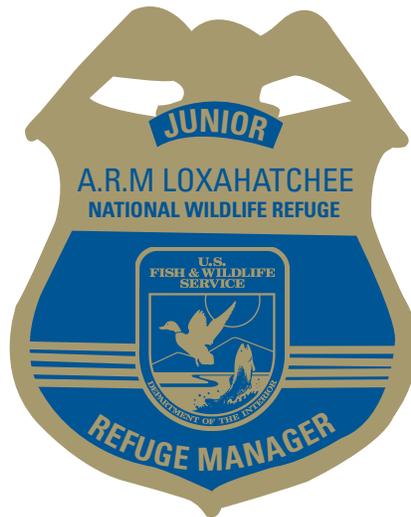




# A.R.M. Loxahatchee National Wildlife Refuge Junior Refuge Manager Program

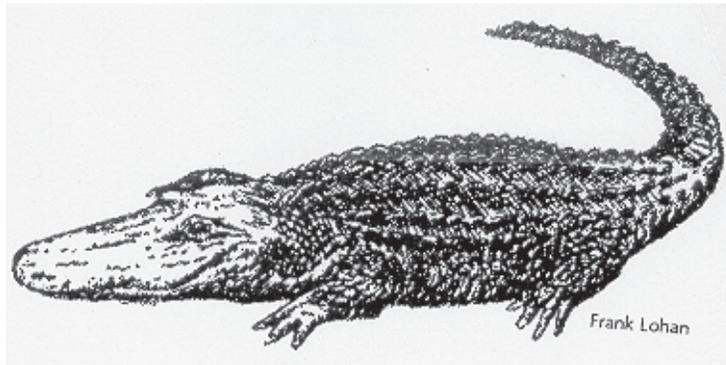


**Become A Junior Refuge Manager and  
Help Us Protect Our Resources!!!**



Arthur R. Marshall (A.R.M.) Loxahatchee National Wildlife Refuge (NWR) was established in 1951 by the U.S. Fish and Wildlife Service along with the South Florida Water Management District under a license lease agreement. The Refuge was set aside for the protection of the endangered snail kite under the Migratory Bird Conservation Act; however, the Refuge has expanded its mission to: serve as an outstanding showcase for ecosystem management that restores, protects, and enhances a portion of the unique northern Everglades biological community. This public asset provides for the enjoyment and enhanced quality of life for present and future generations.

A.R.M. Loxahatchee NWR is one of more than 550 refuges in the National Wildlife Refuge System - the most extensive network of lands and waters in the world that is set aside specifically for fish, wildlife, and plants. President Theodore Roosevelt designated the first national wildlife refuge, a tiny sanctuary in the state of Florida called Pelican Island, in 1903. Since then, the refuge system has expanded to include refuges that range in size from a half an acre to millions of acres!



## **Earning Your Junior Refuge Manager Badge**

After you complete the activities in this booklet, return to the A.R.M. Loxahatchee NWR Visitor Center. A staff member or volunteer will review your answers with you, sign your booklet, and award you with your certificate and a badge. **Please** bring your booklet into the visitor center no later than one hour before closing time to receive your badge.

Note to adult companions: This is a family activity. Your assistance is needed; however, please allow the children to answer the questions in their own words.

## Welcome from the Refuge Manager!

Managing a National Wildlife Refuge takes a lot of work in order to care for the wildlife that lives there. The key is to protect and manage the various habitats found on this Refuge that wildlife use. The Refuge staff and volunteers work hard to make this place appealing to both wildlife and the visiting public but we are always looking for help.

We are looking for young people who want to learn more about the Everglades and the wildlife that live here. We hope you will learn why this is a special place and how to share it with the wildlife by exploring the outdoors safely and not harming the natural resources.

By completing these activities you can join us as a member of the Loxahatchee Junior Refuge Manager Club! Come back often to enjoy this unique Everglades experience at the Arthur R. Marshall Loxahatchee National Wildlife Refuge.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sylvia R. Pelizza".

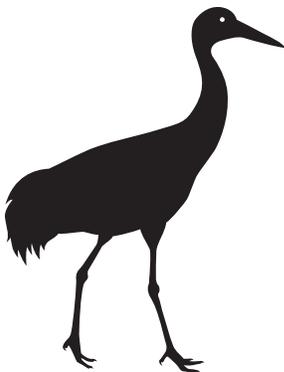
Sylvia R. Pelizza  
Refuge Manager

# Did You Know?

Arthur R. Marshall Loxahatchee National Wildlife Refuge was established to provide habitat for migratory and wading birds and native wildlife, some of which are endangered or threatened.

Here are some of the fascinating places to visit while you are at Loxahatchee...

- Butterfly Garden - This is a place to watch the native butterflies as you walk through the many beautiful host and nectar plants.
- Visitor Center - Open 9:00 am - 4:00 seven days a week.
- Cypress Swamp Boardwalk - This is a great place to see plants. The 0.4 mile loop trail begins behind the Visitor Center.
- Marsh Trail - This is a 0.8 mile walk on a levee. Midway, you can stop at an observation tower to view the many kinds of birds. Also there is a bridge connecting LILA to the Marsh Trail.
- LILA - stands for Loxahatchee Impoundment Landscape Assessment (Impoundments 3 and 4) connects to Marsh Trail by a Bridge. This "living laboratory" digs into the science behind Everglades restoration.
- Boat Ramps - You can use these at the Headquarters Area, Hillsboro Area, and at the 20-Mile Bend Area.
- Canoe Trail - A great way to see the Refuge is from a canoe! You can either rent a canoe or bring your own for the 5.5 mile canoe trail.
- Bike Trail - A 12-mile trail along the rough gravel L-40 Levee from the Headquarters south to the Hillsboro Area.



# ACTIVITY 1

## Habitats of Loxahatchee

### Habitat Detective

Refuge Managers manage wildlife habitat, an area that consists of enough food, water, shelter, and living space for a plant or animal. Loxahatchee NWR has five main types of habitat: tree islands, wet prairies, sloughs, sawgrass, and cypress swamp.

