

Why are the oceans important?



KEY TERM

phytoplankton: floating microscopic plants and algae

LESSON 6 | Why are the oceans important?

The oceans are more important than you may think. Without the oceans, there would probably be no life on Earth. The oceans and the atmosphere work together to support living things.

Living things must breathe oxygen. This oxygen comes from green plants. Green plants that grow on land supply some oxygen to the air, but only a small amount. Most of the oxygen of the air—about 90 percent—comes from microscopic sea plants and algae called **phytoplankton** [fite-uh-PLANK-tun]. Phytoplankton float near the surface of the ocean. Phytoplankton also supply oxygen to ocean water. Sea animals, as well as sea plants, use this oxygen.

There is another way in which the oceans and the atmosphere work together. Water evaporates from the oceans to form clouds. The clouds move over land. The moisture leaves the clouds in the form of rain or snow. Then the plants and animals get the water they need. And, in some places, people depend upon ocean water to drink. But first, salts and other minerals in the water are removed at big factories.

The oceans are important in other ways too.

The oceans give us food. Fish and shellfish are two important foods we get from the seas. Millions of people in Asia and the Pacific islands also eat seaweed. Seaweed is one kind of algae.

The oceans give us oil and gas. Large deposits of oil have been found in the ground along the continental shelf. And usually, where there is oil, there is also natural gas.

The oceans give us minerals. Ocean water contains every known mineral. The most common one is, of course, common table salt. This is also called sodium chloride. It is taken from the ocean to be used in many ways. Other minerals that are taken from the sea are manganese and bromine. Still other minerals dissolved in the ocean are not used. It costs too much to take them out. But scientists are looking for ways to make mining the ocean floor less costly.

PHYTOPLANKTON

Phytoplankton are floating microscopic plants and algae. There are other kinds of plankton. They are microscopic animals called zooplankton [zoh-uh-PLANK-tun]. Both types of plankton are the start of the ocean food chain. It works something like this:

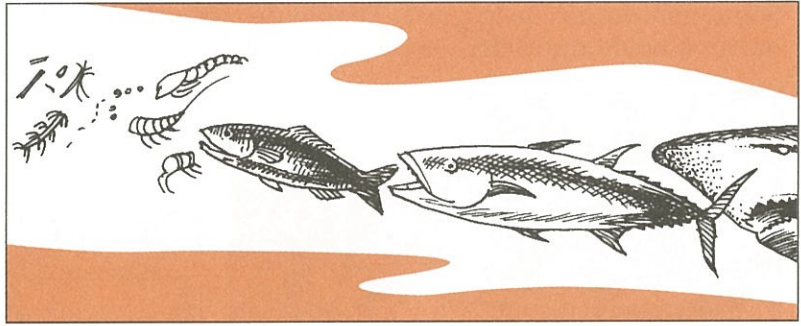


Figure A

- Tiny sea creatures eat the microscopic plankton.
- Small fish eat the tiny creatures.
- Larger fish eat the small fish.
- Still larger fish eat the large fish . . . and so on.

Actually, not only fish take part in this food chain. All sea animals are involved. They include octopus, shellfish, and sea mammals like seals, dolphins, and whales.

How do people fit into this food chain? _____

SOMETHING INTERESTING

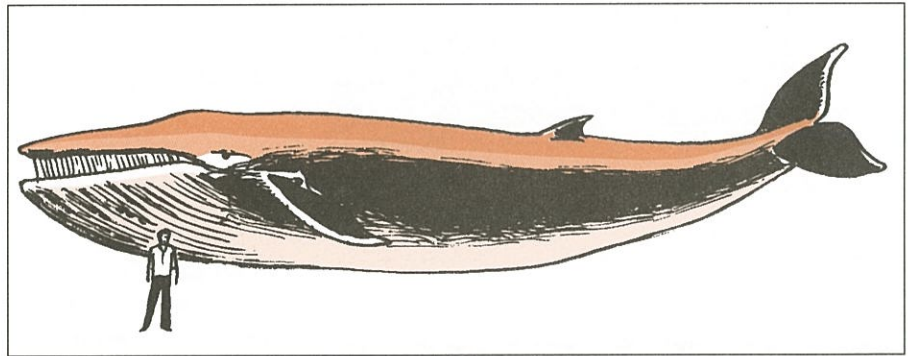


Figure B

Plankton are among the smallest life-forms in the sea.

Whales are the largest. In fact, whales are the largest animals that ever lived.

The largest whale is the blue whale. It may grow 29 meters (95 feet) long and weigh 136 metric tons (150 tons).

The huge blue whale is a baleen whale. Baleen whales eat mostly plankton — about $\frac{1}{2}$ to $1\frac{1}{2}$ tons every day.

