



GEOTECHNICAL

ENVIRONMENTAL

ECOLOGICAL

WATER

CONSTRUCTION  
MANAGEMENT



ECOLOGICAL





## ECOLOGICAL



*Bass Creek Tidal Flow and Ecological Restoration, Marshfield, Mass.*

**GZA is proactive by design.** As projects are built within our natural environment, ecosystems and habitats are affected as an inevitable consequence of land development practices. At GZA, we understand this and successfully manage project effects, avoiding and minimizing potential impacts, and creating or restoring sensitive natural environments that rejoin and often improve the local functional ecology. These projects involve some form of ecological evaluation, design and/or permitting, and GZA is staffed regionally to address the unique conditions of the project environment. With specialists across the country, GZA can respond to your specific situation with the experience you are looking for to achieve outstanding results. Because GZA is a multidisciplinary firm we mobilize quickly to address other project-related issues as they emerge, responding to engineering challenges, environmental requirements, water needs or construction management demands. **GZA is the natural choice to meet your ecological needs.**

## PROJECT SPOTLIGHT

### **Runway Extension, Wetland Tree Clearing, and Rare Turtle Mitigation and Permitting for the George D. Harlow Field Airport, Marshfield, Mass.**

#### **THE CHALLENGE**

Ecological constraints required seven environmental permits in order to provide vital improvements for an airport abutting the Massachusetts coastline. The runways were surrounded by wetlands and rivers, and supported various rare species. A Wetlands Restriction Order existed at the airport, impeding future development.

#### **OUR SOLUTION**

Creative wetland and rare species mitigation packages, permitting activities, and a partnership with Mass. Audubon enabled GZA to convince regulators to grant permits. GZA proposed a telemetry program for the rare box turtles to document their preservation. We designed a restoration program for Bass Creek that involved removal of invasive species in order to restore hydrology and native vegetation to the system. This effort, along with the improvements to tide gates downstream, has proven to be a successful collaboration between the Town of Marshfield and the Mass. Office of Coastal Zone Management.

#### **THE RESULT**

The Wetlands Restriction Order was overturned, all permits were obtained, and the largest turtle telemetry project in the state was conducted. In addition, Audubon gained more protected open space, Bass Creek was restored, and the hard-to-obtain DEP wetlands variance and accepted mitigation packages allowed development to proceed as planned, expanding the airport and its facilities.





GZA provides ecological services from initial assessment through design, permitting and implementation, whether directly for habitat management purposes or in support of development. In today's highly regulated world, virtually all alteration of the natural environment



*GZA employs construction monitoring, litigation oversight and support, and land use regulation to protect interior forested wetlands, home to the barred owl*

requires some form of environmental permitting. GZA will:

- Evaluate and document existing natural resources
- Identify the regulated resources and permit processes
- Assess possible impacts
- Develop and implement a permit success strategy
- Design mitigation or restoration as needed
- Coordinate with regulators to navigate the often complex permitting process
- Implement any needed project mitigation and restoration

Reducing project permitting uncertainty is one of GZA's key ecological approaches. Acquiring permits in various states requires specialized knowledge of local permitting processes. GZA fosters key relationships with individual regulators to ensure a project's success, and through regular, high-quality work, we have earned the respect of the regulatory community. Most of our natural resource practitioners are skilled in multiple areas, including:

- Wetland, terrestrial and restoration ecology
- Soil science
- Botany and rare plants
- Freshwater and marine science
- Wildlife and rare species biology
- Invasive species identification and control
- Environmental planning and permitting
- EcoRisk and toxicity studies
- Ecological compliance monitoring



*GZA endangered species biologists are proficient in all phases of federal and state regulation associated with the life history requirements of the federally endangered bog turtle*

We tailor our integrated services for the specific needs of our various client types, including those in the public sector, utilities, healthcare and academic institutions, private and commercial developers, attorneys, and architects, engineers and landscape architects.

For complex and intricate projects that make a difference to the world in which we work and live, choose an ecology firm that sees your project the way you do.

**Choose GZA.**

#### ECOLOGICAL SERVICES

- WETLAND DELINEATION, ASSESSMENT AND DESIGN
- BIODIVERSITY, HABITAT AND RARE SPECIES ASSESSMENT
- AQUATIC TOXICITY TESTING
- ENVIRONMENTAL IMPACT STUDIES
- NATURAL RESOURCE PERMITTING
- EROSION AND SEDIMENTATION CONTROL DESIGN AND COMPLIANCE MONITORING
- ECOLOGICAL RESTORATION DESIGN
- INVASIVE SPECIES MANAGEMENT
- WATER QUALITY ASSESSMENT AND PLANNING
- MARINE AND FRESHWATER HABITAT ANALYSIS



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