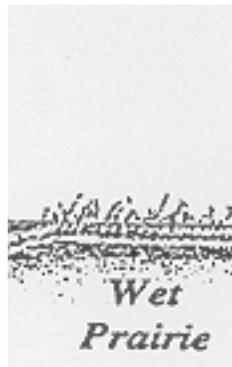
There are five pages that show Loxahatchee NWR habitats. Here's what you need to do to complete this activity:

- 1) Go visit the habitat in the picture. The Marsh Trail will be the best location to see the interior habitats of the refuge. The Cypress Swamp Boardwalk is the best location to find cypress swamp habitat.
- 2) From the list provided, find the plants or animals that live in that habitat. Circle all of the plants or animals you see. If you're not sure of the exact name of the plant or animal, then write the type of plant or animal. If you want you can color the pictures you can.

**Tree Island Habitat**  
wax myrtle, buttonbush, cocoplum  
apple, white ibis, raccoon  
knee,



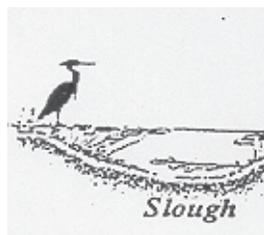
**Wet Prairie**  
beakrush, spikerush, pickerelweed,  
turtle, mosquitofish,



**Cypress Swamp**  
bald cypress, pond  
leather fern, cypress  
cardinal wild pine



**Slough Habitat**  
white water lily, spatterdock,  
great blue heron, alligator,  
turtle



**Sawgrass Habitat**  
wax myrtle, ferns, dragonfly,  
common moorhen, apple snail



**Gator Bert says...**

There are a total of five distinct habitat types located at the Loxahatchee NWR.

# Tree Island Habitat



Can you list the plants and animals in this habitat?

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# A Wet Prairie Habitat

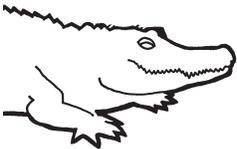


Can you list the plants and animals in this habitat?

*illustrations: Frank Lohan*

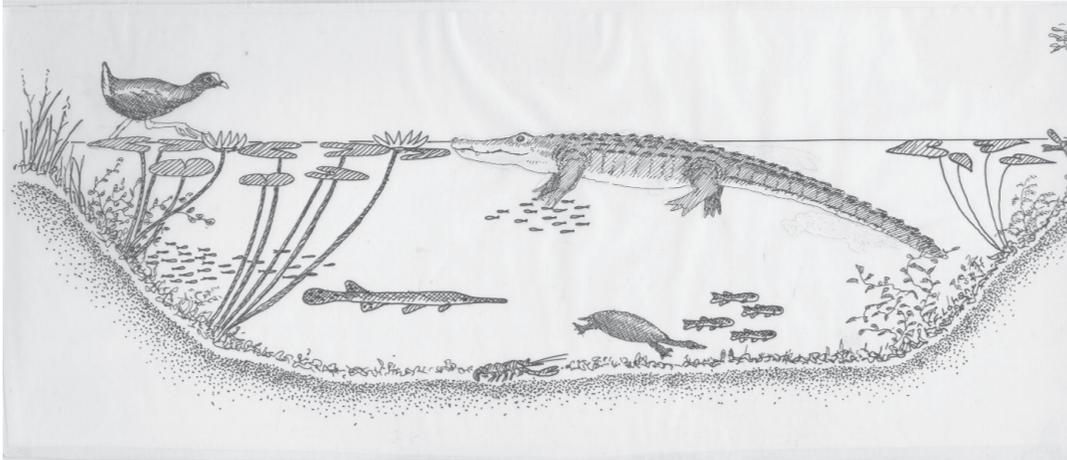
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**Gator Bert says...**  
Did you know that the March Rabbit *Sylvilagus palustris*  
are excellent swimmers?

# A Slough Habitat



Can you list the plants and animals in this habitat?

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# A Sawgrass Habitat



Can you list the plants and animals in this habitat?

