



Protecting Southwest Florida's unique natural environment and quality of life ... now and forever.

Guided Nature Center Experience Pre and Post-Program Activities

Grade Level: 9-12

Next Generation Sunshine State Standards

- SC.912.L.15.3; SC.912.L.15.6; SC.912.L.15.7; SC.912.L.15.8; SC.912.L.15.18; SC.912.L.15.320

Program Overview

Encounter live animals in the Dalton Discovery Center, look for jumping fish on an electric boat ride, and take a peek into the von Arx Wildlife Hospital where we care for more than 3,200 wild animals per year. Learn how you can help the Conservancy protect Florida's water, land, and wildlife.

Learning Objectives Students will be able to:

1. Discuss distinguishing characteristics of the classes of living organisms in southwest Florida.
2. Recognize the consequences of human introduction of invasive species.
3. Describe how human population size and resource use relate to the loss of biodiversity.

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Conservancy of Southwest Florida has been awarded Charity Navigator's prestigious 4-Star top rating for good governance, sound fiscal management and commitment to accountability and transparency. Charity Navigator is America's largest and most respected independent evaluator of charities.

Pre-Program Activity 1: Invasive Species Report

Duration of Activity: Varies with Class Size

Materials: computers or educational books

Background:

Invasive species are plants, animals, or pathogens that are non-native to the ecosystem under consideration and whose introduction causes or is likely to cause harm. Invasive species disturb ecosystems and threaten the populations of native species.

Directions:

1. Review the definition of invasive species and the impacts that invasive species can have on ecosystems.
2. Have students work with a partner or individually and select an invasive species in Florida to research (perhaps instruct students to sign up their species and only allow one student/group to do each species).

Invasive species in Florida (left hand column):

<http://myfwc.com/wildlifehabitats/nonnatives/invasive-species/>

3. Assign students to write a one-page report on their invasive species.
Components to include in report:
 - Where is the species native to?
 - How did it get to Florida?
 - Physical and behavioral characteristics
 - Why is it invasive (predation, competition, etc.)? What native species does it compete with/prey upon, etc.?
 - How is the problem being addressed? Can you come up with any other solutions?
4. Instruct students to give a brief 2-minute presentation of facts about their invasive species to the class.
5. Discuss the negative impacts of invasive species that students mentioned in their presentations.

Pre-Program Activity 2: Research Florida's Ecosystems

Duration of Activity: 1 hour

Materials: computers or educational books

Directions:

1. Split the class into five groups. Then assign each group a different Florida ecosystem (Pine Uplands, Freshwater Marsh, Mangrove Estuary, Scrub and Ocean).
2. Each group will then research their specific ecosystem using computers and books. They should each address certain points pertaining to their habitat, including:
 - Describe the environment, what it is made of and the climate
 - Describe the main plant life found in this area. Explain why it lives so well in that area.
 - Describe the main or most frequently found animal life found in this area. Pick one reptile, one mammal, one insect, and one bird. Then choose one animal to focus on and explain how it uses its surrounding to find food, water, and build a shelter.
 - If they want to add anything else, such as any invasive species or human impact, include those as well.
 - Each group will present their ecosystem to the class so every group can learn about the different environments.

Post-Program Activity 1: Invaders!

Adapted From "Invasive Species Game", Indianapolis Public Schools. [Link to original](#)

Duration of Activity: 1 hour

Materials: Per five person group (*adapt as necessary for group size and available materials*):

- 5- 2 oz. cups (or similar)
- Plastic utensils (2 chopsticks or knives, 1 spoon, 3 forks)
- Pom poms in black (12), red (10), and white (10)
- 15 small objects (such as poker chips)
- Timer
- Soft surface such as carpet, felt, or paper

Background:

