



Kids Activity Book



Cara Czecholinski

Explore the Florida outdoors and do fun activities to learn about our waters, sustainable fishing, and wildlife!



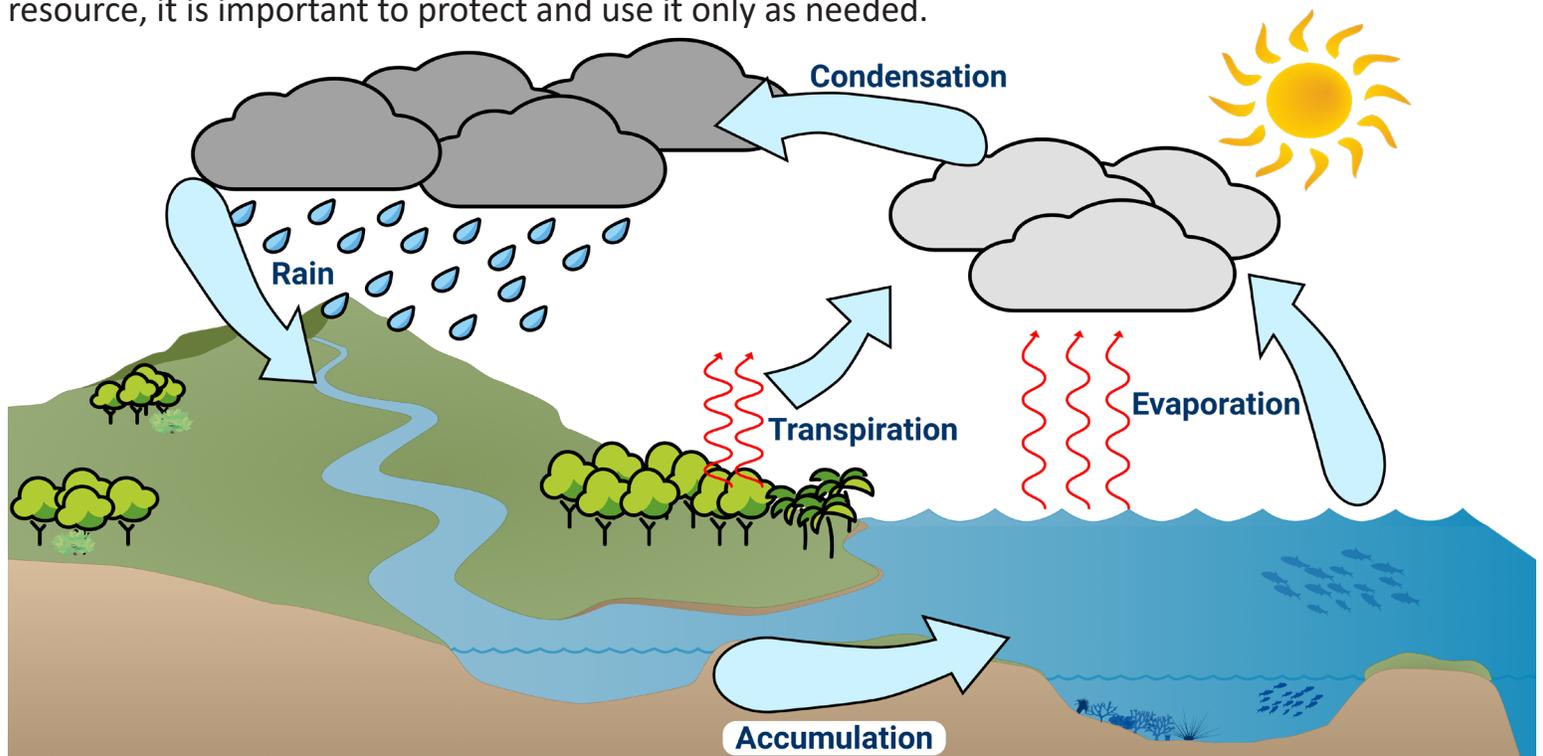
The Water Cycle

How does water move?

Water covers over half of the Earth's surface, but how does it get there? Water moves between the earth and sky through the water cycle. Let's explore the different parts of the water cycle!

