



Corkscrew  
Swamp Sanctuary

## Along the Boardwalk

September, 2008

[www.corkscrew.audubon.org](http://www.corkscrew.audubon.org)

### Bird conservation initiative begins

The Florida Bird Conservation Initiative (FBCI) has been launched by a consortium of organizations in Florida, including Audubon of Florida. A web site with information is at [www.myfwc.com/FBCI/FBCI\\_index.htm](http://www.myfwc.com/FBCI/FBCI_index.htm).

The FBCI web site will serve as a clearinghouse of information and a helpful tool on bird conservation in Florida. It will always be a work in progress and visitors are encouraged to input ideas and projects to improve it. Specifically, please review the site and send in any additional information that you think should be included.

Visitors are encouraged to stop by the "Projects" page on the site and take a few minutes to enter their avian projects into the project database. This database will be a searchable and comprehensive snapshot of avian research going on in Florida.

Help and participation are needed

to improve communication among those working with bird conservation in Florida.

Volunteers can join the Florida Bird Conservation Initiative listerv to stay connected with the avian community in Florida.

To join, email [listserv@listserv.MyFWC.com](mailto:listserv@listserv.MyFWC.com). Leave the subject line blank and in the message box, type "Subscribe FBCI-L." When a confirmation email is received, reply by leaving the subject line as is and typing "OK" in the message box.

Members of the listerv will receive instructions on how to post and reply to the listerv.

For questions or more information, please feel free to contact Elena Sachs at [Elena.Sachs@myfwc.com](mailto:Elena.Sachs@myfwc.com).



### Bobwhite may return

Corkscrew received a Volunteer Days grant from Audubon's and Toyota's TogetherGreen program to fund six days of beginning restoration of the John and David Rigby Tract (tree farm) north of the Blair Center.

The goal is to create habitats for Gopher Tortoises and Bobwhite Quail.

Different days will have different activities, which may include plant and

wildlife monitoring, exotic plant removal, planting native vegetation, and helping create a new public access trail to the area.

Volunteers can be Corkscrew volunteers, college students, and anyone interested in helping. Individuals can help on one or more of the days, but the grant requires a commitment of six hours of work on any specific day.

Materials, refreshments and a recognition event at the end of each day will be provided. Contact Sally if interested in helping on these Saturdays:

- September 27
- November 1
- December 13
- January 24
- April 25
- May 9

### Quick ID Guide: Queen, Soldier, and Viceroy butterflies

**Queen:** From above, look for white spots that extend to the bottom of the fore wing and for a lack of, or very faint, vein lines in the wings.

With wings folded, look for a dark crescent arcing toward the body on the hind wing.



**Soldier:** From above, look for white spots only at the upper tips of the fore wings and for a pronounced vein pattern in both the fore and hind wings.

With wings folded, look for a row of very pale whitish spots on the hind wing and almost no crescent.



**Viceroy:** From above, look for a dark bar that crosses the hind wing and for pronounced vein patterns in both the fore and hind wings.

With wings folded, look for a strong vertical black stripe on the hind wing



### Bird Trivia

**Do birds chew their food?**

Discover the answer at [www.collieraudubon.org/birding.html](http://www.collieraudubon.org/birding.html)

## How does aquatic life reestablish itself after a prolonged dry period?

The wet season has finally returned, and with the rise in water levels comes the return of aquatic life.

During the dry season, many fish die due to desiccation or predation while some survive by seeking out dry-season refuges such as alligator holes, canals, and lakes where they live throughout the dry spring months.

Crayfish burrow underground just before the marsh dries and retain moisture while other species (e.g. apple snails) are adapted to survive aestivation on the dry marsh surface.

When the wet season returns, it takes time for fish to disperse from their refuges throughout the system, so most wetlands exist for several weeks as vir-

tually fishless systems.

Taking advantage of the fact that there are few predators, invertebrates thrive. One of the first aquatic species to arrive are the Everglades crayfish who emerge from their burrows and quickly begin reproducing. At the same time, other aquatic invertebrates (insect larvae) and tadpoles become numerous due to the abundance of habitat (aquatic plants) and food (algae from decaying plants).

After about 4-6 weeks, native fish become more numerous. The first species to appear are generally mosquitofish, flagfish and juvenile sunfish. Another crayfish species, the slough crayfish, and grass shrimp also appear

during this time as connective patches are created between water bodies.

The diversity and abundance of native fish species rises rapidly as the season continues, eventually including least killifish, bluefin killifish, and adult sunfish. The fishes that occupy forested wetlands are habitat generalists: they are adapted to constant changes in the availability and amount of food and other necessary resources.

While it is surprising that aquatic life can return so quickly following last year's drought conditions, forested wetlands are by nature dynamic ecosystems. It's all part of life for a fish in the forest.

—Nicole Katin

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## August Sightings

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An immature Yellow Rat Snake seeks a route to a nearby tree near the north lake (August 22).



A Spicebush Swallowtail pauses on a fallen Pigweed Stalk at the north lake (August 15).



A Scarlet Hibiscus blooms in the north lake above a blanket of Duckweed (August 8).

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## Exotic Species Threat

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### Exotic beetles threaten Red Bay, Swamp Bay, Palamedes Swallowtail

“You may be seeing extinction in progress,” said Georgia forester Chip Bates. “This disease is coming your way, and man, it moves fast. Twenty miles per year.”