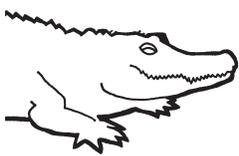
*illustrations: Frank Lohan*

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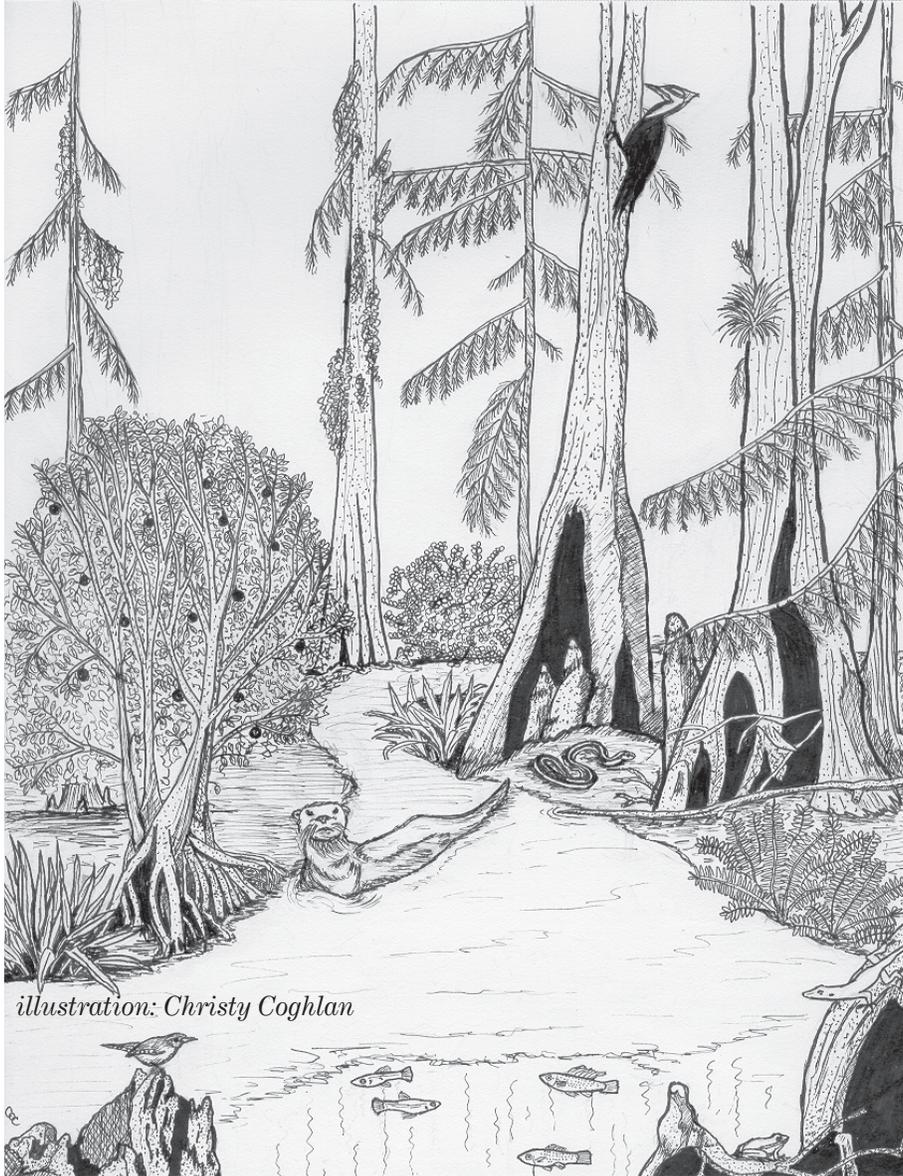
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**Gator Bert says...**

Sawgrass is a sedge and has a triangle shape with three sharp sawteeth edges.

# Cypress Swamp Habitat



*illustration: Christy Coghlan*

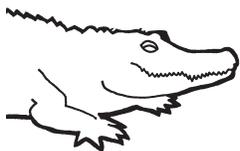
Can you list the plants and animals in this habitat?

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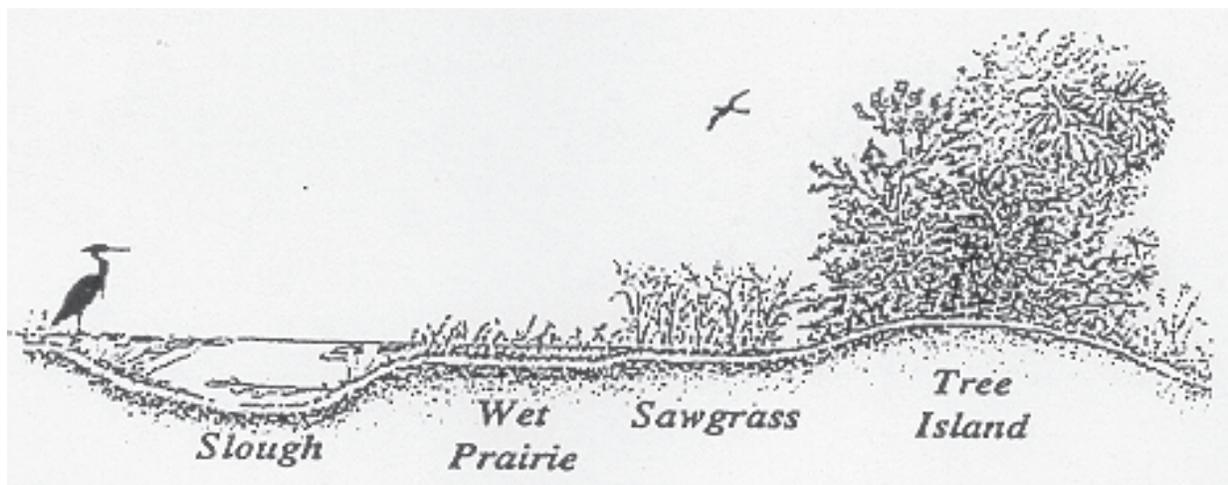
**Gator Bert says...**

Did you know that the word "Loxahatchee" is a Seminole Indian word meaning "River of Turtles"?

Here are some ways Junior Refuge Managers can help protect Refuge habitats.

- Take only pictures, leave only footprints.
- Pick up any litter you find.
- Stay on the trails.
- Leave plants and rocks where you find them.
- Be sure not to harm or disturb any wild animals.
- Tell Refuge staff or volunteers about neat things you see so we can share with others.
- Tell Refuge staff or volunteers about problems you find that need to be fixed.

Thank you for taking care of  
A.R.M. Loxahatchee NWR.



Gator Bert says...  
Watch out for the caterpillars because some of them  
are poisonous. Don't touch them!!!

# ACTIVITY 2 - Wetlands Jumble

All of these plants and animals live in the Everglades. Look for many of them in our Cypress Swamp. Some live on the tree islands, others like the deep slough habitat.

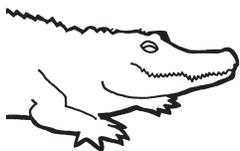
Can you find the plants and animals in this hidden word puzzle?  
The words may be found vertically, horizontally, or diagonally.

wood duck clam crab crayfish mosquito raccoon heron

frog egret dragonfly sunfish turtle glass shrimp salamander

alligator skink sand wasp

A O O T X B Z T D A Q L X A T L M  
T H C U W O O D D U C K X T S X C  
B E L R A C C S T C R A B T F O R  
C R T T S S A N D W A S P G F S A  
S O N L S M O S Q U I T O F B U Y  
A N T E Q T A O C U X N Y H M N F  
L L R T S O P X P A S N A K R F I  
L G L A S S S H R I M P L L N I S  
I D R A G O N F L Y N T S S C S H  
G T V V U Q Q R L U I V I L C H O  
A E G R E T X O T V N Z A T O X O  
T X G N A Z X G T V W M S O O Q E  
O S A L A M A N D E R N Q X N Z L  
R L T S K I N K E R D L I T T O L



Gator Bert says...

