

Turtle River Times

The Newsletter of the A.R.M. Loxahatchee National Wildlife Refuge

Issue 7
May - Aug. 2004

Refuge Plans to Reopen 20-mile Bend Entrance This Summer

by Rolf Olson - Deputy Project Leader

North replacement entrance is to reopen to the public after a seven year closure.

Located 20 miles west of Palm Beach, 20 miles southeast of Lake Okeechobee and 20 miles northwest of the Loxahatchee Refuge Headquarters entrance, this replacement entrance opens to boaters and fishermen later this summer.



New Boat Ramp

In 1997, refuge facilities located at 20-Mile Bend were removed from public access during the construction of the STA 1 West (Stormwater Treatment Area 1 West) Inflow and Distribution Works by the South Florida Water Management District (SFWMD). The completion of STA blocked access to the Refuge from the old ramp. Construction of the new entrance will restore access for visitors coming from the Wellington area and people living north and west of the Refuge. This entrance also fulfills part of the plan described in the Refuge's Comprehensive Conservation Plan of 2000.

The South Florida Water Management District provided project management and funding for the construction of the 20 Mile Bend Boat Ramp and Fishing Pier. The US Fish and Wildlife Service (USFWS) is partnering with the SFWMD to provide interpretive information, maintenance and law enforcement for the area.

In recent years, the Everglades area around 20 Mile Bend has not seen much human activity, which should make for excellent bird and alligator watching, as well as

first class fishing.

The entrance provides a northern access point for boating and fishing to the 57 mile perimeter canal encircling the Refuge. Since 1997, boat access has only been available from the Lee Road and Loxahatchee Road entrances much further south in Palm Beach County.

The 20-mile bend facilities include a boat ramp that can handle up to three boats at a time, a fishing pier, a parking area, and a restroom. The SFWMD and the USFWS provide the interpretive kiosks.

The boat ramp has an aluminum dock on either side of the linked concrete and rebar ramp. The docks are 4 feet wide, 40 feet long and can be negotiated easily.

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Visit the refuge often on the web at <http://loxahatchee.fws.gov/>

Refuge Research Helps Wildlife

by Laura A. Brandt, Sr. Wildlife Biologist

**USGS
Biological
Technician,
Erynn Call,
setting up a
"trap" for
Lygodium (Old
World climbing
fern) spores**



**Biological
Technician,
Camille Darby,
placing new
equipment
in place for
water quality
monitoring**



National Wildlife Refuges are the cornerstone to the protection of many habitats, wildlife, and plants. There are many challenges to successful management. Our ability to protect and restore these natural areas depends greatly on successful monitoring and research conducted by scientists.

At Loxahatchee our major management issues are Water Quality, Water Quantity, and Exotics. Over the last five years refuge staff have worked hard with other partners (state and federal agencies and educational institutions) to conduct or facilitate scientific studies that support the refuge's management needs.

Recently, refuge staff have started a series of water quality studies that will help to identify when canal water (which may contain undesirable levels of nutrients or other contaminants) is moving into the refuge's interior marsh areas. The information gained from this study will help water managers identify ways to keep water from moving into the more pristine areas of the refuge. Additional coordinated water quality studies are being conducted by researchers at the South Florida Water Management and U.S. Geological Survey (USGS).

USGS is also involved in two other timely studies on the refuge. The first is essentially a topographic survey of the refuge that will provide the refuge with much needed ground elevation data for the interior marsh. The second is a cooperative study between refuge staff, and researchers at the University of Tennessee on the development of a tool that will help determine which areas of Lygodium (Old World climbing fern, our fastest spreading exotic plant) can be treated, when to minimize spread, and hopefully reduce Lygodium densities to a level that can be controlled with available resources.

Additional projects that link to our Water Quantity

issues are being conducted on alligators (refuge staff, USGS, University of Florida (UF)), apple snails (University of West Florida), wading birds (UF), and tree islands (refuge staff, USGS, UF).

We are fortunate that we have been able to partner with other agencies in order to maximize our available resources. We could not do these projects alone, and rely on matching resources to meet our needs. It is always a challenge to decide how much effort (money and manpower) to spend on the ground actually doing habitat management (e.g. exotic control) versus how much to invest in learning more about the issue so that we can develop better, less expensive ways to deal with it in the future. It is much like the trade off between spending money on things you need or want now versus putting money away for retirement. You have to spend some money on dealing with today's issues, but it is important also to look toward the future. At Loxahatchee, we are working to find a balance between doing what needs to be done now, identifying what we need to know to manage better, and partnering to maximize our ability to meet both short and long-term needs.

