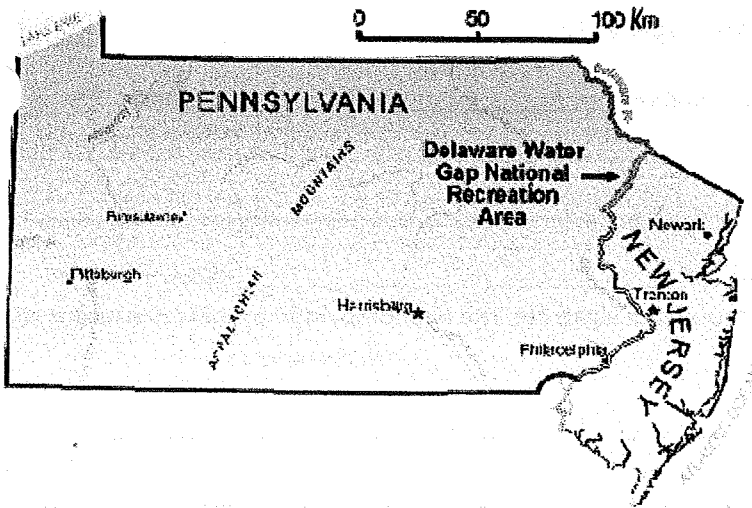


Name: \_\_\_\_\_

## Delaware Water Gap National Recreation Area



[http://archive.fossweb.com/CA/modules3-6/Environments/activities/delgap/content\\_old.html](http://archive.fossweb.com/CA/modules3-6/Environments/activities/delgap/content_old.html)

- 1) The Delaware Water Gap National Recreation Area is a 64.3-kilometer ( \_\_\_\_\_ ) stretch of the middle \_\_\_\_\_, bordering the states of \_\_\_\_\_ and \_\_\_\_\_.
- 2) The Delaware River is the \_\_\_\_\_ free-flowing river in the \_\_\_\_\_ United States, one of the few remaining in North America.
- 3) The Delaware River is in the center of a \_\_\_\_\_ that covers 21,789 square kilometers (13,539 square miles) of \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- 4) The Delaware River originates in the \_\_\_\_\_ of \_\_\_\_\_ and flows into Delaware Bay between Delaware and New Jersey.
- 5) The earliest known inhabitants in this region, the Leni-\_\_\_\_\_, made their home here before the arrival of European settlers.
- 6) In early colonial times \_\_\_\_\_ settlers mined the mountains for \_\_\_\_\_.
- 7) What is the trail that runs along the ridge tops in the Delaware Water Gap National Recreation Area? \_\_\_\_\_
- 8) In 1978, part of the Delaware Water Gap National Recreation Area was designated a \_\_\_\_\_ and \_\_\_\_\_.
- 9) The recreation area focuses on outdoor activities such as boating, \_\_\_\_\_, \_\_\_\_\_, and swimming.

### ABIOTIC DATA

- 10) What are the summer air temperatures at the Delaware Water Gap? \_\_\_\_\_ C ( \_\_\_\_\_ F).
- 11) What are two reasons why the water temperatures drop below air temperatures?  
a) \_\_\_\_\_ b) \_\_\_\_\_
- 12) According to the Average Precipitation bar graph, the months with the highest rainfall totals are: \_\_\_\_\_ and the months with the lowest rainfall totals are: \_\_\_\_\_.

## BIOTIC DATA

- 13) According to the Tree Species pie chart, the dominant tree species is: \_\_\_\_\_.
- 14) The two most common types of plants in the hemlock revines are \_\_\_\_\_ and \_\_\_\_\_ species.
- 15) Click on mayflies. List two characteristics: \_\_\_\_\_, \_\_\_\_\_.
- 16) Too much nitrogen in the water can lead an overgrowth of \_\_\_\_\_ - \_\_\_\_\_ algae, which is called \_\_\_\_\_. When large amounts of algae die, the decomposition process consumes all of the \_\_\_\_\_ available to other \_\_\_\_\_ in the water.
- 17) Click on "brook trout", what do they eat? \_\_\_\_\_  
what are their predators? \_\_\_\_\_.
- 18) Click on "channel catfish", what do they eat? \_\_\_\_\_  
what are their predators? \_\_\_\_\_.
- 19) Read the "Annual Net Primary Productivity" chart. List the four ecosystems that produce the greatest amount of energy as primary producers: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

