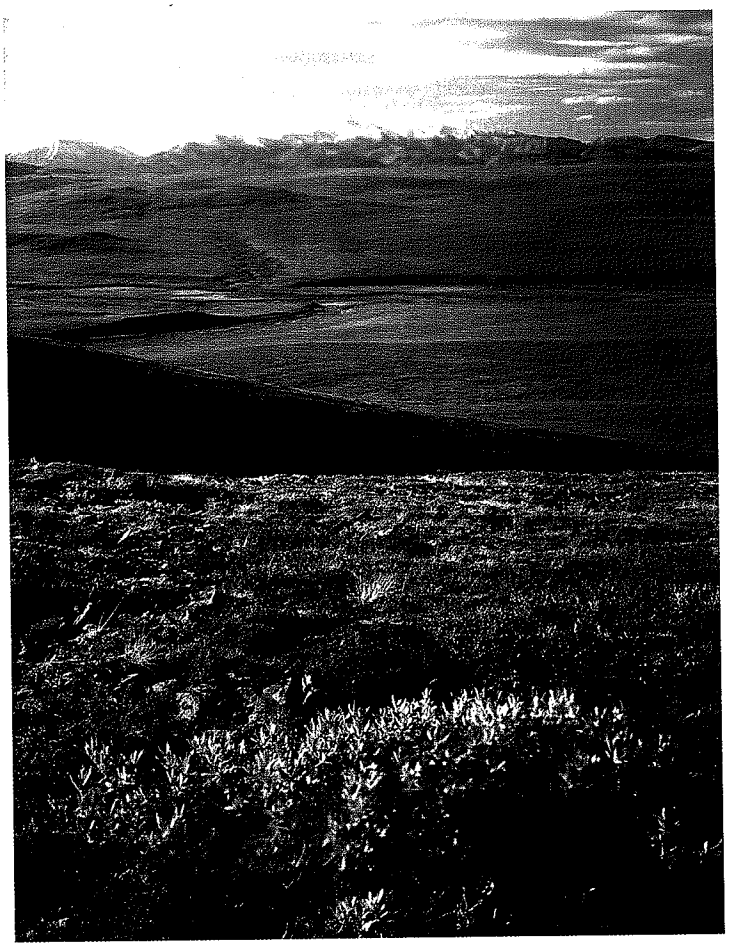
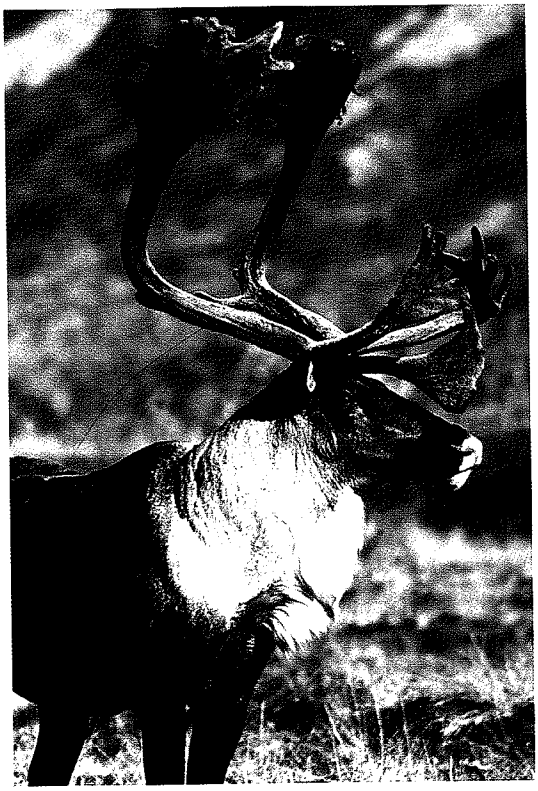
Arctic National Wildlife Refuge