Meet the Staff

- Project Leader....** Mark Musaus
Deputy Project Leader.... Rolf Olson
Refuge Operation Specialist.... Mindy Gautreaux
Administration.... Kim Arserio, Jean Ryan
Everglades Program Team.... Nick Aumen, Matt Harwell, Leslie MacGregor, Jose Quinones, Michael Waldon
USFWS Ecological Services.... Cindy Brashear, Susan Teel
Law Enforcement.... William Calvert, Jared Klein
Wildlife and Habitat Management.... Bruce Arrington, Laura Brandt, Erynn Call, Camille Darby, Jennifer Hinckley, Gayle Martin, Stefani Melvin, George Pelt, William Thomas, Jr.
Maintenance Operations.... Manuel Garcia, Jerry Grist, Allan Hansen, Steve Matzkow
Environmental Education & Interpretation.... Lois Chapman, Krista Markwardt, Serena Rinker
Fee Staff.... Keith Boliek, Lew Hecker, Marie Pohl
LILA On-site Manager ... Eric Cline (SFWMD)

Continued from page 1...

Fenders are attached to the dock to protect the boats being moved. The ramp can handle average size fishing boats although deep draft boats are not recommended.

The 10 foot by 40 foot wooden fishing pier is handicap accessible and provides a picturesque view of the canal leading to the southwest portion of the refuge.



New Fishing Pier

Parking facilities provide space for cars and trailers. A newly widened and improved road provides entry from the County Road 880 turn off.

To get to 20 Mile Bend from I-95, proceed west on Southern Boulevard from SR 7 (US441) for 11.5 miles. Go south at County Road 880, cross the metal bridge, turn left (east) on 20 Mile Bend Boat Ramp Road. Follow 20 Mile Bend Boat Ramp Road until you reach the fee kiosk. The entry fee at the 20 Mile Bend entrance is \$5.00 per vehicle, \$1 per a pedestrian or bicyclist. Entry fees should be placed in one of the envelopes provided and inserted into the fee canister. All visitors are required to pay. Frequent visitors can buy a Loxahatchee National Wildlife Refuge Annual Pass for \$12 at the Headquarters entrance. Other types of passes are available as well. Entrance fees support the visitor areas throughout the Refuge. There are no rental facilities at 20 Mile Bend and no airboats or Go-Devils are permitted.

If you need assistance, you can contact the refuge Law Enforcement officer on duty by calling 561-936-4100. In a life-threatening emergency, you should call 911.

The exact date of the opening is not known at the time of this printing. However, interested people can access our website for opening dates or call Interpretive Specialist Serena Rinker at 561-735-6029 for more information.

LILA Project Update: May 2004

by Eric Cline - LILA on-site Project Manager

The LILA project continues to develop as preparations proceed to plant trees on the world's first constructed tree islands. The treeless islands will soon be planted with the as many as 250 rows of Pond Apple (*Annona Glabra*), Carolina Willow (*Salix Caroliniana*), and Sweet Bay (*Magnolia Virginiana*) and other native species by volunteers from the SFWMD and USFWS.

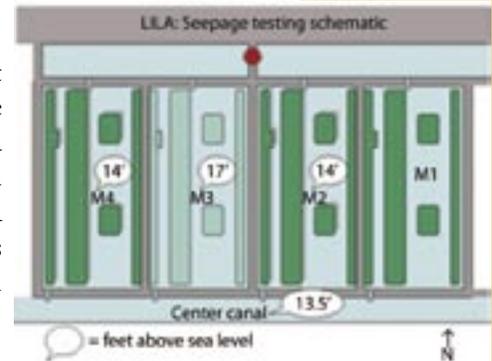
One major project that needs to be completed prior to tree planting is a series of hydrologic (water flow) tests to develop an "operations manual" for the LILA system. Researchers, Dr M. H. Nachebe and his students from the University of South Florida are currently engaged in testing the capacities of the pump system and water control structures. This type of testing is necessary for the research planned for LILA requiring known water velocity. Our first test will require that we fill one macrocosm, M3, to a water depth that will cover the tops of our tree islands (hence the need for this testing phase to be conducted prior to the planting). We will then lower the water levels in the surrounding macrocosms, and measure the water seeping out of M3. We expect to see an increased number of birds feeding in those areas with lower water depths.

