



TEACHER GUIDE

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STUDENT HANDOUTS

• Reading Comprehension	
1. <i>What Are Aquatic Ecosystems?</i>	
2. <i>Where Are Aquatic Ecosystems?</i>	
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4. <i>Changes in Freshwater Aquatic Ecosystems Caused By Human Activity</i> ...	
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EASY MARKING™ ANSWER KEY

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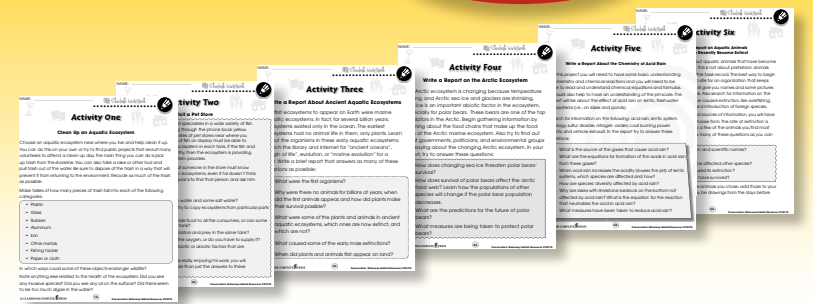
MINI POSTERS

24

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Conservation: What We Can Do

1. Put a check mark (✓) next to the answer that is most correct.

- a) Which of these problems has been *most* nearly corrected in the United States?
- A marine debris
 - B invasive species
 - C release of greenhouse gases
 - D direct dumping of pollutants into rivers
- b) Which human activity helps fish reach their spawning grounds?
- A building dams
 - B building fish ladders
 - C protecting coral reefs
 - D removing trees along streams
- c) Which is true of aquatic dead zones?
- A Dead zones can be restored to life.
 - B Most dead zones have disappeared.
 - C Adding fertilizer to water can restore a dead zone.
 - D Dead zones are caused by the release of greenhouse gases.

2. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

- a) Coral reefs support deep water ecosystems.
TRUE **FALSE**
- b) Fishing in the middle of the Atlantic Ocean is regulated by laws of the United States.
TRUE **FALSE**
- c) Some species of fish are being caught at a sustainable rate.
TRUE **FALSE**
- d) An ocean dead zone is an area where the fish are unsafe to eat.
TRUE **FALSE**
- e) Global temperature will continue to rise for many years.
TRUE **FALSE**



Conservation: What We Can Do

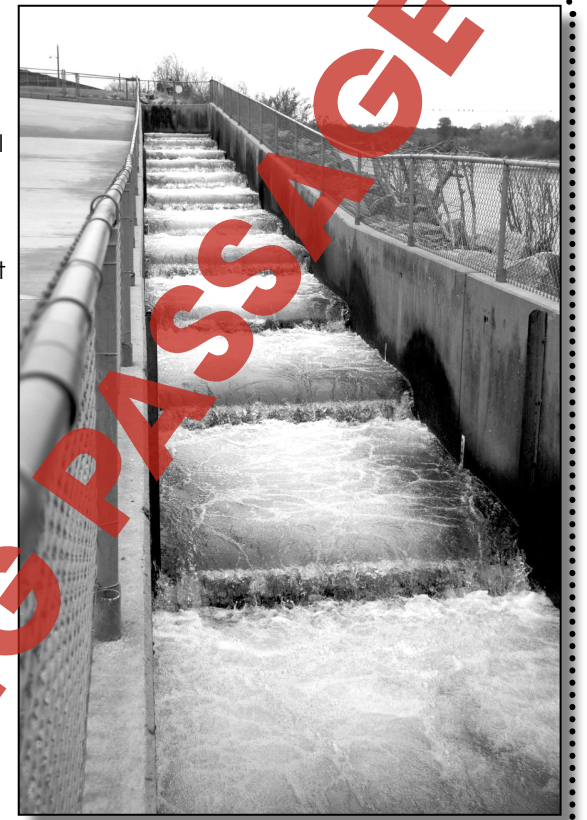
Both the United Nations and many national governments have made efforts to protect and restore aquatic environments. The United Nations has set guidelines for fishing in international waters. The purpose is to encourage sustainable catches of fish and prevent habitat destruction. The guidelines include some strict laws and some suggestions that are not enforced.

Part of the UN program is observing the number, size, and species of fish caught and whether any other species are harmed in the process. Information is gathered using satellites, airplanes, and observers on fishing boats. Sometimes there are arrests of people breaking the laws, but there are also many violations that go unpunished. The Marine Stewardship Council is a non-profit organization that also tries to protect ocean aquatic ecosystems.

In 1972, representatives of 78 countries met at a conference called the London Convention. They agreed to make it illegal to dump anything harmful into the oceans or rivers that flow to the oceans.

Many coral reefs have been protected by making them Marine Protected Areas (MPAs). An MPA is something like a national park or wildlife refuge. Any activities that could damage the reef are prohibited in the area. This approach has improved the health of some reefs, but in other areas there has been a lack of cooperation and poor enforcement of the rules. In some places, reefs have been restored by creating structures with a mineral coating on them on which coral animals tend to grow.

