

OVERFISHING DISCUSSION

Learning Standards: LS2-2, LS2-5, ESS3-3, ESS3-4

Introduction:

The goal of any sustainable fishery is to maximize the biomass that is being removed from the ocean while also leaving a sustainable number of fish and sharks to reproduce and prosper. This activity will help students understand that there is not an infinite amount of resources in the ocean, what happens to one group of organisms when you remove their predators, prey, or competitors, and how removal of marine species has different impacts on both humans and the given species' population (depending on its mode of reproduction). This activity should also show students that while sharks are very important to the ecosystem, smaller non-predatory fish such as herbivorous parrotfish and incredibly important to a healthy coral reef ecosystem, for example.

Discussion:

1. Over the course of its lifetime, the bioaccumulation of toxins in sharks and anchovies is different. Which one would you rather eat if you wanted to be healthy and why?
2. Removing fish from the ocean not only has effects on other members of the species, but other fish and marine organisms that rely on them for food as well. If you were a fisherman and removed half the population sardines in an area, how would that affect plankton levels? How would it affect shark levels?
3. The scenario is the same as in #2, but instead of removing sardines you are removing half the shark population in an area. How do you think that would then affect the zooplankton, other large fish, and smaller fish (i.e. anchovies)?
4. What are some general fishing rules you can make to stop the negative changes from happening in the coral ecosystem?
5. What do you think people should do to stop things like this from happening around the world?