



Corkscrew
Swamp Sanctuary

Along the Boardwalk

April, 2009

www.corkscrew.audubon.org

Stork nesting outlook optimistic

Two events are converging to make the next several weeks potentially one of the most exciting periods for Wood Storks since the spring of 2002.

Since Tropical Storm Fay in August, water levels at the lakes by the boardwalk have dropped into the optimal range for storks and other wading birds, creating a frenzy of feeding activity.

The colony of nesting wood storks will be fledging, capping what is shaping up to be a very good year by recent standards. The little fuzzy headed, somewhat clumsy adolescent storks will be spending a lot of time learning how to fish and fly. That event combined, with a host of adult storks, spoonbills, egrets, night herons, ibis and alligators will make the scene



unfolding at the lettuce lakes a photographer's dream. The surface of the water is already boiling with millions of tiny fish.

The first eggs of the season were laid December 12, and an estimated 1,100 nests were started at Corkscrew between mid-December and mid-February.

Two years of pronounced drought changed the dynamics of the fish population.

Few large piscivorous (fish eating) fish made it through the drought years, leaving fewer predators to reduce the numbers of small fish and crayfish that make up the bulk of the stork diet.

Recent sampling efforts suggest that there are up to 1000 fish per meter in those shrinking pools in the cypress, most less than 4 inches long.

Honors come to volunteers at annual dinner

Volunteers were recognized for their service to Corkscrew during the annual volunteer recognition dinner in the Blair Center on March 19.

Areas of recognition included youth and adult education programs, resource management, boardwalk naturalists, office and publication help, fund raising, wildlife censuses, and maintenance. All active volunteers received 2008 service pins.

Two volunteers had additional stars added to their name plates on the vol-

unteer recognition board for passing 2,500 hours of service: Susan Schumann-Skeehan and Don Williams.

Volunteers recognized with a star for passing 1,000 hours of service were Ralph Arwood, Joan Dunn, Eloise Ingram, and Dallas Mulder.

Those who passed 500 hours had name plates added to the board. These included Mary Ann Aug, Art Blatt, Sam Campsey, Dan Harnish, Harriet Lickhalter, Bob Mellor, Alexandria Orr, Joyce Smyth, and Ray Smyth.

Quick ID Guide:

Live Oak vs. Laurel Oak

Live Oak is a large tree with a wide spreading crown and is buttressed and flared at the base of the trunk. Leaves are simple, alternate, and stay on the tree through winter until they gradually fall as new leaves emerge in the spring. The elliptical leaves are usually stiff and leathery. The upper surface is a shiny, dark green while the underside is a dull grayish green. The leaf base is tapering and the tip is short pointed to rounded. Acorns are shiny, dark brown to black, with a light brown cap.

Laurel Oak is a large tree with a full rounded crown and tall, straight trunk. The leaves are simple, alternate, and may persist on the tree until gradually falling in early spring. The leathery elliptical shaped leaves usually have smooth, shiny bright green upper surfaces and a smooth, light green underside. The leaf base is wedged and the tip is acute. Acorns are light brownish with a red-brown cap.



Live Oak (*Quercus virginiana*)



Laurel Oak (*Quercus laurifolia*)

Bird Trivia

Which flying birds never ever glide or soar?

Discover the answer at www.collieriaudubon.org/birding.html

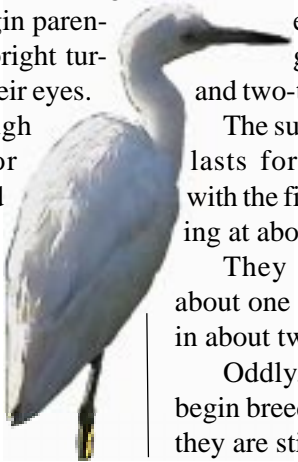
In Case a Visitor Asks

Do female Anhingas also get blue eyes in mating season?

As male Anhingas enter breeding season and are ready to begin parental duties, they develop a bright turquoise blue patch around their eyes.