A few ocean dead zones have been partially or completely restored by preventing fertilizers and sewage from being dumped into the rivers that flow to the ocean. The dead zone in the Black Sea between Turkey and Russia has disappeared. Countries in



A Fish Ladder



Conservation: What We Can Do

1. Fill in each blank with a word or group of words from the list. Use each word only once.

ocean temperature overfishing greenhouse gases United Nations
Marine Protected Areas coral reefs fish ladders spawning grounds

- a) _____ will continue to rise because of the continued release of _____.
- b) The _____ has tried to regulate fisheries to end _____.
- c) Some _____ have been saved by making them _____.
- d) _____ help fish get past dams as they head for their _____.

2. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

- a) Some marine animals die when they mistake plastic for food.
TRUE **FALSE**
- b) Discarded fishing line is seldom harmful to sea life.
TRUE **FALSE**
- c) The gases that cause acid rain can be removed from factory emissions.
TRUE **FALSE**
- d) Laws control what ships at sea can dump into the ocean.
TRUE **FALSE**
- e) Some people use dynamite instead of nets to catch fish because it does not harm coral reefs.
TRUE **FALSE**

Conservation: What We Can Do

3. Answer the questions in complete sentences.

- a) Describe **two** ways that the United Nations gathers information on the practices of fishing boats.

- b) Describe **one** action that can help restore aquatic dead zones.

Extensions & Applications

Describe **one** way in which government regulations can help protect or restore aquatic ecosystems.

Describe **one** way in which individuals can help protect or restore aquatic ecosystems.



Activity Three

Write a Report on Coral Reefs

Coral reefs support one of the most diverse, colorful, and interesting ecosystems in the oceans. They are so rich in life, that they have been called the rainforests of the ocean.

Ask your teachers for books or web sites on coral reefs, or search the web and library yourself. Search for "coral reef" first. After you have taken a first look at the information you gathered, look for live exhibits of coral reefs. Unless you live in the tropics, there will be no reefs near your house. The next best thing would be an exhibit at a public aquarium that is meant to represent a reef ecosystem. Be sure to pick up any literature they have and talk to any of the staff that knows about reef life. You might also try a large pet store with a large collection of tropical fish. Ask if they have a tank of fish that live around reefs.

In your report try to answer as many of these questions as you can. You may also go beyond the questions if you find something interesting.

1. Where are coral reefs located geographically and in depth below sea level?
2. How are reefs formed? Describe the animals called corals.
3. What are the producers and consumers around a coral reef?
4. What are the predator-prey relationships?
5. What natural processes and human activities endanger coral reefs?
6. What is being done to protect coral reefs?

It will be easy to find colorful pictures to illustrate your report.



Crossword Puzzle!

Word List

ABIOTIC
ACID RAIN
ADAPT
DEBRIS
EVOLUTION
EXTINCT
FISH
FRESH
GREENHOUSE GAS
INVERTEBRATE
LOTIC
MARINE
MUSSEL
NATURAL SELECTION
OVERFISHING
OXYGEN
PHOTOSYNTHESIS
PRODUCER
RUNOFF

Across

1. The type of ecosystem located in the ocean.
4. Zebra _____s have invaded the Great Lakes.
7. What a species must do to survive an environmental change.
10. Gradual change of a species over time.
11. The nonliving factors in an ecosystem.
14. _____ ladders are installed at some dams.
16. What can happen to a species if it can't do 7 across.
17. The type of water that is less than 1% salt.
18. The result of releasing nitrous oxide and sulfur dioxide.
19. These compounds in the atmosphere help hold Earth's heat.

Down

2. Water leaving a farm field and entering a stream.
3. The process that allows 10 across to happen.
5. The word to describe an ecosystem in flowing water.
6. The role of plants in an ecosystem.
8. Ocean trash.
9. The process that only 6 down can do.
12. Spineless creatures.
13. Catching fish faster than they can reproduce.
15. A product of 9 down that all animals need.

(Note: For answers of more than one word, do not put a space between the words.)



Comprehension Quiz

Part A

Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

1. Biotic and abiotic factors cannot share the same ecosystem.
TRUE **FALSE**
2. The first ecosystems were in the ocean.
TRUE **FALSE**
3. Oxygen is a greenhouse gas.
TRUE **FALSE**
4. Melting sea ice has made it easier for polar bears to adapt to the Arctic.
TRUE **FALSE**
5. Burning some fossil fuels can cause acid rain.
TRUE **FALSE**
6. Human activities brought most invasive species to freshwater ecosystems.
TRUE **FALSE**
7. Coral reefs are endangered by human activities.
TRUE **FALSE**

Part B

Put a check mark (✓) next to the answer that is most correct.

- a) Which is a product of photosynthesis?**

A oxygen

B nitrogen

C carbon dioxide

D sodium chloride

c) What is the basic cause of most extinctions?

A predators

B overpopulation

C natural disasters

D failure to adapt to change
- b) Which are the most important producers in most aquatic ecosystems?**
- A algae
- B bacteria
- C fish
- D invertebrates

Changes in Fresh Water Aquatic Ecosystems Caused by Human Activity

Commercial Waste

Over Fishing

Waste from Livestock

Residue from a Power Station

Industrial Harbor

Discarded Trash