Baby alligators can often be seen in late August to early October. Look for the yellow strips on their tail.

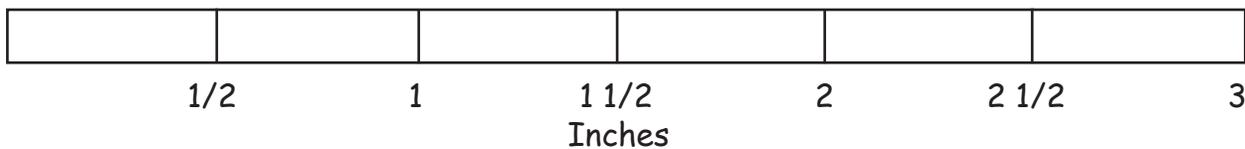
# ACTIVITY 3 - Curious Crocodilians

In the United States, there are two species of native crocodilians: the American Alligator and the American crocodile. While the crocodile has always been rare, the American alligator once dominated Florida's wetlands. After years of being hunted to near extinction, the alligator has made a comeback.

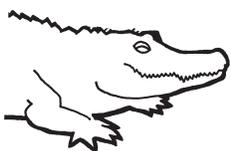
Many people wonder how to tell the difference between an American crocodile and an American alligator. Once you know a little about the reptiles, it's easy to tell them apart. Crocodiles, which are rare and secretive to begin with, occur primarily in coastal, brackish (salt water and fresh water mixed) habitats. Alligators are found primarily in fresh water, have a broad snout, and are darkly colored. Crocodiles have a lighter grayish-green coloring and a narrower snout.

Loxahatchee National Wildlife Refuge is a wonderful place to view alligators. When you spot one, estimate its length based on ruler and information found on page 8 and write down the length \_\_\_\_\_ . Then draw a picture of the alligator you saw.

Alligators	Crocodiles
Fresh Water	Brackish Water
Broad U-shaped Snout	Narrow V-shaped Snout
Dark coloring	Lighter grayish-green coloring



**Gator Bert says...** In order to estimate how big an alligator is, you can guess the distance in inches from his nose to eyes. However many inches it is, that is how many feet long the alligator is.



# ACTIVITY 4 - Everglades Natives

All the plants and animals pictured and listed below are native to Loxahatchee NWR. Native means that that were present before people arrived in the Everglades. These are the plants and animals that Junior Refuge Managers can help protect. Place the number from Column B next to the description in Column A that correctly identifies it.

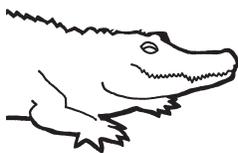
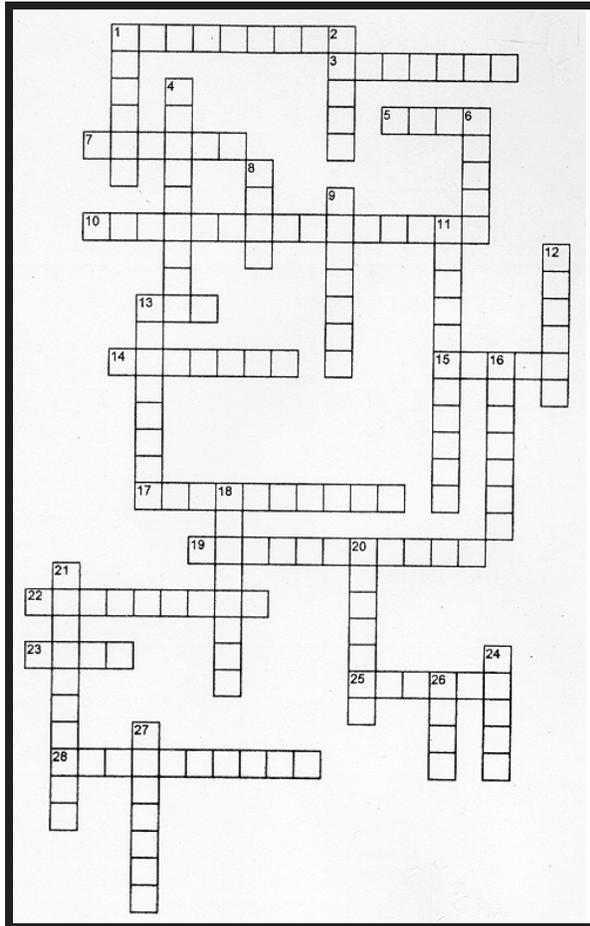
Column A	Column B
<input type="checkbox"/> A common tree on the refuge	1. fulvous whistling duck
<input type="checkbox"/> Insect that nests under ground	2. cypress tree
<input type="checkbox"/> This mammal raises its tail when alarmed revealing it white underside	3. water moccasin
<input type="checkbox"/> Tall gray-blue wading bird that uses its razor sharp bill to spear prey	4. pig frog
<input type="checkbox"/> The burnt color of the drake (male) will help you identify this duck	5. Everglades crayfish
<input type="checkbox"/> Some say the Everglades system rests on the backbone of this invertebrate	6. white-tailed deer
<input type="checkbox"/> Snake that is poisonous and has diamond shaped markings on its back	7. great blue heron
<input type="checkbox"/> An amphibian whose call sounds to some like an alligator grunting	8. lubber grasshopper



Gator Bert says...

Did you know that Loxahatchee National Wildlife Refuge is the LAST remaining portion of the Northern Everglades?

# ACTIVITY 5 - Crossword Puzzle



**Gator Bert says...**  
Look in at the exhibits in the visitor center for clues to the some of the answers for this crossword puzzle!