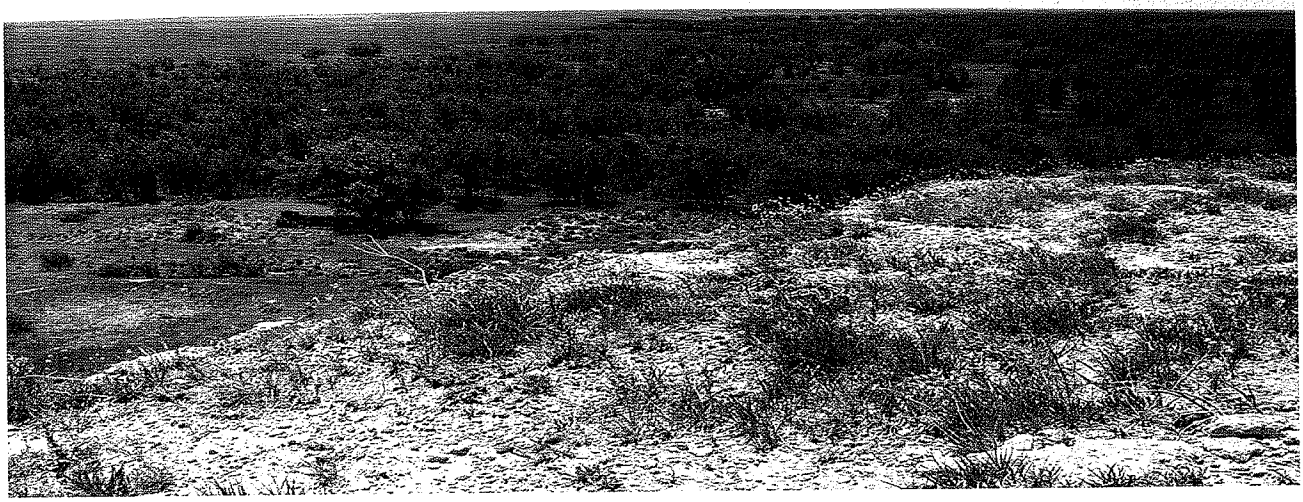
The Arctic National Wildlife Refuge in the northeastern corner of Alaska is one of the most pristine, undisturbed places on Earth. To the south are the rugged mountains of the Brooks Range.

The most productive area of the refuge, and the most used by wildlife, is the 600,000-hectare (1.5-million-acre) coastal plain. This area is dominated by an ecosystem known as middle arctic tundra. Here the treeless landscape is covered with low-growing plants over a layer of permanently frozen soil called permafrost. In summer the region is dotted with standing water. During this short, soggy growing season, insects flourish, supporting millions of migratory waterfowl. Thousands of caribou migrate to the coast to bear young and feed on the low plants and lichens.

A long-standing issue in the Arctic National Wildlife Refuge is whether the coastal plain should be developed for oil drilling. Other areas in Alaska, such as Prudhoe Bay, have already experienced oil drilling. Petroleum scientists have examined part of the Arctic National Wildlife Refuge, called Area 1002, and predict that there is oil there. When the U.S. Congress founded the refuge, it also authorized future oil development in the northern part of the refuge. People have been debating the issue of oil and gas drilling in Area 1002 for almost 40 years.



Cimarron National Grassland



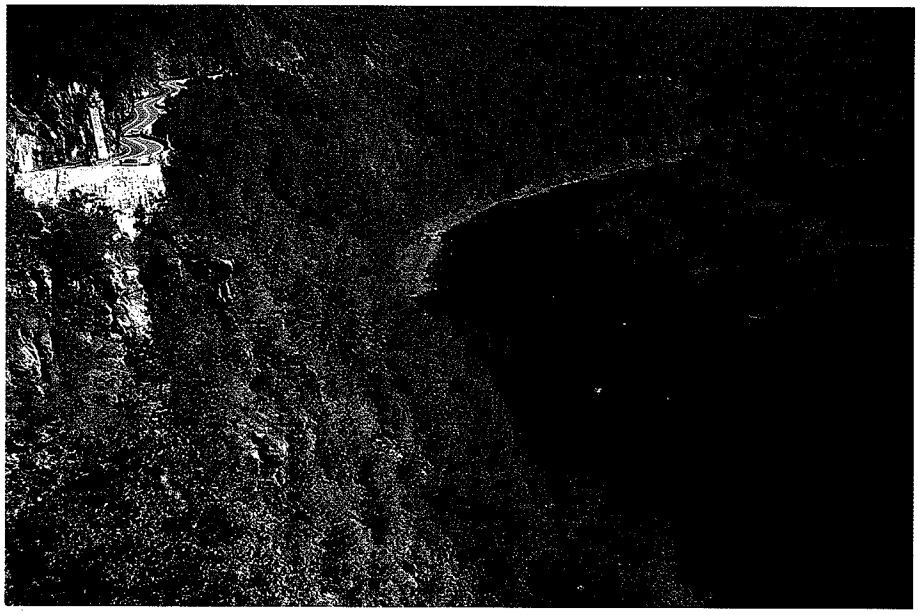
For thousands of years the section of the country between the Rocky Mountains and the Mississippi River was an almost endless sea of grass. The prairies and plains grasslands supported a diverse community of animals, including insects, birds, rodents, and large grazing animals like antelope and bison. Most of the prehistoric grasslands have been converted to agriculture.

