

Junior Ranger

National Park Service
U.S. Department of the Interior



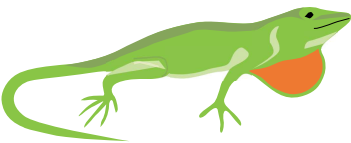




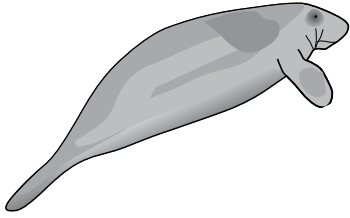
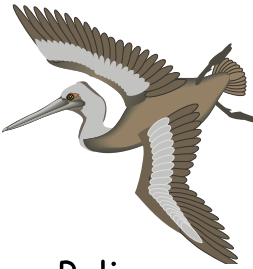



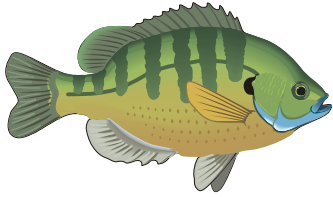

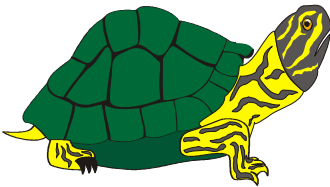
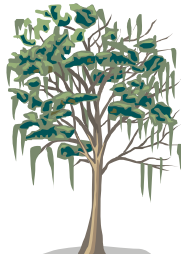


Big Cypress National Preserve
Biscayne National Park
Everglades National Park



Scavenger Hunt BINGO!

Watch for these plants and animals on your journey through the South Florida National Parks. When you find one, mark the square with an "X."

Find 4 in a row = you're an **ALLIGATOR!**
Find all 4 corners = you're a **MANATEE!**
Find them ALL = you're a **PANTHER!**

 Anole (Lizard)	 Raccoon	 Mosquito	 Anhinga
 Heron (or Egret)	 Manatee	 Pelican	 Palm Tree
 Butterfly	 Air Plant	 Fish	 Dragonfly
 Turtle	 Cypress Tree	 Turkey Vulture	 Alligator

Remember... please don't collect, touch, or feed the wildlife!



This book belongs to: _____



Explore, Learn, Protect... Be a Junior Ranger!

Ask about becoming a Junior Ranger when you visit other national parks.



This Junior Ranger book was printed on recycled paper with vegetable inks to help preserve our world's resources.

Vegetable oil-based inks are better for our environment than petroleum-based inks because:

- 1) they produce less air pollution,
- 2) they are easier to remove from paper during recycling,
- 3) vegetables are a renewable resource.



Instead of making paper only from trees, using recycled paper helps our environment by:

- 1) saving trees,
- 2) reducing waste in landfills,
- 3) using less energy and water,
- 4) producing less air and water pollution.



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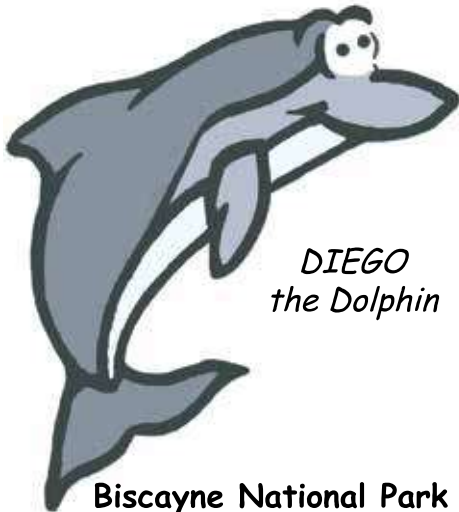


Funding to create this program was generously provided by donations from park visitors and from the South Florida National Parks Trust. The Trust is working to ensure that more people—especially children—have the opportunity to visit and enjoy South Florida's national parks.



PETER
the
Panther

Big Cypress National
Preserve



DIEGO
the Dolphin

Biscayne National Park



ALEESHA
the Alligator

Everglades National Park

SO, you want to be a Junior Ranger?

Just follow these directions and you'll be on your way!

Which park are you visiting?

Three of South Florida's national parks have joined together on this book. Each park is represented by the mascot shown on this page.

You can earn a Junior Ranger **badge** at each of the three parks and you can earn the **patch** if you visit all three parks.

To earn a badge! -- It's as easy as...

- 1 Complete **The National Park Service** activity on page 4.
- 2 Complete at least three activities for the park you are visiting. Each activity counts for only one park. Circle the matching park mascot at the top of each page.
- 3 For each park you visit, do one activity from the list on **Sammy the Manatee's Activity Page** (p. 19).

When you are finished, take your book to the visitor center. A ranger will review your completed activities and give you a badge.

To earn the patch! -- It's as easy as...

- X Earn a badge from all 3 parks.
- Y Complete the rest of the activity pages in this book.
- Z Get it in person at a park visitor center or mail a **copy** of the completed **Junior Ranger Pledge** (p. 20) with signatures and park stamps to:

Biscayne National Park
Attn: Junior Ranger Coordinator
9700 SW 328th Street
Homestead, FL 33033

**Be sure to include
your address so
the ranger can
mail you a patch.*

Other things to do and watch for...

 Keep your eyes peeled on your journey through the parks for the wild-life and plants on the **Scavenger Hunt Bingo** page (front cover).

Flat Frog's Fun Fact



Hey Friends!
I'm Flat Frog. Watch for me and my Fun Facts throughout this book.



Try this at home!

Look for this box for activities you can do at home.

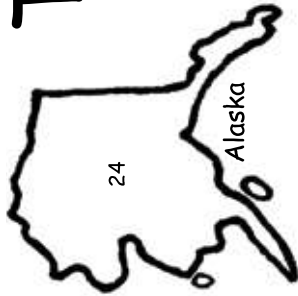


Use the journal on page 18 to record your adventures in the parks.



The National Park Service

The numbers below show how many NPS sites are in each state or US territory.

