



Marine-Management Research Projects -- Suggested Topics

There are many interesting research topics having to do with how people manage the marine environment and the species that live there. This background sheet suggests a handful of topics for which information is readily available.

Possible Research Topics

1) Marine Protected Areas

Protected areas are parts of the marine environment that have limits placed on how people can use them. In some marine protected areas (or refuges), fishing is not allowed at all. In others, fishing is limited to certain types of gear or certain species. Protected areas are designed to give marine plants and animals a break from human pressure. Research topics include the following:

- How and why are marine protected areas used in Hawai‘i? Where they have been used, have they been effective? Why or why not?
- How and why are marine protected areas used elsewhere in the world? Have they been effective? Why or why not?
- What do experts say about how to make marine protected areas effective?
- Under the traditional Hawaiian system governing fishing in the waters around the islands, certain areas were declared *kapu*, or forbidden, for periods of time to allow populations of marine life to recover from fishing pressure. These *kapu* areas were essentially marine protected areas. Research the traditional Hawaiian management system, as well as other islands where similar traditional systems are still used to manage coral reefs.
- What is the current status of Molokini Island and its surrounding waters? Is it a protected area of any variety? What regulations are in place to protect the surrounding coral reefs from damage by recreational boaters, snorkelers, and divers? What is being done to protect the coral reefs around Molokini?

2) Aquaculture

From the time of the ancient Hawaiians, people have been growing fish and other marine life for food. Along the coastlines of the islands, you can see the remnants of Hawaiian fishponds, some of which have been restored. Today, aquaculture operations raise fish for food and to restock fish into parts of the ocean that have been overfished. There is even experimentation with raising fish for the aquarium trade in aquaculture operations. Research topics include the following:

- How were fishponds constructed, used, and managed in early Hawaiian times? Which species were grown in these ponds? Which parts of Hawaiian society were fed by the marine life from these ponds? What is being done to restore fishponds on Maui or elsewhere in the Hawaiian Islands? Are there traditional fishponds in use today?



- What are some current examples of aquaculture on the Hawaiian Islands? Describe them as well as similarities and differences between modern aquaculture and how it was practiced by early Hawaiians.
- What are some of the potential benefits and problems associated with aquaculture? For example, what are the possible effects on water quality, wild fish populations, or human food supply?

3) Managing Marine Fishing

People use the abundant marine life here for many purposes. Some people fish for their own food, some fish commercially, and others make a living on sport-fishing charter boats. Making sure that there are enough fish and different kinds of fish to satisfy all of these uses is one job of government fishery managers. Research topics include the following:

- Which are the main species fished for commercially or for food or sport? Describe the species, their habitats, and how they are fished for. What is the status of populations of these fish in the waters around the Hawaiian Islands?
- Which kinds of food and sport fish were introduced on purpose? Why? What effect has their introduction had on native marine plants and animals?
- What is being done in Hawai‘i to increase populations of fish that are valuable for food or sport fishing? Which methods seem most effective? Least effective? Why? Research and explain other approaches you think might work well.
- What rights do native Hawaiian people have to fish and collect marine life for subsistence purposes? Describe some of the issues and concerns related to this topic, perhaps focusing on subsistence fishing that is allowed at ‘Āhihi-Kīna‘u Natural Area Reserve.

4) Protecting Threatened or Endangered Marine Species

Many marine species are protected by laws and regulations. Some of these rules are designed to protect species that are in danger of extinction. Others are designed to keep species from becoming endangered or threatened with extinction. Conservation efforts help protect many species, regardless of whether they are in danger of extinction. Research topics include the following:

- Pick a species or a type of plant or animal that you are interested in. What is the status of that species and what, if anything, is being done to protect it? (In general, there is more information available on species that are on the federal endangered species list than for species that are not endangered. Endangered Hawaiian marine species include hawksbill and green sea turtles, humpback whales, and Hawaiian monk seals.)
- What habitat conservation efforts are helping to protect endangered species and other species in the oceans around Maui and the other Hawaiian Islands? Research what is happening at the Hawaiian Islands Humpback Whale National Marine Sanctuary or the work of coral reef protection groups on Maui.



- What major laws and treaties are in place to protect endangered species? Research the Endangered Species Act, the Marine Mammal Protection Act, or the Convention on International Trade in Endangered Species of Wild Fauna and Flora. How do these laws help protect marine species found in Hawai‘i?
- What is the current status of U.S. Navy proposals to test and employ Low Frequency Active Sonar in waters around the Hawaiian Islands? What arguments are (or were) made for and against this proposal?