## ISSUES

- 20) What did early settlements do? \_\_\_\_\_  
which caused \_\_\_\_\_, killing thousands of people every year.
- 21) In the 1940's, what caused the fact that fish could no longer survive in its oxygen-depleted waters?  
\_\_\_\_\_.
- 22) In 1962 \_\_\_\_\_ was created.
- 23) In 1972, the Commission received \_\_\_\_\_ in federal grants under the \_\_\_\_\_, and the river began its dramatic comeback.
- 24) Refer to the 'Biological "health measures" of area streams' chart. What are the indicators of stream health?  
\_\_\_\_\_.
- 25) List the pollutants that remain from industrial pollution in the river-bottom detritus?
- a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_  
d) \_\_\_\_\_ e) \_\_\_\_\_

26) These pollutants work up the food chain and are concentrated in fish and \_\_\_\_\_  
\_\_\_\_\_, and \_\_\_\_\_.

7) During storms, pollution from the land in the watershed is washed into the river; including: \_\_\_\_\_  
\_\_\_\_\_.

### Acid Rain

28) According to the pH chart; what is the pH of hydrochloric acid secreted by the stomach lining? \_\_\_\_\_  
pH of urine, saliva? \_\_\_\_\_, pH of soapy water? \_\_\_\_\_.

29) Is rainwater naturally acidic? \_\_\_\_\_ Rainwater pH is between \_\_\_\_\_ - \_\_\_\_\_. The pH of acid  
rain, \_\_\_\_\_ is ten times more acidic than rainwater.

### Why is Acid Rain such a problem?

30) The pH of a lake or stream depends in part on what \_\_\_\_\_ and \_\_\_\_\_ are in  
the watershed and the \_\_\_\_\_ bottom. Some rocks, like limestone, are basic and neutralize acids. Most  
healthy lakes and streams have a pH between \_\_\_\_\_ and \_\_\_\_\_.

31) If the lake contains \_\_\_\_\_ bedrock, the acid is \_\_\_\_\_ for a while.  
However, eventually all the neutralizing capacity, or \_\_\_\_\_, in the bedrock is used up, and the pH  
of the \_\_\_\_\_ or stream begins to \_\_\_\_\_. When it receives acid precipitation, the pH of a lake  
can drop from 9.2 to below \_\_\_\_\_ in less than \_\_\_\_\_ years.

32) Plants and animals can live only within a certain pH range. \_\_\_\_\_  
grow best between pH 7 and 9.2. When the pH falls below 4.5, all \_\_\_\_\_ die and the water contains  
few animals or microorganisms.

### What has happened in this issue?

33) In \_\_\_\_\_, laws were passed and other programs were started to help reduce acid rain. Due to these  
measures, \_\_\_\_\_ emissions have dropped. However, the \_\_\_\_\_  
\_\_\_\_\_ levels have not changed. In order to see real recovery, the amount of \_\_\_\_\_  
\_\_\_\_\_ would need to drop, too.

### The Debate

34) Before making decisions that affect an \_\_\_\_\_, it is important to gather information from  
a variety of sources. Below are the views of several individuals or groups that have an interest in the future of the  
\_\_\_\_\_  
\_\_\_\_\_.



**Part 2 Create a food web using the link below.**

First sketch a practice food web on paper using the organisms in the Delaware Water Gap article. You can click on each organism to view its prey and predators.

Second, go to the link below to connect the organisms in a food web that you will later print and turn in for lab credit.

Be sure to check to see that the organisms that are either primary consumers (herbivores) and/or are small go at the bottom of the web. The larger secondary and tertiary consumers go near the top of the food web. Use the size button to compare size.

Link all of the organisms together to form a food web. Double click on the picture of the organism to see what it eats and what eats it. When you think that you have a complete web, click "check links." Correct any mistakes. Print.

[http://www.fossweb.com/delegate/ssi-foss-ucm/Contribution%20Folders/FOSS/multimedia/Environments/activities\\_CA/delgap/index.html](http://www.fossweb.com/delegate/ssi-foss-ucm/Contribution%20Folders/FOSS/multimedia/Environments/activities_CA/delgap/index.html)