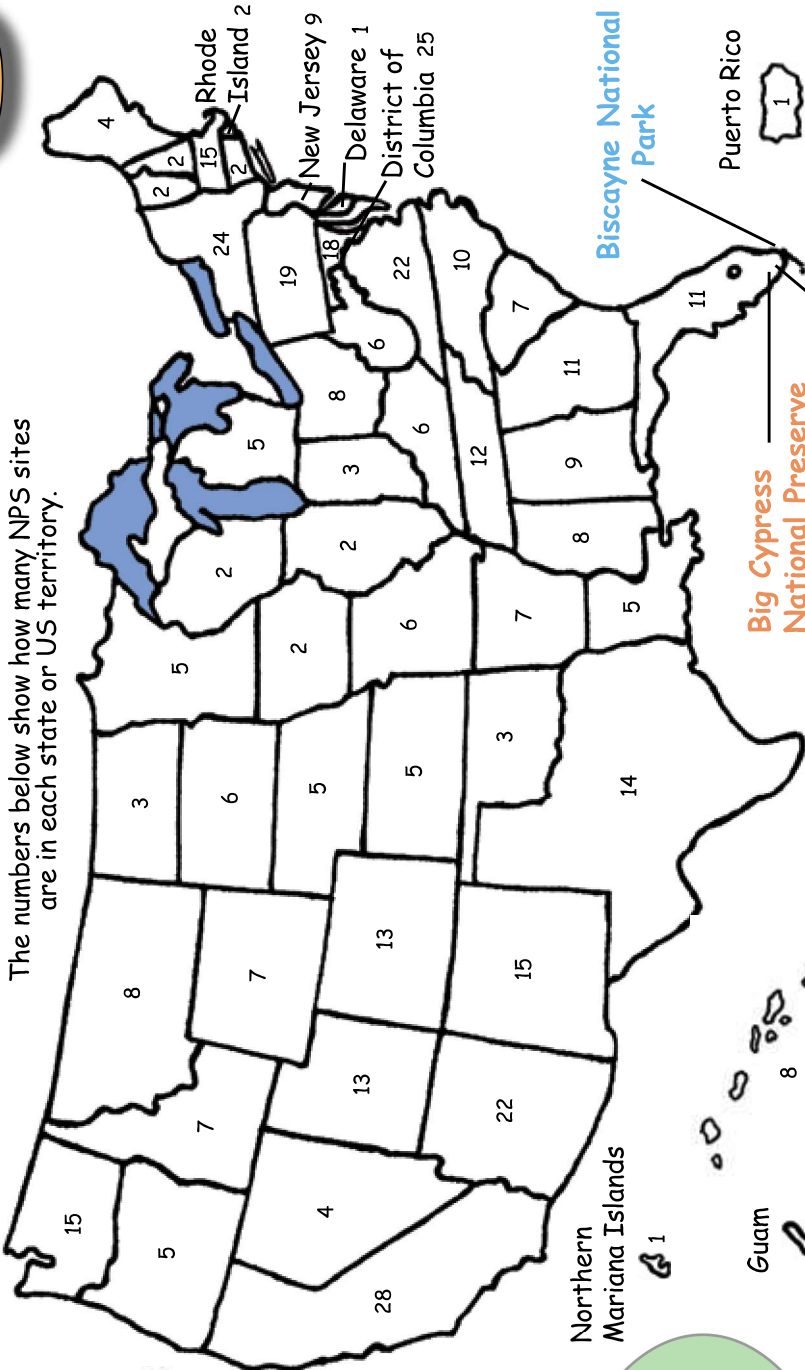


Alaska

From lofty mountain peaks to the low deserts, from volcanoes to glaciers, and from ancient dwellings to places associated with the Civil Rights Movement, the National Park Service cares for special places saved by the American people so that all may experience our heritage. Established on August 25, 1916, the National Park Service now protects and preserves over 400 sites.

Flat Frog's Fun Fact

When you see this symbol, you will know you are at a National Park Service site.



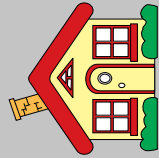
Biscayne National Park

Big Cypress National Preserve

Everglades National Park



Color in all the states and territories that you have visited.



Try this at home!

How many National Park Service sites are there in your home state or the state you are visiting? _____

What other National Park Service sites have you visited? _____

Name a park or parks near your home that you like to visit: (It does not have to be a National Park Service site.) _____

What do you like to do when you visit the park(s)? _____

1. Check out other National Park Service sites. Go online to www.nps.gov and click on "Find a Park." Look up an NPS site in your state or find one that you would like to visit in the future.
2. Become a WebRanger and create your own ranger station at: www.nps.gov/webangers
3. For more kid's activities, go to www.nps.gov/kids



Mangrove Feeding Frenzy

When mangrove leaves fall into the water, they slowly decompose and become food for tiny organisms. The tiny organisms are then eaten by larger creatures. This begins the incredible cycle of the **food chain**. Many food chains connect to create a **food web**.

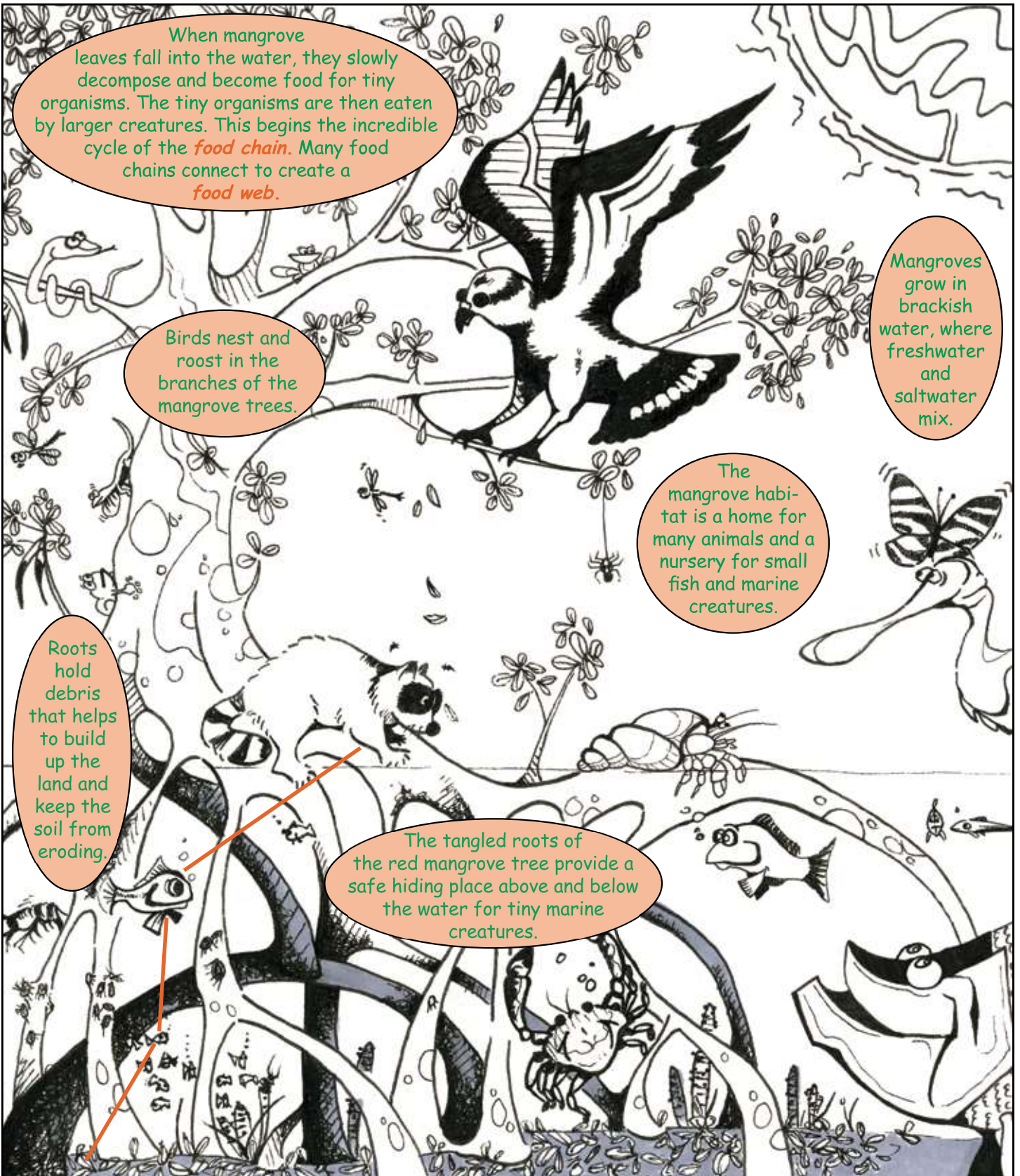
Birds nest and roost in the branches of the mangrove trees.