## Across

1. Army corps of \_\_\_\_\_
3. There can be as many as 35,000 wading birds at Loxahatchee during their \_\_\_\_\_ season.
5. Largemouth \_\_\_\_\_ are a popular game fish.
7. \_\_\_\_\_ is the dry season.
10. You are visiting \_\_\_\_\_ Loxahatchee National Wildlife Refuge.
13. Summer is the \_\_\_\_\_ season.
14. The \_\_\_\_\_ Fish and Wildlife Conservation Commission.
15. The Pond \_\_\_\_\_ tree can be seen from the boardwalk.
17. The alligator was once an \_\_\_\_\_ species.
19. The southeastern lubber \_\_\_\_\_ is several inches long, very colorful and hops!
22. The bird, purple \_\_\_\_\_, can often be seen walking on the spatterdock.
23. This bird of prey can often be seen flying high in the sky.
25. Coral snakes stripes are red, \_\_\_\_\_ and black.
28. When there are only a few animals left of a species, it is said to be \_\_\_\_\_.

## Down

1. Plants that are not native to the Refuge are called \_\_\_\_\_ plants.
2. The \_\_\_\_\_ Egret is a small white bird with yellow feet. It's feathers were once hunted for plumes.
4. Alligators dig these to preserve their water supply.
6. The apple \_\_\_\_\_ is the primary food source for the Everglades snail kite.
8. Tropical Curly-Grass \_\_\_\_\_ is an endangered plant that lives on the Cypress Swamp Boardwalk.
9. Refuge employees preserve and \_\_\_\_\_ what is left of the Northern Everglades.
11. \_\_\_\_\_ is helping to protect the (snail) kite and apple snail.
12. In the \_\_\_\_\_ months, water covers most of the Everglades.
13. U.S. Fish and \_\_\_\_\_ Service
16. People often confuse the bobcat and the Florida \_\_\_\_\_.
18. An \_\_\_\_\_ is an epiphyte, which is a plant that grows on other plants instead of soil.
20. \_\_\_\_\_ are white and black raptors that can be seen on the marsh trail.
21. South Florida Water \_\_\_\_\_ District.
24. In addition to the swamp fern, the \_\_\_\_\_ fern can be found on the Cypress Swamp Boardwalk.
26. You can see the white water- \_\_\_\_\_ and bladder-wart in a slough.
27. The areas in which an animal lives is called its \_\_\_\_\_.

# ACTIVITY 6 - "River of Grass"

Marjory Stoneman Douglas coined that phrase in 1949 with her landmark book, Everglades: The River of Grass. Water is synonymous with the Everglades, it's what gives the Everglades life. There are only two seasons in the Everglades, wet and dry. The rainy (wet) season begins in late May or June, as it does all across the Caribbean. In the summer months, 80% of the annual precipitation may fall. Of equal importance is the annual dry down. Each year, rains decrease in roughly late November (the official close of hurricane season.) Water levels begin to drop throughout the Everglades, concentrating aquatic life in the remaining pools, sloughs, and 'gator holes. With prey species concentrated around limited available water during the dry season, hunting becomes "easy pickings" for many predator species. The dry season also becomes an ideal nesting season for many Everglades wading birds. Typical wet season rainfall is between 10 to 12 inches a month and dry season rainfall is between 1 to 2 inches a month.

## I'M A WATER WARRIOR

WAYS I USE WATER:

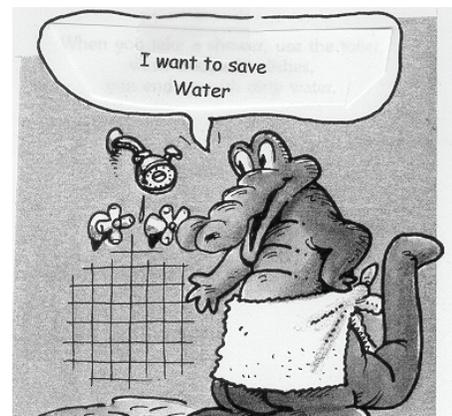
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

WAYS I INTEND TO SAVE WATER:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_



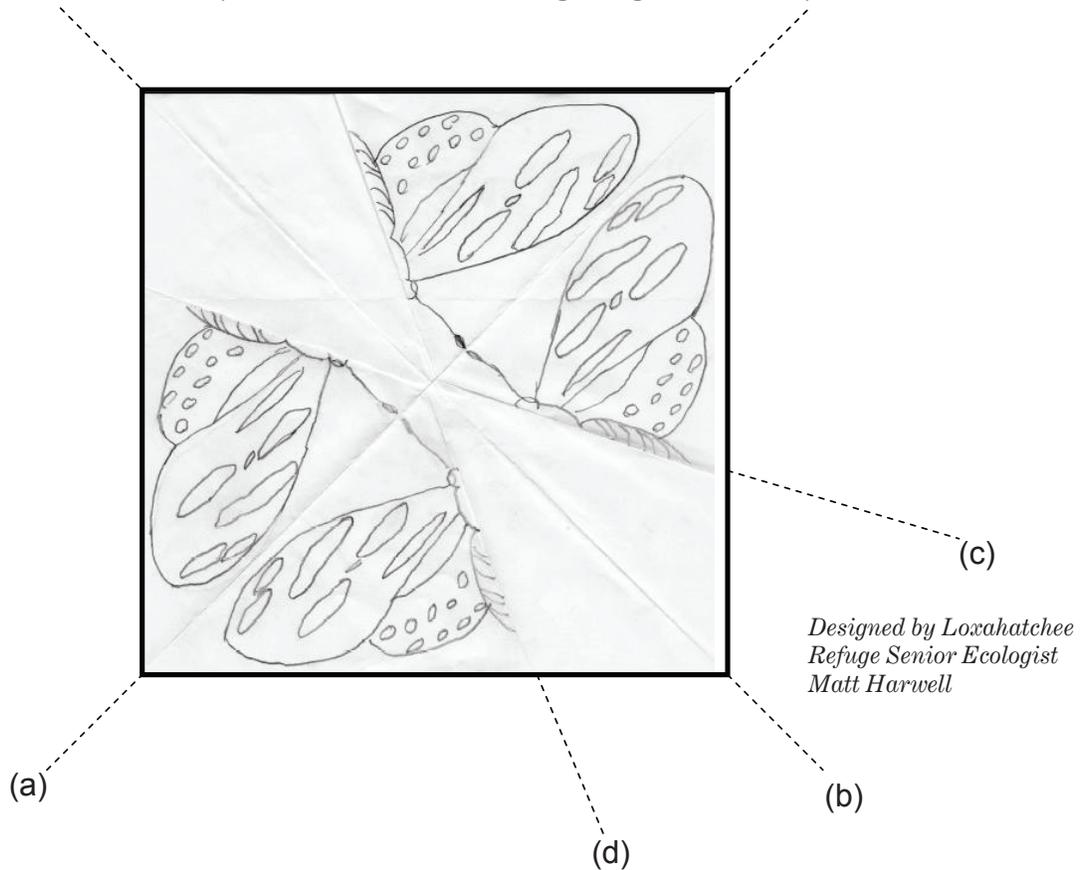
Gator Bert says...  
Saving water is a good thing, not  
just for the Everglades!



