Tampa Bay Estuary Program

Tampa Bay Ecosystem

Summer Camp Activities & Curriculum

Introduction:

These activities and curriculum are for Tampa Bay area summer camps. The activities' themes focus on the Tampa Bay ecosystem and associated habitats, including the local plants and wildlife. The Background sections and additional resource sections provide summer camp staff the information necessary to complete the activity. Extensive knowledge about Tampa Bay ecology is not necessary; however, personal experience and/or expertise of individual camp staff would be a welcome addition to the activities. None of the activities was created assuming the participating summer camp locations have direct access to the coastal communities of Tampa Bay. All activities could be conducted by summer camp staff at any summer camp location regardless of existing amenities at their specific location (e.g., in available gymnasiums, recreation rooms, basketball/tennis courts, outdoor open areas, natural areas, etc.).

If summer camp staff desire additional resources to supplement their personal knowledge level and understanding of Tampa Bay ecology, resources are included. There are also abundant internet resources available such as the Tampa Bay Estuary Program (http://www.tbep.org/), the Southwest Florida Water Management District (http://www.swfwmd.state.fl.us/) specifically the publications and education links, the Florida Fish and Wildlife Conservation Commission (http://www.myfwc.com/), and the Florida Department of Environmental Protection (http://www.dep.state.fl.us/). These sites tend to have information specific to Florida and/or the Tampa Bay area; however, there are also university websites and Federal agency sites such as the U.S. Fish and Wildlife Service (http://www.fws.gov/) and the National Oceanic & Atmospheric Administration's National Marine Fisheries Service (http://www.nmfs.noaa.gov/).

We hope that Tampa Bay area summer camps enjoy using these activities and we encourage the adaption of these activities to fit each camp's own specific location parameters and campers.

Tampa Bay Wildlife and Habitat Connections

❖ Summary

Campers will actively find their matching wildlife card pair. After finding their matching wildlife card pair, campers will identify and connect wildlife to the diverse habitats in the Tampa Bay ecosystem including discussions about the animals' natural history and opportunities for environmental stewardship.

❖ Objectives

Campers will:

- Match their wildlife half-card with another camper's matching half card
- Try and correctly identify their Tampa Bay animal
- Answer the animal natural history questions on the back of each card to the best of their ability.
- As a group, discuss a few or all of the animals as time allows.

❖ Estimated Time for Activity

- 45 – 60 minutes

❖ Materials

- Print 22 Tampa Bay wildlife cards, double-sided and cut in half.
  - 22 sheets of 8.5" x 11" photo paper or white cardstock
  - Optional - 22, 8.5" x 11" self-adhesive lamination sheets
  - Scissors or cutting board
- First print questions (1 page) on each of the 22 cards.
- Next, print the wildlife images (pages 1-22) on the backs of the cards.
- Write the corresponding wildlife number from the answer key only on the left-half of the 8.5" x 11" card. *If you write this number on both halves, the campers will quickly realize to only look for their number thereby not using the wildlife image and their observation skills to find their other wildlife half.*
- Optional - Prior to cutting, the cards could be laminated for long-term use.
- 22 wildlife cards allow 44 youths to participate.
  - If you have 22 youths or fewer, you may want to do this activity twice during the week; use the more commonly known wildlife earlier during camp (e.g., raccoon, bottlenose dolphin). Then later after the campers have learned about more wildlife, use the less commonly known wildlife cards (e.g., Eastern oysters, mangrove salt marsh snake, double-crested cormorant).

❖ Setting

This activity can be conducted either indoors or outdoors.

Tampa Bay Wildlife and Habitat Connections

❖ Vocabulary and Concepts

Estuary, brackish water, habitat, beach, shoreline, mud flat, oyster bar, sandy bottom, sea grasses, open water, predator, prey, detritus, wildlife vs. domestic animals, Florida wildlife vs. captive animals (e.g., zoos, aquariums, etc.), native vs. nonnative vs. nonnative invasive species (Extension Activity)

❖ Background

The Tampa Bay ecosystem is home to diverse wildlife including birds (wading birds, diving birds, shorebirds, raptors, songbirds, etc.), reptiles, amphibians, fish, invertebrates (insects, bugs, snails, bi-valves, marine worms, etc.), and mammals (aquatic and land mammals). Some of these animals live here year-round, while others migrate through on a seasonal basis. Regardless, all of our Tampa Bay wildlife depend on the healthy habitats found throughout the Tampa Bay area.

Tampa Bay is a large estuary surrounded by Pinellas, Hillsborough and Manatee counties. Estuaries are areas where saltwater and freshwater meet and mix together. Estuaries are sometimes referred to as brackish waterways as they are typically not as "salty" as the neighboring ocean or gulf, but the water does contain salt, so it cannot be classified as a freshwater system.

The amount of actual salt (salinity) in the water can fluctuate daily, seasonally, or yearly. Major salinity influences on the salinity in Tampa Bay include the daily and seasonal tidal flows and the amount of freshwater entering Tampa Bay. Most of the freshwater entering the estuary is from springs, rivers, rainfall, and runoff from roadways, rooftops, yards, parking lots, storm drains, etc. Because of the rainfall's influence on the bay salinity, Florida's rainy season from June through September typically lowers the salinity compared to our dry season October through May when we typically do not receive as much rainfall.

Humans can also influence the salinity of Tampa Bay by increasing or decreasing the amount of freshwater we divert and use prior to it reaching the bay. We divert freshwater from the rivers for drinking water, irrigation, agriculture, etc. that would normally flow into Tampa Bay. We also pump ground water, use or divert water that would recharge the ground water system, which ultimately can influence the salinity in Tampa Bay. Fortunately, there are rules and regulations, and state and federal agencies that are specifically tasked with monitoring and regulating the freshwater systems so that human needs, wildlife needs and habitats' needs are balanced so that all receive adequate freshwater. This balance of freshwater use is critical for all species' survival and is often a difficult and complex process.

The actual Tampa Bay waterbody (e.g., the body of water labeled "Tampa Bay") supports aquatic habitats such as sea grass meadows, mudflats, beaches and shorelines, mangrove forests (red, black, and white mangroves), and saltwater marshes. However, the Tampa Bay ecosystem includes all the habitats found within the Tampa Bay waterbody including freshwater marshes and the adjacent terrestrial (land) habitats such as upland forests (pine flatwoods, palms, and oak hammocks). This mosaic of terrestrial and aquatic habitats provides excellent nesting, foraging, roosting, and resting areas for all of our resident and migratory wildlife. In fact, some animals such as the

white ibis (bird) can live easily in the saltwater or freshwater habitats; however, breeding adults must have access to freshwater marshes and ponds to catch fish to feed their young as the small fish in saltwater and brackish water systems are too “salty” for the young white ibis to eat.

❖ Activity

Begin the activity by asking the campers what types of animals are found in the Tampa Bay area (e.g., birds, fishes, mammals, invertebrates, reptiles, etc.). Next, ask where do these animals live? In the actual water of Tampa Bay (e.g., fish, bottlenose dolphin)? Along the shallow edges of the water (e.g. like our long-legged birds, the herons and egrets)? In and around the marsh grasses and shrubs (e.g., mangrove salt marsh snake, white ibis)? This discussion is only meant to initiate the activity, children often have elaborate stories or imaginations about wildlife and this introductory discussion could easily take longer than the few minutes intended. These introductory questions are meant to get the campers thinking about the local wildlife and get excited about the upcoming activity.

Also, keep in mind that children have vast resources available to them and are often not aware that the lions, tigers, grizzly bears, polar bears, penguins, kangaroos, etc. that they see on television shows and other forms of media are not found living wild here in the Tampa Bay area. Please refer to the resources and resource links provided if you would like additional guidance and ideas of wildlife found specifically in the Tampa Bay area. Appreciation and respect for native Tampa Bay wildlife and their habitats is the ultimate goal. If the campers are familiar and interested about wildlife in foreign countries or continents, this is an opportunity for them to direct their wildlife passion to animals they can learn about and observe within their Tampa Bay community.

1. Pass out one-half of a picture card to each camper. If there are an odd number of campers, you may let them match up in “threes” or assign one of the adult chaperones/camp councilors to be a participant.

    a. Suggestion: Make sure to mix or separate half-cards so that you are not handing out the head of an animal to one camper and the matching tail of that same animal to a camper sitting nearby. You want the campers interacting, asking questions, and moving around in search of their matching cards.