Evaporation is when water in waterbodies, like lakes or oceans, is heated by the sun and turns into steam. Water stored in soils and plants is also heated into steam, which is called **transpiration**. The steam travels high into the cooler atmosphere and cools back into a liquid to form clouds - this is called **condensation**. The condensation in the clouds can become so heavy that it falls back down as a liquid in **rain**. When the water falls onto ground, it can soak into the soil or it can fall into waterbodies that flow into rivers, lakes, or the ocean - which is called **accumulation**.

Water continuously moves through this cycle and travels all across the world. Since water is a limited resource, it is important to protect and use it only as needed.



Create a Mini Water Cycle!

What you need: A large clear bowl, a short mug, cling wrap, hot water, soil, and ice

Step 1: Pour the hot water into the large bowl and sprinkle soil in it - this is your waterbody. Place the mug in the middle - this will collect the "rain."

Step 2: Cover the bowl with cling wrap to provide a surface for water to condense. Put ice cubes in the middle of the cling wrap to create a cooler sky and place outside.

Step 3: After several minutes you should see the water start to condense like clouds, then fall in the mug. Once enough water has accumulated, remove the cling wrap to see how much it "rained".

Notice how the water in the mug is clear - this is the water cycle in action!

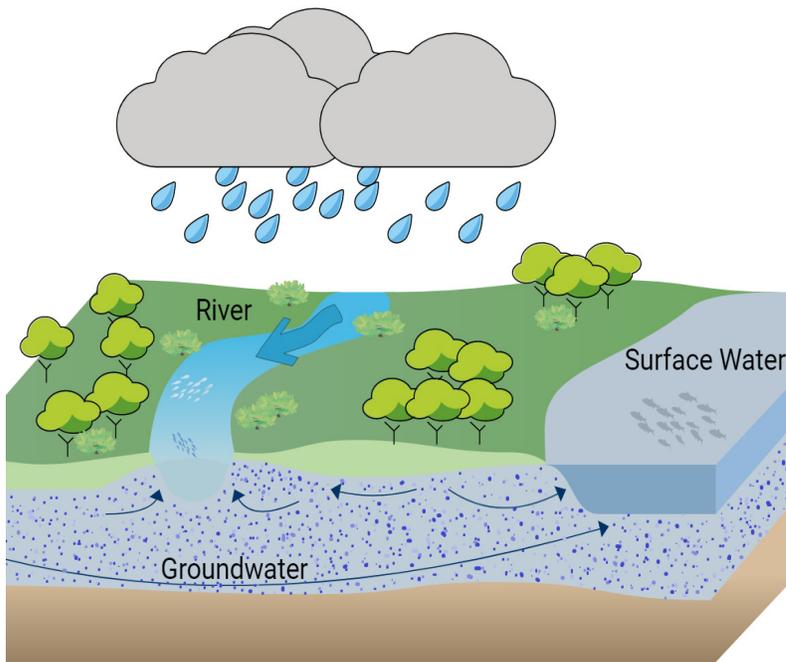


Surface vs Groundwater

Where is water?



Surface water is all the water you can see on the surface of the earth. This includes rivers, lakes, reservoirs, oceans, and estuaries. **Groundwater** is the opposite of surface water and is not easily seen as it sits in the space between rock and soil layers underground. It slowly moves through those layers to underground storage areas called **aquifers**. Groundwater can be used as drinking water by pulling it up through a well and pumping it out through pipes. Although groundwater is protected by rock and dirt layers, overtime some pollutants can go into the ground and then into the groundwater. Keeping pollution off land keeps it out of our surface and groundwater.



Explore Groundwater!

What you need: Clear cup, cling wrap, soil, gravel, seeds, and a spray bottle with water

Step 1: Add one inch of gravel to the cup. Pour enough water to cover the gravel – this is your groundwater.

Step 2: Mix the seeds into the soil and pour over the gravel. Then spray the soil with water.

Step 3: Cover the cup with cling wrap and keep on. Place your terrarium near sunlight to watch groundwater grow your plant!



Build an Edible Aquifer!

What you need: Gummy bears, clear soda, ice cream, cereal, crushed cookies, straw, and a clear cup

Step 1: In the clear cup add gummy bears - this is sand and gravel.