Mangroves grow in brackish water, where freshwater and saltwater mix.

The mangrove habitat is a home for many animals and a nursery for small fish and marine creatures.

Roots hold debris that helps to build up the land and keep the soil from eroding.

The tangled roots of the red mangrove tree provide a safe hiding place above and below the water for tiny marine creatures.



Make food chains by drawing lines to connect the animals with their food. One food chain has been started for you. Draw as many food chains as you can find to create a food web!



Sawgrass Sleuth



When most people think of the Everglades, they think of waving fields of sawgrass. Have you ever wondered why it's called "**sawgrass**?" Well, find some, look closely at it and touch it ...

IF YOU DARE!



Be careful, sawgrass can cut you! Read on to learn how to touch it safely.



GENTLY run your fingers UP the blade of grass, from the wider part to the skinny tip. Then VERY slowly start to move your fingers back down the blade.

Describe how the sawgrass feels: _____

Now, why do you think it's called sawgrass? _____



Hmm, is sawgrass really a "grass?" Solve the word puzzle below to find out!

Use the examples below to help you...

CRACK the CODE

Answer: A B C D E E V E R G L A D E S

Code: Z A B C D D U D Q F K Z C D R

R D C F D R G Z U D D C F D R



Q T R G D R Z Q D Q N T M C



F Q Z R R D R Z Q D G N K K N V



K H J D G N K D R H M S G D F Q N T M C

Now, take a look at the sawgrass again. Is it really a grass? Circle the answer below:

Sedge

Rush

Grass

Write your own poem or description about the sawgrass!

Flat Frog's Fun Fact



Marjory Stoneman Douglas fought to set aside the Everglades as a National Park. In her book she coined the phrase "A River of Grass" because the water flows slowly through the sawgrass like a river.



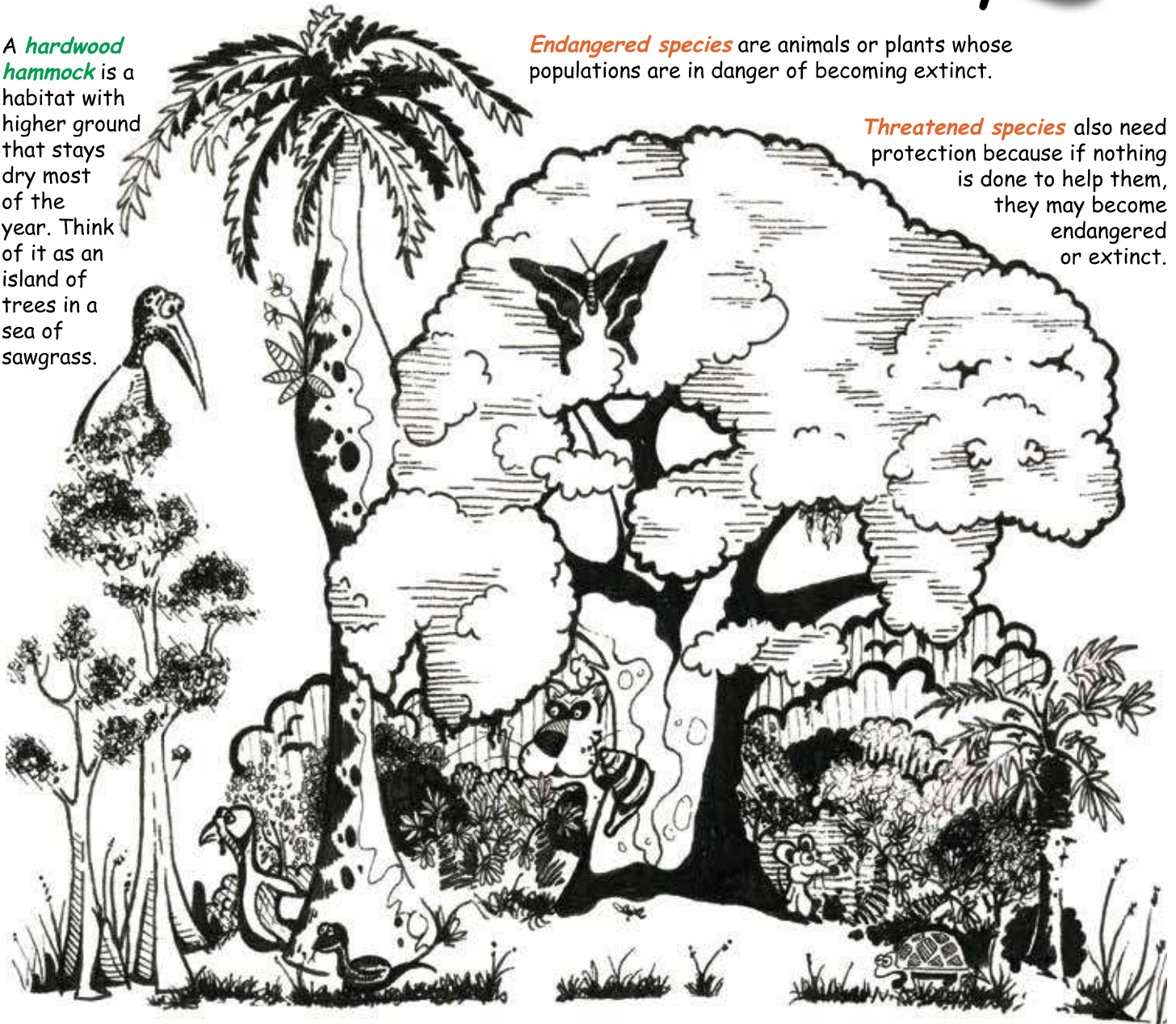
Hammock Hideaway



A **hardwood hammock** is a habitat with higher ground that stays dry most of the year. Think of it as an island of trees in a sea of sawgrass.

Endangered species are animals or plants whose populations are in danger of becoming extinct.

Threatened species also need protection because if nothing is done to help them, they may become endangered or extinct.



Find these endangered and threatened species before they disappear! Search the hardwood hammock above and **circle** the species listed below. Look closely, some are camouflaged. Then color them and their habitat.

- Eastern Indigo Snake
- Clamshell Orchid
- Schaus Swallowtail Butterfly
- Liguus Tree Snail
- Key Largo Cotton Mouse

- Wood Stork
- Florida Panther
- West Indian Manatee
- Gopher Tortoise
- Wild Turkey



Try this at home!

