

News from...

Rookery Bay National Estuarine Research Reserve

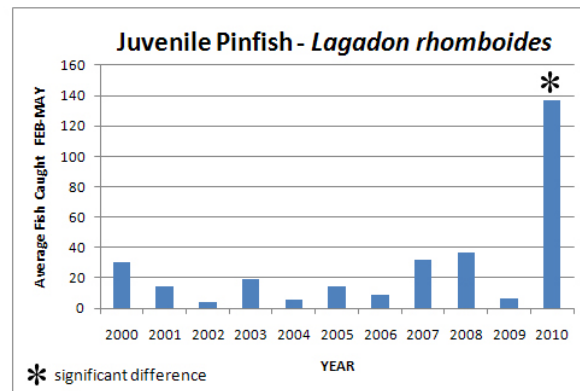
Cold Stress Effects on Estuarine Fishes

Staff and volunteers at Rookery Bay Reserve have been monitoring fish populations for ten years. Sampling of waters in three bays in the Ten Thousand Islands began two years before the Comprehensive Everglades Restoration Project was implemented in the Picayune Strand (Southern Golden Gate Estates). The monitoring program is ongoing throughout the restoration process and is expected to continue for several years following completion of the restoration. The purpose of the study is to understand and evaluate how the restoration affects fish and shellfish in estuaries downstream.

The Reserve's monitoring program entails pulling a trawl net through Pumpkin Bay, Faka Union Bay and Fakahatchee Bay on a monthly basis. Catch is sorted, identified, counted, measured, and released unharmed to the greatest extent possible. All commercially and recreationally valuable fish and shellfish species caught in the net are documented. Much can be learned from collection of this kind of data, and during the process some interesting trends are sometimes observed.

In January 2010, southwest Florida experienced one of the longest stretches of cold weather on record. Because air temperatures dropped below freezing, water temperatures similarly dropped below many native fishes' tolerance levels. On January 11, the Reserve's water quality monitoring stations revealed that water temperatures bottomed out at 45 degrees F, and stayed below 57 through January 14. Anecdotal reports of dead fish included snook, tarpon, snappers, catfish, ladyfish, mullet, needlefish and mojarra.

Fisheries biologist Pat O'Donnell's sampling data reflects a dramatic increase in the average number of pinfish counted in samples from February through May in comparison with the previous ten years. He believes this spike is an indirect effect of the cold water temperatures. According to a NOAA publication, pinfish are a temperate species with minimum water temperature tolerance of approximately 38 degrees F. Many snook, tarpon and snappers, typical predators of pinfish, did not survive the cold temperatures, which may have resulted in more a hospitable environment for pinfish.



Another trend observed in trawl data following the cold water temperatures was a significant increase in abundance of flatfish such as Gulf flounder, tonguefish and lined sole. Because these species are benthic (spend the majority of their time on the bottom) their ability to bury beneath the sand or mud may have given them the advantage when waters were coldest. Flounders' temperature tolerance minimum is approximately 47 degrees F.

This study shows that unusually low temperatures can result in both negative and positive effects on fish populations in local estuaries.

Shorebird Nesting Update



Least terns and Wilson's plovers are two species of shorebirds that rely on our beaches for nesting each summer. Because these species are listed by the Florida Fish & Wildlife Conservation Commission (FWC) as Threatened and Species of Special Concern, respectively, portions of area beaches and sand bars have been roped off and posted as No Entry zones for the summer nesting season.

According to the Reserve's Team OCEAN (Ocean Conservation Education Action Network) Coordinator Lindsay Addison, the posted area at the **south end of Key Island (Keewaydin)** is successfully hosting a small colony of least terns and a handful of Wilson's plovers this year. As of the second week of June, most of the terns' eggs had hatched, and some of the oldest chicks are almost ready to fly. Several Wilson's plover pairs also hatched multiple chicks.

Second Chance sand bar, part of the Cape Romano shoals, is also providing high nesting ground for the first time in several years. A portion of the sandbar was posted to protect the birds nesting in the center, however the edges are accessible to boaters. More than 100 tern pairs and a few plovers are sitting on eggs or attending chicks.

Nest Totals to Date:

- Key (Keewaydin) Island: 23 least tern, 4 Wilson's plover
- Second Chance sand bar: 200 least tern, 2 Wilson's plover
- Caxambas CWA (sand bar) 100 least tern, 4 Wilson's plover
- Sand Dollar/Big Marco PassCWA: 100 least tern, 10 Wilson's plover, 200 black skimmers

July represents the homestretch for many of these birds. Visitors to nesting areas are reminded to respect the postings and to look out for the highly mobile chicks, which often roam outside of the posting. Be especially careful to **keep dogs well away from the posted areas** to minimize stress to the birds. When you visit these areas pay attention to the birds' behavior. If they are flying up or dive-bombing, you are too close. Moving away will calm the birds, make your day more enjoyable, and result in a greater likelihood of a successful nesting season this year.

Rookery Bay Environmental Learning Center July Events

Summer 2010 Ecotour Providers Series - FREE

July 15, 6:00 - 8:30 pm
Night Tours in Southwest Florida

Kids FREE Fridays!

Kids 12 and under get in free with an adult. Enjoy guided children's activities based on a different theme each week:

July 9 Crawling and Swimming Crabs
July 16 Beach Treasures
July 23 Coastal Birds
July 30 Marine Mammals

Open: Monday - Friday, 9 am - 4 pm
Admission: \$5 adults, \$3 kids 6-12, kids under 6 FREE

The Center will be closed on Monday July 5

Rookery Bay, located in southwest Florida, is recognized as one of the few remaining pristine, mangrove-forested estuaries in the U.S. The Reserve is managed by the Florida Department of Environmental Protection's Office of Coastal and Aquatic Managed Areas, and as part of the National Estuarine Research Reserve System, it serves as an outdoor classroom and laboratory for students and scientists from around the world.

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