Step 2: Pour enough clear soda into the cup to cover the gummy bears - this is groundwater.

Step 3: Add a layer of ice cream and seal the edges to represent a confining layer in the aquifer. This layer prevents anything from getting into your groundwater and contaminating it.

Step 4: Add cereal to represent gravel and crushed cookies to represent the top layer of soil where plants can grow. You now have an aquifer!



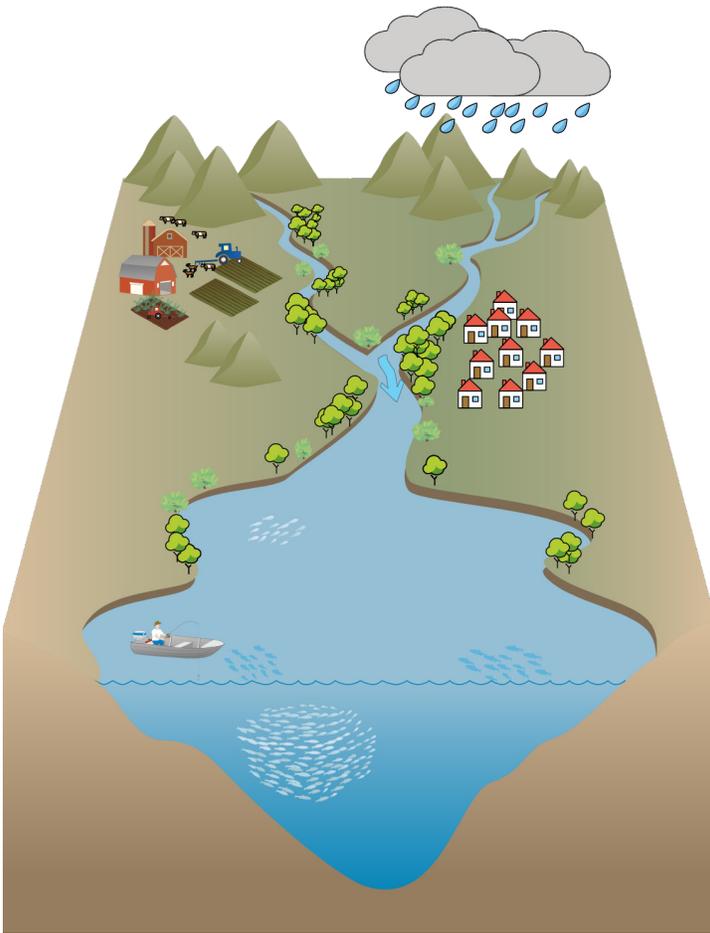
How do you get groundwater out to drink? You can use a straw, which acts like a well to pull the liquid up from underground. Use your straw to drill down to the groundwater and drink it. Enjoy eating the aquifer!



Watershed

Where does water flow?

A **watershed** is the land area that drains water down to a central location like a lake, estuary, or ocean. It acts like a shallow bowl, where the edge is a hill or higher point of land. All water flows down the edges to the lowest point in the watershed. Watersheds are different sizes and include surface waters like streams, rivers, and lakes, plus all the water underground. They connect thousands of acres of land, so everyday activities on land can affect the quantity and quality of water downstream.



Learn about Pollution!

Pollution is when unnatural materials enter the environment, making it dirty and harming people, wildlife, and plants. This includes trash, oil, chemicals, and more. All life depends on a clean environment to be healthy.

What you need: Clear container, 1/3 cup oil, 1 tbs cocoa powder, small toy animals, sand, trash, spoon, cotton ball, paper towel, dish soap

Step 1: Fill the clear container halfway with water. Add sand and the toy animals to represent a watershed!

Step 2: Mix oil with cocoa powder and add to the water.

Add the small pieces of trash. This represents different types of pollution.

Step 3: Take turns using the spoon, cotton ball, and paper towel to clean-up the water.

Step 4: Use dish soap and a paper towel to clean the toy animals.

Were you able to clean-up all the pollution?



Build a Watershed!

