

Making Wetlands Wetter and Better – March 21, 2018

Wetlands are an important component of Florida landscapes. They provide shelter for plants and animals, which in turn attract naturalists, hunters or anglers. Look in the air and you might be able to see a Snail Kite in search of a Florida Apple Snail. Bend over, and there it is, a fascinating pitcher plant digesting its insect meal. In Central Florida, you might even see cows wandering around in freshwater wetlands. Here, they find good quality forage and a nice cooling station during the summer months. Setting aside mosquitoes, what's not to love about wetlands? Yet, wetlands are threatened worldwide, facing pollution and land conversion.



Wading birds utilizing recently restored wetland habitat on the Archbold Reserve. Photo by Rebecca Tucker.

Protecting and restoring wetlands is the main goal of the Wetland Reserve Program, now also known as the Wetland Reserve Easement program, which is operated by the Natural Resources Conservation Service a branch of the United States Department of Agriculture. This program offers landowners the opportunity to enroll in wetland restoration with financial compensation, while keeping ownership and access to their land. Archbold Biological Station Executive Director Dr. Hilary Swain knows a lot about this program. “Archbold manages a total of ten restoration easements, six are located at the Archbold Reserve just southwest of Archbold Biological Station, and four are located at Archbold’s Buck Island Ranch.”

In Central Florida, restoration consists essentially in re-establishing historical wetter conditions in heavily-drained, former wetlands. But, one thing we don’t know is how successful this restoration has been, as it requires monitoring before and after restoration.” Thankfully, Archbold has a long history of collecting data. “We have been monitoring water level and vegetation responses to restoration at Buck Island Ranch since 2003, but we needed additional support and expertise to analyze these data” said MacArthur Agro-ecology Center scientific director Dr. Betsey Boughton. This piqued the interest of USDA and the Mosaic Company, who provided funding allowing Dr. Grégory Sonnier, a post-doctoral fellow at Archbold, to analyze the data.



Dr. Betsey Boughton and her research assistant conducting wetland sampling on Archbold's Buck Island Ranch. Photo by Carlton Ward.

Dr. Boughton and Dr. Sonnier have found that the restored wetland sites became wetter. “Before restoration we had an average of 10 to 20 days of flooding in the wetlands every year, after restoration this increased to more than 120 days a year.” said Dr. Sonnier. “We observed that vegetation changed after restoration with an overall increase in floristic quality. After restoration vegetation also became more varied with more wetland plant species present.”

Florida is one of the few states that allows cattle grazing on wetland restoration easements. Dr. Sonnier and Dr. Boughton are asking if this practice is compatible with wetland restoration. They have not found any evidence that grazing the recommended number of cows negatively affected restoration at Buck Island Ranch. “These are important results because without the ability to graze their land, ranch owners would be less likely to enroll in the Wetland Reserve Program” said Dr. Boughton.

The future of wetland restoration is bright for Archbold Biological Station. Two additional wetland restoration projects are being planned for Buck Island Ranch. These will provide more habitat for fish and wildlife and more interesting observations for visitors on the public tours of Buck Island Ranch.