included the Ipswich, Parker, and Shawsheen Watersheds. An average IEI value was calculated for each subwatershed in the study area as a prediction of the ecological health of the wetlands and surrounding landscape. The primary causes of ecological stress in the Northeast Basin forested wetlands were identified as: loss of connectedness, traffic, habitat loss, and the presence of non-native, invasive plant species. To minimize human created stresses on forested wetlands we recommend establishing terrestrial wildlife passages to connect forested wetland areas; protecting buffer zones; improving stream crossings to meet the MA Stream Crossing Standards; and encouraging efforts to manage invasive species and preserve important wildlife habitat. The report contains information on all plant species, including invasive species, documented during sampling. Forty forested wetland sites were randomly selected from subwatersheds predicted to have overall degraded wetland condition. Assessment of wet-

land condition showed that 36 of the 40 sites sampled accurately reflect the landscape level condition predicted by the CAPS model. Of the remaining sites, two "Exceeded" expectations (i.e. site condition was better than expected) and two sites "Failed" expectations (i.e. site condition was worse than expected). The two failed sites were reviewed and revisited to try and further explain the lower values for wetland condition, and that analysis is contained in the report. A copy of the report will be posted on our website once released. at <http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2>

## Forested Wetlands in Central Basin Reporting Group

The 2016 study area within Central Basin included the Millers and Blackstone Watersheds. The primary causes of ecological stress of forested wetlands were identified by the CAPS model as: loss of terrestrial connectedness, increased traffic intensity, loss of similarity, the presence of non-native invasive plant species, and habitat loss. Strategies identified to alleviate ecosystems stresses include: establish terrestrial wildlife passage structures between similar forested wetland habitats; and investigate the MassDEP maps depicting *Habitat of Potential Regional or Statewide Importance* to identify potential preservation sites; The report contains plant species lists and locations, including invasive species, documented during sampling; and individual town maps identifying locations where improved connectivity would be beneficial for ecological health.

Sample sites were selected in two sub-watersheds that drain to impaired waters and two sub-watersheds that drain to waters that have not been designated as impaired. The site level assessment was conducted to determine if a relationship exists between wetland condition and water quality. No obvious relationship was found, however, in one subwatershed designated as impaired, two wetlands were also determined to "fail" expectations. This area is downstream of a wastewater treatment plant, and immediately upstream of a dam. In another sub-watershed, one wetland that "failed" expectations was located near the outfall of a stormwater treatment basin, near a new subdivision. It appears that the basin was either undersized or not properly maintained since extensive sedimentation was found in the sampled wetland. The report, once released, will be available at [www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2](http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2)