SFWMD

# ACTIVITY 7 - Make an Origami Butterfly

Zebra Longwing is the Florida State Butterfly. Zebra Longwings can be frequently seen at Loxahatchee NWR. Follow along with these easy instructions and make your own Zebra Longwing Butterfly.



Make the state butterfly of Florida – the Zebra longwing

Step 1: Cut out the square

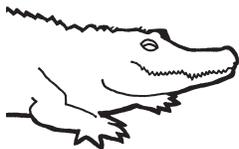
Step 2: Fold along diagonal line indicated by (a) to create a triangle; the wings are visible on the outside

Step 3: Fold along diagonal line indicated by (b) to create a smaller triangle; the wings are on the bottom

Step 4: With the smaller triangle, lift the first wing by folding along (c) to point the wing up

Step 5: Flip the paper over and lift the second wing by folding along (d) to match the first one

Step 6: Your Zebra longwing is complete! The wings can be colored black, the stripes and spots yellow



**Gator Bert says...**

A place to see lots of butterflies is outside the Visitor Center in the Butterfly Garden. You will also see and learn about host and nectar plants for butterflies.

# ACTIVITY 8 - Fun With Ferns

Take a walk on the Cypress Swamp Boardwalk. Do you see all the green plants? Many of them are ferns. See if you can identify the ferns below based on one of the signs along the boardwalk and match the names with the pictures.

Giant Leather Fern

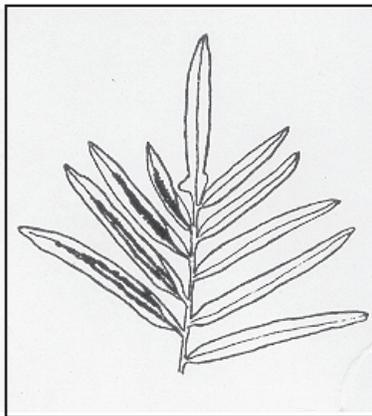
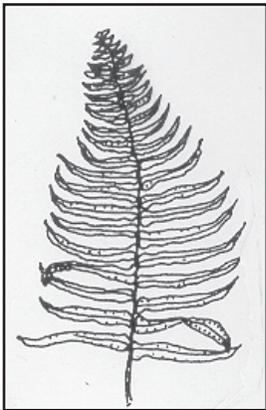
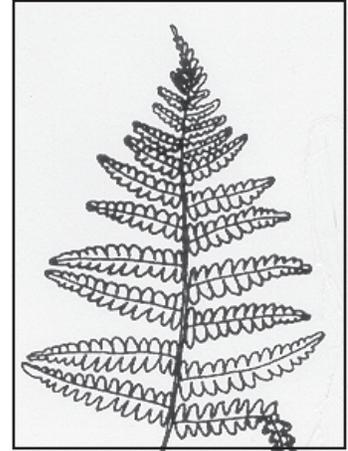
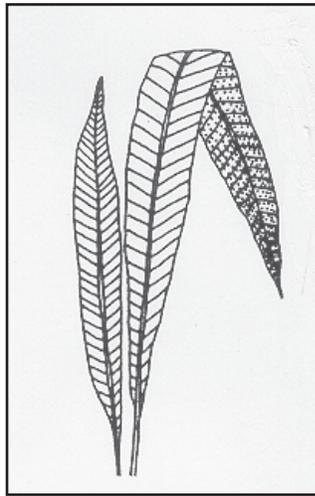
Royal Fern

