

Wetlands

GAI Consultants' wetland scientists, highly skilled in wetland investigations, permitting, and mitigation design, work closely with private and public developers, utilities, industrial firms, and local, state, and federal agencies. Our environmental specialists find practical solutions for projects that affect wetlands, terrestrial and aquatic biota, and endangered/threatened plant and animal species.

Teams of hydrologists and hydraulic engineers working closely with wetland biologists means sustainable hydrology solutions that support thriving wetland communities.

GAI's first step in wetland investigations is to evaluate sites to determine suitability, potential environmental impacts, and engineering constraints. Wetland delineations are conducted in accordance with U.S. Army Corps of Engineers and appropriate state guidelines. They typically involve evaluating vegetation characteristics, wetland

hydrology, and evidence of hydric soil conditions. Our staff is thoroughly familiar with federal Section 404 regulatory requirements and state regulatory needs. We have successfully obtained permits for thousands of projects requiring individual or nationwide permits.

Regulatory agencies only issue permits for unavoidable impacts. In many cases, these impacts must be mitigated by replacing ecological functions. GAI's skilled wetland teams guide clients through options that include on-site restoration, mitigation banks, or developing project-specific mitigation sites. We have extensive experience developing mitigation sites and address site selection, site and hydraulic engineering, habitat design, permitting, and construction monitoring.

In preparing site-specific plans, GAI develops conceptual wetland mitigation plans for agency review and approval that meet sustainable requirements for saturated soil, wetland vegetation, and reliable hydrology. We conduct functional assessments in the design process to assess the



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Service Profile



quality of existing wetland habitat and predict future function. Our extensive wetland mitigation work has cultivated an experienced team of environmental scientists that work closely with clients to move projects forward.

GAI's staff has extensive training and experience in applying natural stream restoration techniques—as stand-alone stream restorations or in conjunction with wetland mitigations. One of the most difficult goals in designing wetlands is maintaining a reliable water supply. GAI's hydrologists and hydraulic engineers work closely with our biologists to prepare designs with sustainable hydrology for thriving wetlands. GAI's

long-term monitoring of restored and created wetlands effectively identifies and resolves any issues.

GAI evaluates wildlife habitats following standard Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service. Skilled environmental specialists determine the existing and after-project quality of area habitats for representative species. We also prepare habitat mitigation plans, guide clients through the agency approval process, and follow through with construction monitoring services. For more than 50 years, GAI has been a premier wetland and wildlife consultant, providing cost-effective wetland solutions.

Wetlands Services

- Wetland investigation and delineation
- Wetlands function and value assessments
- Permit application and agency coordination
- Wetland mitigation and natural stream restoration
- Post-construction monitoring
- Threatened and endangered species surveys
- Stream assessments and water quality studies
- Wildlife habitat evaluations
- Terrestrial and aquatic habitat monitoring
- Fish and macroinvertebrate population surveys
- H&H analysis, and groundwater monitoring
- Flood storage and management analysis
- Shoreline stabilization and site revegetation
- Sediment trapping and nutrient retention

GAI Services Summary

- Airport Planning and Design
- Bridge and Structure Inspection and Design
- Coal Combustion Residuals Management
- Construction Inspection and Management
- Cultural Resources Management
- Economic Analyses and Strategies
- Electric Transmission Design and Siting
- Environmental Engineering
- Environmental Studies, Species Studies, Permitting
- Gas Pipeline Surveying and Mapping
- Geographic Information Systems (GIS)
- Geotechnical Engineering and Geology
- Impoundment and Landfill Permitting and Design
- Land Development Engineering
- Landscape Architecture and Design
- Master Planning and Urban Design
- Mechanical, Electrical, Structural Engineering
- Natural Gas FERC Certification and Permitting
- Nuclear Energy Engineering Support
- Right of Way and Appraisal Support
- Land Surveying and Mapping
- Transportation Planning and Design
- Utility Management Consulting
- Water, Stormwater, Wastewater Management

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