

Wetland Capabilities



Wetland scientists at Woods Hole Group provide a range of expertise to our clients seeking to delineate a wetland, understand the health and quality of a wetland, improve, restore, or protect an existing wetland, and adapt a wetland to changes in sea level, nutrient inputs and other potential stressors. Our team includes Professional Wetland Scientists (PWS), and ecologists with extensive experience evaluating the influence of chemical and non-chemical stressors on ecological functions and wildlife health, as well as regulatory specialists with expertise working with agencies at local, state, and federal levels to obtain permits for wetland projects. Our Geographic Information Systems (GIS) analysts add value to our wetland assessments by evaluating interrelationships between wetlands and their stressors and spatially illustrating our findings and recommendations. In addition, our comprehensive field sampling capabilities extend beyond basic wetland delineations to include collection of biological and physical samples to evaluate stressors, including the collection of hazardous waste samples.

Areas of Expertise

1.) Freshwater and Coastal Wetland Delineation

Determination of wetland boundaries is often critical for project development and land use planning, and requires a thorough understanding of wetland vegetation, soils, and hydrologic characteristics. Our staff is trained in the U.S. Army Corps of Engineers (USACE) wetland delineation method, has experience with state and federal delineation criteria, and is equipped with high-resolution RTK-GPS mapping technology to precisely map resources once delineated.

Representative Projects:

1. Coastal Wetland Delineation at Eastward Ho! Golf Course, Chatham, MA
2. Bordering Vegetated Wetland Delineation along Ashumet Pond, Falmouth, MA

2.) Functional Assessment and Habitat Characterization

Evaluating the qualitative physical characteristics of a wetland (such as sediment and water quality, species composition, and tidal regime) is essential to understanding and assessing impacts, project design, potential alternatives, and to determine the need for restoration. Woods Hole Group also provides eelgrass and shellfish survey services. Developing a baseline map of resource areas is often crucial in evaluating potential impacts from marine development and project alternatives.

Representative Projects:

1. Whidah Road Salt Pond Evaluation, Chatham, MA
2. Offshore Video Eelgrass Survey for Sandwich Borrow Site, Sandwich, MA

- Coastal Sciences, Engineering & Planning
- Oceanography & Measurement Systems
- Applied Ecology & Sustainability

(continued)



3.) Restoration Design and Implementation

Woods Hole Group has extensive experience with successful design and implementation of wetland restoration projects, and offers a full range of restoration services, including planning, feasibility analysis, hydrological analyses, biological surveys, technical studies, ecological risk assessment, alternatives analysis, engineering design, permitting, construction administration, and monitoring. Our approach relies heavily on ecological engineering and adaptive management practices.

Representative Projects:

1. Restoration Design for Salt Marsh Thin Layer Deposition, Charlestown, RI
2. Puritan Road Salt Marsh Restoration Weymouth, MA
3. Herring River Estuary Restoration Project, Wellfleet, MA



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Have a question? Feel free to contact one of our experts for help:

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4.) Wetland Permitting

Our wetland permitting experts prepare local, state and federal permits to facilitate work in wetlands. For example, Woods Hole Group has extensive experience with Notice of Intent (NOI) applications, the primary permitting path for projects regulated under the Massachusetts Wetlands Protection Act. We also work closely with Conservation Commissions and are familiar with the Conservation Commission process, allowing us to develop defensible, transparent, technically sound final products that meet both the permitting requirements and the clients' needs. Permitting expertise extends through the federal NEPA EIS process.

Representative Projects:

1. Town Neck Beach Nourishment and Dune Restoration, Sandwich, MA
2. Comprehensive USACE Permit for Dredging and Beach Nourishment, Edgartown, MA

5.) Develop Projections of Wetland Change Due to Sea Level Rise and Climate Change

Woods Hole Group has developed innovative approaches to model projected changes to coastal wetland habitats due to anticipated sea level rise and climate change. Our staff has 30 years of experience analyzing existing coastal processes and evaluating likely future scenarios. This expertise allows Woods Hole Group to effectively provide adaptation strategies for wetland change due to sea-level rise and climate change by combining knowledge of wetland ecology and stress response, field assessment, spatial analysis and cutting edge climate and vulnerability modeling.

Representative Projects:

1. Modeling the Effects of Sea-Level Rise on Coastal Wetlands for MA CZM
2. Restoration and Resiliency of Reeds Beach and Supawna Meadows for USFWS, NJ
3. Projected Future Change Analysis for Orleans Outer Beach Management Plan, Orleans, MA