

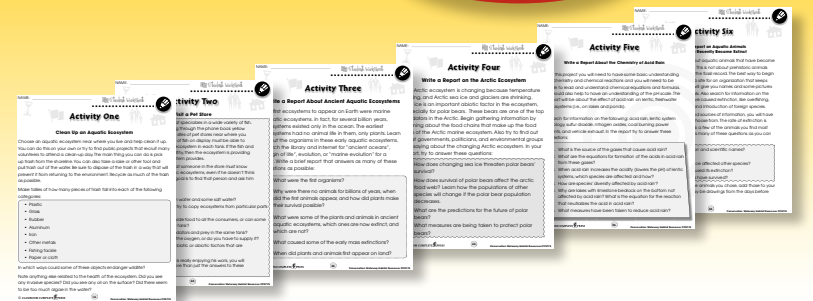
	TEACHER GUIDE	
•	Assessment Rubric	4
•	How Is Our Resource Organized?	5
•	Bloom’s Taxonomy for Reading Comprehension	6
•	Vocabulary	6
	STUDENT HANDOUTS	
•	Reading Comprehension	
	1. <i>What Are Aquatic Ecosystems?</i>	7
	2. <i>Where Are Aquatic Ecosystems?</i>	11
	3. <i>How Climate Change Can Affect Aquatic Ecosystems</i>	16
	4. <i>Changes in Freshwater Aquatic Ecosystems Caused By Human Activity</i> ...	21
	5. <i>Changes in Saltwater Aquatic Ecosystems Caused By Human Activity</i>	26
	6. <i>Predictions for Aquatic Ecosystems</i>	30
	7. <i>Conservation: What We Can Do</i>	35
	8. <i>Graphic Organizers</i>	40
•	Hands-on Activities	42
•	Crossword	46
•	Word Search	47
•	Comprehension Quiz	48
	EASY MARKING™ ANSWER KEY	50
	MINI POSTERS	55

✓ **6 BONUS Activity Pages!** Additional worksheets for your students

FREE!

- Go to our website: www.classroomcompletepress.com/bonus
- Enter item CC5775 – Conservation: Waterway Habitat Resources
- Enter pass code CC5775D for Activity Pages





What Are Aquatic Ecosystems?

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

- a) Only fresh water can support life.
TRUE FALSE
- b) An ecosystem is made up of both living and non-living things.
TRUE FALSE
- c) Parts of a system are independent of each other.
TRUE FALSE
- d) Some rivers contain only salt water.
TRUE FALSE
- e) Some lakes contain only salt water.
TRUE FALSE

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

- a) What is an ecologist?
 - A a fish
 - B a plant
 - C a system
 - D a scientist
- b) Fresh water has very little
 - A depth
 - B life
 - C mud
 - D soil
- c) All of these are living things, except
 - A water
 - B plants
 - C insects
 - D bacteria



What Are Aquatic Ecosystems?

First, we must understand what an **ecosystem** is. An ecosystem is made up of all the living things in an area of the natural world, along with the non-living resources that they depend on. The living things are called **biotic** factors, and the non-living things are called **abiotic** factors.



An ecosystem is a **system** because the parts interact with each other. Changing one factor can have an effect on many of the other factors. For example, if one of the plants is removed, it affects the animals that eat those plants and then the animals that eat the plant eaters. Eventually, most of the plants, animals, and some of the abiotic factors will be affected.

An ecosystem is usually thought of as being isolated from factors outside its area. This is usually not completely true because few areas of the world are completely isolated from all other ecosystems. **Ecologists** think of ecosystems as being isolated to make it easier to study and understand them. An island or a lake is an example of an area that can easily be studied as a separate ecosystem.

STOP Identify the two types of factors that interact in an ecosystem.

An **aquatic** ecosystem is an ecosystem located in a body of water. Most aquatic ecosystems can be classified as either **marine** ecosystems or **freshwater** ecosystems. Marine ecosystems are located in oceans and in salt lakes. Freshwater ecosystems are located in ponds, lakes, streams, and rivers. Some aquatic ecosystems are also in places where salt and fresh water mix, as at the mouth of a river that flows into an ocean.



What Are Aquatic Ecosystems?