Strap Fern

Swamp Fern

Sword Fern

Hottentot Fern



*illustrations: Frank Lohan*

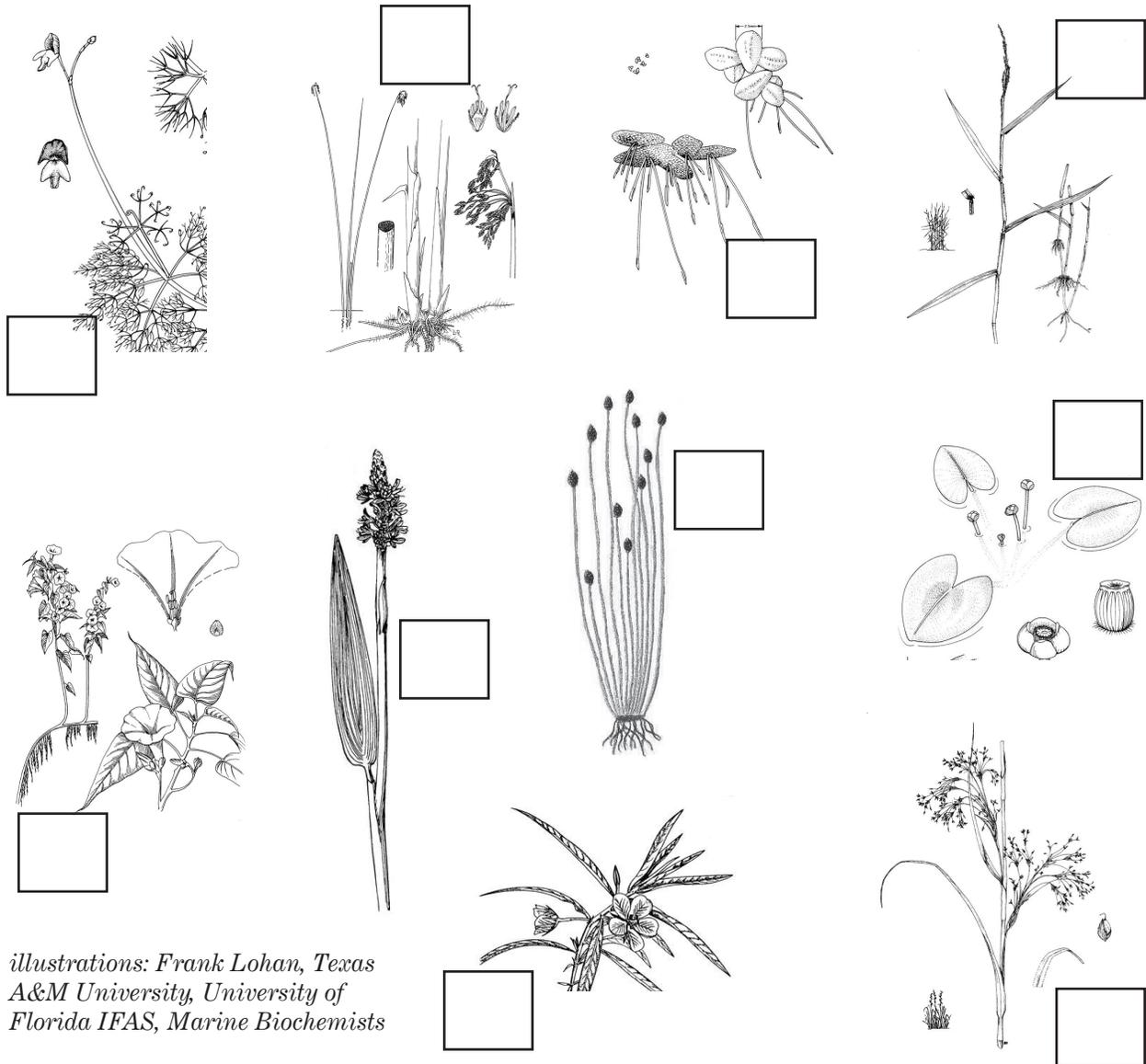


**Gator Bert says...**

The signs along the Cypress Boardwalk can help you identify the ferns that you see.

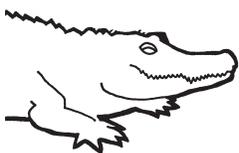
# ACTIVITY 9 - Grasses of the Marsh

"Sedges have edges, rushes are round, grasses are hollow right up from the ground." This little poem has a lot of significance here at Loxahatchee NWR and in the Everglades. There are lots and lots of grasses, rushes, and sedges that live here. The following are but a few that are the most abundant. Let's see if you can match these names to the grasses you see along the Marsh Trail. Many of these are also in the Refuge interior.



illustrations: Frank Lohan, Texas A&M University, University of Florida IFAS, Marine Biochemists

1. Maidencane
2. primrose willow
3. spatterdock
4. pickerlweed
5. spikerush
6. bulrush
7. duckweed
8. morning glory
9. blatterwort
10. sawgrass



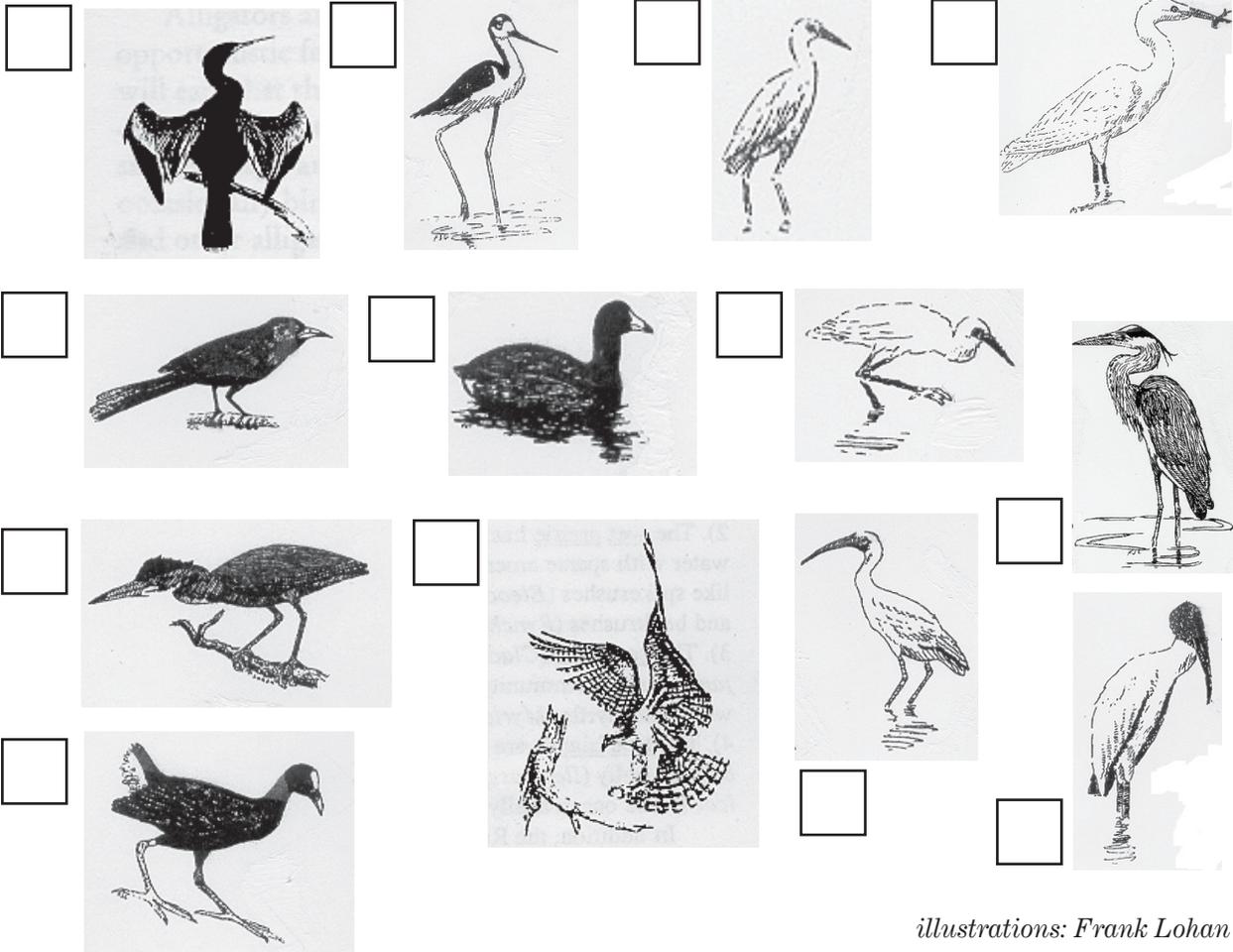
**Gator Berts says...**Grasses are an important part of in the lives of many of the species that live at the refuge.