Invasive species are non-native to a specific ecosystem and are likely to cause harm to that ecosystem. **Non-native** species that do not have an adverse effect on a given ecosystem are called **exotic**. Invasive species are often **generalists**. They can thrive in a wide variety of environments and have a varied diet. Because of this, they often outcompete native species, particularly for food resources. They also consume native species in high volumes. Native species that are **specialists** are often outcompeted first, as they have a less varied diet than generalist species. Invasive species indirectly impact habitats by removing native species that perform valuable ecosystem services. With no cap on the population, invasive species are rapid breeders. Lionfish are venomous reef-dwelling fish that are native to the Indo-Pacific. They were first reported in United States waters in 1985. Since then, they have been seen as far north as Rhode Island and far south as Venezuela. Lionfish populations are estimated to be as dense as 1,000 individuals per acre (National Center for Coastal Ocean Science, 2015). You can view the lionfish tracking map [here](#).

Directions:

Divide students into groups. Assign each group member a species card and utensil. Utensils can only be held in one hand (the two knives will be used like chopsticks). Randomly spread the pom poms across the carpet, felt, or paper. Each of the native species will have 20 seconds to get as many pom poms as possible according to their species card. The species have to collect 5 pom poms in order to survive the round. If the animals don't collect 5, they lose a life (marked by poker chips). Return the pom poms to the playing field. After three rounds, the invasive species (small cup) will join the rounds. Once an animal runs out of lives, they join the invasive species and start collecting food with a cup.

Post-activity discussion questions:

1. How did the introduction of an invasive species affect your ability to hunt successfully?
2. What main factor allowed the lionfish to successfully outcompete native species?
3. What other factors could contribute to population increase of invasive species?



Lionfish

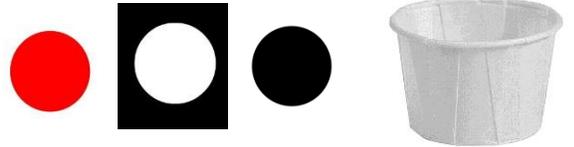
Native to the Indo-Pacific

Has venomous spines

Lifespan of 15 years

Can reach a foot and a half in length

Eats crustaceans, fish, shrimp, spiny lobster.

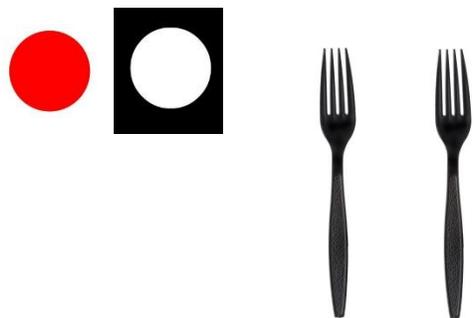


Lookdown

Forms large schools

Can weigh up to two pounds

Eats shrimp, shellfish, fish, squid





Jackknife

Uses live rock as a hiding place
Eats worms, crustaceans
Makes croaking sounds



Atlantic Blue Tang

Herbivore
Eats algae off of other fish
Active during the day



Atlantic Tarpon

Sport fish
Carnivorous
Can reach up to 8 feet in length
Juveniles hunted by lionfish



Post-Program Activity 2: My Role in Policy

Duration of activity: Two 45 minute sessions; 10 minutes per group for presentation time

Materials: computers with internet access and presentation software such as PowerPoint, Google slides, or Prezi

Directions:

In groups, students will select a Southwest Florida conservation issue to write to state legislators about. Students can begin their search for their topic at <https://www.conservancy.org/our-work/policy>. Each group should attempt to select a unique issue. Students can select specific bills (such as House Bill 191, regarding drilling for natural resources) or general conservation issues (such as development of wildlife corridors). Once a topic is identified, students can use websites like <https://www.flsenate.gov/> to identify the appropriate legislator. The website also has helpful articles on writing effective letters to senators, like the one located [here](#). Students can also contact the Conservancy's policy team for assistance with their projects. Students will work together to draft a letter and will present their issue and their letter to the class. In their short presentations, students should introduce the at-risk habitat, describe the proposed legislation, and either read or summarize their letter to their legislator. Habitat and legislation information should be from scientific and reputable sources and should be cited.