

# WETLANDS AND THREATENED & ENDANGERED SPECIES

## Wetlands / Habitat Assessment and Mapping

HSW's chief wetland expert has successfully completed multiple wetlands projects for three water management districts (St. Johns River, Southwest Florida, and Suwannee River), several counties and multiple private clients in Florida. He has acted as Expert Peer Reviewer on multiple WMD projects. He is also qualified as Expert Witness in Florida Administrative Hearings, and has completed numerous surveys for endangered and threatened species.

HSW has also recently completed Ecological Risk Assessments for multiple organizations (including many at Kennedy Space Center). Our Team of experts are also intimately familiar with the various assessment methodologies utilized by local, regional, state and federal regulatory agencies. Mapping is accomplished in numerous fashions, from using actual aerial photographs (black and white plus false color infra-red), maps from WMD computer files, FDOT maps, historic aerials dating back as far as the late 1930's, FLUCCS maps, and Corps of Engineers maps (to name a few sources).

## Wetlands Jurisdictional Line Delineations

HSW professionals are experienced in several different wetland and habitat evaluation procedures. The UMAM procedure will take into account multiple aspects of wetland landscape position, structure and functions in assessing the impacts. This information will be input into formulae to determine mitigation requirements. Also in the formulae will be adjustments for such things as the amount of preservation proposed, the time lag(s) involved in the mitigation, and the relative degree of risk of success in the proposed mitigation. HSW's wetlands experts apply this method to wetland delineations requested by these agencies. Another major delineation methodology used is that of the U.S. Army Corps of Engineers. In those cases where the Corps have a voice in a wetlands issue, HSW wetlands experts will employ the Corps methodology. A recently developed method (Wetland Assessment Procedure – WAP – by SWFWMD) is especially useful in examining impacts and recoveries of wetland systems affected by groundwater withdrawals. HSW experts are able to utilize this method effectively where applicable.

## Threatened and Endangered Species

Currently, more than 500 species are protected by State, federal and local governments, and the laws that govern management and conservation are complex. Our wildlife ecologists and scientists design and conduct surveys, obtain permits, and document the presence of animal or plant species currently under regulatory mandate. HSW staff can identify critical habitats that support endangered and threatened species, help clients avoid conflicts with those species, secure required permits, and develop species-specific mitigation and conservation plans. We employ contemporary techniques such as remote video census, aerial survey, specialized modeling design as well as conventional survey methodologies to evaluate population health, habitat suitability, habitat connectivity, and biodiversity. We can use our GIS and spatial analysis of conservation features to integrate this data into management plans and permitting strategies.

## Mitigation Planning & Design

Mitigation planning and design efforts most commonly follow the requirements of the ERP rules, or may follow the requirements of the Corp of Engineers. In certain situations, mitigation can be required by a local governmental agency' rules and/or under Consumptive Use-Water Use Permitting Rules. Mitigation banks may be appropriate for certain projects, while for others, onsite mitigation is more cost-effective. For on-site mitigation, preservation and enhancement are normally the most cost-effective. Wetlands creation requires the greatest level of design effort, to ensure species survival and ultimate project success. HSW's wetlands Team have experience in virtually all aspects of wetlands mitigation, and would represent the client's interests to the regulatory agencies in a manner to ensure the client would take the most cost-effective route available within the applicable regulation.

