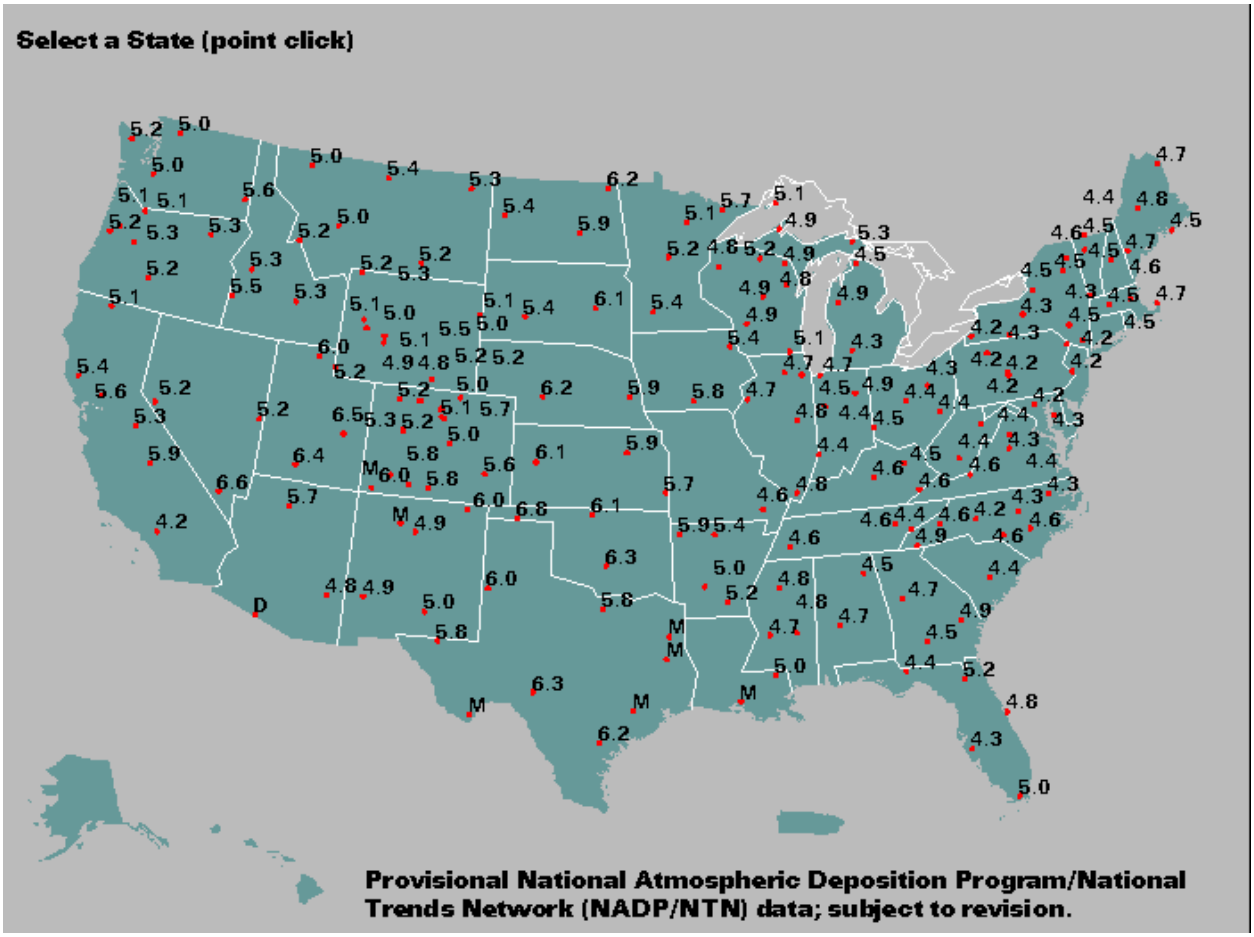
Acid rain (3B3)



	pH 6.5	pH 6.0	pH 5.5	pH 5.0	pH 4.5	pH 4.0
TROUT						
BASS						
PERCH						
FROGS						
SALAMANDERS						
CLAMS						
CRAYFISH						
SNAILS						
MAYFLY						

Environmental Impact Statement (5)

Project: building a new bridge across the Missouri River.