Females don't, although they do undergo a color change. The patch around their eyes is more of a slate-green color, making it hard to distinguish against the dark bill and black head.

The color is a little more intense when they are on a nest.



How long before immature Little Blue Herons are blue?

At birth, Little Blue Herons are entirely white with the greenish-gray legs and two-tone bill of adults.

The sub-adult plumage lasts for 10-12 months with the first traces of blue appearing at about six months.

They are irregularly blue at about one year and completely blue in about two years.

Oddly, some Little Blue Herons begin breeding at about one year while they are still in their white plumage.



When do juvenile White Ibis become all white?

Beginning White Ibis are all brown with a white belly and the bill is a dark brownish color.

White feathers appear gradually with each molt, so the browner the bird, the younger it is.

At about 12-18 months, they will be noticeably whiter and by their second year the bodies will be mostly white with just a little brown around the neck and head.

By around 28 months, they are all white.

March Sightings



A Ruby-throated Hummingbird gets nectar from an iris in the wet prairie (March 15, D. Bailey).



Barred Owl chicks peerout from their nesting cavity near the north lake (March 15, D. Bailey).



Bobcats court and are observed during a field trip to the north end (March 14, C. Bauer).

Wildlife updates

Two healthy Bald Eagle chicks are doing well in the Corkscrew nest in the pines southwest of the boardwalk area. Visitors reported seeing an eagle flying over the lake at their house near Immokalee Road and Oil Well Road, which may be one of the feeding areas.

The latest information received from the Florida Wildlife Commission panther team is that at least seven panthers are roaming in or near the sanctuary. One is a large radio-collared male (FP-159) and two are females with two juveniles each. Remote cameras set up

throughout the sanctuary have been recording panther activity; and in mid March, visitors observed a young panther in the wet prairie between the entrance and exit sides of the boardwalk stalk and catch a deer that had been grazing in the same area.



©2009 Rod Wiley



©2009 Ralph Arwood

There are three subspecies of Banded Water Snake: *Nerodia fasciata fasciata*, *Nerodia fasciata pictiventris*, and *Nerodia fasciata confluens*.

Nerodia fasciata pictiventris is the Florida Banded Water Snake and is found in peninsular Florida. It is found throughout the Florida peninsula except in the Florida Keys. Outside the state, it occurs in extreme southeastern Georgia and a very isolated population is in extreme southeastern Texas around Brownsville.

Nerodia fasciata fasciata is commonly called the Banded Water Snake and is found in the coastal plain regions from North Carolina to Mississippi, except in peninsular Florida.

Nerodia fasciata confluens is called the Broad-banded Water Snake and is found in Louisiana, coastal Mississippi, eastern Texas, Arkansas, and portions of Mississippi, Tennessee, and Missouri close to the Mississippi River.

The Florida Banded Water Snake can be found in nearly all freshwater habitats, preferring the shallow waters of swamps, marshes, ponds, lakes, streams, and rivers. It is active mainly at night, but it may be found during the day sunning on banks or on vegetation hanging over the water.

Florida Banded Water Snakes are harmless and non-venomous, although

Banded Water Snake

Nerodia fasciata pictiventris



they have a mouth full of sharp teeth. When threatened, they may flatten to mimic a Water Moccasin. If that doesn't work, they will bite viciously and smear their tormentors with a foul smelling musk to defend themselves.

Primarily a nighttime hunter, the Banded Water Snake eats live or dead fish, frogs, salamanders, crayfish, and tadpoles.

The adult is a stocky snake with black, brown, or red cross bands across its back. As the snakes age, the bands become less and less visible. The background color can vary from black to a gray, tan, or have a reddish tint. Its underside is pale with roughly square shaped spots.

Young are brightly colored with broad bands. Bands on juveniles appear narrower and come closer to the background color.

Adults are typically from 24-40 inches in length, but they can grow to almost five feet long.

The head is the key area for identification. The most noticeable feature is the lower jaw, which is whitish with many thin, dark vertical stripes. There is also a thin dark stripe from the eye to the angle of the jaw.