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

- a) Which of these is an **abiotic** factor?
 - A bacteria
 - B fish
 - C grass
 - D precipitation
- b) Which of these is a **biotic** factor?
 - A air
 - B bears
 - C sunlight
 - D temperature
- c) Which of these could be the location of a **marine** ecosystem?
 - A The Great Lakes
 - B The Arctic Ocean
 - C The Mississippi River
 - D The Rocky Mountains

2. Use the words below to complete the sentences. Use each word once.

abiotic aquatic biotic ecosystem freshwater marine

- a) _____s are made up of _____ factors and _____ factors.
- b) _____ ecosystems are located in oceans.
- c) _____ ecosystems are located in inland bodies of water.
- d) _____ ecosystems are classified as either freshwater or marine.



What Are Aquatic Ecosystems?

3. Answer the questions in complete sentences.

- a) Define the term "ecosystem."

- b) Explain what makes an ecosystem a system.

Extensions & Applications

Factors in an aquatic ecosystem are listed below.

air	algae	dolphins	light	lobsters	whales	seagulls
seaweed	shellfish	soil	temperature	tuna	water	wind

Classify each factor as biotic or abiotic by writing its name in the appropriate box of the graphic organizer below.

Biotic Factors	Abiotic Factors



Activity One

Visit an Aquatic Ecosystem

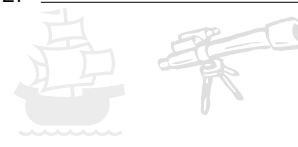
Visit an aquatic ecosystem near your home. The ecosystem can be any size from a puddle to an ocean. A small, still body of water, like a pond or a swamp, will be easiest to observe and understand.

Take notes on the ecosystem with the goal of answering the following questions:

1. Is the ecosystem lentic or lotic?
2. Which are the producers?
3. Which are the consumers?
4. Which consumers are predators?
5. Can you tell what the consumers eat?
6. Can you see any predators hunting prey?
7. Are any of the organisms part of both the aquatic ecosystem and the surrounding land ecosystem?
8. Are there any signs of pollution or debris?

The object is to learn as much as you can by careful observations. You may want to learn more by making observations at different times of day and during different seasons.

You may also want to take some pictures and include them in a notebook or in a written report.

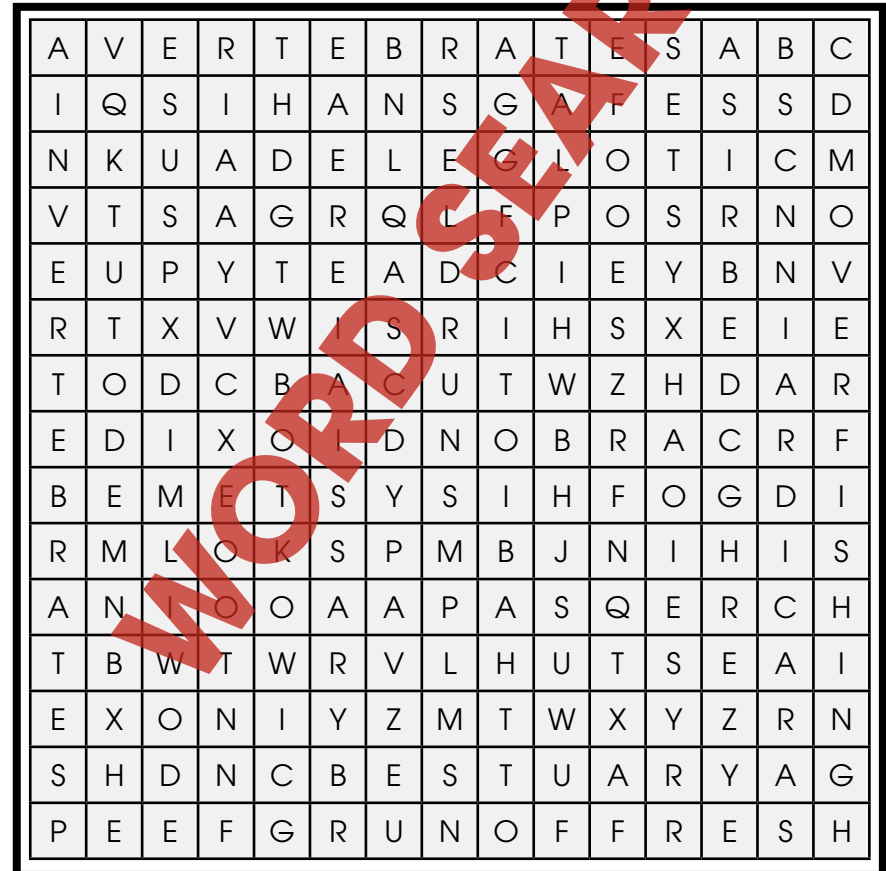


Word Search



Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

- | | | | | |
|-----------|----------------|----------------|----------------|--------------|
| abiotic | biotic | fresh (water) | nurdles | salt (water) |
| acid rain | carbon dioxide | greenhouse gas | overfishing | spawn |
| adapt | debris | invertebrates | oxygen | system |
| algae | estuary | lotic | photosynthesis | vertebrates |
| aquatic | fish (ladder) | marine | runoff | |