What currently exists at the site?

- Plant and animal life
- Type of ecosystem
- Has the area been disturbed before?
- Does it include a habitat for endangered or threatened species?
- Is there danger of soil erosion during construction?
- Are there streams, ponds, or other wetlands on the site?
- Are important fossils or artifacts present?
- What activities occur on lands next to the site?

How does the project fit into existing plans for the area?

How will the project likely affect the environment?

- Will it cause soil erosion after completion?
- Will it destroy forests or other ecosystems?
- Will it disturb the habitats of endangered or threatened species?

Identify any effects of the project that probably will be harmful but cannot be avoided.

Suggest alternatives to the proposed project that would protect the environment but still meet the needs of people.

What are the trade-offs between short- and long-term environmental losses and short- and long-term benefits of the proposed project?

How would the project permanently prevent other uses of the site?

Should the project proceed as planned or be stopped? If stopped, are there alternative plans that would be acceptable?

Environmental Science Careers (6)

1. Forestry
2. Mining
3. Analytical laboratory

What type of education, training, and experience are required for one of these?

Bison: a species that was once endangered but has recovered (3E2)

Use this or other information to write a 100-word report on how it recovered.

Sixty million bison—or buffalo—once roamed the grasslands of America. Historical accounts describe herds stretching as far as the eye could see. Although Native Americans hunted bison, it was not until European settlers came with firearms that their numbers fell drastically. Many people shot the animals for fun, while others sold the hides. Bison numbers were eventually reduced to fewer than 1,000. Today they are found in the Great Plains from Mexico to Canada.

The bison is the largest terrestrial animal in North America. It has short, pointed horns and a hump over the front shoulders. The head, neck, and front parts of the body are covered by a thick, dark coat of long, curly hair; the rear has shorter, lighter hair. Adult males weigh as much as 1,800 to 2,400 pounds; females are smaller. Adult males also have black "beards" about a foot long. Bison are social animals and travel in herds. Considering their size and weight, bison are remarkably light on their hooves—unlike cattle, they love to run and are surprisingly fast. Bison were central to the existence of Plains Native Americans, who used them for food and made clothing from their hides and tools from their bones. The dried dung, called buffalo chips, was used for fuel.

Bison first received protection from the U.S. government in 1872, with the establishment of Yellowstone National Park in Wyoming and Montana. However, the welfare of the small herd of bison in the park was largely ignored until 1901, when it was discovered that only twenty-five individuals remained. The herd was restored to 1,000 by 1930 with bison imported from the Great Plains. As the Yellowstone herd multiplied, the park service shot animals to keep the population under control. This practice was unnecessary, however, because harsh winters caused the herd to dwindle naturally. The park service stopped shooting bison in the 1960s, and by 1994 the population of the Yellowstone herd had reached a peak of 4,200 animals. Over 3,000 individuals were documented in April 2002.

However, conflict over bison management continues at the park. Half the Yellowstone bison are carriers of a cattle disease called brucellosis. In domestic cattle, it can cause miscarriage in pregnant cows. Although there is no evidence that the disease can be transmitted from bison to livestock, and the popular elk in the area also carry brucellosis, ranchers are nonetheless wary.

Today some populations of bison are managed as livestock because they have become a food source for humans. Bison are a source of high-protein, low-fat, low-cholesterol meat. The National Bison Association estimates that 150,000 bison are slaughtered for food each year, producing 7.5 million pounds of meat. Bison meat is not expected to replace beef, but some people think it might become an alternative red meat source. In *Bring Back the Buffalo!* (Washington, DC: Island Press, 1996), researcher and writer Ernest Callenbach argues that bison will gradually gain support as a food source, as it becomes evident that bison are better adapted to grasslands and require much less human management than cattle. There are even bison ranchers abroad, including in Canada, Southern France, Switzerland, and Belgium.

By the end of the twentieth century, the National Bison Association reported a total of over 350,000 bison in the 48 continental United States, Alaska, and Canada—344,000 bison were privately owned, and 13,000 lived in public herds. An additional 1,000 lived in zoos or outside of the United States and Canada.

http://www.libraryindex.com/pages/670/Endangered-Mammals-BISON.html