Ecosystem Restoration

Areas of Expertise

- Freshwater Wetlands
- Coastal Habitats
- Freshwater Aquatic Habitats
- Fish Passage Enhancement
- Upland & Wildlife Restoration

Key AECOM Attributes

For restoration projects, AECOM offers the expertise of hundreds of aquatic, marine, wetland, and terrestrial ecologists; wildlife scientists; specialists in threatened and endangered species; surface water and groundwater hydrologists; hydraulic engineers; geomorpholgists, geologists; and design engineers including nationally and regionally-recognized technical experts.

AECOM's renowned staff includes senior Professional Wetland Scientists, USACE-Certified Wetland Delineators, Marine Scientists and Certified Managers. This broad and experienced skill mix enables us to cost-effectively design and perform large and small projects.

Overview

Human-related activities, such as pollution, construction, habitat and hydrologic modification, and watershed development, have caused the loss and degradation of coastal, riverine, aquatic, and terrestrial ecosystems. Fortunately, businesses and governmental authorities are realizing that restoring these ecosystems offers a wealth of cost-effective benefits, including economic revitalization, expedited contaminated-site cleanup, increased regulatory compliance, and enhanced quality-of-life for communities.

Our Approach

We understand the ecological and public benefits of restoring degraded ecosystems, the regulatory driving forces that require restoration, and the advantages of applying restoration as a mitigation measure for proposed construction, dredging, and other projects resulting in a net positive environmental effect. Committed to the protection and restoration of wetlands, freshwater aquatic, coastal, and terrestrial ecosystems, AECOM actively supports non-governmental organizations and academic institutions involved in developing innovative restoration techniques and maintain an internally funded Research & Development program.

AECOM is known for applying innovative strategies to construct, enhance and restore impaired ecosystems, such as:

- A wide variety of engineering, graphical, modeling, and GIS-based tools, which often provide superior results at a lower cost than traditional, labor-intensive methods.
- Extensive knowledge and assessment of the dynamic behavior of natural ecosystems
- Field measurements and integrated assessment of ecosystem biological, physical, and chemical characteristics
- Application of models from an extensive software library to assist in the development of optimal restoration designs plans.
- State-of-the-art hydraulic modeling, including our pioneering use of combined computational fluid dynamics and physical modeling

We integrate these methods and technologies into cost-effective, sustainable solutions for our clients, resulting in successful ecosystem restoration and enhancement with minimal project delays.

Areas of Expertise

With unmatched ecosystem restoration capabilities and experience, AECOM applies innovative strategies to construct, enhance and restore impaired ecosystems. We offer a full range of ecosystem restoration services for aquatic water bodies, wetlands, shorelines and river banks, and terrestrial habitats and wildlife.

FRESHWATER WETLANDS. To facilitate effective restoration planning and design, AECOM teams identify objectives and key structural and functional goals from the outset. We have prepared restoration plans for projects involving wetlands impacts related to development, infrastructure, maintenance or remediation purposes. Our wetland services include project scoping and regulatory negotiation, hydrologic regime assessment, conceptual design, final design engineering and modeling, specification development, planting and soils plan development and monitoring.

COASTAL HABITATS. Coastal marshes are a critical part of the marine ecosystem, providing habitat and a nursery area for numerous marine species, as well as flood storage and protection. AECOM's range of services for coastal marshes include monitoring, evaluation of habitat function and value, assessment of invasive species impacts, coastal hydrodynamics assessment, modeling of tidal flushing and salinity gradients, prediction of flooding potential and abatement, and development of enhancement and restoration methods — all of which are designed to facilitate our clients' compliance with a broad range of federal, state, and local regulations.

FRESHWATER AQUATIC HABITATS. A nationally recognized leader in the assessment and restoration of lake and ponds, AECOM has performed hundreds of freshwater habitat restoration and watershed-based Total Maximum Daily Load restoration studies. Our freshwater habitat work includes shoreline and stream bank riparian restoration, stormwater pollution assessment and mitigation, nonpoint source pollution control, nutrient/eutrophication assessment and control, sediment management, invasive species control, aeration system design and installation, and land use planning and management.

FISH PASSAGE ENHANCEMENT. To protect fish at hydropower and other water diversions, our services for creating or improving fish passage include the design of fish ladders and other passage systems, improved hydraulic control structures, and screens, as well as partial or complete dam removal. AECOM has also developed an innovative integrated approach to improve fish migration at dams involving the use of acoustic Doppler current profilers for detailed flow measurements near dams, hydraulic modeling, and knowledge and assessment of fish migration behavior.

UPLAND AND WILDLIFE RESTORATION. Our experience includes terrestrial habitat evaluations, habitat enhancement design, and wildlife/threatened and endangered species protection and mitigation in support of environmental impact studies, facility siting and permitting, and master planning projects. AECOM biologists also specialize in the study of vernal pools and the development of mitigation and protection efforts in support of our client's projects.

Key Reference Material

- New England Estuarine Research Society www.neers.org
- North American Lake Management Society (NALMS) www.nalms.org

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