# ACTIVITY 10

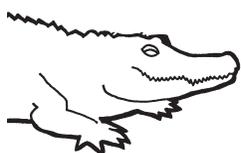
## What's that Bird in the Marsh

Loxahatchee NWR is home to many birds (over 257 on our bird list). While you are visiting, learn to identify at least 5 birds and where they are found. One of the best ways to identify birds is by their beak. A second way to identify birds is by their feet and then by their size. One of the last things "birders" look for is the color of the bird. Make your own origami bird with the material page attached.

Match these birds with their names:



1. Aninga
2. Boat-tailed Grackle
3. Great Blue Heron
4. Great Egret
5. Common Moorhen
6. Black-necked Stilt
7. Green Heron
8. Purple Gallinule
9. Cattle Egret
10. Snowy Egret
11. Wood Stork
12. White Ibis
13. Osprey



**Gator Bert says....**

The signs along the Marsh Trail can help you to identify the birds you see.

# ACTIVITY 11 - Nature Notes

## Naturalist's Journal

Weather Conditions:

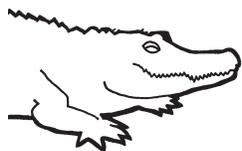
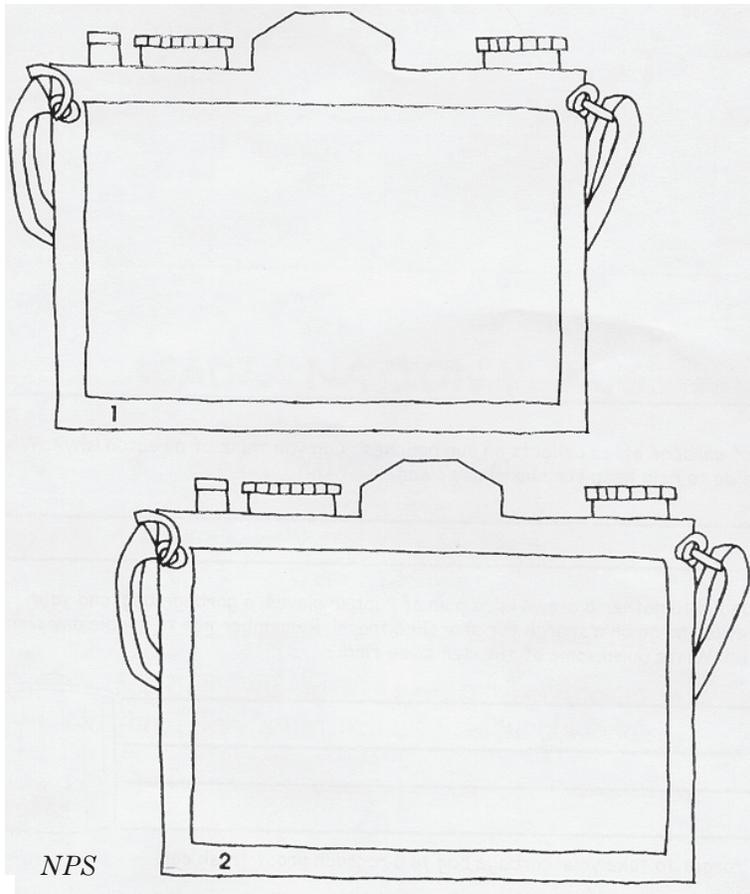
General Description of habitats in the Refuge:

The birds and animals I saw during my visit:

Name/Type	Description
-----------	-------------

These are the sounds I heard:

These are some drawings I made or photos I took while at Loxahatchee NWR:



**Gator Bert says....**

Each visit you make to a national wildlife refuge will be a different experience, so come often.

## The Junior Refuge Manager Pledge



"I pledge to work to save the natural environment by using what I have learned, by sharing my knowledge, and by becoming involved in the preservation of the Everglades and our wild places like Loxahatchee National Wildlife Refuge."

### All Done?

When you have completed all of your activities, take the booklet to a staff member or volunteer at the Visitor Center. Remember, please bring your booklet into the visitor center no later than one hour before closing time to receive your badge. They will review your work and make you an official Junior Refuge Manager!

# Congratulations!

A.R.M Loxahatchee  
National Wildlife Refuge  
10216 Lee Road  
Boynton Beach, Florida 33473

October 2010  
[www.fws.gov](http://www.fws.gov)