Find out which plants and/or animals near your home are endangered or threatened. What is being done to help protect them and what can you do to help? Suggestion: search the internet or ask at a local park.

Which species is endangered, but does not belong in the hardwood hammock?

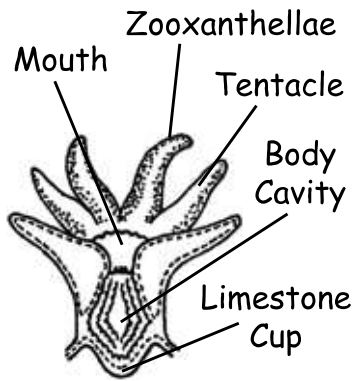
Which species pictured is NOT endangered or threatened? (Hint: traditional Thanksgiving meal) _____



Recommended for Biscayne

Biscayne National Park protects the northern part of the 3rd largest coral reef in the world.

The skeletons of millions of animals called *polyps* create the reef. Polyps extend tiny tentacles to gather their food.



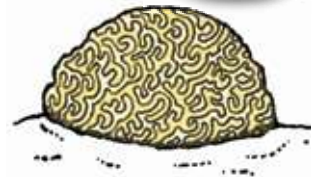
A coral polyp is about the size of a pencil eraser!

Coral Reef Search

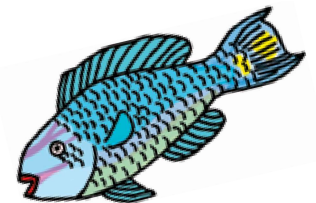


Find and circle the words from the list below.

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



Do you know which coral this might be? (Hint: It is one of the words listed in the word search.)



Parrotfish are *herbivores*, animals that eat plants. They like to munch on coral polyps to get to the zooxanthellae.

CORAL POLYP
ZOOXANTHELLAE
PARROTFISH
LETTUCE CORAL
LIMESTONE CUP

SEA URCHINS
BRAIN CORAL
CAMOUFLAGE
SEA ANEMONE
SEA TURTLES

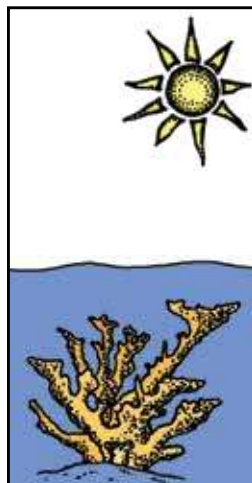
SEA STARS
SHARKS
BLEACHING
WRASSE
JELLYFISH

SPONGE
SHRIMP
ALGAE
TRASH

The unused letters in the puzzle spell out a hidden message. After solving the puzzle, the hidden message will be revealed. Write it below:

Inside the coral polyp are *zooxanthellae* (zoo-zan-thel-ee) which are tiny plants that give coral its color. Like other plants, zooxanthellae harness energy from the sun to make their own food. Coral polyps need zooxanthellae to survive and zooxanthellae need sunlight to survive, so the sunlight must be able to penetrate the water.

Name two ways you can help keep the water clear so sunlight can reach the coral polyps?



Make your own coral polyp!

1. cake frosting = limestone cup
2. marshmallow = coral polyp body
3. red licorice = tentacles
4. colored sprinkles = zooxanthellae
5. plate = limestone base



Try this at home!

Use a toothpick to help guide in the strips of red licorice.

Then make like a parrotfish and gobble it up!



Pinelands Detective



Read the story:

During your visit to South Florida you decide to explore one of the unique and endangered habitats found here. As you're hiking along through the pinelands, all of a sudden you come across a cluster of pine trees whose trunks are black near the ground and brown up above. As you come around a bend in the trail you see that some of the trunks are only black on one side of the trees. You think to yourself, "Isn't that strange?" You keep walking, careful not to trip on the jagged limestone rock.

All along the trail, you've been seeing pine cones, but a few look like someone tossed them into a campfire. Looking a little closer, you see that the soil is black, but there are fresh green shoots of grass poking up. The trees here are also charred at the base of the trunks.

Ok, that's it! It's been at the back of your mind, but now you're positive. A fire burned through here! Was it a campfire out of control? Was it by accident or on purpose?

Solve the puzzle to find out who or what caused the fire. Write the answers on the lines below.

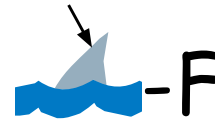
Use the combination of letters and pictures to make words. It may be helpful to "read" the puzzle out loud. Some of the pictures make the sound of the word, but are spelled differently. Be sure to look where the arrows are pointing in some of the pictures.



+TS



+S



-F

3-RE



-P

SP+



-H



-N



+HA.



+S

ST+



+S

2



+P

3-RE

10

-T

+V



+



-CE

H



-S+THY.

Flat Frog's Fun Fact



Fires are good for the pinelands because they renew the soil, spread new seeds, and make room for new plants to grow.