What you need: Shallow pan, wax paper, washable markers, spray bottle with water, and cocoa powder

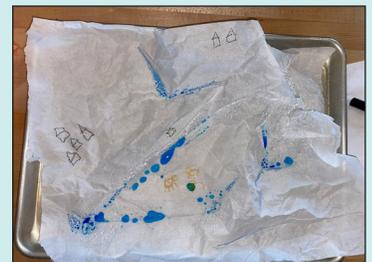
Step 1: Cut a piece of wax paper to the size of the pan and crumple it into a ball. Lightly unfold the paper and place it into the pan.

Step 2: With a blue marker, draw where you think the water would go if it rained. Remember that water moves towards the lowest points. This is your watershed.

Step 3: Spray the watershed with water and see where water flows.

Step 4: Sprinkle cocoa powder on the watershed to represent pollution.

Step 5: Spray with water and see how the pollutants enter the watershed.



Habitat



Habitat is where animals and plants live. It provides animals with everything they need to live - food, water, and a home. Florida has many different types of wildlife that live in a variety of habitats. Protecting their homes and our natural environment ensures the survival of these animals. Freshwater habitats in Florida include lakes, rivers, springs, creeks, and ponds.



Lakes

Florida has over 7,000 freshwater lakes that provide homes for wildlife! When visiting a lake, you can find alligators, fish, turtles, frogs, birds, and many different insects. Plants like waterlilies and cattails grow in and around lakes; acting as a natural filter to help keep the water clean.

Rivers

Rivers move water throughout the watershed, either quickly or slowly, shaping the land around them. They can flow into lakes, estuaries, or the ocean. Rivers are home to alligators, fish, otters, and many other types of wildlife.



Create Habitat!

What you need: Recycled or construction paper, water, blender or food processor, wildflower seeds, and a muffin tin (optional)

Step 1: Rip paper into small pieces and cover with water for 20 minutes.

Step 2: Squeeze out the water and put into a blender or food processor.

Step 3: With adult supervision, blend the paper until it has a pulp consistency and pour into a bowl.

Step 4: Push a small handful of the paper pulp into the muffin tin or squeeze into a small ball.

Step 5: Sprinkle seeds on top of the pulp, cover with more pulp and press firmly down to stick.

Let the seed balls dry for several hours. Once dry, throw the balls outside and watch them grow after it rains!





Sustainable Fishing Tips

Hooks and Knots

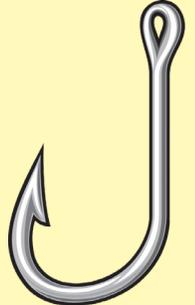
The first part of fishing sustainably is having the right set up! Here is a guide to get you started.

When bait fishing, there are many different types of hooks to choose from. The two main types of hooks are **J Hooks** and **Circle Hooks**.

Circle Hooks have a more circular shape. These are easier to hook in the mouth of the fish and are less likely to get stuck in them - so these are the best hooks to use when you are fishing for fun and plan to release the fish you catch.

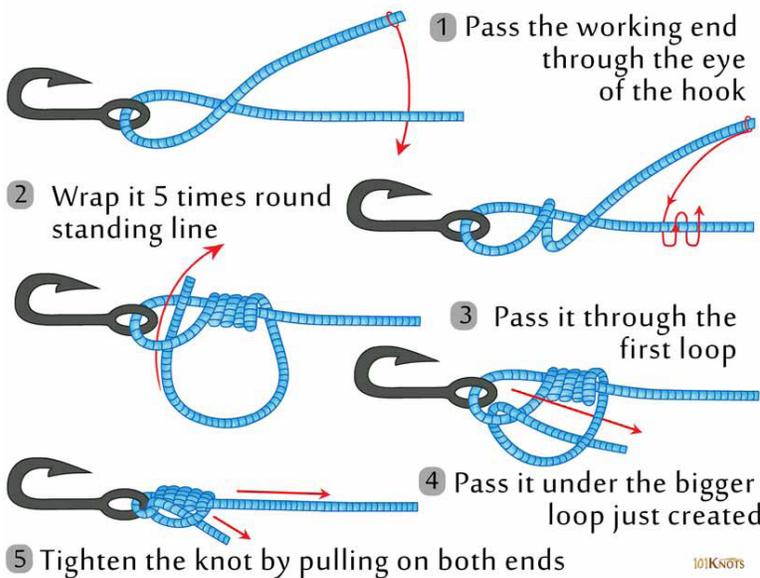


J Hooks are shaped like the letter "J." These types of hooks can get hooked on any part of the fish - not just the mouth. They can also get stuck inside of the fish which can cause an injury.

