

# Wetland Management Streamlines Planning

Large-scale wetlands surveys can provide detailed data for planning long-term base construction.

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The task of balancing wetland preservation and base construction requires more than careful planning. Not only must commanders perform detailed surveys to clearly delineate wetland boundaries, they need a thorough understanding of environmental regulatory conditions.

The *Clean Water Act of 1972 (CWA)* placed the authority of restoring and maintaining the integrity of the nation's waters in the hands of the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers (USACE). Each USACE district is charged with regulating proposed federally permitted activity that may impact jurisdictional wetlands. State and local laws add further complexity to the regulatory environment.

In addition to CWA regulations, the *National Environmental Policy Act (NEPA)* requires that the Department of Defense and its military agencies review all environmental impacts of new construction; and, if necessary, consider alternate locations for proposed federal activities. When evaluating new construction sites on installations, commanders must first meet the ecological objective of minimizing (or completely avoiding) the harmful impacts to native wetlands.

## ENVIRONMENTAL ASSESSMENT

NEPA law requires a thorough environmental assessment to evaluate the impacts of proposed new construction. This includes a compensatory mitigation evaluation process that calculates the net loss to the wetland environment. Then it must be determined what equalizing compensation would be required to offset these losses. Per the results of the assessment, commanders may choose to acquire compensatory mitigation credits to ensure that required offset efforts provide the environmental benefits that



Scientists take soil samples while conducting a large-scale wetland survey at Hurlburt Field, Fla. The data will be used when planning future development projects on the base. PHOTO COURTESY WOOLPERT

result in "no net loss." The entire regulatory process, from the environmental assessment to final permitting, can be extremely prolonged.

Yet despite regulatory efforts, wetland losses continue to escalate. That has meant tighter monitoring of mitigation strategies under ever-stricter environmental criteria. Installations such as Hurlburt Field, Fla., must be ever-vigilant of their environmental constraints, dictated by land restrictions and protection of wetlands, species and habitat.

Hurlburt Field's leadership decided to take a proactive stance to prepare for future mission construction. Instead of looking only at the next mission, the commander took a broader view of the wetlands, hoping to improve and streamline regulatory compliance for each new project in the future.

Woolpert and Wetland Sciences Inc. completed the base-wide Hurlburt Field survey in 2011. An update to the original delineation performed in 1996, this review spanned 3,000-acres and was the largest of its kind performed in Florida that year. Of the installation's 6,700-acres 52 percent is wetlands. Only 33-acres of noncontiguous, buildable area remains.

To improve accuracy and accelerate the process, the teams used hand-held GPS units to capture wetland delineation data within 1-ft of horizontal accuracy. Each survey team consisted of a wetland scientist and a GPS operator. Scientists determined the wetland boundary while GPS operators obtained the spatial position and descriptive information of the wetland line, then placed survey ribbons accordingly. Each point was delineated geographically, then converted to data that was integrated into geographic information system (GIS) maps, and validated via a web-based, on-screen review process. In instances where accurate geospatial data could not be captured—due to satellite communications or terrain obstruction—the teams relied on aerial photography to "ground-truth," or verify, results.

With the survey completed, GIS mapping is serving multiple purposes at Hurlburt Field. The digital geospatial data can be accessed by base engineers so they can clearly understand the wetland boundaries and avoid development that could damage them. All the compiled geospatial data integrates into the installation's overall management system, giving environmental managers an accurate



A portion of Hurlburt Field's wetland boundaries, as indicated by the orange dots. IMAGE COURTESY WOOLPERT

database with which to manage resources, including wildlife conservation and prescribed burning zones.

An accurate GIS map for the entire wetland area will enable a detailed classification of assets, including: vegetation, habitat, herbaceous regions, forested regions, soil types, and much more.

## INITIATING NEW CONSTRUCTION

Even with clear wetlands lines established, contractors involved with any new construction at Hurlburt Field must coordinate with the base's environmental managers to acquire an Environmental Resource Permit and CWA Permit. USACE and the Florida Department of Environmental Protection are the governing agencies for work at Hurlburt Field. Commanders in other regions are subject to USACE, as well as unique state, county and local wetland regulations.

To move forward with a new development on designated wetlands, Hurlburt Field's environmental managers must determine the value of the area impacted. Unique on-site environmental issues require extraordinary consideration. The assessment requires a compensatory mitigation evaluation. Defined by USACE as "the restoration, creation, enhancement or

preservation of wetlands when compensating for wetland loss," these efforts must offset any destruction caused by displacing the wetlands.

Restoration efforts can either take place individually or through a dedicated mitigation bank. Mitigation banks are wetland areas that have been established or restored specifically for the purpose of providing compensation for wetland impacts. After achieving buy-in and approval from regulatory agencies, commanders can purchase mitigation bank credits to offset the impacts of new construction. But before construction can begin, the proposed mitigation must be approved during permitting. To assure sufficient compensation, a compensatory mitigation assessment includes both on-site appraisal of impacted wetlands and the evaluation of proposed restorations.

Federal law requires environmental managers to keep the mitigation bank in the same watershed as the impacted site. Individual compensatory restoration sites must be looked after in perpetuity, so the base has to account for that long-term cost. Because of this, restoration projects sometimes fall short of achieving a functioning ecological offset. Designated

## ADVANTAGEOUS APPROACH

The prospect of performing a one-time, large-scale survey of military installation wetlands (or other environmentally sensitive regions) has many advantages over a project-by-project approach.

1. Shorter lead times on construction projects due to the existence of mapping.
2. Reduces the cost of new builds, since the survey is an expense assumed outside the project.
3. Allows engineers and contractors to flag construction zones at the points provided by the environmental management team.
4. Improves long-term planning.
5. Prevents potentially damaging environmental consequences by working near a wetland.
6. Raises awareness for wetland protection activities on base.

mitigation banks have generally become the ecologically preferred offset method.

## PLANNING AHEAD

When considering construction in and around wetlands, installation commanders should factor in a potentially protracted regulatory approval process. Champions of new installation construction can expedite this process by performing a base-wide survey of their wetlands to establish an accurate mapping database.

There is no avoiding the regulatory process. But accurate mapping provides a clear understanding of wetland constraints—and it promises to expedite the approval process for years to come.

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