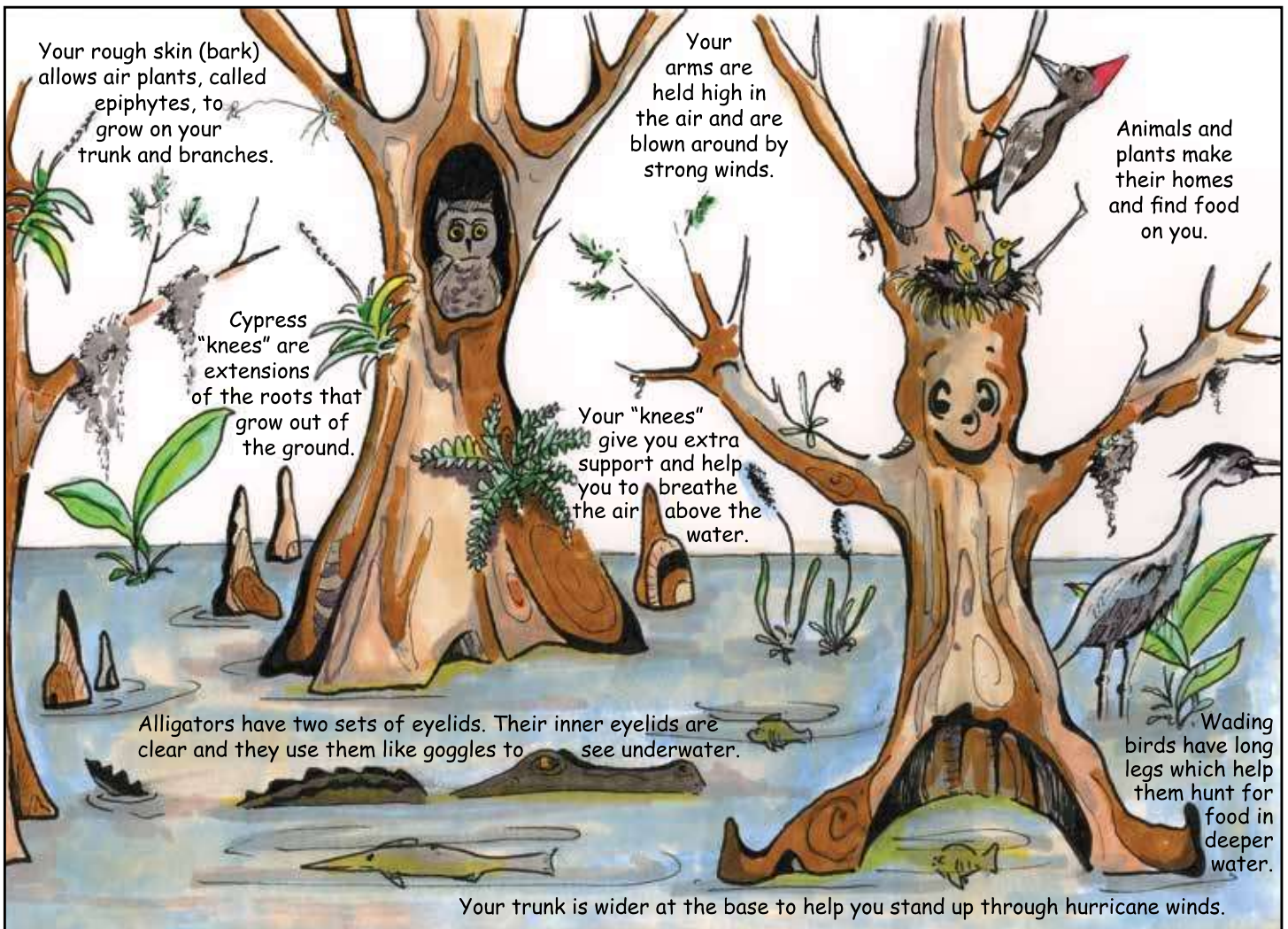


Cypress Survival



IMAGINE... you're standing knee-deep in water during most of the year. Your feet are buried deep below the squishy soil. Millions of tiny aquatic organisms are swimming around your legs all the time.

Could YOU survive?



The Bald Cypress tree can!

Unlike most other trees, Bald Cypress trees grow best when standing in water. Like many other plants and animals that live in the wet swamp, they have developed special adaptations to help them survive this habitat. **Adaptations** are characteristics that animals and plants use to survive in their environment.

Look closely at the picture above and read the notes to learn about some of the adaptations in the cypress habitat. Keep these in mind as you...

Follow the tracks to the next page

In the space below, DRAW YOUR OWN plant or animal with special adaptations to survive in the cypress habitat.



Label your adaptations and describe how they help your animal or plant.

A large empty rectangular box with a green border, intended for drawing a plant or animal with special adaptations.



Estuary Escape



Find your way through the estuary maze to the offshore island.
Use the word bank to help you fill in the blanks.

START at the mangrove shoreline

Between the _____ shoreline and the seagrass meadows lie the mud _____.

You spot trash in the bay.

You pick it up and leave no trace.

Florida Bay, Biscayne Bay and the Ten Thousand Islands serve as _____, where infant marine organisms live.

You stop to look at a manatee munching on seagrass.

Leave it for someone else.

Florida Bay, Biscayne Bay and the Ten Thousand Islands are _____.

Seagrasses grow throughout the Bays. Can you name them?
1. _____
2. _____
3. SHOAL GRASS

Boat groundings can be very harmful when boating through the bays. Always:
a. Use a nautical chart ("water map")
b. Follow navigational aids (like street signs, but in the water)
c. Be aware of how deep the water is
d. All of the above

An **estuary** is a place where _____ water from the land mixes with _____ water from the sea.

You use your nautical chart to find your way.

-- **True or False?** --
Since there is not enough sediment on the bottom to allow seagrasses to grow, "hard bottom" areas are lifeless.

You get a bit lost in the bay.

_____ are filter feeders. Not only do they clean the bay, they also provide a home for small animals.

The water is so clear you spot sponges and other marine creatures.

You are NOT prepared. You end up going in circles.

_____ are predator that uses sonar to hunt for its prey.

What percentage of Florida's fish, crustaceans, and shellfish spend part of their young lives in the estuaries.
a. 3% b. 15% c. 70% d. 48%

Name the shy reptilian residents of estuaries, with pointed snouts, that build nests along saltwater shorelines.

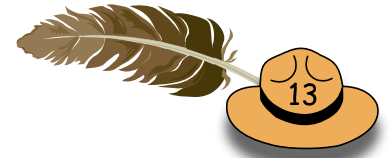
You spot something in the distance. You stop to look.

You FINISH exploring the Bay and stop to rest on one of the islands that dot the horizon.

- Word Bank**
- salt
 - fresh
 - sponges
 - nurseries
 - crocodiles
 - manatee
 - grass
 - turtle
 - grass
 - mangrove
 - estuaries
 - dolphin
 - flats



Plume Hunt



Would YOU wear a DEAD bird on your head?!!

Hopefully not, but in the late 1800s and early 1900s it was fashionable for women to wear hats with birds or feathers on them. It was as fashionable as _____ is today.

Fill in your favorite fashion trend

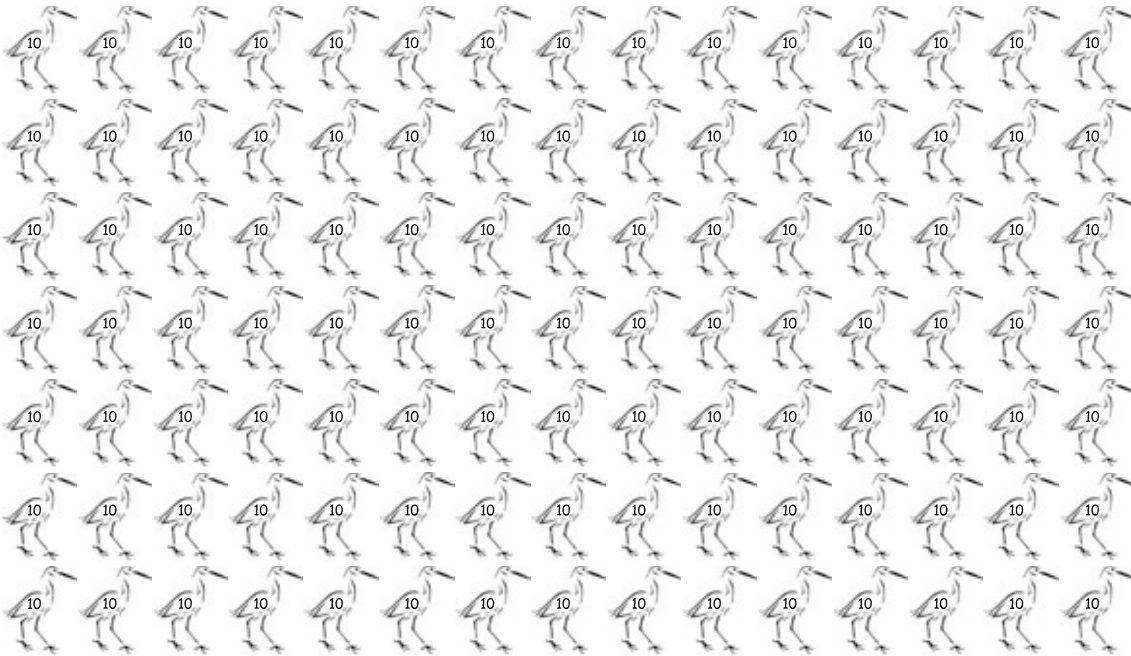
The difference, though, was in order to get the feathers, or plumes, people had to shoot the birds. Plume hunters could make a lot of money by killing the birds with the fancy feathers. Many of these birds were in danger of becoming extinct.

