

INSIGHTS

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A Necessary Good Large-Scale Wetlands Restoration

Wetlands are a vital part of Florida's ecology, economy and beauty. Wetlands are formed and sustained by water and in return they protect this valuable resource. As water passes through a wetland system, plants take up pollutants and sediments settle in still water, leaving the water cleaner and clearer. Beyond helping to ensure better quality water for swimming, fishing and drinking, wetlands provide habitat for many wildlife species. Panthers and wood storks are frequent inhabitants of Florida swamps, and many sport fish raise their young in the protective waters of the wetlands before the young move out to deeper waters.

For decades, Florida's wetlands were filled to make way for agricultural use or development. These fragile and important ecosystems paid the price for the state's growing population. Today, the wetlands are making a comeback. In addition to more stringent development regulations, previously impacted wetlands are being restored—bringing them closer to their natural function and beauty. Restored wetlands serve many purposes: improving surface water quality, improving wildlife habitat and providing critical water storage areas. Considering that Florida's population is projected to grow by nearly 80 percent by 2030, pressure to develop wetlands will increase throughout the state in the coming years.

Federal and State wetland regulations require mitigation to compensate for negative impacts of development in wetlands. This can be achieved by restoring or enhancing damaged wetlands, creating wetlands from uplands and/or preserving high-quality wetlands and uplands. Mitigation banks are another way to alleviate wetland impact. They have been developed throughout the state to allow mitigation to be performed at the bank rather than at the project site where wetland impacts occur. Mitigation banks perform large-scale habitat improvements by restoring, enhancing and preserving wetlands and uplands. Once the habitats meet certain success criteria, the banks are permitted to sell mitigation credits within a defined service area. These mitigation banks are often an attractive option for applicants to obtain permits without having to perform mitigation at their project site. As

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The Great Egret is one of the many birds that will benefit from wetland restoration projects.

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Employee Spotlight BJ Bukata



Benjamin Bukata, or BJ as everyone knows him, is ready to celebrate his sixth anniversary with Jones Edmunds. BJ came in with a wealth of experience, making his move from project scientist to Wetlands Ecology Department Manager a natural one. As the manager, he balances staff workloads, schedules field work and provides Quality Assurance/Quality Control for reports that are generated from the Department. He also serves as lead scientist on various large engineering projects and manages several mitigation projects.

After he was born in Portsmouth, New Hampshire, BJ's family moved south to the coastal town of Clearwater, Florida, where he grew up. BJ attended the University of Florida where he obtained a Bachelor of Science in Wildlife Ecology and a Master of Science in Wetlands Ecology.

After earning his degrees, BJ took an exciting position as Wetlands Specialist for the American Samoa government. American Samoa is a set of five volcanic islands and two coral atolls in the South Pacific, the heart of Polynesia. While working in the land of the coconuts, BJ helped village elders, teaching them about wetland management. His tasks included a variety of educational outreach programs with wetland villages and local schools as well as developing wetland GIS data. He even held workshops to train staff from other government agencies and the local utility company to use GIS software and datasets.

Culturally, it was a unique and challenging stint for BJ and his wife, Eliana Bardi. After a little over a year they came back to the mainland where BJ headed to Jones Edmunds. ■

Client Spotlight St. Johns County



Aerial outline of the TCRMA

Home to the vista-rich coastal towns of St. Augustine Beach, Crescent Beach and Ponte Vedra, a stop on the Professional Golf Association and Association of Tennis Professionals tours, it's no wonder that St. Johns County (SJC) is the third fastest growing county in Florida. As the population swells, so must the infrastructure that supports it.

To compensate for the impact of future growth on wetlands and avoid the difficult task of securing mitigation sites for every project or purchasing mitigation bank credits, SJC had the foresight to purchase the Turnbull Creek Regional Mitigation Area (TCRMA).

By working with Jones Edmunds to improve the quality of wetlands and uplands in the TCRMA, SJC will provide more than 700 acres of habitat for wildlife, protect important tributaries of the St. Johns River and help preserve a piece of Florida's natural beauty for future generations. SJC will obtain mitigation credits from the St. Johns River Water Management District and the U.S. Army Corps of Engineers to minimize wetland impacts that occur as a result of future transportation projects.

"We are responding proactively to our projected transportation mitigation needs and doing so in a manner that provides regional ecological benefits for our County," said St. Johns County Land Management Manager Tony Cubbedge.

