HGL

Restoring the Environment.
Protecting Our Future.

WATER RESOURCES

Protecting Life's Most Precious Resource

For over 30 years, HGL has been providing a wide range of water resources management services to clients around the world facing both water quantity and water quality challenges. As a leader in innovative environmental and resource management solutions, HGL recognizes that achieving global sustainability will require managing water resources while meeting increasing development and energy needs. HGL's engineers and scientists use innovative technologies, industry-leading modeling and decision support tools, and best management practices to design cost-effective solutions to manage both water quantity and quality issues for municipalities, regulatory entities, and management enterprises.

HGL's expertise encompasses the following service areas:

Integrated Water Resources Management

- Basin, Watershed, and Local Planning Support
- Optimization and Decision Support
- Stakeholder Engagement
- Scenario Analysis
- Climate Change and Resiliency

Water Supply Management

- Groundwater/Surface Water Studies
- Subsidence Investigation
- Saline Intrusion
- Conjunctive Use
- Aquifer Storage and Recovery
- Consumptive Use
- Permitting

Drought Management

- Water Audits and Conservation Strategies
- Safe Yield Analysis
- Resource Allocation
- Alternate Water Sourcing
- Operations Plan Optimization

Flood Control/Management

- Mitigation Design Support
- Surface Water Modeling/Analysis
- Geospatial Data Analysis
- Operations Plan Optimization

Groundwater Investigation and Remediation

- Groundwater Fate and Transport Modeling
- Nutrient Transport and Management Studies
- Groundwater Remediation
- Remediation Optimization
- Long-Term Treatment Operations

HGL DISTINCTIONS

ENR Top 200 Environmental Firm

Specialized models and expertise to assess long-term impacts of groundwater and surface water use

Extensive practical project experience designing solutions to meet clients' needs

Over 30 years' experience providing Expert Witness services to resolve water resource issues

WATER RESOURCES

Today's water resources planners face ever-increasing challenges in managing water as a sustainable resource. They must provide water for potable, agricultural, and industrial uses; ensure flood protection; and meet recreational demand while balancing protection of ecological resources. Making better decisions requires water managers to think strategically and harness the technologies that will allow them to meet these challenges. HGL brings the best investigative, assessment, management, and restoration technologies right to your doorstep. We then help you integrate these solutions into effective resource management strategies.

HGL employs knowledge and lessons learned through the implementation of our own Corporate Sustainability Program. We are committed to practicing sustainable principles to achieve the integrated benefits of environmental, social, and economic sustainability. Since HGL's founding in 1987, we have been employing sustainable practices in daily operations to reduce our resource burden on the environment and to ensure we have a positive impact on our communities.

CREDENTIALS

- Certified Construction Managers
- Certified Hazardous Materials Managers
- Certified Industrial Hygienists
- Certified Project Management Professionals
- Certified Safety Professionals
- Certified Sustainable Development Professionals
- Certified Wastewater Treatment Plant Operators
- LEED® Accredited Professionals
- Professional Engineers
- Professional Geologists
- Subject Matter Experts
- USAESCH Certified UXO Personnel

CLIENTS

- US Air Force
- US Army Corps of Engineers
- US Army Environmental Command
- US Bureau of Reclamation
- US Department of Energy
- US Environmental Protection Agency
- Department of Justice
- Environmental Security & Technology Certification Program, DoD
- Federal Bureau of Prisons
- National Aeronautics and Space Administration
- National Park Service
- Strategic Environmental Research and Developmental Program, DoD
- Arizona Department of Environmental Quality
- Florida Water Management Districts
- International Public and Private Clients

CASE STUDIES

Water Resources Modeling Evaluation, for the Apalachicola, Chattahoochee, and Flint (ACF) River Basin, Florida. Project highlights:

- Extended the USGS-developed MODFE model for transient simulations to better define the reasonably expected regime of stream-aquifer flow reductions over the course of a typical growing season, taking into account recharge from the overburden that includes storage effects.
- Provided expert assistance to NWFWMD in the setup, application, analysis, and review of the HEC-5 model for system alternatives and assistance in the application of the HEC-5Q model to evaluate water quality environmental conditions in the Apalachicola River and Bay.
- Provided technical assistance to Florida's General Counsel with respect to interstate compacts and contracts pertaining to water allocation and rights for Florida, Georgia, and Alabama.
- Conducted a comprehensive analysis of water availability through development and calibration of a regional groundwater flow model using MODHMS® over Walton, Okaloosa, Santa Rosa, and Escambia Counties that included the Surficial and Floridan Aquifer Systems.

Development and Calibration of a Watershed Hydrologic Model, Florida. Project highlights:

- Developed a regional HSPF-based surface water model, referred to as DWRM, for simulating surface hydrologic processes and predicting recharge and groundwater ET fluxes for subsurface models.
- Calibrated observed streamflow in rivers and streams, as well as baseflow and ET.
- Compared generated total recharge and groundwater ET fluxes with those from an existing groundwater model and an integrated groundwater/surface water model.
- Generated recharge and ET for the entire DWRM area and the NDM.
- Incorporated recharge and ET into the NDM model and recalibrated the NDM model.

Three-Dimensional Saltwater Intrusion Model, for the Tiger Bay, Volusia County, Florida. Project highlights:

- Developed a groundwater model that spanned approximately 24 miles in an east-west direction and 34 miles in a north-south direction, incorporated the salient sub-regional hydrogeologic influences within the Tiger Bay area based on available published data from several sources, including SJRWMD, the U.S. Geological Survey (USGS), and the National Oceanic and Atmospheric Administration.
- Used the USGS SEAWAT-2000 code as a simulator for density-dependent groundwater flow and transport in the model region.
- Calibrated the model in two stages: predevelopment calibration (circa 1936) and transient calibration (1936 to present).
- Used the calibrated model to perform a predictive simulation to evaluate the effects of projected pumping rates.
- Conducted sensitivity analyses to assess the range of predictive uncertainty of the model.