Fortunately, some people were worried that these birds might all die off, so they formed the Audubon Society. They worked to get laws

passed to protect the birds and the number of birds returned to what it was before the hunting began.

In the late 1940s, people started draining the swampland in order to build new homes and create farmland. That changed the birds' habitat and again their populations began to decline. Some of the wading birds were again in danger of disappearing forever. In 1994, the Everglades Forever Act became a law to protect these birds and their habitats. Today, scientists are trying to restore the health of South Florida's ecosystem with the hope that bird, and other animal and plant, populations will increase again.

Keep track of the birds on your visit. For each real bird you see, circle one below.



Try this at home!

To learn more about feathers for fashion and how people helped save the birds, read the book *She's Wearing a Dead Bird on Her Head* by Kathryn Lasky. This book and others are sold at most national park visitor centers.

Flat Frog's Fun Fact



Old-timers say that the flocks of birds used to block out the sun when they flew overhead!

How many birds did you circle? _____

Great! That's the number of birds you've seen on your visit.

Now, multiply that number by 10: _____ (or add up the "10s" inside the birds you circled) That's how many birds you would have seen if you were here in the early 1800s! Scientists tell us that 90% of the wading birds have since disappeared.

How long did it take you to see this many birds? _____



Following the Water



Flat Frog's Fun Fact



An **aquifer** is an underground lake beneath the rock and soil. The limestone rock is full of holes, like Swiss cheese. Water seeps down through the holes. This water is pumped out and used for our drinking water.

First, find the the two main watersheds for South Florida on the map. A **watershed** is an area of land that collects water from rainfall, lakes, and rivers.

Now, **CONNECT THE DOTS** to see how the South Florida National Parks fit into the watersheds. Follow A-U and 1-6 to make the parks' boundaries.

Where does the water come from?

in Everglades:
Lake Okeechobee, rain, canals

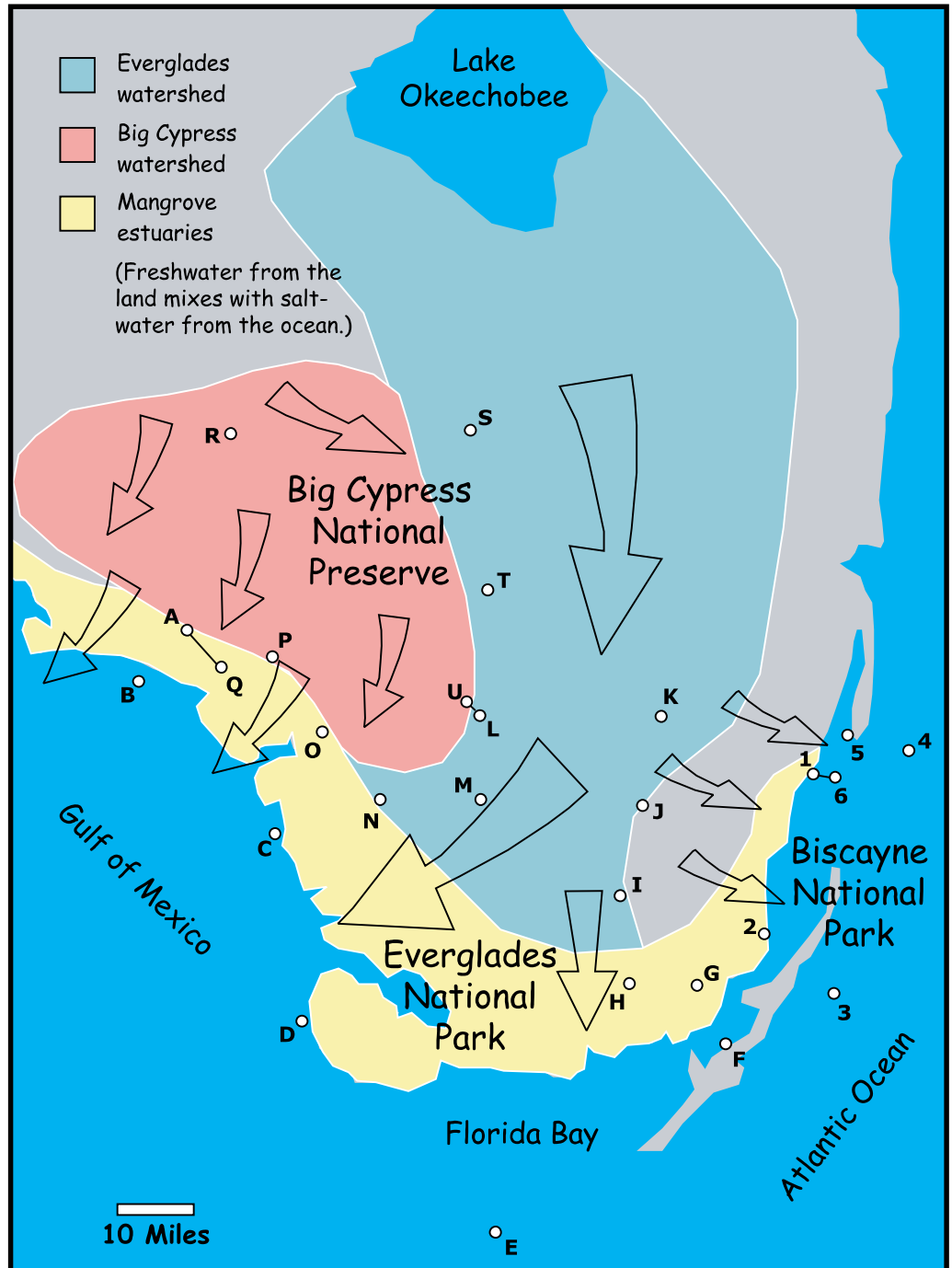
in Big Cypress:
rain

in Biscayne:
rain, creeks, canals

And where does the water go?

Some water soaks into the ground and trickles down to the aquifer, while some water stays on the surface and flows downstream through the watershed.

Into which bodies of water do these watersheds drain? (The arrows on the map point where the water flows.)





Restoring the Watershed



Key:
= 100,000 Wading birds
= 100,000 People

Why does the watershed need to be restored?

For many years, people made changes to the watershed of South Florida. They wanted to live on the land and farm it, but the land in the Everglades was covered with water during most of the year. People dug canals to drain water off the land so that it would be dry enough to build houses and grow crops. This drainage changed the flow of water through South Florida's watersheds and altered the natural habitats. Many birds, animals, and plants are now endangered because of the changes to their habitats.