2. Allow the campers enough time to circulate around the activity area and find their matching pair. Encourage campers to find their partners on their own, but also watch and help facilitate campers finding one another as needed.

3. Once they find their matching pair, you may want to have them sit down together and quietly discuss the answers to the questions on the backs of their cards. This also makes it easier to determine which campers are still in search of their matching card.

4. Once everyone has found their wildlife card partner, discuss as a group each wildlife species on the cards or highlight only a few animal cards as time allows. Ask either the whole group or those campers with the specific cards if they can name the animal. Discuss the questions on the back of the paired cards including adding any additional information (you may have factual personal experience, learned interesting facts during an environmental training, etc.). Keep the information flowing and be sure to stick with facts—avoid and debunk myths and false teachings that are detrimental to wildlife and the environment (e.g. sharks are "man eaters," the only good snake is a dead snake, etc.).

❖ Extended Activity

After the campers have identified all of Wildlife Connection cards, you can ask the campers if these animals are native or nonnative (a.k.a. exotic). First, explain what is a native species and a nonnative species then share how various nonnative species have arrived in Florida.

Background: Native & Nonnative Species: Native species are wildlife and plants originally from an area in this case Tampa Bay, Florida. Although there is not an agreed upon exact date (January 2, 1500), native species are plants and animals thought to be in Florida prior to the arrival of the European explorers. Remember, the early explorers often brought plants and animals from their home lands so they could guarantee having something to eat or live off—items with which they were familiar. Consequently, when the explorers left, even if only temporarily, they often left the animals and plants behind for either their return trip or for future explorers.

In general, it is thought that animals and plants that were naturally found in Florida prior to the 1500's are native species. Animals and plants that arrived in Florida either naturally on their own (e.g. coyote, nine-banded armadillo, cattle egret through human-caused habitat changes), or brought by humans (citrus, wild hog, European starlings), or some other means (e.g. red imported fire ants and citrus rats via boats) after the 1500's are considered nonnative.

Nonnative species have created numerous problems for our native Florida animals and plants. Since nonnatives are not originally from Florida, they often lack their traditional predators, diseases and other natural population controls existing in their native lands. This competitive edge often allows them to crowd out or survive better than our native species, changing the natural habitats, species diversity and sometimes even the ecosystems' function. This is kind of like a bully on the playground taking over every toy and all of the swings, slides and fun equipment causing everyone else to leave. When this happens, the nonnative species' status (classification) changes from nonnative to nonnative invasive.

Tampa Bay Wildlife and Habitat Connections

In Florida and the United States nonnative invasive species have become such a problem and expense to taxpayers, rules have been adopted and laws passed that prohibit the possession, transport, or propagation of certain nonnative species.

You may want to conduct some investigations of your own prior to discussing the ideas of native versus nonnative species. It is an interesting topic that is always changing. There are continually more plants and animals being imported into the United States; there is often debate even within the scientific community about native versus nonnative designations; and with climate change, these nonnative invaders are on the move.

Tampa Bay Wildlife and Habitat Connections

"Tampa Bay Wildlife and Habitat Connections" Activity - Card Species List – Answer Key
Tampa Bay Estuary Program Summer Camp Curriculum

	Animal Name	General Classification	Where do I live?*	Predator?	Or Prey?	Indigenous Status
1	Anhinga	Bird	Estuary; rests in shrubs/trees along water's edge; fishes in open water	Yes, diet is fish	Yes, most likely when egg or young still in nest	native
2	Black Skimmer	Bird	Estuary; nests and rests on beach; fishes by flying while "skimming" bill along shoreline	Yes, diet is fish	Heavily preyed upon as egg or young (raccoons, gulls, crows, herons); raptors may eat adults too	native
3	Osprey	Bird (raptor)	Estuary; rests in shrubs/trees along water's edge; nests in snags; fishes by diving into sea grasses and in open water	Yes, 98% diet is fish	Yes, most likely when egg	native
4	Southern Puffer Fish	Fish (bony)	Estuary; mud flat; sea grasses; oyster bar; sandy bottom (not preferred); open water (not preferred)	Yes	Yes	native
5	Laughing Gull	Bird	Estuary; rests on beach; nests in dunes; forages shoreline, mud flat, sea grasses when low tide exposes them and open water	Yes, eats live prey as well as scavenges	Yes, most likely when egg or before adult	native
6	Mangrove Salt Marsh Snake	Reptile (snake)	Estuary; rests and hunts in shrubs / trees along water's edge; also hunts and swims in shallow water	Yes	Yes	native
7	Cownose Ray	Fish (cartilaginous)	Estuary; shoreline water; hunts in sea grasses, around oyster bars, and sandy bottom; open water	Yes	Yes	native
8	Gulf Fritillary Butterfly	Invertebrate (insect)	Estuary; nectars beach plants and may rest in shrubs/trees along water's edge; flies shoreline and migrates over open water (migrates over "Gulf of Mexico" = "Gulf" Fritillary	No, eats nectar	Yes	native
9	Lightning Whelk & Egg Cases	Invertebrate (mollusk)	Estuary; mud flat; sea grasses; oyster bar; sandy bottom; open water	Yes, throughout life	Yes, throughout life	native

Tampa Bay Wildlife and Habitat Connections

	Animal Name	General Classification	Where do I live?*	Predator?	Or Prey?	Indigenous Status
10	Nine-banded Armadillo	Mammal	Estuary; forages soil mostly for invertebrates in beach, dune, and shrub/tree habitats; dens underground in coastal habitats that don't frequently flood (higher ground)	Yes, diet is most invertebrates (e.g., worms, grubs, ants, etc.)	Yes, most likely when young and shell is still soft	non-native
11	Fiddler Crab	Invertebrate (crustacean)	Estuary; shoreline; mud flat	No, typically eats detritus (decaying plant and animal matter)	Yes	native
12	Bottlenose Dolphin	Mammal	Estuary; sea grasses; oyster bar; sandy bottom; open water	Yes, diet is fish	Yes, but not often. Most likely when young (e.g., sharks)	native
13	Raccoon	Mammal	Estuary; beach; shoreline; mud flat; sea grasses; oyster bar; will swim across open water to travel to another location	Yes, throughout life (generalist--eat almost anything)	Yes	native
14	Marsh Rabbit	Mammal	Estuary; coastal grasses, shrubs and trees including along water edge; will readily swim open water to avoid predators or to travel	No--eats plants	Yes	native
15	Florida Manatee	Mammal	Estuary; shoreline/very shallow water when mating; feed on sea grasses; open water	No--eats plants	Yes, but not often. Most likely when young (e.g., sharks)	native
16	Green Sea Turtle	Reptile (turtle)	Estuary; females nest on beach; sea grasses; open water	No--eats plants	Yes, from egg through adult (e.g., raccoon, ghost crab, gulls, fish including sharks, etc.	native
17	Dragonfly	Invertebrate (insect)	Estuary; hunts insects when flying in coastal areas (must lay eggs in freshwater where larvae grow then emerge as adults)	Yes, other invertebrates	Yes	native
18	Brown Anole	Reptile (lizard)	Estuary; coastal grasses, shrubs and trees including along water edge	Yes, other invertebrates	Yes	nonnative invasive

Tampa Bay Wildlife and Habitat Connections

	Animal Name	General Classification	Where do I live?*	Predator?	Or Prey?	Indigenous Status
19	Double-crested Cormorant	Bird	Estuary; rests on beach and shoreline, in shrubs / trees along water's edge; fishes sea grasses, oyster bars, sandy bottom, and open water	Yes, diet is fish	Yes, most likely when egg or young still in nest	native
20	Eastern Oysters	Invertebrate (mollusk)	Estuary; oyster bar; open water (young oysters, called spat, need hard substrate like other oysters to cling to for growing)	No, filter feeder	Yes	native
21	Horseshoe Crab	Invertebrate (arthropod--closer related to arachnids, e.g., spiders, than crustaceans, e.g., crabs, lobsters)	Estuary; shoreline; sea grasses; sandy bottom; open water (deep water migrant species)	Yes, eats invertebrates (e.g. crustaceans, clams, marine worms)	Yes, especially as eggs. It is a critical food source for migrating birds (e.g., red knots)	native
22	Great Blue Heron	Bird	Estuary; rests and nests in shrubs/trees along water's edge; beach; shoreline; mud flat; sea grasses; sandy bottom; shallow open water	Yes, eats almost any animal (bird, fish, snake, turtle, lizard, crab, etc.)	Yes, most often when egg or young still in nest	native

*Some of these animals may also use freshwater ecosystems and uplands.

