

OUR HIGH SEAS

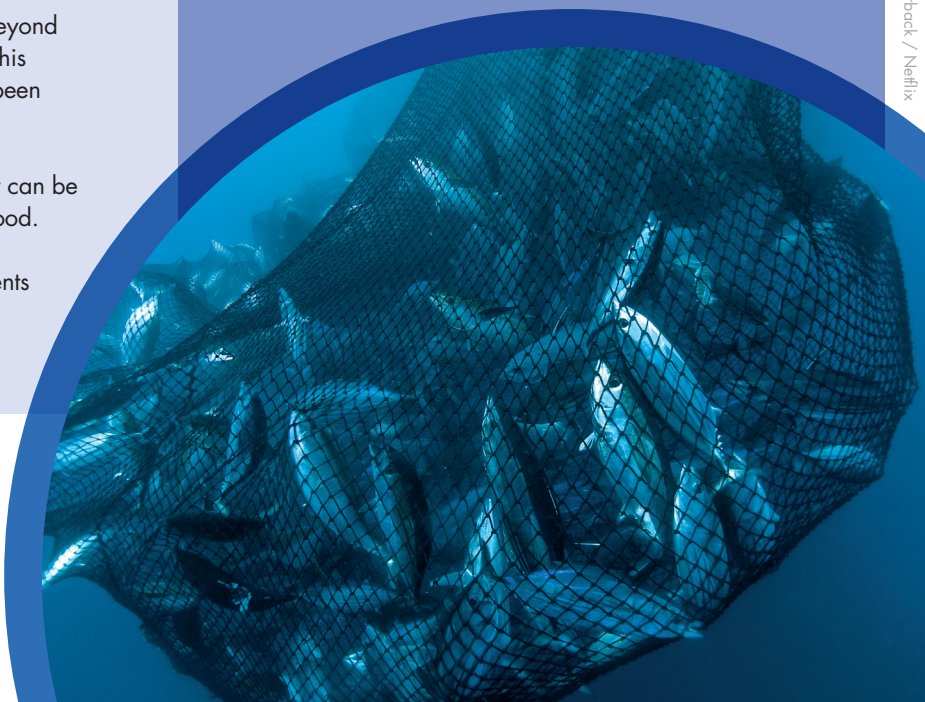
Key Takeaways:

- Beyond the shallow coastal waters lie the high seas, or open ocean. The open ocean covers 60% of our planet's surface. It is the largest habitat on our planet, but also one of the least understood—we have explored only 5% of the world's oceans.
- The open ocean is enormous and largely ungoverned, leaving it vulnerable to overfishing, illegal fishing, mining, and hazardous shipping.
- We have assumed that the open ocean was too large to damage, but we now understand it is under enormous threat. In addition to unsustainable fishing practices, our oceans are suffering from the effects of climate change and pollution (noise and plastics).
- In addition to providing us with food, the oceans offer other benefits like supplying half of the oxygen we breathe and playing a huge role in cloud formation and climate.
- One-third of all fish stocks have been harvested beyond their limit due to unsustainable industrial fishing. This includes populations of bluefin tuna, which have been fished close to extinction.
- If we harvest the oceans in sustainable ways, they can be productive and supply us with an abundance of food.
- Global cooperation to form international agreements is the only way our oceans will recover.



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Drag net of a seine fishing vessel full of Yellowfin tuna (*Thunnus albacares*), Los Roques, Venezuela. Caribbean.



GUIDED DISCUSSION PROMPTS

Use these prompts to generate a class or small-group discussion based on the Our High Seas episode or on videos on ourplanet.com.

1 Describe the cycle of matter and flow of energy among living and nonliving parts of a marine ecosystem, starting with phytoplankton. Why are phytoplankton important? What threats do phytoplankton face? What kind of ripple effect would their decline have on other marine species?

Example from the episode:

Phytoplankton depend on nutrients released from animals, such as bottlenose dolphins, in the form of waste. The plankton then combine these nutrients with energy from the sun to provide half the oxygen in the air we breathe. Phytoplankton are the basis of many marine food webs, so many animals depend on them. Phytoplankton need the energy provided by the animals as much as animals need the energy provided by the phytoplankton.

2 Discuss the role of oceans in regulating climate using terms associated with the stages of the water cycle. How do oceans help protect us against climate change?