A few updates on events and activities mentioned in previous Turtle Times:

- AnnMarie Rivera, the Forest Hill Environmental Science Academy student, won a second place at the regional science fair with her LILA based research. She moves on to the state competition in Jacksonville.

- You may have noticed the bird perches have been installed on all eight tree islands. These perches will be monitored for bird use, and their surroundings for tree seedlings. We hope to learn the effect of perching birds on the types of seedlings we find.

- Installation of instruments needed to measure the flow through LILA's water control structures will be completed.



Note:

M = Macrocosm

Impoundment update

by Stefani Melvin, Refuge Biologist

Water on the Marsh Trail (C-7) will be raised to slow vegetation growth over the summer



Spring is a busy time in the Refuge's wetland impoundments. Migratory waterfowl are fueling up before heading back up north to prairie breeding grounds. Shorebirds are also stopping in for a meal during their long flight north. Mottled ducks and black necked stilts are pairing off in preparation for their own breeding season here in Florida, and wading birds are busy raising hungry youngsters. The main goal of our impoundments during this critical time of the year is food, food, and more food. Water levels in the impoundments C6 and C7 were relatively high during March, but started to come down during April. The April/May time frame is the critical time

for foraging wading birds that have to bring home a lot of food for a nest full of hungry babies. The lower the water levels, the more concentrated the fish are and therefore easier to catch. This easily obtainable food source is very important to

the successful raising of young herons, egrets, ibises, and storks. After the breeding season is over, water levels will be raised quite high in C6 and C7 to slow down the growth of vegetation. In June, the cookie cutter will once again be put to work, thinning out the vegetation and opening up areas that will provide foraging habitat for waders, waterfowl, and shorebirds in the fall.

C-10 is scheduled for a prescribed burn



The C8 impoundment is our apple snail headquarters. Water levels will remain stable through the spring as the snails lay their eggs directly above the water on stalks of vegetation (see article in this newsletter). If the water comes up too high, the eggs will drown and no apple snails will be available the next year for snail kites and limpkins. An intern from the University of West Florida has been attempting to count apple snails and egg clusters in the C8, density seems to be fairly low. Efforts will be made over the

summer to improve snail habitat in this impoundment. The cookie cutter may need to be used in part of the impoundment to cut up the dense vegetation which does not support apple snails.

Water in the C9 impoundment will also be raised late in the spring or early in the summer. This impoundment is managed for secretive marsh birds, and the vegetation has gotten to dense over the past few years. Surveys conducted by a volunteer this winter showed that rails are using the C compartments to a lesser extent than the A compartments. We would like to do some habitat manipulations this summer in C9 to increase its use by rails and bitterns. C10 is also slated for management as habitat for secretive marsh birds. This particular impoundment will undergo a prescribed fire this summer. We will first treat the impoundment with herbicide to kill some of the vegetation. This way, we can improve the results of the prescribed burning activities. The objective of the burn is to set back the vegetation and open up areas in the marsh. Next winter, this impoundment should be popular with waterfowl and shorebirds because of the newly open areas. In addition, rails and bitterns (the target species for this compartment), will benefit from the greatly increased edge habitat between marsh and open water. These species prefer to forage along the edge of wetlands with dense vegetation near by to escape into.

In the upcoming months, watch for these management activities as the Refuge staff strive to improve habitat for wildlife in our wetland impoundments. Wildlife viewing opportunities will still be available during our management activities. Often, wading birds follow the cookie cutter taking advantage of the prey items stirred up by it. Red-shouldered hawks and osprey will continue to be present during the summer, providing some raptor viewing opportunities. In fact, we are in the process of installing two osprey nesting platforms in the impoundments to encourage pairs that forage here to stay and nest. Watch for the platforms this summer.

Happy Birthday Loxahatchee!

*The Refuge was created on June 8,
1951 under the Migratory Bird
Conservation Act*

It's only a snail

by Stefani Melvin, Refuge Biologist

Or is it? The Florida apple snail (*Pomacea paludosa*) is a very important part of the Everglades ecosystem. It is the largest freshwater snail in North America and because it is aquatic, the apple snail uses gills to extract oxygen from water. However, if the water does not



Florida Apple Snail

contain enough oxygen or the snail must be out of the water, it is also capable of breathing air using an air sac that acts like a lung. This characteristic is unique to snails from the family

Ampullariidae.