This activity focuses on the typical estuary habitats for these animals, but animals move and do not always "follow the rules."

Tampa Bay Wildlife and Habitat Connections

What can you do to help?

- Don't litter
- Pick up litter
- Collect and recycle fishing (monofilament) line
- Throw away or recycle plastic bags
- Always follow fishing regulations
- Report injured wildlife
- Keep your cats inside--protect their lives and save wildlife lives
- Don't ever chase resting or nesting birds
- Walk around birds resting on the beach--don't make them move
- Help local organizations remove crab "ghost traps" when legally allowed
- Don't feed wildlife--keep them wild
- Plant native plants in your yard and schoolyard
- Scoop the (dog) poop
- Always stay on trails and follow the rules where you are
- Don't injure plants by breaking branches or picking leaves
- Always keep your pets on a leash; don't ever let them chase wildlife
- Be a safe boater and avoid hurting wildlife homes and food like sea grasses
- Avoid using pesticides when possible
- Remove invasive exotic plants and animals
- Avoid getting too close to wildlife. If they change what they are doing when you are near…back up, you are too close!
- Follow fertilizer rules; don't fertilize lawns in the summer and always follow label directions
- Never collect live animals still in their shells (and look for crabs using these shells too)
- Leave nature a cleaner, better place than how you found it
- Nicely share with others how to respect wildlife and their homes
- Know that your actions matter--make the right choices!

Write Campers' Other Ideas Here:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

Who Lives in the Mangroves?

❖ Summary

Campers will learn the importance of our incredible saltwater forests, the mangroves, and learn about the many wildlife species that call the mangroves home.

Let's go on a scavenger hunt quest! Campers conduct a "mangrove forest" scavenger hunt searching for these fascinating mangrove inhabitants. Afterwards, as a group they will discuss the values of mangroves and all functions they provide for our wildlife (food, shelter, space).

❖ Objectives

Campers will:

- Participate in a scavenger hunt by locating animals using the mangroves
- Identify the animals they found in the mangroves
- Campers will relate and discuss why the mangroves are important to their discovered species

❖ Estimated Time for Activity

Approximately 45 – 60 minutes

❖ Materials

- 25 – 30 small photos, drawings, plastic models and replicas of mangrove animals.
    - Suggestions: Some toy companies have inexpensive miniature replicas of animals found in coastal systems and mangroves; use clip art; have volunteers or interns draw the animals; collect used magazines and cut out images.
- Paper to write down # of scavenger hunt items and where they were hidden
- Reusable container(s) to store scavenger hunt items

❖ Potential Scavenger Hunt Items

Invertebrates – Mangrove crab, blue crab, fiddler crab, Gulf fritillary butterfly, dragonfly, mosquito, periwinkle snail, barnacle, clam, shrimp, sponge, oyster

Birds – Great blue heron, little blue heron, snowy egret, brown pelican, yellow-crowned night-heron, black-crowned night-heron, roseate spoonbill, belted kingfisher, osprey, great egret, least tern, royal tern, cormorant, white ibis, mangrove cuckoo

Fishes – Tarpon, snook, mullet, pinfish, killifish, redfish, black-tipped shark, anchovy, sheepshead, southern stingray, cownose ray

Mammals – Raccoon, bottlenose dolphin (hunting a mangrove/water edge), Virginia opossum, Florida manatee, marsh rabbit, river otter, Brazilian free-tailed bat

Who Lives in the Mangroves?

Reptiles – Mangrove salt marsh snake (nonvenomous), Florida cottonmouth snake (venomous), eastern diamondback rattlesnake (venomous), green anole, diamondback terrapin (estuarine turtle), sea turtles (swimming around mangrove islands)

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary and Concepts

Mangrove swamp, drop root, prop root, pneumatophores

❖ Background

Mangrove swamps are one of the most productive ecosystems in Florida providing food and shelter for numerous coastal animals. Mangroves swamps lining our local estuaries provide filtration by absorbing nutrients before they flow into Tampa Bay as well as provide a dynamic erosion barrier by stabilizing our estuarine shorelines.

In Tampa Bay, the three types of mangrove trees are the red, black, and white mangroves.

Red mangroves – distinctive "walking" roots sprawling outward typically along the water's edge. Their prop roots and drop roots not only help stabilize the plant in their sandy/muddy habitat, but they help protect shoreline erosion acting as a barrier against the crashing waves. Even though red mangroves are typically found in brackish and along the brackish water's edge, red mangroves do not like salt. They have a specialized approach drinking in only the freshwater and preventing the salt from entering their roots. Their large leaves are pointed and dark green on top with lighter/yellow-green undersides.

Black mangroves – obvious "fingers" (pneumatophores) sticking up through the shoreline's mud. These "fingers" are part of their root structure helping stabilize the plant in this muddy environment and serving as a snorkel by allowing them to take in necessary oxygen from the air. Black mangroves are typically found farther back towards the land from the water's edge behind the outer red mangrove fringe. Black mangrove leaves are pointed and dark, flat-green on top and silvery/light green underneath. If it has not rained for a few days, you should be able to see the black mangrove leaves covered with salt crystals. Unlike the red mangrove, black mangroves readily drink the salt water only to excrete the salt through their leaves.

White mangroves – lack the distinctive root structures of the red and black mangroves; however, close investigation of their leaves will provide their identification clues. Their leaves are more oval shaped than the red and black mangrove leaves and the white mangrove leaves are almost the same light green/lime green color on both the top and

bottom sides. The leaf tip is typically indented, think “dip in the tip,” and you will notice a pair of tiny bumps, or glands, at the base of each leaf.

Sometimes you may hear the mangroves described by the color of their bark—red, black, and white. However, young trees may not have these colors; red mangroves were actually named after the color of wood under the bark, not to mention the added colors of the prolific lichens growing on the mangrove bark. The two distinct root structures and the dip in the tip are consistently better identification indicators. For additional information, please refer to the resources section.

❖ Activity

1. Hide the photos or toy replicas. If indoors, use available bookshelves or indoor plants as imaginary mangroves. These will also give the campers an idea how small animals can really hide in the mangroves.
    - Remember, always count the items you hide for the scavenger hunt (either total number or number per animal). Even though the scavenger hunt is trying to teach campers about mangroves in a fun activity, items left outside unattended become litter and could potentially harm real wildlife.

2. Begin discussing what a mangrove swamp is and do they think the mangroves may be important. If so, why?

3. Ask the campers if anyone has been in a mangrove swamp and if so, where were they? Were they on a boardwalk or trail or in a kayak or canoe? A school field trip? What animals, if any, did they see?

4. Now it is time for everyone to enter the important “mangrove forest”—begin the scavenger hunt quest!

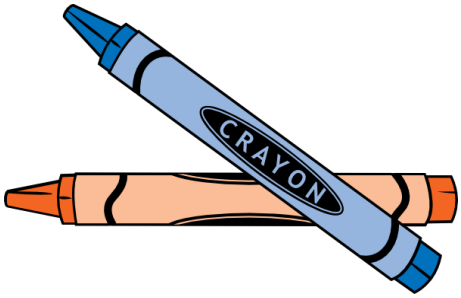
    a. You could operate the scavenger hunt as a contest and award points for the items located (e.g., roseate spoonbill (bird) is worth 10 points, tarpon (fish) is worth 100 points, mangrove crabs are worth 5 points each …)

    Or, you could assign campers to teams that search for specific wildlife types (e.g., Team A searches only for birds, Team B searches only for fish…)

5. After all, of the wildlife animals are collected have each camper select his favorite mangrove animal and as a group discuss how the mangroves are important to that animal’s survival.

Color it Right!

❖ Summary



Today's and tomorrow's ecosystems need environmentally knowledgeable residents and visitors. If each person were to reduce at least some of their negative impacts on nature it would make a large positive impact. Campers will help one another decide how we should or shouldn't behave when exploring nature.