So just think — the world's largest animals depend on some of the world's tiniest living things.

"GIFTS" FROM THE SEA

Some fish do not taste good. People do not eat them. But they are still important. They have valuable nutrients—especially protein.



Figure C

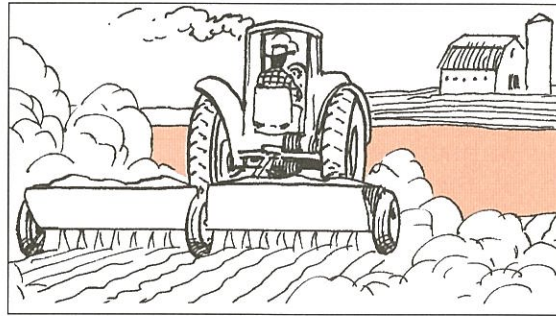


Figure D

Some of these "trash" fish are made into fertilizer. How does this help farmers? _____

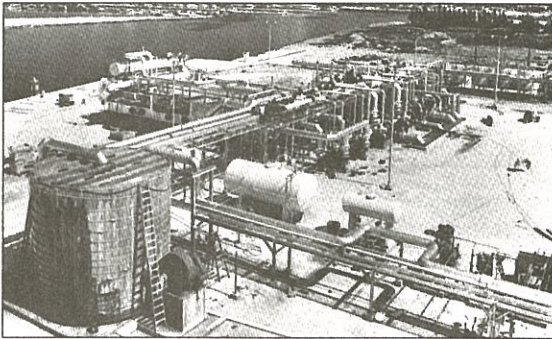


Figure E *Desalination plant*

Another important resource of the oceans is fresh water. In some countries, fresh water is very scarce. In these countries, people get their fresh water from removing the salt from the oceans.

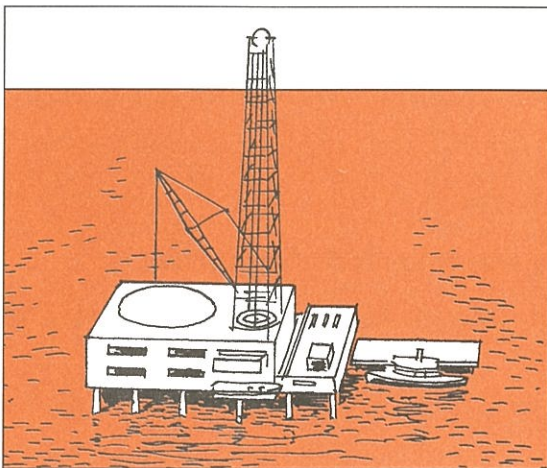


Figure F *Drilling for offshore oil*

In shallow offshore waters, drilling is done from permanent platforms. The platforms have legs that are sunk into the ocean floor.

In deeper water, floating platforms and special drilling ships are used.

Scientists believe that there is more oil below the oceans than there is below land.

What special problems does offshore drilling present? _____

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

eat
salt
phytoplankton
shellfish
rain and snow

bromine
seaweed
dead
oil and natural gas
mineral

fertilizer
fish
manganese
ocean

1. Most of the oxygen we breathe comes from _____ .
2. Plankton live in the _____ .
3. The oceans supply most of the water vapor that returns to earth as _____ .
4. Without the oceans, our planet would be a “_____” planet.
5. People eat many things that live in the ocean. Three examples are _____ , _____ , and _____ .
6. “Trash” fish are fish that are not good to _____ . They are made into _____ .
7. Large deposits of _____ have been discovered along coastal waters.
8. Ocean water contains every known _____ .
9. Three minerals we do take from sea water are _____ , _____ , and _____ .

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A

- _____ 1. phytoplankton
_____ 2. zooplankton
_____ 3. salt, manganese, bromine
_____ 4. “trash” fish
_____ 5. floating platforms

Column B

- a) some minerals we take from the sea
b) used for fertilizer
c) supply most of the oxygen to the atmosphere
d) used for oil drilling in the ocean
e) floating sea animals

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. Green plants give off oxygen.
- _____ 2. All green plants grow on land.
- _____ 3. Most of our oxygen comes from zooplankton.
- _____ 4. Most of our oxygen comes from phytoplankton.
- _____ 5. Phytoplankton are large.
- _____ 6. The ocean is an important source of food.
- _____ 7. Seaweed is a food.
- _____ 8. The oceans have only small deposits of oil.
- _____ 9. Every mineral we use comes from the ocean.
- _____ 10. Huge amounts of water evaporate from the ocean. This means that the oceans are drying out.

REACHING OUT

Many people earn their living from the sea.

How many different kinds of jobs can you name that depend upon the sea? _____

The ocean is important for some of its harmful effects on people too. What are some ways in which the oceans can harm people? _____