Breathing air is important to the apple snail for several reasons. First, the apple snail lays its eggs on vegetation above the water level. During the egg laying process, snails must breathe through their 'lung'. Second, apple snails live in wetlands that experience the typical wet/dry cycle of Florida seasons. During the dry season, the wetlands dry out and the snail must bury itself in the mud or 'aestivate' until the rains come to fill the wetlands up again. Third, wetlands where the snails live are often shallow. In the summer, when the temperature is high, this water does not contain much dissolved oxygen. Therefore, the snail comes to the surface, extends a shallow tube called a siphon above the water level, and breathes air.

The habit of coming to the surface is critical to the apple snail's role in the Everglades ecosystem. When the snail is near or above the water surface, it is visible to predators. The two main predators of apple snails are the Everglades snail kite and the limpkin. Apple snails are the primary food source for the kite, and make up 75% of the diet of limpkins. The snail kite's beak and talons are specifically designed to aid in the removal of the snail



Endangered Snail Kite

from its shell. Snail kites are an endangered species, and their population is currently declining in Florida. Managing habitat for snail kites includes improving habitat for apple snails. Other predators of apple snails

include fish, alligators, and white ibis.

Sometime between March and October, the female apple snail crawls out of the water at night to lay her eggs on a blade of vegetation. She will lay 20-30 eggs in a cluster. At first, the eggs are soft and pink, but as they mature they become harder and lighter in color. Water levels are critical to the survival of the eggs. If the water level comes up before the eggs hatch, the tiny snails inside will drown. If the water under the vegetation has dried up before the eggs hatch, the tiny snails will dry out after they drop to the ground. Managing water levels appropriately can increase the number of apple snails in a wetland area. At the refuge, the C8 impoundment is managed specifically for apple snails to encourage its use by snail kites.



Photo credit: Mike Turco

Much research is being done to determine what components or conditions are necessary for improving habitat for apple snails. Dr. Phil Darby at the University of West Florida has been studying the snail for many years. Dr. Darby and his students are looking at apple snail ecology, including their habitat needs and movements. By attaching small radio transmitters to snails they were able to determine that the average apple snail moves about 45 feet per week! That doesn't sound like much, but some snails moved up to 300 feet during a seven day period, which is equal to the length of a football field. That's quite a journey for a snail that is only three inches long! Current research is focusing on the density of apple snails in various areas that have historically supported nesting snail kite populations, including the refuge. Laboratory studies are being conducted to look at how water chemistry affects apple snail growth, survival, and reproduction. All of this information will be important for determining what management actions need to take place. One of the keys to helping the snail kite is to increase the availability of apple snails in habitats the kites can use. The refuge has been designated as critical habitat for the snail kite, so increasing apple snail production in our marshes is very important. For more information about the apple snail and current research, see Dr. Phil Darby's website at http://cars.er.usgs.gov/sofla/Apple_Snail/apple_snail.html.

*Snail laying
eggs*

Summer Events Description

See the calendar on pages 7-8 for specific dates

International Migratory Bird Day (IMBD)

May 8 9:00AM-4:00PM
Palm Beach Zoo at Dreher Park

As part of the celebration of IMBD, the Zoo and staff from the Refuge will present bird programs and activities, face painting, and offer samples of shade grown coffee. A fun event for all ages.

Kid's Fishing Day

June 12 7:30AM - 12:30PM
Refuge Administration Building

As part of National Fishing and Boating Week, children are invited to learn about freshwater fish, how to trap minnows, fishing rules and regulations, and how to catch fish. For children up to 12 years of age, accompanied by an adult. **RESERVATIONS REQUIRED (LIMITED SPACES AVAILABLE)** Call 561-734-8303.

Bird Walks - This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Swamp Strolls - Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotrophism as a naturalist reveals the swamp's secrets to visitors.

"Canoeing the Everglades" - Take a two-hour journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended. **RESERVATIONS REQUIRED** Call 561-734-8303

"All About Nature" Walks - Join a naturalist for a discovery tour of the plants and "critters" who call the refuge home.

LILA Walking Tours - Join on site manager Eric Cline as he gives a personal "show & tell" walk of the LILA (Loxahatchee Impoundment Landscape Assessment) research project and its possible future impact on Everglades restoration.