Red Bay Ambrosia Beetles were first detected near Savannah, Georgia, in 2002, probably arriving in wood on a container ship from Asia. The beetles carry Laurel Wilt, a fungal disease, which kills Red Bay. Related species, including Swamp Bay, Sassafras and possibly Avocado, are also at risk.

The Red Bay Ambrosia Beetle introduces the fungus into the tree's sap-

wood by boring tunnels into Red Bays, laying eggs, depositing the Laurel Wilt spores, and then farming the fungus. Within weeks, or months at most, the fungus clogs the tree's circulatory system and it dies.

As of January, 2007, Laurel Wilt was present along the Atlantic coast from Charleston, SC, to south of Jacksonville with an outlying infestation in Indian River County, FL.

Red Bays are host to three butterflies: palamedes, Schaus, and spicebush swallowtails. The range of the palamedes overlaps that of its sole host

plant, the Red Bay. The worst case scenario is the butterfly's extinction in the next decade or two.

Many trees develop chemical defenses to thwart attacks by insects and disease, but the Red Bay has no such protection against the Laurel Wilt fungus. The prospects of halting the spread of Laurel Wilt and the beetles are bleak. No pesticides have been found effective against the beetles, and even if some were found, individual trees would have to be inoculated by hand.

More information: [www.nature.org/initiatives/forests/files/fy08redbaywilt.pdf](http://www.nature.org/initiatives/forests/files/fy08redbaywilt.pdf)

## Pig Frog *Rana grylio*

Bullfrogs just croak, or so everyone thought until early settlers heard large grunting frogs in Southern swamps.

It was a big noise that some said sounded like a pig and others likened to an alligator. “Pig” frog won as the common name for *Rana grylio*, an exclusively Southern bullfrog. The confusion still exists. Visitors on the boardwalk often mistake the calls of Pig Frog for those of alligators and excitedly report hearing choruses of alligators in the marsh and cypress forest.

The scientific name *Rana grylio* reflects the common name: *Rana* from the Latin *rana* for frog and *grylio* from the Greek *gryllos* for pig.

Pig Frogs have three different calls. The regular call sounds like the guttural grunt of a pig; a second call sounds like the single snapping of a really large, stretched and taut rubber band; the final call, an alarm call, is a single squeak. Female Pig Frogs are usually silent, but when alarmed they too produce the low-pitched alarm call.

Breeding choruses usually erupt at night when the majority of the mating occurs. Rainy or humid overcast weather seems to provide conditions that make for the most active mating.

During their mating season, which is typically late spring and summer when the waters return, male Pig Frogs grunt their presence and territory, which sends a signal to any ripe and ready females in the neighborhood to come on over for a little *amplexus*.

Amplexus, *below*, consists of a male climbing on top of the female and clasping her. In response, she lays a swarm of up to 10,000 eggs in a floating film of transparent jelly, which he fertilizes. Then they part, and he resumes his calling for another mate.



Eggs are laid in relatively still, warm water, so they must develop on the surface in order to receive a steady supply of oxygen. Submerged or dried out eggs die.

The eggs hatch in two to three days and the tadpoles begin a one-year developmental sequence into frogs. The eggs appear to have no animal predators, so their only threat is the receding water.

Tadpoles in the northern range take a little longer to develop while those in the southern range (here) take a shorter time. The tadpoles are quite large, to five inches, with extremely long tails. At first they are a solid dark greenish color, but as they mature they become more colorful with yellow bellies, yellow spots on their sides, and greenish to black on top. After resorbing their tails and becoming air-breathing frogs, the adults remain in the same habitat as when they were tadpoles.

Pig Frogs are opportunistic feeders that will eat insects, worms, small amphibians, small crustaceans like snails and crayfish, and small reptiles. In turn, they are food for all wading birds as well as for owls, hawks, alligators, and other carnivores.

Young Pig Frogs are uniformly dark but they can sometimes be dark

greenish. Adult Pig Frog colors range from blackish-brown and extremely dark olive green, to bright green, to yellow. Most of the time, there are scattered dark spots on the back. The belly is usually whitish but may also have dark spots, commonly toward the rear. Some males have bright yellow throats.

Adult male and female Pig Frogs can be distinguished by the tympanum (outer ear located just behind the eye). That of the male is noticeably larger than the eye while that of the female is about the same size or smaller than the eye.

Adult sizes range from three and a half inches to six and a half inches. Pig Frogs are the second largest frog in



Male, tympanum larger than eye, left; female, tympanum smaller than eye, right.



Florida, behind the Bullfrog. Although some Bullfrogs may be found in Southwest Florida, the southern tip of their range is typically around Tampa.

Pig Frogs have narrow, pointed heads – the snout is narrower and more pointed than that of a Bullfrog. Pig Frogs can be distinguished from other aquatic frogs in Corkscrew by their hind feet, which are fully webbed; the webbing on the longest toe extends almost all the way to the tip while webbing on the longest toe of other large frogs’ rear feet stops well before the tip.

Pig Frogs are aquatic frogs, so they will be found in permanent open waters of ponds, streams, lakes, rivers, swamps, and marshes. They may either float in open water or choose a station on or amid floating vegetation. They are much more aquatic in nature than Bullfrogs. They are found in the entire state of Florida and into southern and coastal South Carolina, Georgia, Alabama, Mississippi, Louisiana, and extreme eastern coastal Texas.

Young Pig Frogs are uniformly dark but they can sometimes be dark