❖ Objectives

Campers will:

- Brainstorm the "right ways" and the "wrong ways" to behave when outdoors exploring nature.
- Look at the two coloring activity pages; decide what are the right and wrong ways for behaving in nature that are shown; write their answers on the pages.
- Color the activity pages.

❖ Estimated Time for Activity

Approximately 60 minutes

❖ Materials

- 1 "Not a Fun Day in Tampa Bay!" coloring activity sheet per camper
- 1 "A Fun Day in Tampa Bay!" coloring activity sheet per camper
- Crayons or colored pencils
- Hard surface for coloring activity—tables, desks, clip boards, etc.
- Dry erase board, chalkboard or large flip chart pad with easel

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary

Recycle, litter, native, nonnative (a.k.a. exotic), nonnative invasive (a.k.a. invasive exotic), habitat, pesticide, fertilizer, wildlife (vs. domestic pets)

❖ Background

With approximately 2 million people living in the Tampa Bay area and many more visiting, the natural habitats and wildlife that also live here depend on us to act respectfully and make positive choices so that the area is healthy today as well as tomorrow. This activity will help accentuate what positive behaviors we should encourage and what negative behaviors we should avoid. Knowing how to behave in natural areas is not instinctual; instead it is a learned behavior that needs to be fostered.

Color it Right!

❖ Activity

As a group, brainstorm the “right ways” and the “wrong ways” to behave when outdoors exploring nature. Under the corresponding column name, write these ideas down for everyone to see. If Camp Counselors have any additional suggestions, ask if they can be shared too. Below are examples of how to behave. Doing the opposite creates a list of ways we should not behave.

Right Ways to Behave when Outdoors Exploring Nature – Examples

- Don't litter
- Pick up litter
- Collect and recycle fishing (monofilament) line
- Throw away or recycle plastic bags
- Always follow fishing regulations
- Report injured wildlife
- Keep your cats inside--protect their lives and save wildlife lives
- Don't ever chase resting or nesting birds
- Walk around birds resting on the beach--don't make them move
- Help local organizations remove crab "ghost traps" when legally allowed
- Don't feed wildlife--keep them wild
- Plant native plants in your yard and schoolyard
- Scoop the (dog) poop
- Always stay on trails and follow the rules where you are
- Don't injure plants by breaking branches or picking leaves
- Always keep your pets on a leash; don't ever let them chase wildlife
- Be a safe boater and avoid hurting wildlife homes and food like sea grasses
- Avoid using pesticides when possible
- Remove nonnative invasive plants and animals
- Avoid getting too close to wildlife
- If they change what they are doing when you are near…back up, you are too close!
- Follow fertilizer rules; don't fertilize lawns in summer and always follow label directions
- Never collect live animals still in their shells (and look for crabs using these shells too)
- Leave nature a cleaner, better place than how you found it
- Nicely share with others how to respect wildlife and their homes
- Know that your actions matter--make the right choices!

After everyone has had a chance to share at least one of their ideas, go through the behaviors to clarify meanings, verify if the group wants to keep each one or any edits that might be made.

Give one of each of the coloring activity pages to each camper. Explain that the campers are to fill in the blanks at the bottom of each coloring activity page while remembering some of the ideas previously shared as a group.

Color it Right!

For younger campers, the words can be read to the campers and then Camp Counselors walk around to each camper and help them write their answers.

Next, have the campers color the activity pages.

❖ Extended Activity

- Conduct the activity again while brainstorming the "right ways" to behave to help nature and the "wrong ways" to avoid that hurt nature when at home, in the backyard, at school or playing in the neighborhood.
    - <u>At Home</u>:
        - take showers instead of baths
        - shorten showers
        - turn off water while brushing teeth
        - never waste food
        - always keep cats inside for their safety and wildlife's safety
        - always recycle cans, paper, plastics, milk and juice cartons
        - help family members choose nature-friendly behaviors too
    - <u>Backyard</u>:
        - remove nonnative grass and replace it with native plants creating wildlife habitat
        - water yard less
        - put up bird nest boxes
        - use fewer, or better yet no pesticides and fertilizers
        - remove nonnative invasive plants
        - plant trees to shade house roof
        - learn about the wildlife that visits your yard
        - scoop pet poop
    - <u>At School</u>:
        - start or join an environmental club
        - learn about the wildlife that shares the schoolyard with you
        - pick up at least 1 piece of litter every day and encourage friends to do this too
        - never waste food at lunch
        - always recycle cans, plastics, paper
        - plant native plants
        - remove nonnative invasive plants
        - help friends and other schoolmates to choose nature-friendly behaviors too
    - <u>In Neighborhood</u>:
        - pick up at least 1 piece of litter every day and get your friends to do this too
        - always walk dog on leash
        - scoop your pet's poop
        - learn about the wildlife that shares the neighborhood with you
        - adopt a neighborhood park
            - remove litter
            - remove nonnative invasive plants

- plant native plants to give wildlife homes, food and shelter
- put up educational sigs explaining how others should act while in the park that will help nature

- Encourage the campers to draw themselves doing a positive outdoor behavior that they are going to pledge to start doing. Have them write at the top of the activity page, “I pledge to start/stop _____ to help Tampa Bay.”
- Write the list of pledges next to each camper’s name and post it on the wall for the duration of camp.
- When they are picked up that day, suggest the camper show their parent or guardian their drawing with the pledge.

Recyc-la-Saurus

❖ Summary

Campers will learn about litter and its impacts to the environment. They will also use their imaginations to create a Recyc-la-saurus and discuss how their creations will handle recycling issues.

❖ Objectives

Campers will:

- Learn that many recyclable items have "lifespans" longer than most humans.
- Learn that during the "lifespan" of litter, it often harms wildlife, plants and the health of our water.

❖ Estimated Time for Activity

Approximately 45 – 60 minutes

❖ Materials

- Glue
- Tape
- Markers
- Rulers
- Scraps of colored paper (hopefully, rescued from the recycling bin)
- Anything that is in the recycling bin, including rinsed plastic water bottles, plastic bottle caps, cans without sharp edges, paper towel and toilet paper cardboard rolls, small to medium cardboard boxes, etc.
    - You may want to stock pile items prior to camp or you could have the campers bring in their own clean recyclable products.
    - Check with framing companies or local photographers to ask if they have any photo mat scraps.
    - Ask friends and family members to save any nature-related magazines for campers to flip through to get ideas for their creature.
- Newspapers (for protecting the tables and floor from spilled glue, runaway markers, etc.)
- Optional - water-based craft paint

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary

Recycle, litter, recyclable, decompose, biodegradable, monofilament line (a.k.a. fishing line), ghost traps; 4 Rs: reduce, reuse, recycle, and refuse

Recyc-la-Saurus

❖ Background

Litter comes in many shapes and sizes. Some items like cigarette butts, soda cans, water bottles, broken balloon fragments, and fast food wrappers are easy to distinguish.

Other litter items may not be as obvious. What about the banana peel or apple core that was thrown out? They are biodegradable after all. However, just because something is biodegradable does not mean it is not litter. Unlike polypropylene (Styrofoam), most things are biodegradable…it just takes time. And some things take a *really* long time. Therefore, items that are tossed into the environment are litter, quickly biodegradable or not. Don't be a litterbug.

Fortunately, litter is one thing that everyone can reduce. People who litter can easily stop; and *everyone* can pick up at least one piece of litter each day. Even better, many litter items can actually be recycled. Not only will the picked up litter be eradicated from the environment, in our case the Tampa Bay ecosystem, but much of it can be recycled keeping it out of our already over-crowded landfills. With approximately 2 million people living in the Tampa Bay area, that is 2 million pieces of litter removed from nature each day. Wow!

❖ Activity

Engage the campers in a discussion about litter. Ask what they think litter is. What about something like an apple core? Is that litter? If they say no, ask if throwing a piece of paper down is littering. If they say yes, ask how is throwing an apple core down any different than throwing down a piece of paper? They both will take almost the same amount of time to decompose.

Ask the campers where do they think the trash from the trash can goes. Get them to realize that it doesn't "disappear;" it is buried at a landfill that will be there forever. Some counties, like Pinellas County, do burn an amount of their trash at a special facility that creates energy from trash and then the rest is dumped into a landfill.