Children's Story & Craft Hour - Join a naturalist for a children's story and craft session afterward. Open to children five to eight years old. Children must be accompanied by an adult. **RESERVATIONS REQUIRED** Call 561-734-8303

Refuge Hours & Fees

The refuge is open to the public from sunrise to sunset daily. Exact times are posted at each entrance on our website and change with the hours of daylight. Currently the refuge opens at 6:00AM and closes at dusk.

Summer hours for the Visitor Center are Wednesday through Friday 9am to 4pm and Saturday and Sunday from 9am to 4:30pm. A fee of \$5.00 is charged to private vehicles entering the refuge. When the fee booth is unmanned, visitors are subject to the honor system and should pay at the fee shelter next to the fee booth.

Photographic Personality?

Looking for volunteer who is detail minded who can label and file slides for our image library. Work hours are flexible. If interested, contact Lois Chapman at 561-735-6032.

Please Join Us

• **Membership Application** •
**Friends of the Arthur R. Marshall
Loxahatchee National Wildlife Refuge**

- | | |
|---|---|
| <input type="checkbox"/> Individual \$15.00 | <input type="checkbox"/> Student (to age 18) \$5.00 |
| <input type="checkbox"/> Family \$25.00 | <input type="checkbox"/> Supporting \$50 |
| <input type="checkbox"/> Organization \$100 | <input type="checkbox"/> Contribution _____ |

Please mail this form to:

Friends of the Loxahatchee Refuge
P.O. Box 6777
Delray Beach, FL. 33482-6777

Make checks payable to:

"Friends of the Loxahatchee Refuge"

If paying by credit card please indicate:

___ Visa ___ MasterCard ___ Discover

Credit Card # _____

Expiration Date _____

Signature _____ Phone _____

Name (please print) _____

E-Mail _____

Street _____ City _____

Zip _____

For further information about the Friends of the Refuge please contact:

Arthur R. Marshall National Wildlife Refuge
10216 Lee Road
Boynton Beach, FL 33437-4796
(561) 734-8303 or (561) 732-3684

2004 Loxahatchee Events Schedule - May through August

May 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 Visitor Center Closed	4 Visitor Center Closed	5	6	7	8 IMBD at Palm Bch Zoo - All Day
9	10 Visitor Center Closed	11 Visitor Center Closed	12	13	14	15
16 Swamp Stroll 2PM (VC)	17 Visitor Center Closed	18 Visitor Center Closed	19	20	21	22 Bird Walk 7:30AM (MT)
23	24 Visitor Center Closed	25 Visitor Center Closed	26	27	28	29
30 Nature Walk 9AM (MT)	31 Visitor Center Closed					

June 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6 *Children's Story and Craft - 2PM (VC)	7 Visitor Center Closed	8 Visitor Center Closed	9	10	11	12 *Kid's Fishing Day
13	14 Visitor Center Closed	15 Visitor Center Closed	16	17	18	19 Bird Walk 7:30AM (MT)
20 Swamp Stroll 2PM (VC)	21 Visitor Center Closed	22 Visitor Center Closed	23	24	25	26 LILA Tour 10AM (MT)
27 Nature Walk 9AM (MT)	28 Visitor Center Closed	29 Visitor Center Closed	30			

Events with an asterick (*) Require RESERVATIONS - please call 561-734-8303

MT = Marsh Trail

HQBR = Headquarters Boat Ramp

VC = Visitor Center

2004 Loxahatchee Events Schedule - May through August

Events with an asterick (*) Require RESERVATIONS - please call 561-734-8303

MT = Marsh Trail

HQBR = Headquarters Boat Ramp

VC = Visitor Center

July 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5 Visitor Center Closed	6 Visitor Center Closed	7	8	9	10 Bird Walk 7:30AM (MT)
11 Swamp Stroll 2PM (VC)	12 Visitor Center Closed	13 Visitor Center Closed	14	15	16	17 *Canoe Trip 8:00AM (HQBR)
18	19 Visitor Center Closed	20 Visitor Center Closed	21	22	23	24
25 Nature Walk 9AM (MT)	26 Visitor Center Closed	27 Visitor Center Closed	28	29	30	31