Because they are found around bodies of water, water snakes are often mistakenly identified as the venomous Water Moccasin.

But jaw colors and head shape and color patterns make it easy to distinguish between the two.

The Moccasin has a wide, dark band that goes through the eye to the front of the head, and it has a vertical pupil in the eye. The Banded Water Snake lacks that band and has a round pupil.

If the heads are viewed from above, the eyes of the water snake are easily visible while the eyes of the Moccasin cannot be seen.

Most noticeably, Moccasins do not have the fine stripes on the lower jaw, just large blotches.

Like all water snakes, the Florida Banded Water Snake bears live young. Mating occurs from midwinter to spring and litters of 20-30 young are born in late spring through summer. The young are 7.5-10.5 inches at birth and very brightly colored.



Banded Water Snake: front
Water Moccasin: front



Banded Water Snake: adult
Water Moccasin: adult



Banded Water Snake: juvenile
Water Moccasin: juvenile



Banded Water Snake: young
Water Moccasin: young



For over a decade, Corkscrew Swamp Sanctuary has been host to Florida Gulf Coast University's Environmental Colloquium Course.

The course is designed to provide the impetus for students to understand issues related to economic, social, and ecological sustainability, analyze and evaluate ecological issues locally and globally,

participate in projects requiring awareness and analysis of environmental issues and to ultimately allow students to find their "sense of place" in the unique natural environment in which they live.

Corkscrew is an ideal place to demonstrate the principles of the course. The Sanctuary provides experiential learning – it is a working model that "being green" is also viable business practice.

Educational strategy at Corkscrew is to **LEAD** by example, enable others to **LEARN** sound environmental education practices and empower visitors and students to incorporate conservation into their **LIVES**.

Ten years ago FGCU brought 100 Colloquium students per year for guided boardwalk tours. Today it has grown to a booming university which brings nearly 1,800 students per year to the Sanctuary.

An ironic situation developed: Colloquium's large groups of 25 students per class did not allow optimum conditions to experience the serenity of natural habitats; the large numbers of visits put a strain on Corkscrew staff and volunteer guides; and 1,800 students were driving individually to an Audubon Sanctuary to discuss ecological sustainability.

Our Education Department worked with FGCU team members to evaluate,



benefit by having their field experiences tailored to the curriculum, faculty benefit by having assistance and Corkscrew benefits by having trained student naturalists free up valuable volunteer hours for service elsewhere."

LIVE

In early 2009, FGCU chartered a 33-passenger bus to shuttle students to and from campus to the Sanctuary.

"Buses now transport the entire Colloquium

classes, reduce the carbon footprint, reduce highway traffic, reduce parking requirements, and offer more teaching time with the students," said Annette Snapp, University Colloquium Coordinator. "More importantly for FGCU, the buses serve as a lesson in sustainability."

Students appreciate the bus program and its significance.

"The bus was the best carpool! It makes sense and I realized we often use individual vehicles out of convenience rather than necessity," said Richard Callahan

"...using the bus reinforces the principals of sustainability that are being taught in this course. I don't see any downfalls; it is better all around!" added Travis Wagner

With changes similar to the FGCU program implemented in other areas, success at Corkscrew is measured by how many students, teachers and citizens become advocates who teach others about conservation and incorporate sustainable practices into their own lives.

Program Benefits

- 45 tons carbon reduced
- 105,984 road miles eliminated
- 35 partner educators trained

LEAD

At Corkscrew students observe a working model of achieving conservation goals while maintaining economic sustainability through tourism dollars, contributions and merchandise sales. Key components are the Sanctuary's natural wastewater treatment facility, the Living Machine; 2.25-mile boardwalk constructed from sustainably harvested wood; and 13,000 acres of native habitats managed to maintain the health of wild and human populations.

LEARN

A pilot program was developed to train faculty to guide boardwalk trips. Each professor who comes to Corkscrew is now capable of presenting the environmental significance of the Sanctuary.

The FGCU Student Naturalist Program was initiated. Alumni of Colloquium trips were trained as guides.