Share with the campers that the earth's human population is always growing. Ask if this continues, where will all of the people live? Will there be enough space? Where will the natural areas with their plants and wildlife live if the world continues to be filled with people? Without raising too many concerns about this issue, bring the conversation back to litter and landfills. Ask if they think with people, plants and wildlife needing space, can we afford to waste land by filling it with our trash? NO!

What can we do to reduce our trash? Share with them the 4 Rs: reduce, reuse, recycle, and refuse. Ask them to give an example of each.

Examples of the 4Rs:

- Reduce—buy large bag of chips and divide into smaller, reusable containers instead of buying snack-size, prepackaged bags with all of the wasted wrappings.
- Reuse—use bag that covers the newspaper (or any plastic baggie large enough) to pick up pet waste

Recyc-la-Saurus

- Recycle—aluminum soda cans, paper, cardboard, lunch plastic containers
- Refuse—don't buy it in the first place!

Ask how long they think specific trash and litter items take to decompose. Use the resources in your curriculum materials for answers. Now choose some of the below questions that might be the most interesting to your campers and ask them to raise their hand for the best answer. Give them the correct answers and discuss them.

Litter Quiz

Source: Modified from Keep Pinellas Beautiful -- http://www.keeppinellasbeautiful.org
Correct answers are highlighted in yellow.

How much money can drivers and their passengers be fined for littering in Florida?

a. $25
b. $75
c. $100
d. $500

What is the most common type of roadside litter found in Florida?

a. Cigarette butts
b. Aluminum cans
c. Fast Food Wrappers
d. Tires

How long does it take a Styrofoam cup to decompose?

a. 10 years
b. 500 years
c. 1 million years
d. 10,000 years

How much litter happens accidentally like trash blowing out of the back of a truck?

a. 10%
b. 45%
c. 63%

Nationwide, how many shopping carts are discarded each year?

a. 1,500
b. 100,000
c. 245,000

How long does it take a banana peel to decompose?

a. day
b. 2-5 weeks
c. months

Approximately, how much money does it cost per mile to remove litter?

a. $23
b. $47
c. $63

Recyc-la-Saurus

How much litter is found on 2-miles of highway?

a. 12,500 pieces
b. 32,000 pieces
c. 47,000 pieces

Each year, how much trash does each person make?

a. 1 ton
b. 2 tons
c. 10 tons

How does litter harm wildlife?

a. Causes water pollution
b. Animals mistake litter for food
c. Litter wraps around animal and harms it
d. All of the above

Adopt-A-Highway volunteers pick up approximately how much litter each year?

a. 17,000 tons
b. 26,000 tons
c. 100,000 tons

Nationwide, how much cigarette related litter is produced each year?

a. 50 tons
b. 100 tons
c. 122 tons

During what activity does most littering occur?

a. Biking
b. Camping
c. Boating
d. Driving

Now think about the wildlife that comes into contact with these litter items. How do campers think litter like aluminum cans, plastic straws, plastic bottle tops, broken balloon pieces attached to string, cigarette butts, monofilament line (fishing line), and old abandoned crab traps (“ghost traps”) might injure wildlife? What could they do to prevent it?

After learning about the impacts of litter to Tampa Bay wildlife, campers will create their own animal out of recyclable materials. It can be any animal real or imagined. You could ask questions or give suggestions. Is this a recycla-animal that will visit you if you do not recycle? Is this an animal that will eat all the litter it finds? Or, will their animal simply clean up litter and recycle all items that can be recycled?

Spark their creativity! Remind them that creating a recycled animal is good and fun, but having these same litter items out in the Tampa Bay ecosystem could be very harmful, if not deadly to our wildlife. By making the right choice to reduce their trash and not litter, they make a positive difference in their Tampa Bay community!

The Web of Life

❖ Summary

Through an interactive discussion followed by a fun activity, campers will learn how the sun, plants, herbivores, and carnivores are all interconnected.

❖ Objectives

Campers will:

- Determine the difference between herbivores (plant eating animals), carnivores (meat eating animals), and omnivores (plant and/or meat eating animals)
- Learn how all of these animals are directly or indirectly connected
- Learn how the sun's energy is transferred among plants and animals in nature

❖ Estimated Time for Activity

Approximately 30 – 45 minutes

❖ Materials

- Ball of yarn or string/twine (any color)
- 25 clothes pins (1 per camper)
- 25 cards (1 per camper)
    - 1 card labeled -- Sun
    - 5 plant cards (one plant per card) – Red Mangrove, Sea Grass, Black Mangrove, Marine Algae, Cabbage Palm Tree
    - 7 herbivore cards (one animal per card) – Manatee, Mangrove Crab, Green Sea Turtle, Crown Conch, Mullet (eats decaying matter), White-tail Deer, Marsh Rabbit
    - 5 omnivore cards (one animal per card) – Raccoon, Virginia Opossum, Gray Fox, Coyote, Wild Hog
    - 7 carnivore cards (one animal per card) – Blacktip Shark, Tarpon, Great Blue Heron, Osprey, Green Anole, Eastern Diamondback Rattlesnake, River Otter

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary

Herbivore, carnivore, omnivore, producer, primary consumer, secondary consumer, tertiary consumer

The Web of Life

❖ Background

The food web, or the food chain as was formerly named, is a very complex system that we as humans do not have all the answers. It is never as simple as it seems. Carnivores may eat other prey animals, but those prey animals may also depend on smaller prey animals, or other plants, or even a combination of both to survive. The food web concept is an attempt to explain this complex system supplying animals with food.

The sun is the ultimate source of energy for most living organisms on earth. Without the sun, plants would not be able to grow, animals that depend on plants for food would not survive, and animals that depend on other animals to survive would not live. Therefore, the plants that produce their own energy from the sun via photosynthesis are called **Producers**.

Herbivores are animals that eat plants and are called **Primary Consumers**. Animals such as spiders, birds, or snakes that eat the **Primary Consumers** are called **Secondary Consumers**. Top predators that eat the **Secondary Consumers** are called **Tertiary Consumers**. Finally, at the end of the cycle you have the **Decomposers** breaking down all that is left so that the Producers may benefit from the nutrients and start the cycle all over again.

Since the Producers (plants) are the basis of the food web, they are extremely numerous.

❖ Activity

Give 1 card to each camper then have all the campers stand in a large circle with their cards clothes-pinned to their shirts and tell them that they are going to make their own food web. When a camper has the ball of yarn, they will need to determine which camper they could give their energy. The ball of yarn will represent their energy. The camper with the Sun card will go first. Ultimately, the Sun should pass the yarn to a camper with a Plant card that would then pass the yarn to a camper with an Herbivore card that would then pass the yarn to a camper with a Carnivore card. Once a camper with the Carnivore card has the yarn, they will pass it back to the sun and start over. Keep playing the activity until everyone is holding the yarn at least once.

To show how complex the food web is, after every camper is holding the yarn, ask one of the Plant card campers to let go. *Be sure to clarify multiple times that only the camper(s) you tell to let go will release the yarn; everyone else needs to hold on to their yarn very tightly.*

Now everyone camper that received energy from that camper should let go as well. Before long, the entire food web will fall apart and no campers will be holding the yarn. This will demonstrate that even if one part of the food web breaks down, the damage can be felt throughout many if not all the species in the food web.

A Sea Turtle Will Survive!

❖ Summary

Campers will learn about the limiting factors (food, water, shelter, space) and how sea turtles survive in the wild.

❖ Objectives

Campers will:

- Transform into sea turtles and learn to find food, water, shelter, and space to ensure their survival

❖ Estimated Time for Activity

Approximately 45 – 60 minutes

❖ Materials

- Scissors to cut paper
- 25, 8.5' x 11" sheets of colored construction paper (plain white cardstock will work)
  - Each 8.5 X 11 piece of paper will be cut in four equal rectangles
  - Paper colors are green, red, orange, purple, blue, yellow and white
- Dice
- Optional – masking tape to create grid lines

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary

Limiting factors, food, water, shelter, space, loggerhead sea turtle, leatherback sea turtle, hawksbill sea turtle, green sea turtle, Kemp's ridley sea turtle

❖ Background

Florida is home to five sea turtle species – loggerhead sea turtle, green sea turtle, hawksbill sea turtle, leatherback sea turtle, and Kemp's ridley sea turtle. The loggerhead sea turtle is a Threatened species and our other four sea turtles are listed as Endangered. Loggerhead sea turtles are the most common nesting sea turtle along the Gulf coast of Florida; however, our smallest sea turtle, the Kemp's ridley sea turtle considers Tampa Bay an important location during their juvenile years of development.

