

Name: _____

Threat to Flow of Energy in Ocean Ecosystems

Ecologists are scientists who study ecosystems. Ecosystems are communities of living things, like plants and animals, and non-living things, like rocks and soil. Living and non-living things share an environment and resources within that environment.

One part of an ecologist's job is raising awareness about what happens when ecosystems are threatened. Today, you will create an infographic to raise awareness about what happens when an ocean system is threatened due to overfishing. Follow the steps below to design your infographic.

Step 1: Read about threats to the flow of energy in ocean ecosystem

Flow of energy in ocean ecosystem

Coral reefs are important ecosystems in the world's oceans. Coral reefs have sea grass and plankton. Sea grass and plankton are food sources for fish. Fish are an important source of food for large marine life, such as octopus, crabs, sharks, and dolphins.

Overfishing: A threat to ocean ecosystems

In recent years, overfishing by humans has become a huge problem for coral reef ecosystems. Overfishing is when too many fish are taken out of an ecosystem, and the ecosystem is harmed. Here is an example of what happens during overfishing:

- Humans use nets to catch a lot of small fish near coral reefs.
- There are less fish for larger animals to eat. This means that higher levels of the ecosystem won't have enough food. For example, sharks are dying due to a loss of prey to eat.
- The algae that the fish normally eat won't get eaten. Algae is a plant that grows on the coral. This means that there will be too much algae. Too much algae can kill the coral. Too much algae can also take up too much room so other plants won't have room to grow.

Overfishing: Why is it a threat?

- One problem with overfishing is that it lowers the biodiversity of a coral reef ecosystem. Biodiversity refers to the variety of plants and animals in an ecosystem. When species of animals or plants are missing from an ecosystem, biodiversity is lowered. As a result, the entire ecosystem can fall apart. For example, if puffer fish are removed from the ecosystem, animals that eat puffer fish don't have a food source.
- Another problem is that people do not accurately report how many fish they caught. Many states and countries require people to report the number of fish they have caught. Sometimes, people are not truthful about the number of fish they caught. For example, they might say they caught 200 fish when they actually caught 350 fish. This is a problem because government agencies that are in charge of regulating fishing practices will think there are more fish in the ocean than there actually are. This means they will allow more people to go out and fish and too many fish could be caught.
- Another problem is that if the fish population decreases, people around the world are at risk for losing their jobs and main source of food. This is because almost 300 million people live near coral reefs and depend on fishing to make money and provide food for their families and communities.

Ways to raise awareness about overfishing

- If you are fishing, only take what you need. Catch and release fish you don't plan on eating or selling.
- If you are fishing, know about fishing regulations in your area.
- If you are fishing, learn how your actions affect other levels of the ecosystem.
- If you are fishing, it is important to accurately report how many fish you caught.
- If you are fishing, research the populations of fish in the area where you will be fishing. Do not catch fish from populations that are struggling to survive.
- If you own an aquarium, be a responsible owner. Know about where your fish come from and do not release aquarium fish into the wild.

Name: _____

Threat to Flow of Energy in Ocean Ecosystems

Step 2: Read requirements for infographic

- Specific audience chosen
 - Will your infographic be written for fishermen who are overfishing or for the general public?
 - Will your infographic be informational or cautionary?
- Picture of healthy food chain in ocean that includes the following:
 - At least 4 levels.
 - Each level should be labeled producer or consumer.
 - Arrows that show how the energy flows through the food chain.
- Description of what overfishing is and how it harms the food chain.
- Suggestions on how overfishing can be avoided
- A slogan that people will remember. A slogan is something that will help people spread the message of your campaign. For example, “Only you can prevent forest fires” and “Reduce, reuse, recycle” are both examples of slogans that help people remember a campaign's message.
- Images and symbols that represent your message. For example, you might choose to use a picture of an empty ocean to show that overfishing has taken away too many fish.

Step 3: Plan your infographic

Audience: Choose who your infographic will target.

Fishermen

General Public

Other (Describe)

Picture of healthy food chain in ocean. Plan your food chain below.

Description of how energy flows through your healthy ecosystem:

Name: _____

Threat to Flow of Energy in Ocean Ecosystems

Description of overfishing and how it harms the food chain:

Suggestion on how overfishing can be avoided:

Images and symbols you want to include:

Slogan you want to include:

Name: _____

Threat to Flow of Energy in Ocean Ecosystems

Step 4: Draw your infographic