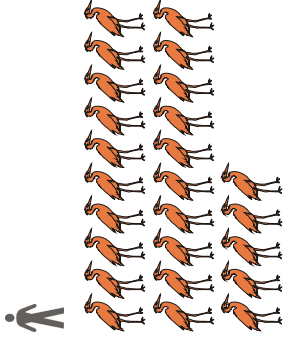
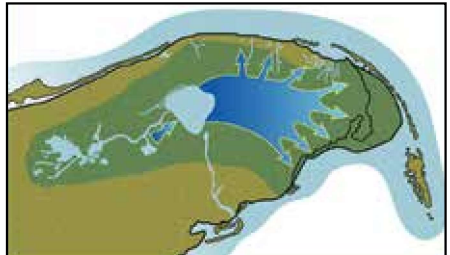
People are now working together to try to fix some of the problems of the Everglades ecosystem. Local, state, and federal government agencies along with private groups have designed a project called the *Comprehensive Everglades Restoration Project*, or *CERP* for short. Although *CERP* will not completely restore the ecosystem, the goal is to create a more natural flow of water through the watershed. Scientists are hopeful that wading bird populations will increase as a result of the restored water flow.

The restoration is scheduled to be completed in the year 2040. How old will you be then?

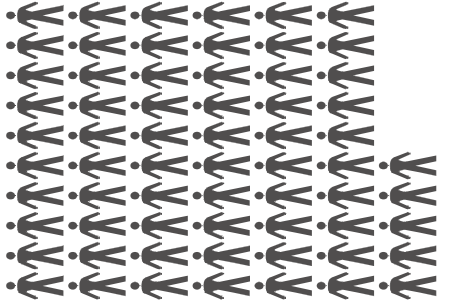
What can you do to help?

CONSERVE WATER! Every drop counts! List 3 ways you will start conserving water when you get home.

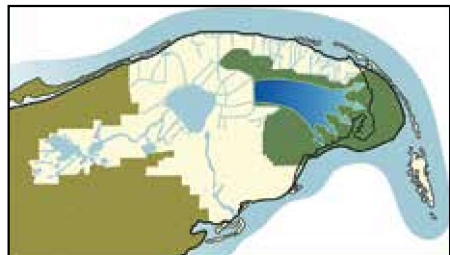
1850 - Before people made changes to Florida



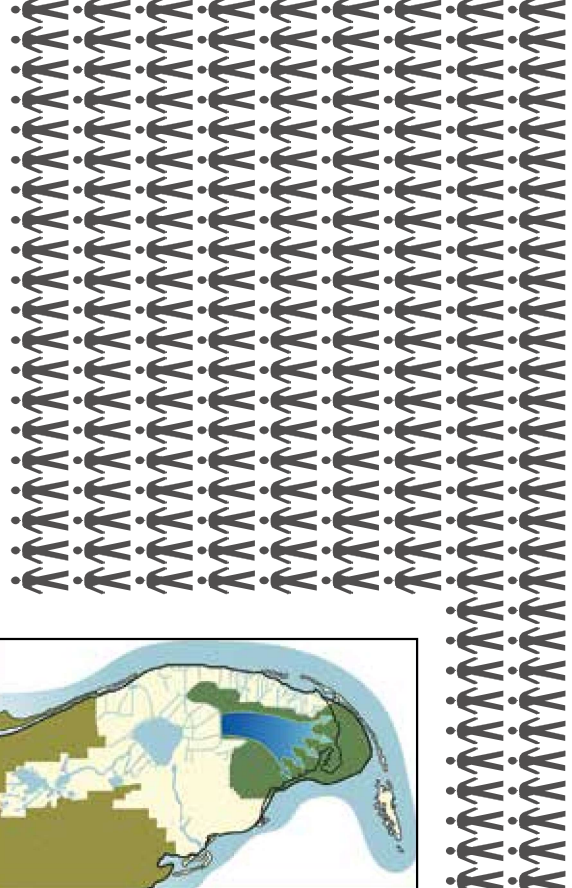
1995 - After people changed the water flow



2040 - At the end of the Comprehensive Everglades Restoration Project



Estimated:



What do you think?

Consider the restoration project and the increase of people living in South Florida. In the space below, draw the number of wading birds you think there will be in 2040. (Remember each bird symbol represents 100,000 birds.)





Listen Up!



Flat Frog's Fun Fact



Maybe you've heard of a LANDSCAPE, but have you ever heard of a SOUNDSCAPE?! A **soundscape** is the collection of sounds that you hear in a place.

CHECK OUT THE **SOUNDSCAPE**

1. Find a spot outside where you can sit or stand.
2. Ask your family and/or friends to join you!
3. Close your eyes and listen quietly for 1 minute.

What Did You Hear?



Write the sounds you heard in the lists below:

Natural Sounds

(made by animals, plants, and things in nature)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Human-made sounds

(made by people or machines)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Can you hear some of these sounds where YOU live? **Circle the sounds you might hear at home.**

Do you think it's important to protect the soundscape in our national parks? Why or why not? _____



When you get home, try this experiment again.

Try this at home!

Natural Sounds

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Human-made sounds

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Where did you hear more natural sounds? (circle one) National Park or home

More human-made sounds? (circle one) National Park or home



Hike or Swim?