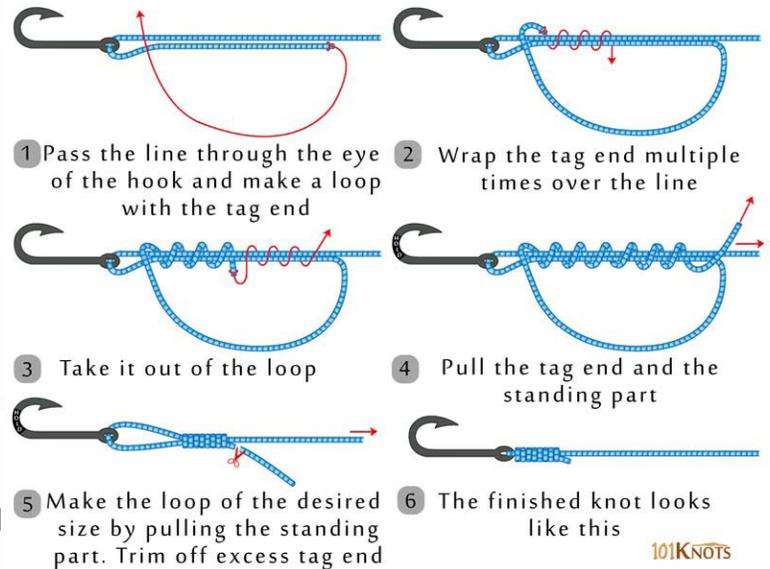


Your fishing rig is only as strong as your knot, try these out!

Improved Clinch Knot Instructions



Uni Knot Step By Step



What's in your tackle box?

Be sure to bring these essential items with you when you go fishing!

- Extra fishing line
- Lures
- Bait
- Different sizes of hooks
- Bobbers
- Swivels and snaps
- Leaders
- Sinkers



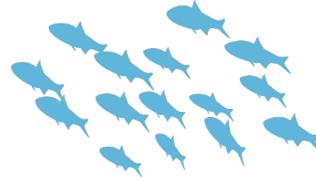
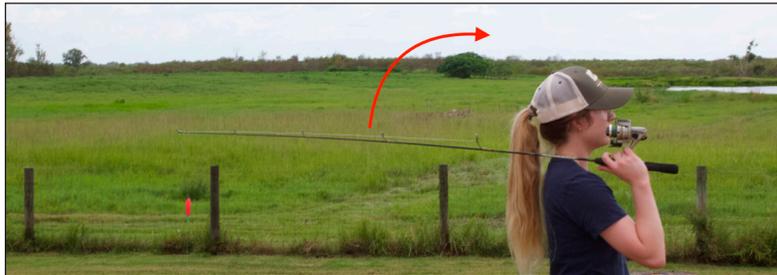
- Dehooking device
- Ruler/scale
- Identification manual
- Regulations Guide
- Small flashlight
- First-aid kit
- Insect repellent
- Sunscreen



Casting a Fishing Pole



Now that you have all your equipment, it's time to go fishing! Follow along to learn how to cast a spin-cast reel and what type of bait to use.



1. Point the rod at the target. For a spin-cast reel, push and hold the button. For a spinning reel, use your index finger to hold the line to the rod and use your opposite hand to flip open the bail. This makes your line slack.
2. Check behind you to be sure the area is clear. Bring the rod back behind you over your shoulder, making sure the line is untangled.
3. Swing the rod forward until it is pointed straight up then release the button.
4. Continue the casting motion forward until your rod is parallel to the ground!

When you catch a fish, be sure to land it quickly! You can use a knotless net to easily land the fish without any injury. Knotless nets prevent the fish from losing its protective slime layer so they can be safely released if they are undersized or not wanted.

What type of bait should you use?

Worms are an easy way to catch a freshwater fish. To place the worm on your hook, hold it tightly and place one end through the hook then continue until the worm covers most of your hook.

