

Manatee Endangered



Goal:

Students will learn about manatees, why they are endangered and how they are protected by law. Students will then apply the lesson to investigating wildlife in their own community and the laws designed to protect them.

Objectives:

- Understand the habitat of a manatee and why the species has been listed as endangered.
- Demonstrate understanding of civics by reviewing wildlife protection acts
- Identify a local species in their community which may need assistance.
- Create an action plan to help the wildlife which involves utilizing potential civic responsibilities.

Grade Level: 9-12

Subject Areas:

science and civics

Materials Needed:

Internet access

Time to Complete:

two 45-minute class sessions

Background

Manatee Information

DESCRIPTION: Manatees have a large, seal-like body that tapers to a powerful flat tail. Two agile forelimbs with three to four toenails on each act like arms to help the manatee maneuver in shallow water, grasp and move food toward their mouths, and act like flippers during swimming. They have thick and wrinkled skin with a rough texture—a bit jiggly under the neck and arms. Their skin reacts to touch, as their bodies are very muscular—contracting and changing shape slightly when scratched or tickled. Powerful upper lips articulate to help maneuver food or dig through sediment.

SIZE : Manatees are on average 9 to 10 feet long and weigh around 1,000 lbs. They can grow as large as 13 feet and weigh more than 3,000 lbs. Calves are born weighing about 40 lbs, gaining about 700 lbs. during their first year.

BEHAVIOR : Gentle and generally slow-moving. Most of their time is spent eating vegetation (100-150 lbs. per day), resting and traveling. On average manatees can travel about 40 to 50 miles a day, sometimes more.

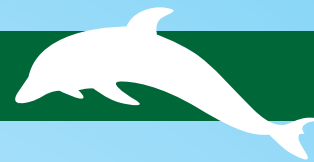
Threats to Manatees

The biggest known immediate threat to Florida manatees is collisions with watercraft. Watercraft-related mortality in 2008 reached 90 individuals, the third highest number on record. In 2006, 92 manatees were killed by watercraft, the second highest number on record. In 2007, there were 73 watercraft-related deaths. It is unknown how many manatees are seriously injured from boat collisions each year or how the injuries affect other life functions such as reproduction. Population scientists believe that unless this cause of death is curtailed, the manatee population will not recover.

The greatest long-term threat involves the loss of warm-water habitat that manatees need when temperatures dip into the low 70s (Fahrenheit). Scientists predict that a large percentage of the manatee population will be lost in the next few decades when aging electric power plants will be shutting down. Many manatees aggregate in the warm-water outfalls at these plants on cold winter days.

Red tide also remains a threat to the manatee population, particularly in southwest Florida. In 1996 at least 149 manatees died from exposure to the toxic algal blooms. In 2005, 2006, and 2007, red tide killed 93, 62, and 52 manatees respectively. Red tide occurs almost every year in the Gulf of Mexico. Although a natural occurrence, there is currently a debate among scientists as to whether blooms of the Florida red tide organism *Karenia brevis* are exacerbated by nutrients associated with run-off in developed coastal areas.

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Conservation Policy

THE ENDANGERED SPECIES ACT (1973): The ESA is a federal law and is the safety net for wildlife and plants that are on the brink of extinction. The act also protects the critical habitat that is needed to prevent the extinction of endangered plants and wildlife.

The Endangered Species Act is based on three key elements:

- Listing species as threatened or endangered
- Protecting habitat essential for their survival and recovery
- Restoring healthy populations of the species

MARINE MAMMAL PROTECTION ACT OF 1972: The Act establishes a federal responsibility to conserve marine mammals, with management vested in the Department of Commerce for cetaceans and pinnipeds other than walrus. The Department of the Interior is responsible for all other marine mammals, including sea otter, walrus, polar bear, dugong and manatees. The Act generally assigns identical responsibilities to the Secretaries of the two departments.

NATIONAL ENVIRONMENTAL POLICY ACT (1970): NEPA was established to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

Procedure

Research about Manatees

1. Have students use the internet research information about one of the questions below to learn more about manatees.
 - *What does a manatee need to survive?*
 - *What human activities are threatening manatee survival?*
 - *What manatee behaviors and characteristics make them vulnerable?*
 - *How quickly does the manatee reproduce? How does this reproduction rate affect its population numbers?*
 - *What can be done to help the manatee? What is being done?*

Have the students share their research and conclusions with the group.

Research about Laws and Protection

2. Have the students research laws in Florida and the three federal laws that protect manatees and answer one of the following questions.
 - *How does the ESA act help manatees, who oversee manatees under the Act?*
 - *How does the MMPA help manatees and why was it enacted?*
 - *How does the NEPA protect manatees?*
 - *How did the acts get passed – who worked on the effort and what did they do?*
 - *What is the status of the Acts today?*

Have the students share their research and conclusions with the group by writing down the key bullet points of the laws.

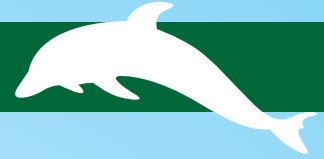
Make a Difference at Home

3. Have students identify a wildlife species or a wildlife area in their community that may be threaten or endangered. (Students can talk with their local department of natural resources or other wildlife agencies for ideas.) Students will investigate:
 - *Why is the species threatened?*
 - *What is being done currently to help the species?*
 - *What groups are working toward helping the species?*
 - *What laws local, state or national may help the species survive?*
4. Have the students create an action plan for how they would help protect the species through different advocacy actions (see Resources below for ideas). Students should share their action plans with the group and create one action plan. Students should take three of the actions identified and report on the results.

Extensions

Create a presentation of the research on local wildlife, actions that could be taken and what the difference would be. Why is it important? Invite parents or local officials to participate in the presentation.

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Resources:

- **Florida manatee information (PDF):**
<http://www.sirenian.org/FPLBooklet.pdf>
- **Project Wild Science and Civics curriculum:**
<http://www.projectwild.org/ScienceandCivics.htm>
- **Manatee facts from Save the Manatee:**
<http://www.savethemanatee.org/manfcts.htm>
- **Manatees, An Educator's Guide, from Save the Manatee:**
http://www.savethemanatee.org/Educators_Guide_9-10.pdf
- **Action Tools from Alaska Youth for Environmental Action:**
<http://ayea.org/resources/action-tools/>