Once male sea turtles are born, they never come back to shore. However, female sea turtles return to their natal nest area near where they were born to lay their eggs along the beaches and beach dune habitats.

Did you know that the temperature inside the sea turtle nest determines if the young sea turtles become male or female? At a critical stage of development while still in the egg,

warmer temperatures in the nest will produce females and cooler temperatures will produce males. Even within the same nest, the sand closer to the surface is constantly heated by the sun producing females while the deeper cooler sand produces males.

After the sea turtles hatch out of the nest, they wait until most of their siblings are also hatched. Then as one large group, they march to the water's edge, plunge into the surf and feverishly swim to deeper water. They will spend their entire life out in the estuaries, and larger waterbodies (e.g., Gulf of Mexico, Atlantic Ocean, etc.). Not a lot of information is known about sea turtles after they hatch until they become adults. However, scientists are constantly studying them, so one day we may have more answers than questions. We know the very young sea turtles will hide in the floating seaweed located in the middle of the oceans, but there is so much more information that scientists are constantly investigating. The fortunate female hatchlings surviving until they are 30 – 50 years old will mate and then come back to land to lay their own eggs.

Adult sea turtles do not have many natural predators; however, when they are young and smaller, they are prey for many predators. From raccoons and ghost crabs eating them as eggs to gulls and large fishes eating them after they have hatched, sea turtle survival rates to adulthood are very slim. As adults they are still food for some animals; sharks are one of their main predators. Unnatural predators include humans. Some are killed for food and their shells (legally or illegally). Also, incidental deaths often occur.

Unfortunately, sea turtles become tangled in commercial fishing nets, drown after being caught on fishing gear, are hit by large boats and ships, and sometimes become trapped and drown during construction activities. Not to mention our very own human litter – plastic grocery bags and balloons – become sea turtle deathtraps. To a sea turtle, these floating bags and balloons look just like a jellyfish or other drifting invertebrates. Once these bags are ingested, they often get caught in the sea turtle's throat or stomach preventing the sea turtle from eating, which ultimately starves it to death unless it is rescued by people. Even after countless hours in a sea turtle hospital, it is very difficult to nurse the injured sea turtles back to health and releasing them into the open waters.

❖ Activity

Set up your Sea Turtles Will Survive! game area by establishing a grid like the one below. You can add more spaces as desired.

Start Team 1	Start Team 2	Start Team 3	Start Team 4	Start Team 5
Finish	Finish	Finish	Finish	Finish

A Sea Turtle Will Survive!

Label each of the squares on one side with the below messages. Place the written side down on the grid. If using white paper, write the color (e.g., "Orange") on one side and the message on the other.

Red Squares (use the 3 different scenarios with 2 being used twice)

- Ouch! Hit by a boat. Move back to Start.
- Your luck is out. Trapped in fishing gear. Move back to Start.
- Yuck, you swallowed a plastic bag. Move back to Start.

If someone lands on a red square more than once, they go to a wildlife hospital and rehabilitation facility. Unfortunately, their injuries are too severe and they can never be released into the wild again. (Rehab is on the sidelines; they leave the game, rooting for their team from the sidelines.)

Young children typically do not like to be "killed off" in a game so moving them back a high number of spaces or permanently going to a rehab facility may be easier for them to accept.

Green Squares – Yummy! You found food. Move forward 2 spaces.
Blue Squares – Swim fast! Predator is chasing you. Move back 1 space.
Yellow Squares – You got tangled in fishing net. You broke free and are okay. Move forward 1 space.
Orange Squares – Your nest of eggs successfully hatched. Yea! You and your closest teammate behind you move forward 3 spaces.
Purple Squares – People hurt your habitat where you find food and rest. Move back 1 space.
Blank or White Squares – Free space. You are treading water. Stay here.

Place the colored paper randomly with at least one color in all columns (e.g., each team will have the same number of blue squares, red squares, etc.). Make sure the messages are face down.

Divide the campers up into equal teams (if there is an odd number, maybe one camper can be the official roller of the dice).

Roll the dice and the first person in line for each team will move forward the same number of squares as on the dice (e.g., if a 4 is rolled, the entire row of campers will move up 4 spaces).

Starting with Team #1, each player will read aloud their card message. Then they return the card facing down and move the number of spaces as told. The team with the most sea turtles at the finish line wins.

Options:

- Adjust how many teams and spaces you want to make on your game board.
- Let the teams create their own name or you can use the different species of sea turtles as their team names (e.g., loggerheads, greens, hawksbill, etc.).
- Vary the game by adding or removing the specific colored cards. Campers will quickly learn the card colors and if they will move forward or backward.

Can You Spare a Day for Tampa Bay?

❖ Summary

Campers will discuss their favorite animals or plants found in the Tampa Bay area and then discuss what they can do as individuals to protect or preserve them. Afterwards, campers will pledge via their own drawings what they can do to help the plants and animals of Tampa Bay. Their drawings can also be shared with the camper's parents as they are posted on the walls or other space for their parents to see as they pick-up and drop-off their children for the camp.

❖ Objectives

Campers will:

- Discuss their favorite animal or plant found in the Tampa Bay ecosystem
- Determine actions that they personally can do to help preserve and protect their selected favorites
- Pledge to take action and illustrate their actions

❖ Estimated Time for Activity

Approximately 45 – 60 minutes

❖ Materials

- Dry erase board / chalk board / large piece of paper to record the campers' favorite plants and animals in Tampa Bay
- 25-30 pieces of paper to illustrate the campers' personal pledges
- Colored pencils, markers, or crayons for illustrations

❖ Setting

This activity can be conducted either indoors or outdoors. Because of the drawing paper involved, some outdoor locations or windy weather conditions may make this activity more suitable for indoors.

❖ Vocabulary

Estuary, Habitat, Preservation, Conservation

❖ Background

As Florida's largest open water estuary, Tampa Bay covers approximately 400 square miles and supports an incredible diversity of plants and wildlife. In addition to supporting vast sea grass meadows, oyster beds, mudflats, and mangroves, Tampa Bay attracts anglers, boaters, swimmers, and countless others who just want to enjoy and appreciate

the beauty of Tampa Bay. This does not include all the commercial shipping, boating, commercial fishing and residents that choose to live on the waters of Tampa Bay. In fact, approximately 2.3 million people populate the Tampa Bay area. If steps are not taken to maintain and preserve the habitats within and adjacent to Tampa Bay, all of the visitors and residents would probably reduce or lose their connection to our great estuary.

Many groups have not only pledged their support for keeping Tampa Bay clean and healthy, but many local governments, state and federal agencies, and local environmental groups have made significant financial and physical labor contributions to ensure Tampa Bay is healthy today and, hopefully, healthy for future generations.

You can imagine with all of the people sharing a connection to Tampa Bay, keeping Tampa Bay clean and healthy is imperative not only for the plants and wildlife, but to support all the user groups and preserve a delicate balance of human wishes and wildlife needs.

As a single resident, family, or visitor to the Tampa Bay area, you may ask yourself how can you contribute in a way that is not already be accomplished by one or more of the previously mentioned groups. After all, you are only one person and do not have the financial power or labor effort needed to match a large habitat restoration or habitat enhancement project.

Although this is true, the power of one can be tremendous if the majority of the local residents all do their part. Remember, there are approximately 2.3 million people living in the Tampa Bay area. What if everyone picked up one piece of litter, no matter how small, each day? That would equate to 2.3 million pieces of litter that could never enter the Tampa Bay waterways. What if only half of these people picked up one piece of litter? That would still equal 1.25 million pieces of litter that could never enter the Tampa Bay waterways or injure wildlife. How much would it cost to pay someone or a group of people to pick up over a million pieces of litter every day? How much would it cost for each person to simply bend over and pick up one piece of paper they see as they are walking into the grocery store? This is only one example of how the power of one person can make huge contributions and help preserve our beloved Tampa Bay.

Imagine the headline, “Tampa Bay Has Run Out of Litter!” How can you make <u>your</u> difference?