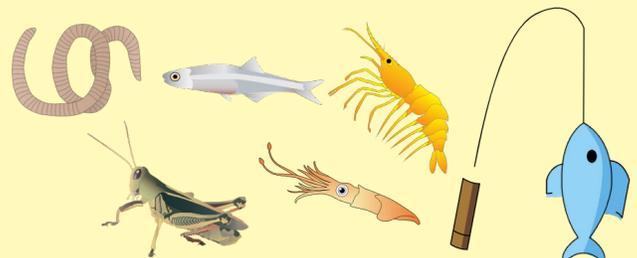
Minnows are small-sized fish. Place the hook through the top of the minnow to keep it alive and swimming in the water.

Grasshoppers or **crickets** can be used to catch freshwater fish and can be found around lake and rivers. Place the hook through the middle of them to keep them moving in the water.

Shrimp can be used as live or dead bait. Place the hook through the head of the shrimp.

Squid and **Baitfish** are used for saltwater fishing. Squid can be bought frozen and cut into pieces, and baitfish can be caught with a net.

Lures are made to look like live bait and can be used in all types of fishing.





Stewardship when Fishing

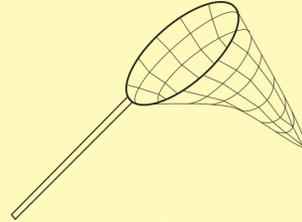
Stewardship is the careful and responsible care of something. Being a good steward means being mindful of your actions and how they affect the environment and wildlife. Here are some tips on how you can be a good steward of water and wildlife when you are out having fun fishing.

Catch and Release

By practicing catch and release fishing, healthy fish populations can be restored and maintained for generations. This ensures you and your family will always be able to fish!



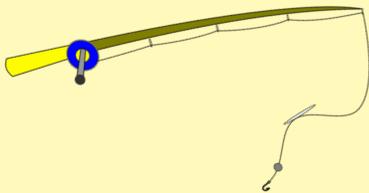
Land the fish quickly to prevent the fish from being tired or injured.



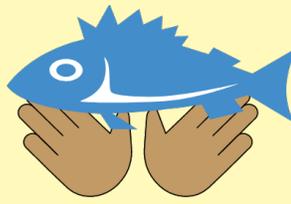
Use a knotless net to protect the fish.



Keep the fish in the water at all times. You can take a great photo this way!



Make sure to cleanup any fishing line and throw it away. Birds and other wildlife can get stuck in loose fishing line.



If you need to handle the fish, hold the fish with two wet hands - one towards the front and one under its belly.



Be gentle with the fish. If you need to revive the fish, gently move it towards the current of the water or move it in a "S" pattern.

Protecting Wildlife

When you are outdoors, you are in the homes of our wildlife. Here's some ways you can protect where they live.

- Pack trash out
- Don't feed wildlife human food
- Give wildlife space
- Alert an adult to injured animals



Steve Richardson

Protecting Water

One way to keep trash from entering our waterways is to properly throw it away - including recycling. Also, by recycling and reusing things as much as possible, we make less trash. Here are some items you can recycle at home:

- Cardboard
- Paper
- Beverage and food cans
- Plastic bottles
- Glass containers



See how many things you can recycle!

Wet Wildlife Homes



Rivers meet the sea in areas called **estuaries**, which can also be called bays, harbors, sounds, and passes. They are home to many different types of animals and plants and serve as important nursery habitat to some. Explore the different habitats where wildlife live in wet homes!



Seagrass Meadows

Seagrasses are underwater flowering plants that provide food for threatened Florida manatees, endangered sea turtles, and many different fish. They are especially important as nursery habitat for very young fish and for protecting shorelines from erosion by wind and storms.

Salt Marshes

Salt marshes form between saltwater and land and are often underwater from tides. They are made up of many different types of grasses that help maintain clear water and protect coastal areas from flooding. Salt marshes provide a home to young fish, crabs, mussels, and many other species.



Mangrove Forests

Mangroves are trees that are adapted to live in saltwater. These forests provide nesting areas for birds and shelter for young and adult marine animals. There are three different types of mangroves (black, white, and red) that protect the coast from flooding caused by storms.

These habitats house a lot of **biodiversity** - the variety of life in a certain area! All living things are connected and depend on each other. When we preserve biodiversity, we protect the food we eat, the water we drink, and the animals we enjoy seeing.