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
- b) Which are the most important producers in most aquatic ecosystems?
- A algae
- B bacteria
- C fish
- D invertebrates
- c) What is the basic cause of most extinctions?
- A predators
- B overpopulation
- C natural disasters
- D failure to adapt to change

Marine Dead Zones

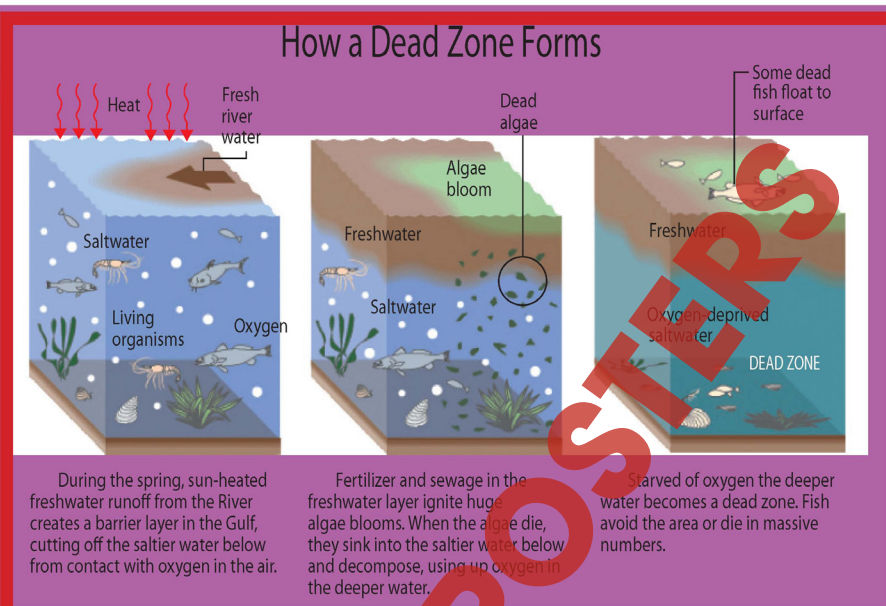


Image courtesy of NASA



How Climate Change Can Affect Aquatic Ecosystems

3. Answer the questions in complete sentences.

a) Describe the relationship between fossil fuels and climate change.

b) Explain why polar bears are part of an aquatic ecosystem.

Extensions & Applications

a) Explain why an ocean fish could adapt to global warming more easily than a fish living in a small freshwater lake.

b) Explain how greenhouse gases are similar to glass in a greenhouse in terms of light and heat.

3.

a) Fossil fuels release greenhouse gases when they are burned. Greenhouse gases trap heat in the atmosphere and raise global temperature.

b) Polar bears prey on sea life.

- 1.**
- a) FALSE
- b) TRUE
- c) FALSE
- d) FALSE
- e) FALSE
- f) TRUE

Decaying algae removes oxygen from the water, which fish need to survive.

23

- 1.**
- a) B
- b) C

3.

a) Sulfur dioxide and nitrous oxide dissolve in raindrops forming acids, then fall and run into streams.

b) (Answers will vary.) Non-native species can travel in the holds of boats. Non-native species can travel through canals from the ocean.

Extension & Applications

- Answers will vary:
- Any four of the following:
- Invasive species caused by boat traffic and canals
 - Oxygen depletion caused by agricultural runoff and sewage discharge
 - Acid rain caused by burning fossil fuels
 - Loss of spawning grounds caused by dams and logging
 - Reduced biodiversity caused by overfishing
 - Higher water temperature caused by burning fossil fuels

- 2.**
1. C
2. A
3. E
4. B
5. D

- 2.**
- a) sulfur dioxide, acid rain
- b) runoff, fertilizer, algae
- c) overfishing
- d) spawning

21

3.

a) An ocean fish is free to swim to the part of the ocean with the temperature to which it is best adapted, but most freshwater fish cannot.

b) Both glass and greenhouse gases are transparent to sunlight. Sunlight warms the soil, which radiates heat, but heat does not pass through the glass or the gases as easily as did the light.

20

2.

a) sulfur dioxide, acid rain

b) runoff, fertilizer, algae

c) overfishing

d) spawning

21

EASY MARKING ANSWER KEY



25