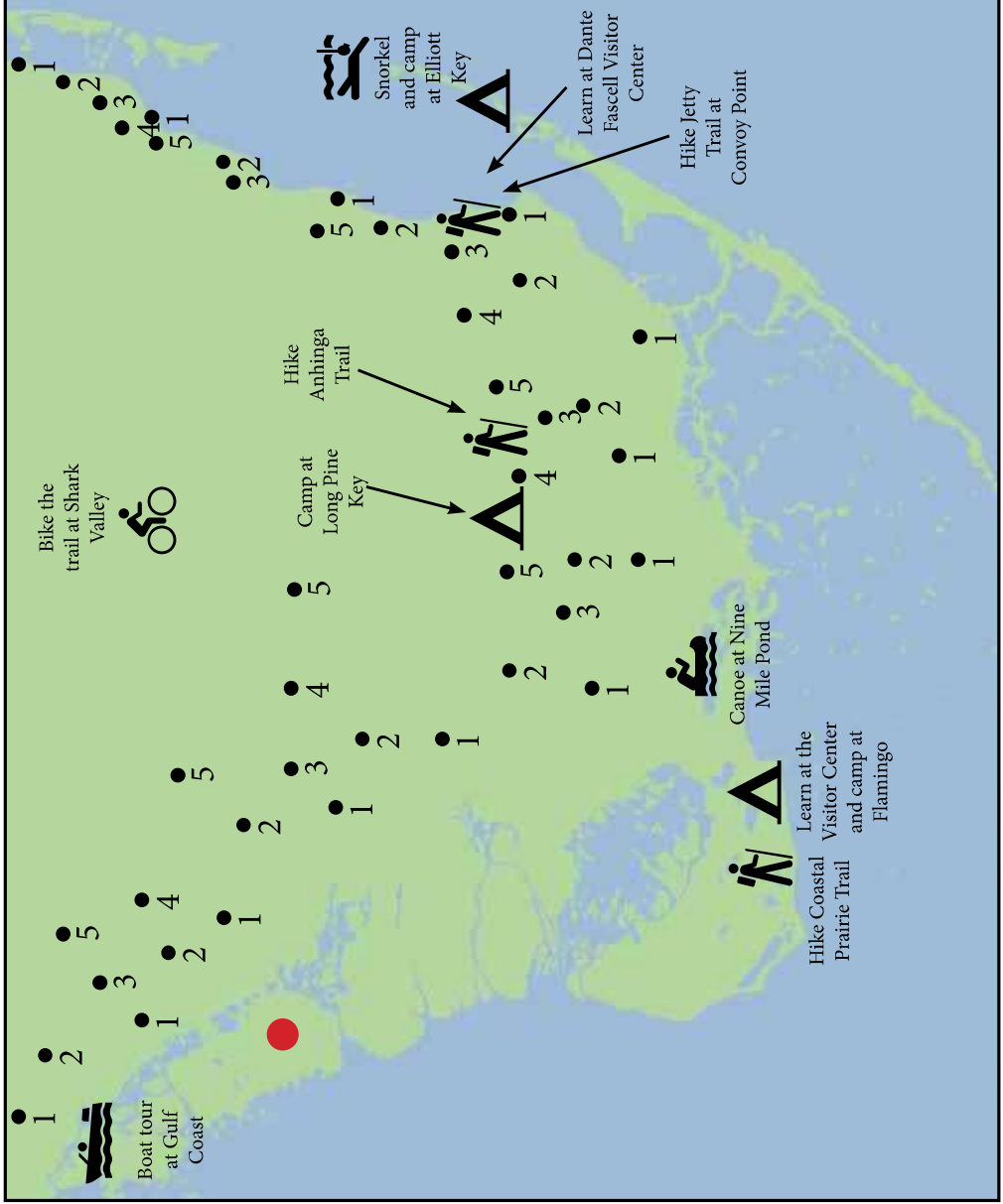


Both Everglades and Biscayne National Parks have oceans or bays as their neighbors. Climate change will cause the sea level to rise and move the Florida coastline inland. One estimate is that the new sea level will be two feet higher by 2100.

Notice some of our favorite activities in the parks are labeled on the map below. Circle activities you would like to do or have done on your visit. What did you circle?

Each point and number on the map represents an elevation, number 1 is one foot, number 2 is two feet and so on.

To find out if your favorite activities might be affected by climate change, connect all of the dots labeled with the number 2.



Pretend the line you just drew is the new Florida coastline. This is what it could look like in the future if the sea level rises two feet higher than it is today.

Find a campsite on the map that we will no longer be able to camp at because it will be wet. Which campsite did you find?

Find a trail on the map that would be hard to hike because it will be underwater. Which trail did you find?

Do you think you may need to bring a snorkel with you to do these activities on your next visit? Or in 100 years?

Find the red dot on the map. This is where an activity on page 5 occurs. How do you think the food chain will change in 100 years?



Journal Time!

Use this space to record your wildlife sightings, observations, feelings, and experiences in the South Florida National Parks.



A series of 20 horizontal green lines, wavy in appearance, providing space for writing.

Sammy the Manatee's Activity Page



Manatees eat 10% of their body weight everyday. So if you weighed 80 pounds you would need to eat 8 pounds of food a day! (That's like 32 quarter-pound hamburgers!)

Boaters can help reduce injury or death to manatees by obeying speed zones, being careful in shallow water, and wearing polarized sunglasses.

The manatee's closest relative is the elephant. The manatee's snout is a modified trunk, which it can use to grab objects.

Manatees have heavy solid bones, which help them stay underwater when they want to.

Men at sea for long periods of time may have confused manatees with mermaids.

A manatee's only teeth are molars in the back of its mouth.

DIRECTIONS:

For each of the parks you visit, do one activity from the list below. Circle the park's symbol next to the activity that you complete.



Attend a guided or ranger-led program.



Walk, bike, or canoe a trail with your family.



Watch a park film or video at a visitor center.



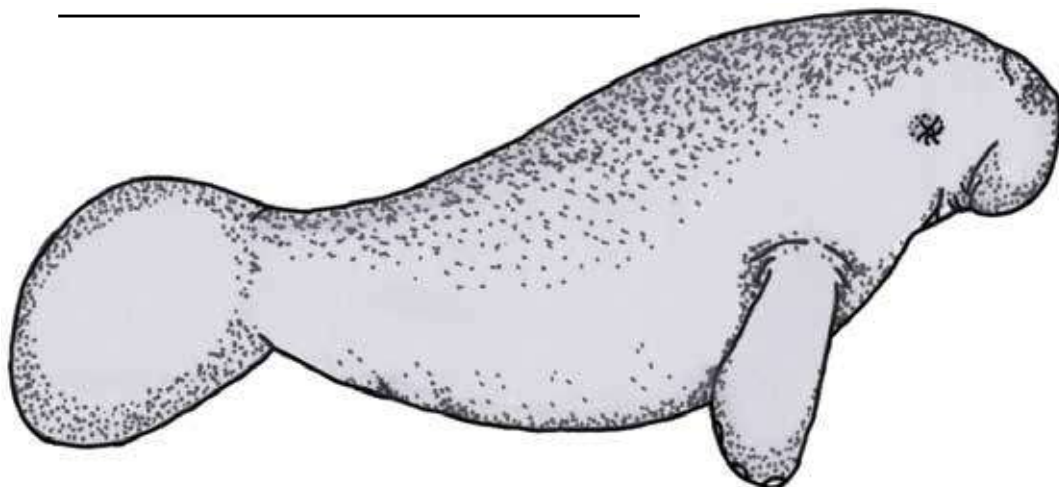
Explore a touch table at a visitor center.



Read a book about the park, ecosystem, animal, or plant found here. Title of book(s): _____



Other activities may be available at the visitor centers. Ask a ranger. Write the activity below: _____



When you are finished, you and a ranger will complete this page together.



Junior Ranger Pledge

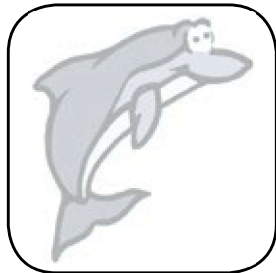
As a Junior Ranger, I _____,
(your name)

*promise to protect and preserve the plants,
animals, and history of the South Florida
National Parks and to keep the air, water, and
land clean. I will share what I have learned
about National Parks with others and will
continue to explore these national treasures.*

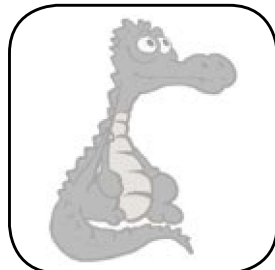
Stamps:



Big Cypress National
Preserve



Biscayne National Park



Everglades National Park

Signatures:

Junior Ranger

Park Ranger

Junior Ranger

Park Ranger

Junior Ranger

Park Ranger