August 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7 *Canoe Trip 8:00AM (HQBR)
8 *Children's Story and Craft - 2PM (VC)	9 Visitor Center Closed	10 Visitor Center Closed	11	12	13	14 Bird Walk 7:30AM (MT)
15	16 Visitor Center Closed	17 Visitor Center Closed	18	19	20	21 LILA Tour 10AM (MT)
22 Swamp Stroll 2PM (VC)	23 Visitor Center Closed	24 Visitor Center Closed	25	26	27	28
29	30 Visitor Center Closed	31 Visitor Center Closed				

National Wildlife Refuge Plans Prescribed Burns

Fire management officials at the Arthur R. Marshall National Wildlife Refuge are planning to conduct a series of prescribed burns beginning in April. Depending on cooperative weather conditions, approximately 7500 acres are planned to be burned on the Refuge during the spring and summer. Under prescribed conditions, highly trained professionals will plan, set, and extinguish the fire.

Prescribed fire is the controlled burning of vegetation based on a prescription that takes into consideration fuel type, fuel moisture, relative humidity, air temperature, wind speed, wind direction and other atmospheric conditions to ensure a safe and successful burn. According to Jennifer Hinckley, Prescribed Fire Specialist, "All prescribed fires must have approved plans and meet set criteria authorized by agency fire experts." Refuge management staff will conduct the burns and use other resources including a helicopter, fire engines and airboats. Fire, properly applied, restores native wetland ecosystems, reduces hazardous fuels and chance of wildfire, and enhances habitat for wildlife, including the endangered wood stork and snail kite.

While prescribed fires have proven to be very successful in creating conditions necessary for healthy ecosystems, there is a troublesome side effect. It is smoke. "Concerns regarding smoke created by prescribed fire are a priority", said Rolf Olson, Deputy Refuge Manager. To ensure smoke dispersion, atmospheric conditions area closely monitored before prescribed fires are ignited to ensure that smoke will blow away from nearby highways, schools, hospitals, neighborhoods and other sensitive areas. Yet even in favorable conditions, the air may still be smoky. However, it still meets federal and state air quality standards; the smoke generated by a wildfire in an area with heavy fuels not treated with a prescribed burn would be much more intense and create far more smoke. Most prescribed fires take only part of a day. On rare occasions, a burn continues into the night. Some smoke may linger in the area of a burn for a day or two.

Fire has shaped the local landscape for eons. Because of Florida's long history of lightning and man-made fires, natural systems are adapted to fire and depend on frequent fire to remain healthy. Prescribed burning plays a natural role in local ecosystems and is a vital tool for managing the Everglades ecosystem. The extraordinary high plant species diversity of the Everglades ecosystem is maintained by frequent fire, which reduces competition

from woody plants and recycles nutrients.

Because fire is natural and inevitable in South Florida, fire suppressions leads to adverse consequences such as overgrown landscapes. One of the greatest benefits of prescribed fire is that it reduces "fuels" – the underbrush, leaves, and dead plant debris that have built up over time. If fuels are not reduced every few years, wildfires can become intense, hot, and destructive. Prescribed fire is much more cost and energy efficient than other fuel reduction tactics, such as mowing or herbicides.

Native animals also are adapted to the natural south Florida ecosystems like the Everglades and know how to survive in these fire-prone habitats. Most wild animals migrate to safety during the relatively slow-moving, low intensity controlled burns. Some take refuge by moving to unburned or previously burned areas, seeking shelter under logs, higher up in trees or down in burrows. Animals actually benefit by increased quality and quantity of food in the regenerated new growth after a burn. Prescribed fire sets back plant succession, opening up areas for use by waterfowl, wading birds, and other wildlife.

The Arthur R. Marshall National Wildlife Refuge is one of 544 National Wildlife Refuges in the U.S. (www.refuges.fws.gov). The 143,874 acre refuge is located in Palm Beach County and is home to the Everglade snail kite and several wading bird colonies, including the endangered wood stork. Many of the wildlife species depend on fire-maintained ecosystems. For more information, contact the Arthur R. Marshall Loxahatchee National Wildlife Refuge at 561/732-3684 or visit <http://loxahatchee.fws.gov>.



Drip torches are often used in prescribed burns



Prescribed burn in C-6

Refuge Fun Facts - Anhingas

by Chrissanna (gator) Srdoch - University of Florida

Just how big are anhingas?

