Planning Your Research

Objectives:
- Review the current guidelines of the Marine Mammal Protection Act and the Endangered Species Act.
- Provide background for a hypotheical permit application for research on the marine mammal of your choice.

Grade Level: 9-12

Subject Area:
science

Materials Needed:
- access to the internet, books and/or research articles about whales

Time to Complete:
Two or more days for research and writing

Background

In waters under the control of the United States, a scientist cannot just go out in a boat or jump in the water to study whales up close. Whales and other marine mammals (including dolphins, seals, sea lions, sea otters, polar bears and manatees) are protected by laws and regulations. Scientists must apply for special research permits to conduct their studies.

There arc three important federal laws designed to conserve marine mammals: the Marine Mammal Protection Act, the Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act.

The Marine Mammal Protection Act, first enacted in 1972, has been amended and re-authorized, most recently in 1994. The Marine Mammal Protection Act states, as outlined in the 1996 Marine Mammal Commission's Report to Congress, that "the primary objective of marine mammal management should be to maintain the health and stability of the marine ecosystem. Secondarily, whenever consistent with this objective, it should be the goal to obtain an optimum sustainable population of each stock, keeping in mind the carrying capacity of the habitat."

The primary goal of the Endangered Species Act is to restore the species listed as endangered or threatened to a point where they no longer need protection.

The Magnuson-Stevens Act was established to provide guidelines for managing U.S. fishery resources and for the problems that arise when marine mammals and fishermen are competing for the same fish and shellfish.

Humans are responsible for the disruption of marine mammals in several ways, including fishing, hunting, boating and research.

Consider the following examples of compromised marine mammal species.

Florida manatees

Many Florida manatees die every year. One third of manatee deaths are related to humans and to habitat destruction, including collisions with boats and entrapment in water systems (i.e., flood gates and navigational locks).

In response to these problems, different state and national agencies are working together to impose speedboat rules, to develop pressure-sensitive gate-reversing mechanisms to prevent manatee entrapment, and to develop new methods for returning recovered manatees to the wild.

Hawaiian monk seals

Hawaiian monk seals are among the world's most endangered species. They are extremely sensitive to human disturbance and occur almost exclusively on or around the small, remote islets of the Northwestern Hawaiian Islands (find these on a map; they arc not the islands where people vacation, like Maui and Oahu). One of the important issues in assessing the

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decline of Hawaiian monk seals is lobster fishing at French Frigate Shoals—a practice which may remove much of the food of monk seals.

Northern right whales

The most endangered marine mammal in U.S. waters is the Northern Right Whale. The largest surviving population, about 400 animals, occurs seasonally in three locations off the U.S. Atlantic coast and two areas off Canada. One third of the deaths of Northern Right Whales are due to human causes-collisions with ships and entanglement in fishing gear. There have been attempts to establish airplane survey networks that would alert ships of the presence of right whales. Suggestions have been made for seasonally limiting the use of fishing gear known to entangle whales in right whale habitats. So far none of these programs has been successfully implemented.

Whales considered "endangered" under the Endangered Species Act and “endangered” or "depleted" under the Marine Mammal Protection Act include:

- Beluga whale
- Blue whale
- Bowhead whale
- Fin whale
- Gray whale
- Humpback whale
- Killer whale
- North Atlantic right whale
- North Pacific right whale
- Sei whale
- Southern right whale
- Sperm whale

Any scientist preparing to do field research on whales must apply for a permit. There are limits on how much researchers can disturb the natural behavior of animals. There even more stringent laws applying to the invasion of habitats of endangered or threatened species.

In Hawaii, for example, you may not come within 300 feel of a humpback whale without a permit, and there are "whale police" who can arrest or cite recreational boaters for disobeying that law.

Of course, it is essential to most field research to be closer than 300 feet from your subject. It would be extremely difficult to note characteristic markings, or take dose-up photographs from a distance away the length of a football field. So scientists must work hard to define and justify their research and research methods in order to obtain the appropriate permits for conducting their studies.

Your Challenge

Pretend that you are a scientist interested in doing whale research. Choose one of the species from the above list to study, and think about what you would like to research about that species. Prepare an imaginary application for a permit to conduct your research. In real life, your application would be reviewed by the Department of Comrnerce (National Marine Fisheries Service) and the Department of the Interior (Fish and Wildlife Service), then by the Marine Mammal Commission and its scientific advisors. It would be published in the Federal Register and be open for public comment.

Federal regulations require you to submit the following information:

1. Your qualifications as a scientist (i.e. schooling, work experience, previous research completed/published, etc.) Be creative. For example: imagine where you went to col!ege.
2. The species of marine mammals that may be bothered, or harassed, in the course of your research.
3. The geographic location(s) where you will conduct your research. Use your imagination and the results of library research.
4. The period(s) of time during which you will conduct your research.
5. The purpose of your research, including an explanation of why the research is believed to be bona fide and important and helpful. The legal definition of bona fide scientific research is research that is:
   - likely 10 be accepted for publication in a scientific journal,
   - likely to contribute to the basic knowledge of marine mammal biology or ecology, or
   - likely to identify, evaluate or resolve conservation problems.
6. The methods to be used for conducting your research. Use some you have read about or invent some new ones.