

Scientific Exploration of Fish at the Celery Fields

On Saturday August 22, 2015 a group of scientist volunteered to conduct fish sampling at the Celery Fields Regional Stormwater Facility. Led by Ron Van Fleet of Vanasse Hangen Brustlin (VHB), an environmental consulting company, seine nets were used to learn what kind of fish are living in the marshy ponds that were built to control flooding in the Phillippi Creek watershed of Sarasota.

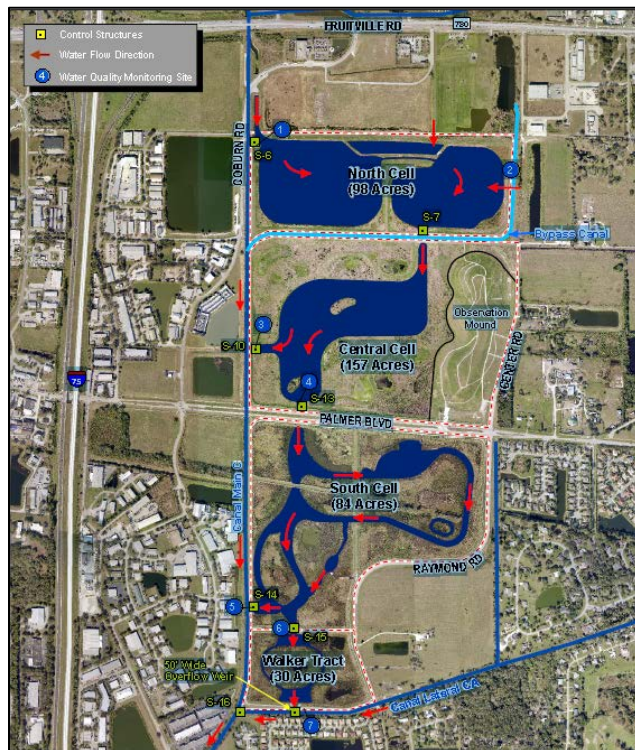


Scientists and family members preparing to net fish

The Celery Fields was historically a sawgrass marsh (similar to the Florida Everglades) that was used for celery farming for many decades until it was converted into a flood control facility in recent years. Over 200 homes were removed from the 100-year floodplain by completion of the third phase of construction in 2011. A recent study shows that the facility reduces pollution substantially and restores more natural flow to the productive estuary downstream in Roberts Bay. Wetlands at the Celery Fields provide habitat for over 200 species of birds. The site is so productive for bird watchers that Sarasota Audubon has built a Nature Center that will open up later this year.



The Celery Fields is located near Fruitville Road and I-75



Water flows from north to south through the cells

Sampling was conducted using seine nets just like with the nets used for statewide fish monitoring conducted by the Florida Fish and Wildlife Conservation Commission. Eight deployments were conducted in the South Cell of the Celery Fields near Palmer Boulevard adjacent to the boardwalk and gazebo. The South Cell is a wetland-rich area planted with hundreds of thousands of native plants that provide food, cover, and nesting opportunities for fish and wildlife.



Wetland plants - Thalia



Adam Olenoski deploying a net



The volunteers getting into their work

The results were a combination of good news, disappointing information and surprises that make scientists even more curious.

Good News

- There is a great abundance of small fish that are desirable prey for wading birds such as herons, egrets, spoonbills and wood storks. This new information tells us the Celery Fields provides more than enough food for the bird population on site.
- The prey fish will also support a population of predatory fish that are sought after game fish.
- There are a variety of desirable fish present including red-ear sunfish, bluegill, shad, bass, killifish and others.
- Some Tilapia were found. They are an exotic fish from Asia and Africa that have become common in Florida and are edible, tasty and found in fish markets.
- Many mosquitofish were found - good news because they eat mosquito larva.
- Numerous shellfish were found. They play an important role in the food pyramid in any aquatic system. Red ear sunfish prefer to eat them in particular.



Shellfish in the Net

Other News

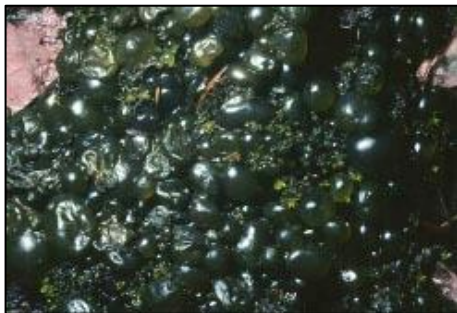
There was an abundance of plecostomus 'algae-eating' fish that are foreign and are not desirable prey. They dig into the banks of ponds, undermining them and causing erosion. The Plecostomus that were caught were removed from the Celery Fields ponds.



Gary Serviss holding an algae eater

Curiosities

A very large amount of green jelly algae was found on the bottom of the pond. Nostoc is a blobby blue-green algae found in water and also on land. The extent or importance of this algae is yet to be determined.



Nostoc

This voluntary effort creates a baseline of information - but was too small to create a full understanding of the aquatic environment in the Celery Fields. Additional sampling during other seasons of the year, during droughts, or in other cells would be informative. The 8 net pulls produced results that were different from each other too, which indicates that more sampling would be needed to be able to generalize about the facility as a whole.

History

Facility managers Tom Medel and Lisa Wedin have observed large game fish at the Celery Fields over the years. The most notable event was a cold snap in January 2010 that caused hundreds of snook to die throughout southwest Florida. They also observed mullet, gar, and largemouth bass.



Tom Medel holding a cold-killed snook

Next Steps

The Phillippi Creek watershed continues to improve through the implementation of central sewer services, stormwater treatment and habitat restoration.

Approximately 100 miles of canals in the watershed are managed by the Sarasota County Stormwater Environmental Utility (SEU). The SEU is developing a canal maintenance approach that integrates flood control, environmental benefits and cost-efficient maintenance practices. To understand the value of canals as fish habitat, the Sarasota Bay Estuary Program has retained Mote Marine Laboratory to conduct fish sampling in the Phillippi Creek canal system with a focus on snook - a popular game fish that occupies streams and canals during its life cycle.



Ron Van Fleet led the volunteer effort

The volunteer team included:

Ron Van Fleet

Gary Serviss

Clayton Robertson

Adam Olenoski

TJ Venning

Justin Heller

Ray Leary

Calvin Serviss

Danielle Salmon

Maria Heller

Star Venning

Marley Venning

Aiden Leary

Rowan Leary

Spring Leary

John Ryan