The TCRMA has been impacted by various activities and will be enhanced by removing roads, ditches, and pine trees planted in wetlands, constructing a 9.3-acre marsh, thinning upland pines and implementing a controlled burn program. ■



Joe Kuhn of Jones Edmunds evaluating one of the many ditches of the Turnbull Creek Regional Mitigation Area (TCRMA).

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demand for mitigation credits rises, so does the price, ranging from \$30,000 to over \$100,000 per credit. Jones Edmunds has helped clients develop mitigation banks to offset impacts associated with their capital improvement projects.

Restoration efforts require collecting and assessing data to evaluate potential alternatives and develop work plans detailing tasks necessary to bring wetland functions back to life. In the case of Devil's Hammock Wildlife Management Area, Jones Edmunds' staff evaluated 7,500 acres and prepared wetland restoration plans. Located in Levy County, the land was damaged from decades of silviculture, with logging roads and ditches altering the hydrology and plant communities. Jones Edmunds staff used a Geographic Information System (GIS) to identify ecological resources and man-made alterations across the property, allowing our scientists and engineers to evaluate on-site conditions and determine alternatives for restoring each impacted site.

Jones Edmunds developed restoration plans, including construction methods, construction costs and enhancement benefits for each impacted site. Improvements to the hydrology of many large wetlands—e.g., removing unnecessary roads, adding culverts or constructing low water crossings—were proposed. Based on this information and the acreage of the enhanced area, each site was ranked to allow an objective cost-benefit evaluation.

Jones Edmunds' work on important wetland mitigation projects such as Devil's Hammock is just one example of the firm's dedication to improving Florida's environment. ■

Did You Know?

- **Swampland For Sale** – Before European colonization of Florida in the 1800s, half the state was covered in wetlands. Today wetlands cover approximately 30 percent of the state. More than 10 percent of the country's 90-million acres of wetlands are in Florida.
- **One of a Kind** – Although wetlands can be generally labeled, each Florida wetland system is unique based on its geologic, hydrologic, soil and vegetation conditions. Some of the categories used to classify wetlands are cypress domes and sloughs, floodplain wetlands which are found along rivers and streams, freshwater marshes and salt marshes that are specific to coastal areas and saltwater.
- **The Middle Man** – Wetlands are often transition zones between upland ecosystems and deeper aquatic habitats. They provide flood control, wildlife habitat, coastal protection and help to filter pollutants from adjacent upland ecosystems.
- **Government Acquisition** – In an effort to save important wetlands and uplands, the Florida Forever program purchases property for use as preservation, recreation, education and wildlife habitat areas. The Florida Forever program replaced the Preservation 2000 program and is the largest land-acquisition program in the county.
- **Ouch!** – Damage to wetlands is usually caused by dredging or filling wetlands, invasive exotic species that out-compete native vegetation, pesticide and fertilizer run-off from golf courses and lawns, gasoline and oil from parking lots and overpumping of groundwater which lowers the water levels and alters the hydroperiod.

Source: University of Florida, the Florida Department of Environmental Protection, and the Florida Fish and Wildlife Conservation Commission.

INSIGHTS

Back From the Brink Martins Lake

Martins Lake, located in the City of Minneola's Trailhead Park, is slowly recovering and local children are invited to come see.

Over the past 20 years or more, development within the basin caused sediments to settle in the lake. The once deep and open lake teeming with fish, turtles, alligators and more was transformed into a stagnant marsh. The city wanted to change this and, with funding assistance from the Lake County Water Authority, worked with Jones Edmunds to enhance the area.

Jones Edmunds designed the restoration plan for the western portion of Martins Lake. Native plant species were re-introduced, offering habitat and food for wetland animals while filtering run-off that finds its way into the lake.

Inhabitants of the newly restored lake include birds such as sandhill cranes, tri-colored herons, red-shouldered hawks and belted knightfishers. Raccoons, armadillos, black racers and banded water snakes also call the lake home.



One of the educational kiosks at Martins Lake

Visitors to the park are not only likely to see a variety of animals and plants, but also signs providing educational information. Walkers, bird watchers and others can read signs that include the history of the lake and the enhancement activities involved in its revival. To encourage visitors to take advantage of the rehabilitated area, Jones Edmunds sent a letter to local schools encouraging them to take their students to the restored park for environmental education field trips. ■