Example from the episode:

Moisture from oceans collects in tiny particles and forms clouds. These ocean clouds reflect the sun's energy back into space, helping slow global warming. This important role in cloud formation also means that oceans drive weather systems that sustain life in other areas of the world.

3 There are 10 times more animals living in the deep oceans than previously thought. These creatures often look unlike anything ever seen on our planet; they have adapted traits necessary to survive the heavy pressure and darkness of these environments. Provide examples from the episode of these deep-sea adaptations.

Examples from the episode:

Dragonfish and deep-sea angler fish have adapted bioluminescence, using their glowing attachments to lure their prey.

Deep-sea corals have adapted to not require the sunlight that their shallow coral reef relatives need to survive.



GUIDED DISCUSSION PROMPTS

4 Compare and contrast overfishing and illegal fishing. What are the causes of these destructive actions? Discuss in terms of human population and consumption of natural resources. What will eventually happen if these problems are not addressed?

Examples from the episode:

Overfishing occurs when more fish are caught than the population can replace. This causes an imbalance in the ecosystem and affects the social and economic well-being of the coastal communities that depend on fish for their livelihood.

Illegal fishing is a key driver of global overfishing. It is essentially defined as fishing without permission. One form of illegal fishing is fishing in foreign areas that are governed by other countries. It can also refer to using banned fishing techniques that damage the environment, fishing for a species that is protected, or fishing in an area that is protected and designated as being off-limits. Illegal fishing threatens the food supply of both marine animals and people.

5 With so many changes occurring to our oceans, marine species are being forced to adapt and make drastic changes to their way of life. With unsustainable fishing occurring, waters that were once dominated by fish are now being taken over by other species. What kind of impacts would this have? How would this affect the food web and the species within it?

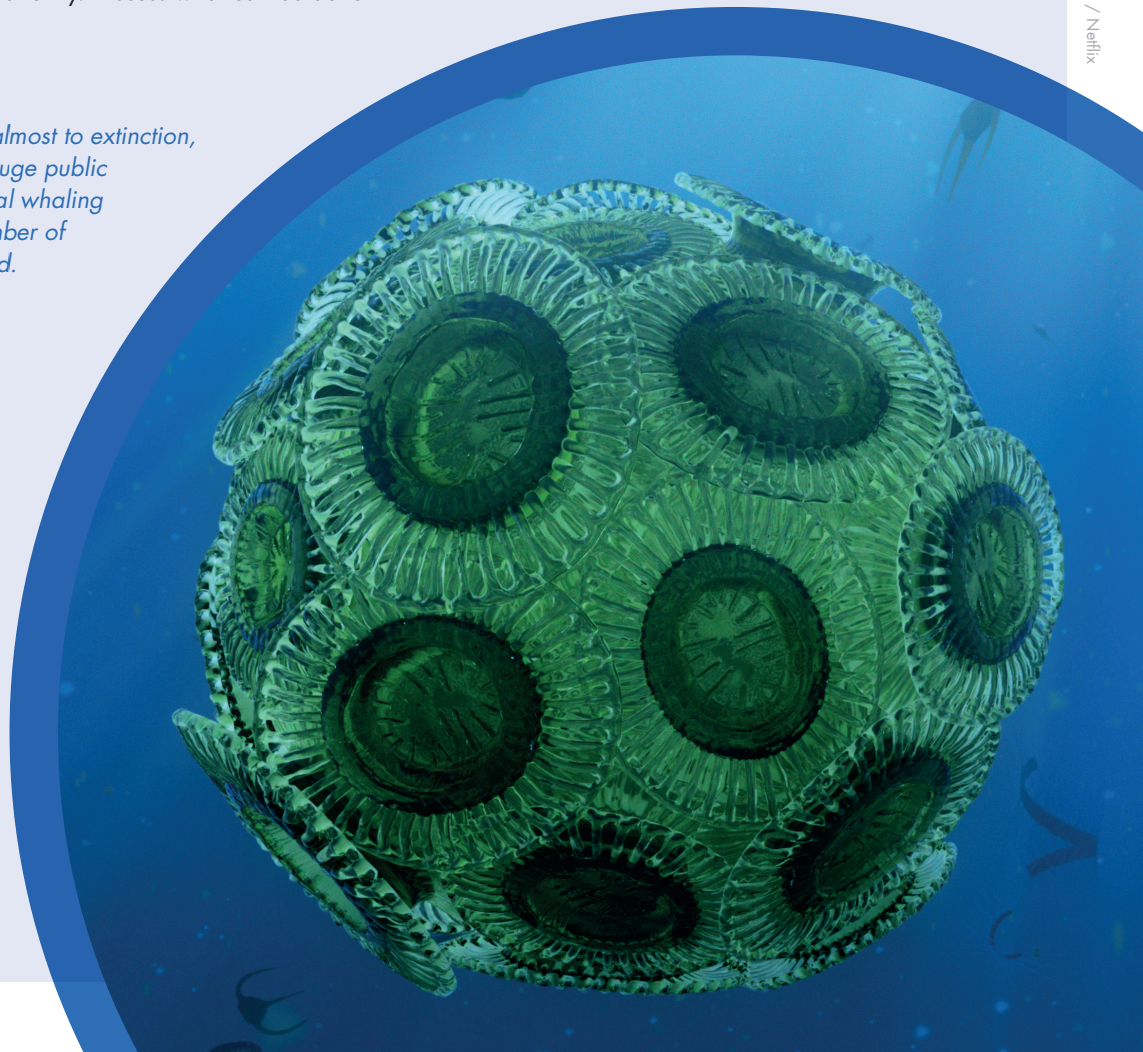
Example from the episode:

Squid are increasingly replacing fish, indicating a serious imbalance in our oceans. Squid breed quickly and have fast-growing young, able to fill gaps left by fish we overharvested. Sea lions are now forced to eat squid instead of their preferred meal of anchovies.

6 Don't underestimate the power of your voice. Even with large global environmental issues, such as saving our oceans, gathering support and initiating the conversation demonstrate the value in each individual being able to make a difference. We can begin to improve the health of our oceans; oceans have the power to recover if given the opportunity. Discuss what can be done in your community to help oceans.

Example from the episode:

Humpback whales were hunted almost to extinction, leaving only a few thousand. A huge public outcry led to a ban on commercial whaling in 1986, and since then, the number of humpbacks has steadily increased.



ACTIVITIES

ACTIVITY IDEA	SUBJECTS
Participate in a game of limbo while learning about zones of the oceans and endangered deep-diving marine species.— How Low Can They Go?	Physical education
Use your engineering skills in a science experiment that exposes the damaging truth behind some industrial fishing practices.— Be Careful What You Fish For	STEM
Write a persuasive letter outlining the benefits of oceans and demanding their protection.— A Need for the Seas	Language arts
Play a dolphin-themed twist on the game Marco Polo to model how these intelligent animals use echolocation to find fish.— Food or Foe?	Physical education
Create a jellyfish art model out of recycled plastic litter to understand how sea turtles mistake trash for food.— Only Jellies in the Belly	Arts
Research the impacts of single-use plastics and propose environmentally friendly alternatives to the administration within your school or community	Science/social studies

What We Can Do:

- Spread the word—talk to your friends and family about the importance of the ocean.
- Encourage smart shopping—when buying seafood, make sure to look for a label indicating it came from a fishery or farm that has been certified as meeting environmental sustainability standards that protect both wildlife and communities.
- Ask questions—don't be afraid to ask a shop or restaurant where their seafood comes from and how it was caught. Posing these questions can help you choose sustainable seafood, and it sends a message that people care about the source of their food.
- Watch your trash—don't throw litter anywhere except in proper waste containers. Always attempt to recycle or repurpose items when possible, especially plastic. Avoid single-use plastic items such as straws and bags.
- Enjoy the oceans—spend time in and around the oceans, but always remember to leave them how you found them!

Additional Resources:

- [Effects of MPAs](#)—this magazine article dives into a study that unveils the benefits of marine protected areas
- [A small straw's big environmental impact](#)—understanding the threats straws pose to the environment
- [7 ways you can help save the ocean](#)—easy tips for how to do your part
- [Tackling plastic pollution in the Galapagos](#)—a closer look at the different ways plastic is impacting this habitat
- [Stemming the tide of plastics in our oceans](#)—colorful infographic of where the trash is coming from and what the solution is
- [Bluefin tuna species WWF webpage](#)—facts about the threats facing this impressive marine hunter
- [Growing underwater noise in the Arctic puts whales and other animals at risk](#)—information about how noise pollution from boats and oil exploration can harm whales, dolphins, and other species
- [Overfishing WWF webpage](#)—causes, impacts, and how WWF is working to put a stop to it
- [Illegal fishing WWF webpage](#)—an overview of this continued threat to marine habitats
- [Our Planet official webpage](#)