Anhingas are about 3 feet tall. But if you measured their wings when they spread them out, it is about 4 feet from the tip of one wing to the tip of the other. Scientists call that distance a bird's wingspan. Spread out your arms, and have someone measure them for you; imagine that as your "wingspan". How far is it from finger to finger? Is your "wingspan" larger or smaller than an anhinga's? While you're thinking about how big anhingas are, see if you can remember how much you weigh. Is it more than 3 pounds? I bet it is. Anhingas may be about 3 feet tall, but they only weigh about three pounds. Their bones and everything inside them needs to be light for them to fly. Pretty cool, huh?

How do anhingas catch their food?

Anhingas spear food with their sharp beaks. Think of their beak as a fork to pick up food. When anhingas get out of the water, they can flip the fish off their beak, catch it in their mouth and swallow it. Bet you can't do that one with your fork.

***Why do they open their wings while out of the water?***

When you're inside a cold building and then walk out into the sunlight, does it feel good? Anhingas seem to think so. People who study them believe that the reason they open their wings is for "thermoregulation," which is just a big word that means it helps them to not get too cold or hot. While you're at the refuge, look around. Do you see any anhingas? Look and see if their back is to the sun. That creative bird uses the sun to help it keep warm after being all wet from fishing.

I see an anhinga. Should I call it a he or a she?

What color is the anhinga's head and neck? If it is black, then the anhinga you're looking at is a boy anhinga. If the head and neck are a pale brown color, and a little puffy, then that anhinga you're looking at is a girl anhinga. And if the whole bird is kinda brownish then you're probably looking at a young anhinga.

Where do Anhingas build their nests?

In the Everglades, anhingas usually prefer willow clumps or other trees or large scrubs near or above the water. They often nest four feet to 20 feet off the ground. The male picks out a site and brings materials to his mate who builds the nest with loose sticks, twigs, and leaves. Anhingas often build their nests near other anhingas, herons, and egrets in groups called colonies.



Kids
Corner

Annie's Big Adventure

story by Chrissanna (gator) Srdoch - University of Florida
artwork by Frank Lohan

Remember our little Annie? On that dark and stormy night during hurricane Irene, she was blown from her warm and cozy nest, AND HER MOMMY! Well... Thank goodness... she finally found her Mommy, now she will learn all about the refuge from Abigal and all of her new friends !!

Kids
Corner

Annie the
Anhinga

Annie Flaps her Wings

Annie the anhinga slept soundly that night amidst her brother and sister. How nice and warm it felt to be snuggled inside the nest of sticks and leaves built up in a tree. Morning seemed to come all too fast.

Just as the sun began to peek across the sky, Annie woke up to the sound of so many birds. At first she was scared because they didn't all sound like her mother did last night. Had she been lost again?

"Good morning, Annie!" her mother Abigail said. "Our home looks a lot different in the morning doesn't it? We live in a colony with other aningas, but also with herons and ibises." Annie breathed a sigh of relief to realize that she hadn't somehow gotten lost during the night.

"It's about time you woke up sleepy-head," Andy and Ashlie, Annie's brother and sister aningas shouted. "We're going to go look out at the everglades. Come join us." A few minutes later Annie found herself gazing out over the tree islands and the beautiful rising Florida sun. Her brother and sister had no intention of perching quietly on the branch and being still. Annie looked over at them and was shocked to find them hopping around flapping their wings.

"Do be careful. You might fall out of the tree," Annie pleaded with them.

"Since when are you our mother?" Andy and Ashlie cried. "Besides, mom lets us do this all the time. She says one day we'll be ready to fly off the branch. Then we'll really have fun!"

"Well, if you really think we'll be ok, it does look like fun to climb out on the branch and flap my wings. Ok, here I come," yelled Annie. "Besides," Annie thought, "my mother really does seem to know a lot about being an anhinga."

Flap! Flap! Bounce! Squeal! The three aningas were really enjoying themselves when suddenly Andy yelled, "Uh, um." And there was a loud thump.

"Andy!" They cried. "Are you ok?"

"I'm ok!! I think I just lost my balance. I guess mom's right, I'm not ready to fly! Aw man, now I have to figure out how to get back the nest," Andy groaned. "It's a good thing we're aningas. Not all baby birds can climb back into the tree if they fall out!"



It took him a while to get back into the tree, but finally the three were united again. "Next time you should be more careful." Annie lectured.

"Yes mom," Andy teased his sister. "Let's get back to the nest, maybe mom has some food for us. I'm getting hungry and we have quite an adventure to tell hert about!"



Rocky the
Racoon



Otto the
Otter



Ally the Alligator



Bertha the
Butterfly