Discover Biodiversity!

What you need: Square made out of cardboard, paper, pencil.

Step 1: Cut a square of cardboard and place it in a natural area outside.

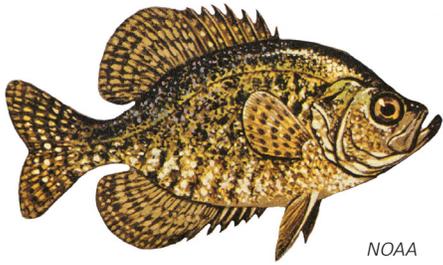
Step 2: Write down all the different plants and insect you see! You can even try to draw what you see. What is there that provides them habitat? Try to draw how they are all connected!



Florida Wildlife Guide

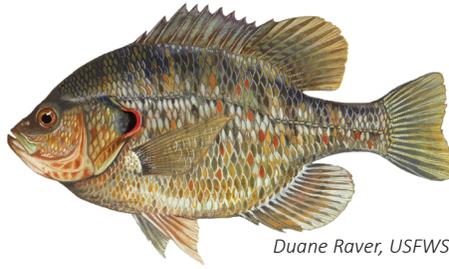
Freshwater Fish

These fish are found in freshwater habitat across Florida!



NOAA

Black crappie
Pomoxis nigromaculatus



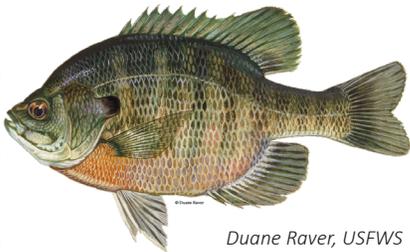
Duane Raver, USFWS

Redear sunfish
Lepomis microphus



Duane Raver, USFWS

Warmouth perch
Lepomis gulosus



Duane Raver, USFWS

Bluegill
Lepomis macrochirus



Largemouth bass
Micropterus salmoides

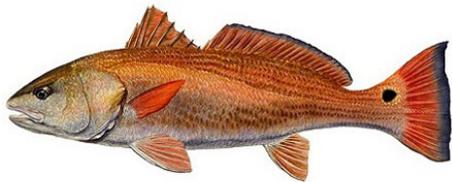


Duane Raver, USFWS

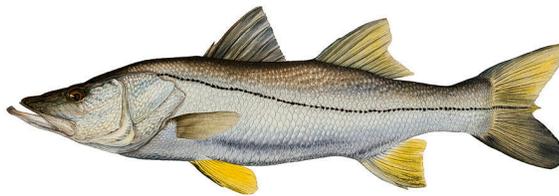
Channel catfish
Ictalurus punctatus

Saltwater Fish

These fish are found in saltwater habitat across Florida!

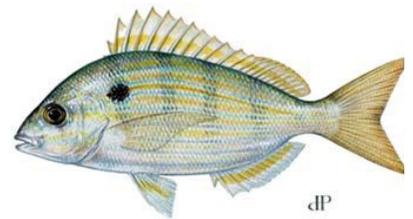


Redfish
Sciaenops ocellatus



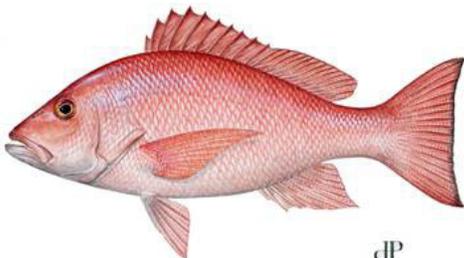
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Common Snook
Centropomus undecimalis



