

Where the Locals Hang Out!

Curriculum Guide

Grades 9-12



Goal: Students will be able to give examples of animals that live in Florida and describe how they are adapted to live in a particular type of habitat.

Association of Zoos and Aquariums Conservation Message:

All life on Earth exists within an ecosystem.

- a. Ecosystems are made of interdependent relationships between groups of living things (biodiversity) and their physical environment
- b. An impact on any element of an ecosystem has ramifications throughout the ecosystem.

Human beings are responsible for dramatic changes to ecosystems at a rate unprecedented in Earth's history.

- b. The primary human threats to the environment are global warming, habitat destruction, invasive species, and overuse of individual species.

Sunshine State Standards:

- **SC.912.L.17.4** Describe changes in ecosystems resulting from seasonal variations, climate change and succession.
- **SC.912.L.17.6** Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
- **SC.912.L.17.8** Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

Background Information:

Florida is home to thousands of species of animals, including many varieties of mammals, birds, reptiles, fish, amphibians, and invertebrates. Each of these animals is adapted for life in a particular type of habitat. An animal's habitat, which includes all the living and nonliving things in the area where it lives, provides it with the food, water, and shelter required for survival. Some animals need a very specific habitat, some are able to survive in a few different types of habitat, and others spend part of their time in one kind of habitat and part of their time in another.

Florida has an assortment of different types of habitats, such as beaches, lakes, marshes, forests, and swamps. These habitats can be grouped into three general categories: coastal, freshwater, and upland.

Coastal: There are various habitats along the 1,350 mile coast of Florida, including coral reefs, salt marshes, mangrove forests, dunes, and seagrass beds. The plants and animals in these habitats are adapted to live in or near the saltwater of the ocean. Many animals, such as Stoplight Parrotfish and Red-Jointed Fiddler Crabs, spend

Vocabulary

Habitat – the area in which an organism lives

Adaptation – any physical or behavioral characteristic that makes an animal better suited to survive in its environment

Species – closely related organisms capable of interbreeding

Invertebrate – an animal without a backbone or spinal column

Scrub – a large area covered with low trees and shrubs

Swamp – wet wooded area where standing water occurs for at least part of the year

Marsh – wetland with an open expanse of grass and very few trees and shrubs

Brackish – a mixture of seawater and fresh water

Endangered species – a species that is at risk of becoming extinct

Invasive species – a non-native species that causes harm to its introduced environment

their whole lives along the coast. But coastal habitats are also important to the numerous species that start their lives there before traveling to other habitats. For example, five species of sea turtles lay their eggs on Florida's beaches, and birds such as Roseate Spoonbills and Brown Pelicans often nest in mangroves. Estuaries (areas where freshwater from rivers and streams mixes with saltwater from the ocean) serve as nurseries for many different species of fish and invertebrates such as Tarpon, Common Snook, White Shrimp, and Striped Mullet. Other animals that thrive in the habitats where the water meets the land include Marsh Wrens, Spiny Lobsters, Laughing Gulls, Blue Land Crabs, and Mangrove Killifish. Bottlenose Dolphins, West Indian Manatees, and American Crocodiles (in south Florida) can also sometimes be found in coastal habitats.

Freshwater: Florida's freshwater habitats include springs, rivers, lakes, swamps, and freshwater marshes. These areas are home to a variety of fish and invertebrates, numerous species of birds, and many other animals, including frogs, snakes, turtles, alligators, otters, and manatees. Many animals that live in these habitats, such as Longnose Gar and Channel Catfish, are adapted for life underwater, while others, like American Alligators and River Otters, spend part of their time on land. Anadromous fish (fish that spend most of their lives in the ocean but swim into freshwater areas to breed) can also sometimes be found in freshwater habitats. Some saltwater fish, like Atlantic Sturgeon, may spend the first few years of their life in one of Florida's rivers.

Upland: Upland habitats occur in higher elevation areas away from the coast and include pine flatwoods, hardwood forests, and scrub. The scrub habitat is considered to be one of the most unique habitats in Florida and is home to some species of animals that cannot be found anywhere else, such as the Florida Scrub Jay and the Blue-tailed Mole Skink. Other animals that depend on Florida's upland habitats include Gopher Tortoises, Florida Burrowing Owls, and Pine Woods Snakes, as well as many species of invertebrates. Florida Panthers, White-tailed Deer, Florida Black Bears, Gray Foxes, and Florida Box Turtles can also be found in these habitats.

Florida's habitats have undergone many changes in the past few hundred years. Some of these changes came about naturally through such things as fires, erosion, or gradual succession. But when people begin populating a natural area, they often make sudden, drastic changes to the existing habitats. For example, people may cut down all the trees in an area to make space for buildings and roads or drain a wetland to use for agricultural fields. When an animal's habitat changes, it must either adapt to the new habitat or move somewhere else. Animals in Florida that are unable to adapt to a habitat modified by humans have very few other places to go. Habitat loss has been a major factor in putting animals like the Florida Panther, Wood Stork, and Key Deer on Florida's endangered species list.

Another threat to Florida's natural habitats is the introduction of non-native species of plants and animals. Sometimes non-native animals make their way to Florida as "stowaways" among cargo that has been shipped from other parts of the world. Others are brought to Florida on purpose and then accidentally or intentionally released into the wild. Some of these animals are unable to adapt to Florida's habitats and do not survive. But some introduced species do very well in their new habitat and soon develop a wild population. Because they don't have the same natural predators as they would in their native habitat, some of these animals become invasive species, multiplying quickly and out-competing or even preying on native animals. Some examples of invasive species in Florida include Cuban Tree Frogs, Red Imported Fire Ants, and Cane Toads.

Procedure (as presented by zoo instructor):

- Introduction (5 minutes)
- Discuss Florida habitats and basic needs of animals (5 minutes)
- Give examples of animals that live in Florida habitats using hands-on animal interaction and biofacts (20 minutes)
- Check for comprehension (5 minutes)
- Allow for questions (5 minutes)

Evaluation: The zoo instructor will continually check for comprehension throughout the lesson by asking questions and reinforcing ideas.