"The program is a win-win," said FGCU instructor Laurie Coventry-Payne. "Student Naturalists develop valuable leadership skills, students ben-

Reference

Below is a listing of articles from volunteer newsletters. All are available on the Corkscrew web page by clicking on "Information" and then on "Volunteer newsletter." All are also available in the red loose-leaf notebook in the Bunting House.

Profiles

BIRDS

Anhinga
Carolina Wren
Limpkin
Northern Parula
Owl & hawk nesting
Painted Bunting
Pileated Woodpecker
Red-shouldered Hawk
Swallow-tailed Kite
Turkey Vulture
White-eyed Vireo
Wood Stork

MAMMALS

Bats at Corkscrew
Black Bear
River Otter

HERPS

Alligator
Banded Water Snake
Corkscrew's frogs & toads
Green & Brown Anoles
Green Treefrog
Pig Frog

PLANTS

Bald Cypress
Butterfly garden plants
Poison Ivy
Pond Apple
Salvinia
Strangler Fig
Water Lettuce

INSECTS, FISH & OTHER

Aestivation & dry-downs
Lightning
New damselfly species
Mosquitofish
Prescribed burns

Quick I.D. Guide

BIRDS

Common vs. Boat-tailed Grackle
Hairy vs. Downy Woodpecker
Green Heron vs. American Bittern
Immature night herons
White Ibis, Glossy Ibis, Limpkin
Little Blue vs. Tri-colored Heron
Little white wading birds
Louisiana vs. Northern Waterthrush
Starling vs. fem. Red-winged Blackbird
Swallow-tailed Kite, immature vs. adult
Vireos & Ruby-crowned Kinglet
Ducks in flight
Vultures in flight

MAMMALS & HERPS

Banded Water Snake vs. Moccasin
Cottontail vs. Marsh Rabbit
Turtles: Red-bellied vs. Cooter

PLANTS

Alligator Flag, Pickerelweed, Sagittaria
Bald Cypress vs. Pond Cypress
Live Oak vs. Laurel Oak
Three nasty exotics
Coastal Plain vs. Virginia Willow
Elderberry, Water Dropwort, Water Hemlock
Saw Palmetto vs. Cabbage Palm
Seasonal plants in the lettuce lakes

INSECTS & ARACHNIDS

Monarch vs. Viceroy Butterfly
Palamedes vs. Black Swallowtail
Pearl vs. Phaon Crescent
Queen-Soldier-Viceroy Butterflies
Yellow sulphur butterflies
Stinging caterpillars
Orchard & Long-jawed Orbweaver
Fishing Spiders
Large Orbweavers

In Case a Visitor Asks

Do female Anhingas also get blue eyes in mating season?
What are the differences between an Anhinga and a Cormorant?
How long before immature Little Blue Herons are blue?
When do juvenile White Ibis become white?
What are some common hatch and fledge times?
Why do Anhingas spread their wings?
How big is that bird, and what's its wingspan?
Why do sapsuckers drill holes in rows?
Do all spiders bite? Are they poisonous?
Why are raccoons active during the day? Are they dangerous?
Where did the water go, and when will it come back?
What happens to alligators and turtles when the lakes dry up?
What are cypress knees?
What causes peeling or shredded bark on cypress trees?
Can two cypress trees grow together?
What are the white growths on cypress trees?
Why do some cypress grow needles when they should be dropping them?
How much of what can be seen from the observation platform belongs to Corkscrew?
How does aquatic life reestablish itself after a prolonged dry period?
What are tussocks, where do they come from, and what do they do?

Why is it called "Corkscrew"?
What's the feathery looking plant growing in the wet prairie?
What is the boardwalk wood?
How do you read the Stevens Gauge?
Do you feed wildlife?
What do alligators eat?
What's the best time to visit?
What left that scat?
Why does the water look dirty?
How do snakes climb trees?
What makes the slits in Alligator Flag leaves?
What vine is blanketing the trees?
What are the growths on bay leaves?