

# World Web Wonders

## What Is An Environmentally Sensitive Area

### Worksheet

The following set of questions that you will be asked to answer relates to the material that you have just read. The purpose of the questions is not to see if you can read but to test your ability to understand what you have read. Environmental issues are of major political concern to the people who represent us in our governments. In order to make sound judgments about the treatment of environmentally sensitive areas we need to understand our relationship with our environment.

1. Catch phrases like "the fragile planet" and "environmentally sensitive" are used politically as a means of making people aware of environmental problems and special agendas that interest groups are advocating. Can you think of three other words or phrases that are used by active environmental groups? (If you have trouble coming up with answers, check the web sites of organizations like "Greenpeace" (<http://www.greenpeace.org>), the "Sierra Club" (<http://www.sierraclub.org>), or the "Nature Conservancy" (<http://www.tnc.org>)

A. Greenpeace: Pirate-fishing, genetic engineering, reusable energy, greenfreeze

B. Sierra Club: urban sprawl, corporate hogs, CAFOs (Concentrated Animal Feeding Operations)

C. Nature Conservancy: ecologically significant habitat, Last Great Places

Many times natural disasters will alter the ecosystem of a large area. Below are two examples. The first set of pictures is from the volcano explosion of Mount St. Helen in 1980. The top two pictures are before the volcanic eruption. The bottom left is immediately after. The picture at the lower right was taken in 1980.



- The explosion took off most of the top of the mountain and leveled anything that was above ground level. What does the picture from 1987 in the lower right tell you about the area?

Students will recognize that plants are returning to the devastated area.

- This picture is seven years old. Even if you did not know the age of the picture you can still get an idea of how old it is? Count the whorls of branches on the fir trees in the center of the picture. How many can you see?

Students should be able to count 5 or 6 whorls and a part of the top.

Each whorl represents one year.

- If the trees are about 6 feet high, how long before they reach the height and size of the trees in picture one that are 200 feet high?

The trees have grown 6 feet in about 6 years so it should be about 200 years before the land is the same.

5. What can be said about the recovery time of an ecosystem that has been destroyed?

Even with life being very resilient and having the ability to start again, it requires ecological time for it to fully recover. Ecological time marks the life span of an ecosystem not the individual life spans of the species that make up the ecosystem. Environments destroyed today will take several human generations for them to return to present conditions.

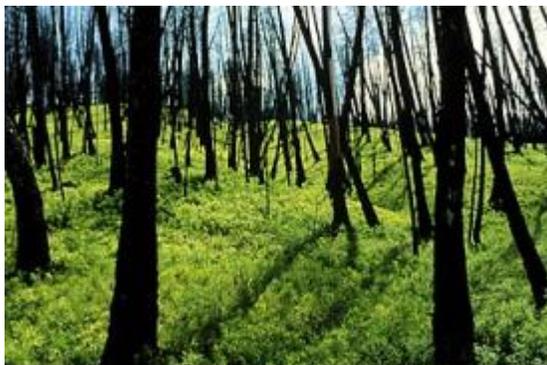
Now look at the second set of pictures from Yellowstone National Park. The park was almost destroyed by fire in 1988.



*Norris area, immediately after fires.*



*Elk Park, grass emerges only 2 weeks after the fires*



*Lodgepole Pine seedlings carpet the Tower Area 5 years later*



*9 years, the lodgepole on the Gibbon River are several feet tall*

6. The pictures illustrate the tenacity of life. Which area, Yellowstone or Mt. St. Helens, seems to be recovering the fastest in terms of specie number and ground cover?

Students should see that Yellowstone is recovering faster than Mt. St. Helens.

7. Both Yellowstone and Mt. St. Helens are similar ecosystems, yet they seem to be recovering at different rates. The reason lies in the type of disaster that befell them. One

disaster was natural and a part of the ecosystem. The other was natural but it changed the landscape. What area had a disaster that was a natural part of the life of the ecosystem?

Yellowstone had a fire, which is common to all wildlife areas.

Using the key word "fire ecology," research and write a definition for the term?

Fire is a natural process in many environments. Fire destroys those species that invade and try to change the environment. Fire also removes old plants and in some cases fire is needed for certain seeds to germinate

8. If you permanently change the environment of an ecosystem you will cause a change in the types of species that can survive there. What did you think is meant by the statement "*Life is tough but species are fragile?*" Use complete sentences to explain your answer.

The basic concept that the student should understand is that life is tough because it has the ability to change as the environment changes; but this also means that as life changes it must also change the type(s) of species that are present. New environments mean new species.

9. Complete Table 1 below by writing in five environmental concerns that are in the news today. Be specific in your concerns. Don't just write air pollution, but give a specific example that is affecting the people of a real city or region.

## Present Environmental Concerns

Specific	How Does It Affect Human Life?
Environmental	
Concern	
Example:	Quality of drinking water, loss of organisms that filter waste products,

Everglades	loss of food organisms.
Answers will vary	

10. How many of your concerns had water as part of the environment that could be affected by human impact?

Answers will vary

11. Water is so critical to humans, not only for consumption but also for the plants that we grow as food. Water is used in many of our industries in the United States. We seem to have plenty of water when compared to other areas of the world. Can you name three areas of the world where the lack of water has become critical to human life? (You might want to look at a world map to get an idea.)

A. Any of the Sahara regions of Africa, especially the northeast region.

B. Several areas in the Middle East, namely Syria, Iraq, and even Saudi Arabia

C. and the Persian Gulf countries.

12. How can fertilizer placed on a corn field in Iowa affect the fishing industry in the Gulf of Mexico? (Refer to a topographical map of the United States)

Rain causes the fertilizer to be washed from the land into the Missouri or the Mississippi Rivers and is then transported to the Gulf. There the high phosphorus and nitrogen concentrations change the species in that ecosystem.

13. After reading the material on the relationship between the environment and humans, what do you think constitutes an environmentally sensitive area? Use your own words in the definition.

In their definition, students should include the following concepts:

a) Life is tough and that some form of life will continue to grow if the environment changes.

This means that the species present will change.

b) Some organisms depend upon several environments for them to complete their life cycles. Humans are global and have high populations that force them to use several environments. They are more dependent on the earth as a giant ecosystem.

c) A destroyed environment requires long periods of time to return to its original state.

d) Environments are tough, but they have a limit to their existence. Environments on the edge of collapsing are more "sensitive" to any change.