dP

Pinfish
Lagodon rhomboides



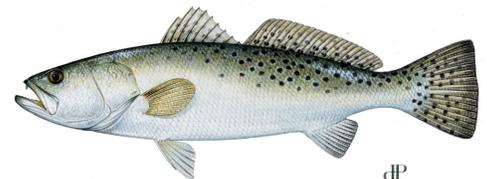
dP

Red Snapper
Lutjanus campechanus



Illustration by Dave Bone Protein

Sheepshead
Archosargus probatocephalus



dP

Spotted Seatrout
Cynoscion nebulosus

Birds



Steve Richardson

Aninga
Anhinga anhinga



Frank Schulenburg

Double-crested Cormorant
Nannopterum auritum



FL FWC

Snowy Egret
Egretta thula



John Guiseppi

Great Blue Heron
Ardea herodias



Barbara Brooks

Osprey
Pandion haliaetus



Steve Griffin

Roseate spoonbill
Platalea ajaja



Ava Rittiff

Burrowing Owl
Athene cunicularia



Craig Faulhaber

Florida Scrub Jay
Athene cunicularia



Judy Gallagher

Northern mockingbird
Mimus polyglottos

Reptiles



Eileen Fonferko

American Alligator
Alligator mississippiensis



Eileen Fonferko

Florida Softshell Turtle
Apalone ferox



FL FWC

Gopher Tortoise
Gopherus polyphemus

Florida Box Turtle
Terrapene carolina



Lee Martin



John Courtney

Green Anole
Anolis carolinensis

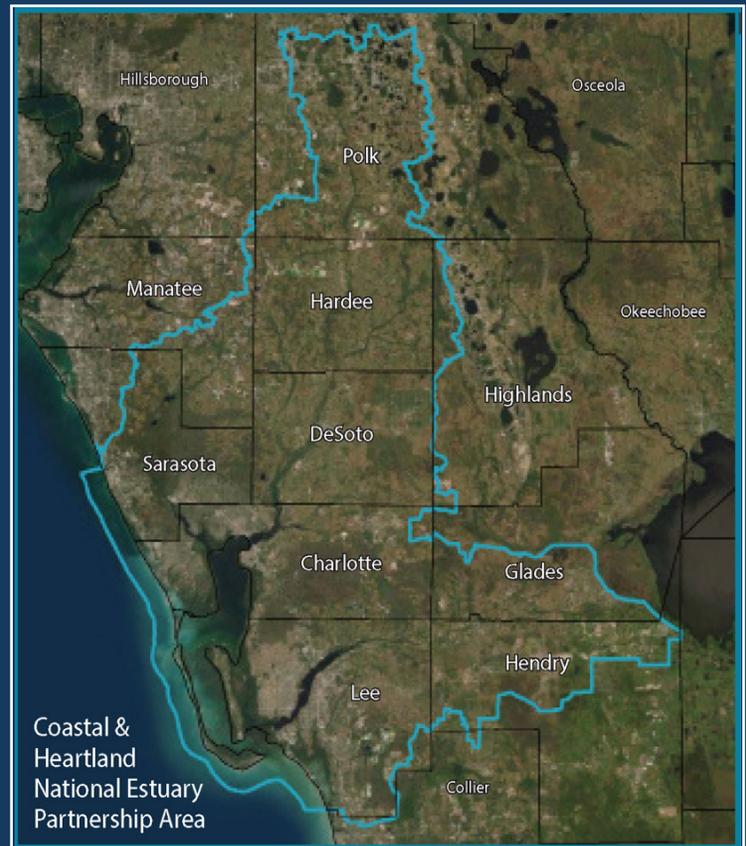


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About the Coastal & Heartland National Estuary Partnership

The Coastal & Heartland National Estuary Partnership (CHNEP) was formed by Congress in 1995 to protect “estuaries of national significance” and their watersheds in Central and Southwest Florida. The partnership of governmental and private organizations work together to protect and restore waterways and wildlife habitat throughout the CHNEP Area (outlined in map to right).

The CHNEP serves 5,416 square miles from Polk to Lee County, including Dona & Roberts Bays, Lemon Bay, Charlotte Harbor, Pine Island Sound, San Carlos Bay, and Estero Bay. These estuary watersheds have many lakes, streams and rivers - including the Myakka, the Peace, the Caloosahatchee, and the Estero. The CHNEP focuses on Water Quality Improvement, Hydrological Restoration, Fish, Wildlife & Habitat Protection, and Public Engagement. To learn more, visit CHNEP.org.



We offer free volunteer events for all ages, for those interested in getting more informed and engaged in protecting Central and Southwest Florida's waters and wildlife. To learn more about how you can get involved, please go to www.CHNEP.org/monthly-volunteer-events.