❖ Activity

Start by having all the campers close their eyes and imagine their favorite animal, plant or place in the Tampa Bay area. Is it fishing or boating on the actual waters of Tampa Bay with their family and friends? Is it enjoying the afternoon at Fort DeSoto Park? Tell the campers to imagine feeling the breeze as it glides over the calm Tampa Bay waters. Can they feel the sun and salt spray on their body? Are they watching pelicans crash dive into a school of baitfish trying to catch a meal, or bottlenose dolphins peacefully swim along the surface? Encourage the campers to use their imaginations.

Next, ask the campers to share with the group one of their favorite animals, plants, or places found in our Tampa Bay community. Try to get all campers to list at least one and write them on your board or large paper for all to see. Optional: you could break the campers into groups and award them one point for each different answer and maybe

give bonus points for the most original, etc. Once they start listing their plants, animals, and places enthusiastic discussions are bound to occur. That is great because you can help them channel that enthusiasm and passion into their pledge drawings.

Now ask the campers to look at the list and have them share some ideas of how they can help these animals, plants or places. Write these next to the respective items on the board.

Tell them it is time to choose one of these animals, plants or places and one of the ways they will help it. They can use their suggestion written on the board or someone else's suggestion. They will make a pledge to help, which in turn helps preserve the Tampa Bay area.

Pass out the blank pieces of paper to all campers so that they can draw themselves doing whatever helpful pledge they decided. Have them write their names on their drawings and post them in a position that the parents/guardians can see when they come in to drop-off or pick-up their campers.

Be sure all campers get to take their drawings home with them at the end of camp.

Pledge Ideas

I pledge to…

- Keep my cat indoors so it doesn't get hurt and doesn't hurt wildlife.
- Pick up at least 1 piece of litter every day.
- Be more tolerant of snakes in my yard.
- Scoop my dog's poop every day.
- Put up a screech owl nest box in my yard.
- Teach my younger brother/sister how to tell if a plastic container can be recycled and help him/her remember to recycle.
- Help my parents plant native plants in my grandparents' yard.
- Start a nature club at school.
- Learn the names of at least 10 animals found at my favorite park and look up what they need to survive (food, shelter, water, space).
- Always remove my fishing line when it gets caught in the trees or oysters…even if it takes away my fishing time and I have to ask for help.
- Share with my friends and family at least 3 things that I learned in camp to help our wonderful Tampa Bay area.

Wouldn't it be great if everyone gave a little time everyday to preserve Tampa Bay?

Tampa Bay All the Way!

❖ Summary

This activity will test your campers' knowledge about Tampa Bay during a fun, trivia contest format.

❖ Objectives

Campers will:

- Improve their teamwork skills
- Demonstrate their knowledge of Tampa Bay's conservation, ecology, wildlife biology, species migration, wildlife adaptations, and history
- Learn new information about the above topics

❖ Estimated Time for Activity

Approximately 45 – 60 minutes

❖ Materials

- 1 copy of the Tampa Bay all the Way! Questions and Answers for each Camp Counselor
- Scoreboard – can be a pad of paper, erasable board, chalk board, etc.
- Calculator
- Timer
- Prizes for winning team(s)
- Poster board to use as a game board. The game board design can also be drawn onto an erasable board.
- Easel for poster board
- 55 note cards for Round 1.
    - Print or hand write Round 1 topic headers (5 cards total)
    - Print the Round 1 questions and answers. Cut them out and adhere the respective question and answer to each note card (25 cards total).
    - Print or hand write the Round 1 point cards (25 cards total): five note cards labeled 100, five labeled 200, five labeled 300, five labeled 400, five labeled 500
- 55 note cards for Round 2
    - Print or hand write Round 2 topic headers (5 cards total)
    - Print the Round 2 questions and answers. Cut them out and adhere the respective question and answer to each note card (25 cards total).
    - Print or hand write the Round 2 point cards (25 cards total): five note cards labeled 200, five labeled 400, five labeled 600, five labeled 800, five labeled 1000
- Velcro to affix note cards to game board (60 pieces per Round = 120 pieces)
- Suggestion: Create 5 tie-breaker questions/answers of your own that corresponds with your camp location, local area or another their specific theme

Tampa Bay All the Way!

❖ Setting

This activity can be conducted either indoors or outdoors.

❖ Vocabulary & Concepts

Habitat, migration, estuary, adaptations, wingspan, plume trade, mosquito ditches, Tampa Bay area history

❖ Background

Prepare your game board by using poster board or something else reusable; or draw it on an erasable board.

Sample game board design for Round 1:

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400
500	500	500	500	500

Sample game board design for Round 2:

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
200	200	200	200	200
400	400	400	400	400
600	600	600	600	600
800	800	800	800	800
1000	1000	1000	1000	1000

Tampa Bay All the Way!

For each game, you will need a Camp Counselor to ask the game questions and another Camp Counselor to keep score and be the timekeeper. The group needs to be divided into smaller groups, preferably no groups with fewer than five campers.

To increase involvement by all team members, consider having campers "number off" into teams. This will encourage campers to partner with other campers who they might not know as well. Also determine the order that the teams will take turns (e.g., Team 1 gets to answer the first question, Team 2…).

Each team will have a set amount of time and correctly answer in the form of a question (e.g., 30 seconds to answer, "What is a tarpon?"). If a team answers incorrectly or does not provide a potential answer, the remaining team (if two only teams) or the first team to raise their hand (if more than two teams) will be given an opportunity to answer. After the second team provides either a correct or incorrect answer, that card is extinguished and the next team up for questions selects from the game board their topic and point amount.

❖ Rules

1. There are a total of five categories of questions per round.
    a. Round 1 questions will be worth 100, 200, 300, 400, or 500 points each.
    b. Round 2 questions will be worth 200, 400, 600, 800, or 1,000 points each.
2. After a team requests a specific category and point amount, that point amount card is removed from the game board (e.g., Topic 1 for 200 points).
3. Each team will have 30 seconds to answer the question in the form of a question. Thirty seconds is an adequate amount of time to allow for answers while keeping everyone engaged in the game.
    a. Optional – For younger campers, you could allow them to answer the question in any fashion not restricting answers to question form.
    b. Optional – For older campers, if a team answers incorrectly you could subtract from their total the number of points for that category.
4. After a team answers correctly, that same team picks another topic and point card. If the team answers incorrectly, the other team or the first team to raise their hand gets a chance to answer the question. After the second team provides either a correct or incorrect answer, the next team up for questions will get to select from the game board.
5. Round 1 and Round 2 are complete when all point cards have been removed from the game boards.
6. Once all questions from Round 1 and Round 2 have been used, the team with the highest amount of points wins. If there is a tie, ask the bonus questions that you created which are possibly related to a theme or your camp location.

Tampa Bay All the Way!

❖ **Questions and Answers**

Round 1 Questions

	Tampa Bay Birds	Fishes of Tampa Bay	What Can I Do?	Migratory Species	Wildlife Adaptations
100	A group of birds is called this.	We avoid these flat cartilaginous fishes by "shuffling" in the water and they are also the name of a local baseball team.	This is what you should do whenever you see litter.	This is the major reason animals migrate each year.	Without this rudder, fish, dolphins, manatees, and river otters would have a hard time steering their bodies underwater.
200	This large bird tucks its 6 feet wingspan next to its body before diving head first into the water after its fish dinner.	This baitfish has very sharp spines or "pins" along its fins used for protection from predators.	After eating or drinking, you should do this to reduce what is thrown in the trash.	What Pinellas County Park named after Hernando deSoto is world famous for migratory birds each year?	Wading birds have very long _____ to help them walk around in the water.
300	The _____ is also another word for the mouth of the bird.	This small baitfish is the most numerous fish in Tampa Bay; you may even eat them on your pizza!	This is illegal to do to dolphins, raccoons, foxes (and many other animals) and teaches gulls very bad manners.	These birds have distinctive red breast (chest) feathers. Hint: Who is Batman's partner?	Since their skins cannot grow as this animal grows, this reptile has to shed its skin.
400	This bird is the symbol for the United States.	What fish likes to jump multiple time out of the water and no one really knows why?	These plants are originally from Florida and you help wildlife by doing this in your yard and schoolyard.	These large aquatic mammals migrate to warmer waters when it gets too cold in the winter, you may also find them in the warm discharge waters at power plants.	This large pink bird uses its spoon-shaped bill to catch its prey.
500	What is the State bird of Florida?	This top predator has extremely sharp teeth and instead of bones, they have cartilage.	Since domestic cats kill hundreds of millions of birds each year outdoors, what could you do to prevent this?	These large white birds do not dive-bomb they food like their brown pelican relatives.	This very large, trophy game fish can breathe oxygen from the water and air. Hint: also called the "Silver King."

