

Resources from the Ocean

BEFORE YOU READ

After you read this section, you should be able to answer these questions:

- What are the living resources from the ocean?
- What are the nonliving resources from the ocean?



California Science Standards

6.6.a, 6.6.b, 6.6.c

What Are the Living Resources of the Ocean?

People have been harvesting plants and animals from the ocean for thousands of years. Today, harvesting food from the ocean is a multi-billion-dollar industry. As the population of humans on Earth has grown, the demand for these resources has increased. However, the availability of these resources has not increased as much.

Harvesting fish from the ocean can harm the environment. Usually, fish can reproduce faster than people can catch them. However, new technology, such as drift nets, has allowed people to catch more fish in less time. This may allow people to take fish faster than they can reproduce. This could cause the population of fish in the oceans to decrease. Also, other animals, such as dolphins and turtles, can be caught in fishing nets.

Recently, laws have been passed that regulate fishing more strictly. These laws are designed to help reduce the amount of damage fishing causes to the environment. As a result of these laws, people have begun to raise fish and other types of seafood, such as shellfish and seaweed, in farms near the shore.



New technology, such as these drift nets, allows people to catch more fish in less time. However, other animals, such as dolphins and turtles, can sometimes get caught in the nets.

STUDY TIP

Summarize As you read, make a chart describing the resources that people use from the ocean.



CALIFORNIA STANDARDS CHECK

6.6.b Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.

Word Help: resource anything that can be used to take care of a need

1. Explain Why can fish be considered to be a renewable resource? When would fish not be considered a renewable resource?

SECTION 3 Resources from the Ocean *continued*

What Are the Nonliving Resources of the Ocean?

Fish and other seafood are important resources that people take from the oceans. However, people also take many nonliving resources from the oceans. These resources include energy resources and material resources.

FRESH WATER

Fresh water is often considered a renewable resource. However, in parts of the world where the climate is dry, fresh water is limited. In these parts of the world, ocean water is desalinated to provide fresh drinking water. **Desalination** is the process of removing salt from sea water. ✓

Most desalination plants heat ocean water to cause the water to evaporate. The water vapor, which is not salty, is collected and condensed into liquid fresh water. Another method of desalination involves passing the ocean water through a membrane to leave the salts behind. However, no matter what process is used, desalination is expensive and can be slow.

READING CHECK

2. Define What is desalination?

Critical Thinking

3. Infer Why can't tidal energy be used everywhere?

TIDAL ENERGY

The ocean is constantly moving as tides come in and go out. People can use the motion of the water to generate electricity. Energy that is generated from the movement of tides is called *tidal energy*. Tidal energy is clean, inexpensive, and renewable. However, it can only be used in certain parts of the world.



- 1** As the tide rises, water enters a bay behind a dam. The gate closes when high tide reaches its peak.
- 2** The gate remains closed as the tide falls.
- 3** At low tide, the gate opens, and water rushes through the dam. The water moves turbines, which generate electricity.

TAKE A LOOK

4. Explain Why is tidal energy considered to be renewable?

SECTION 3 Resources from the Ocean *continued*

OIL AND NATURAL GAS

Oil and natural gas are considered the most valuable resources in the ocean. Oil and natural gas form from the remains of tiny plants and animals. These remains take millions of years to turn into oil and natural gas. Therefore, oil and gas are nonrenewable resources.

Many deposits of oil and natural gas are found in rock near the continental margins. In order to obtain these resources, engineers must drill wells through the rock. About one-fourth of the world’s oil is now obtained from wells in rock beneath the oceans.

Oil is refined by manufacturers to make gasoline. Gasoline powers vehicles and generators that make electricity. Oil is also used to make plastic and other products. ✓

MINERALS

Many different kinds of minerals can be found on the ocean floor. These minerals are commonly in the form of nodules. *Nodules* are potato-shaped lumps of minerals that form from chemicals dissolved in ocean water.

Nodules can be made of many different kinds of minerals. Most nodules contain the element manganese. Manganese can be used to make certain kinds of steel. Some nodules contain the valuable metals iron, copper, nickel, or cobalt. Some contain phosphorus, which can be used in fertilizer.

Nodules can be very large. They may contain a large amount of valuable minerals. However, they form in the very deep parts of the ocean. For this reason, they are difficult to mine. ✓



Minerals can be found on the ocean floor in the form of nodules. These nodules are difficult to mine because they are found in very deep water.



Discuss In a small group, talk about different ways that you use resources from the ocean every day.

READING CHECK

5. List Give two ways that people use oil or natural gas.

READING CHECK

6. Explain Why are nodules hard to mine?

Section 3 Review

6.6.a, 6.6.b, 6.6.c



SECTION VOCABULARY

desalination a process of removing salt from ocean water	
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1. **List** Name two living resources from the ocean.

2. **Define** Write your own definition for desalination.

3. **Describe** How can the tides can be used to generate electricity?

4. **Identify** Give five minerals that may be found in nodules.

5. **List** Give four nonliving ocean resources.

6. **Infer** Why are people starting to farm the oceans instead of harvesting wild organisms?