Tampa Bay All the Way!

Round 1 Answers

	Tampa Bay Birds	Fishes of Tampa Bay	What Can I Do?	Migratory Species	Wildlife Adaptations
100	What is a flock?	What are rays?	What is Pick it Up?	What is to find food?	What is a tail?
200	What is a brown pelican?	What is a pinfish?	What is recycle?	What is Fort DeSoto Park?	What are legs?
300	What is the beak or bill?	What is a bay anchovy? (Or, what is an anchovy?)	What is feed wildlife?	What are Robins?	What are snakes? Or, what are lizards?
400	What is a bald eagle?	What is a mullet?	What is plant native plants?	What are Florida manatees?	What is a roseate spoonbill? Or, what is a spoonbill?
500	What is the Northern Mockingbird	What is a shark?	What is keep your cats indoors/inside?	What are white pelicans?	What is the tarpon?

Tampa Bay All the Way!

Round 2 Questions

	History of Tampa Bay	Invertebrates	Change of Seasons	Liter and Pollution	Mammals
200	This invention, that we take for granted today, made living in Tampa Bay less hot and humid indoors.	Give the main difference between invertebrates and vertebrates.	During June through September, this Florida season is named after the amount of rain that falls.	This thin, clear string-like line can remain in nature for over 500 years if not cleaned up. Hint: keep this in mind next time you go fishing.	These "masked" animals are extremely adaptable and can be found living in natural and urban areas.
400	This bridge is over 4 miles long and was first built in 1954 connecting Pinellas and Manatee Counties.	These bivalve animals (two-shells) can filter over 10 gallons of water every day helping keep Tampa Bay healthy!	Unlike some trees that are deciduous (drop their leaves in the fall/winter), the ____ mangrove is "evergreen."	This litter is the #1 litter item found in Tampa Bay and throughout the world.	The only Florida marsupial (pouched) animal can also be seen in the coastal habitats of Tampa Bay.
600	This tree is what Pinellas County is named after.	This crab lives underwater, is often eaten by people and is named after a color.	We rest. Wildlife rest. Give the season that plants rest when they are not growing a lot and do not need much food or water.	These bright and loud explosions are fun for humans on July 4th, but they also scare baby beach birds and litter our beaches.	These small gray and rust-colored canines (dog relative) can actually climb trees.
800	Give two reasons the Tampa Bay area has lured people to come here.	This large conch is our State shell. Hint: it is not big enough to ride as the name implies… Giddy up!	In winter when the Gulf of Mexico and the Atlantic Ocean water temperature drops, where do manatees find warmer water approximately 72^0?	Picking up after these animals can prevent excess nutrients (pollution) from entering Tampa Bay … "Scoop the Poop"	These bottlenose mammals often can be seen swimming in Tampa Bay.
1000	In the 1950s, ditches harmful to the environment were dug through our mangrove swamps to remove these biting insects.	This underwater "living fossil" has blue blood. Hints: it is not a farm animal; you do not wear it on your foot; and it is not a crab.	During the late 1800s and early 1900s, many nesting waterbirds were hunted almost to extinction for their plumes to be put into this type of clothing.	Building sand castles is fun, but be sure to take these tools home with you, otherwise they become beach litter.	This large aquatic mammal is sometimes called a Sea Cow.

Tampa Bay All the Way!

Round 2 Answers

	History of Tampa Bay	Invertebrates	Change of Seasons	Liter and Pollution	Mammals
200	What is air conditioning?	What are vertebrates have a backbone? Or, what is invertebrates lack a backbone?	What is the rainy season?	What is fishing line or monofilament line?	What are raccoons?
400	What is the (Bob Graham) Sunshine Skyway Bridge?	What is an Eastern oyster?	What is the red? Or, what is the black? Or, what is the white?	What is a cigarette butt?	What is the Virginia opossum? Or, what is the opossum?
600	What is the pine tree or long leaf pine tree?	What is a blue crab?	What is winter?	What are fireworks?	What is a gray fox?
800	What is…military, agriculture, mining, development, mild climate, fishing, water/Gulf/Ocean, wildlife viewing, beaches, tourism, etc.	What is a horse conch?	Where is in the freshwater springs?	What are dogs?	What are bottlenose dolphins?
1000	What are mosquitoes?	What is a horseshoe crab?	What is a hat?	What are beach toys (shovels, buckets, etc.)?	What is the Florida manatee?

Who Am I???

❖ Summary

This activity is an interactive wildlife learning experience encouraging campers to interact with one while developing techniques for identifying our local Tampa Bay wildlife.

Camp counselors will affix a picture of a local wildlife species to each camper's back without the camper's knowledge of what the image is. Campers will then interact with each other asking "yes" or "no" questions about the image on their back so that they can correctly identify it.

❖ Objectives

Campers will:

- Learn to how to ask descriptive questions necessary for identifying wildlife.
- Learn what descriptive questions are more useful than others are when identifying wildlife.
- Relay important physical and behavioral characteristics of our local wildlife to other campers while learning details themselves about these animals.

❖ Estimated Time for Activity

Approximately 30 – 45 minutes

❖ Materials

- 20 - 30 images of Tampa Bay wildlife; 1 image per camper. If you want to print another set of the Wildlife Connections cards for this activity, avoid cutting them in half like you did for the Wildlife Connections activity.
    - Other options: use computer clip art; have volunteers or interns draw the animals; collect used magazines and cut out images.
- Tape or clothespins to affix the images to the back of campers' shirts

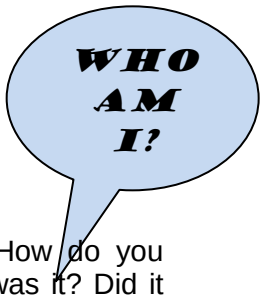
❖ Setting

This activity can be either indoors or outdoors.

❖ Vocabulary

Mammal, Reptile, Fish, Bird, Insect, Bug

Who Am I???



❖ Background

Have you ever observed an animal that you had never seen before? How do you remember it? Was it a bird, reptile, mammal, fish, or insect? What color was it? Did it have any distinctive markings? These are all great questions to ask when trying to identify an unknown animal.

In this activity, the campers will discover their "new" animal without ever initially seeing the animal. Campers should be encouraged to ask basic questions like, "Is it a bird?" or, "Is it a reptile?" before they can ask more descriptive questions.

For example:
Is it a bird…**Yes**
Is it a small bird…**Yes**
Is it blue…**No**
Is it brown…**No**
Is it red…**Yes**
Is it a northern cardinal…**YES!**

❖ Activity

Line up all campers in a line, shoulder to shoulder, facing forward (no peeking!). Camp Counselors walk behind the campers and tape or clothespin one wildlife image to each camper's back without the campers seeing the images.

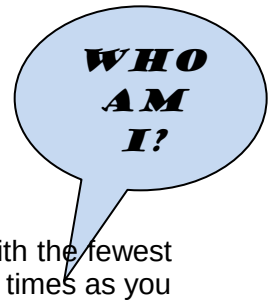
Tell the campers they only get ONE yes or no question per person before they try either to guess their animal or rotate to another camper. If they do not guess the animal correctly, they must move on and ask another camper ONE yes or no question and try and guess their animal again.

For every question they ask about their wildlife animal, they should also answer a wildlife question from a fellow camper. The campers should repeat this process until all of the animals are guessed.

Once a camper correctly guesses their animal, they can have another camper remove the image from their back and then the camper is to tape/clothespin the image to the front of their shirt and sit down. Be sure to ask them to whisper the name of their animal to you as soon as they sit down. In case they have misidentified the animal, they will need to stand up and continue asking questions to the other campers.

After everyone is sitting, as a group ask each camper to identify their animal. You may also ask them how many guesses it took to get the correct answer.

Who Am I???



❖ **Extended Activity**

You can also make this a contest to find out who can guess their animal with the fewest number of guesses! You can rotate the cards and play this activity as many times as you like. This repetition will hone their identification skills for each species, reinforce the correct names for the animals found in the Tampa Bay region, as well as improve the campers' abilities to ask clear and specific identification questions.