Cimarron National Grassland is 44,500 hectares (110,000 acres) in the southwest corner of Kansas. More than a hundred years ago, these lands were known as the Point of Rocks ranch. The Beaty brothers, who operated this ranch, grazed cattle on the plentiful grasses. Around 1885, homesteaders began to settle in this area as well. Years of cattle grazing and farming degraded the soils. In the 1930s strong winds swept through the area, blowing away the topsoil. Cimarron was in the dust bowl that lost millions of acres of grassland soil.

In 1937 the U.S. government started a program to restore the soils. Most of the restored soil is now productive farmland. One large section, the former Point of Rocks ranch, was set aside as the Cimarron National Grassland in 1960. Cimarron is managed to maintain it as a native grassland to serve as a reminder of what once was a major ecosystem in the United States.

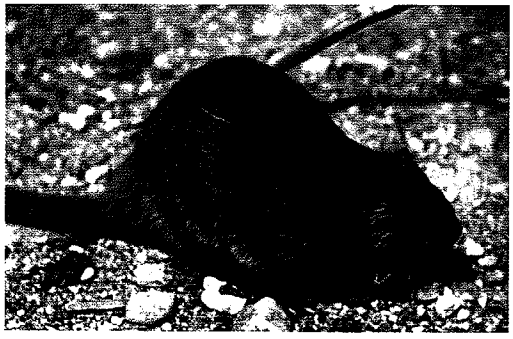
The main management issue in Cimarron National Grassland is rangeland fires. Some people view fire as beneficial to the ecosystem and believe it is a tool for management. Others feel fire is dangerous and should be put out quickly.

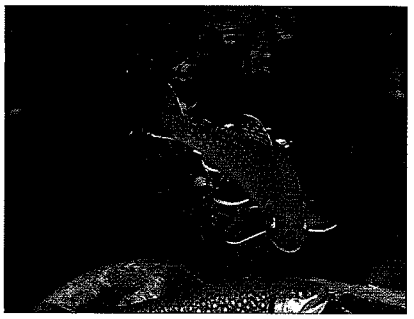
Delaware Water Gap National Recreation Area



The Delaware Water Gap National Recreation Area is a 64.3-kilometer (40-mile) stretch of the Delaware River, running between the states of New Jersey and Pennsylvania. The Delaware River is the largest free-flowing river in the eastern United States—no dams block the river's flow to the ocean.

The Delaware Water Gap National Recreation Area includes riparian woods along the Delaware River and covers 28,000 hectares (69,000 acres) of eastern hardwood ecosystem in New Jersey and Pennsylvania. This park was established on September 1, 1965, for public recreation, to preserve scenic and scientific resources, and to protect the ecosystem from commercial development. In 1978 part of the Delaware Water Gap National Recreation Area was designated a national wild and scenic river. After years of public discussion, plans for a dam and reservoir on the river were abandoned in 1992.





The Delaware River is one of the cleanest rivers in the United States. The Delaware Water Gap National Recreation Area is an example of the meeting of several ecosystems—a freshwater ecosystem, a riparian ecosystem (the trees and other native vegetation that border the river), and a forest ecosystem.

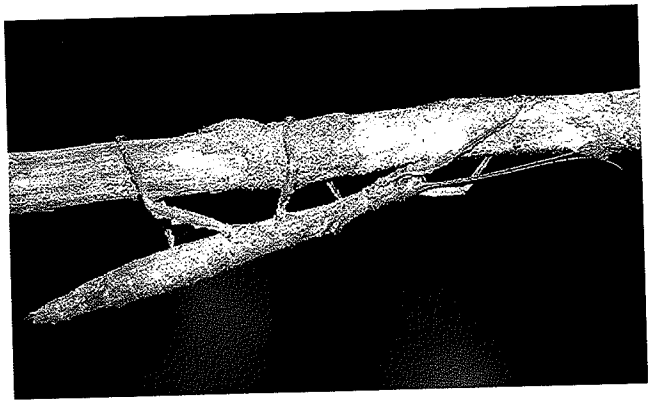
Water quality in the Delaware River is a constant issue. The health of the ecosystems depends on a continuous supply of clean water. Pollution management is essential. Acid rain entering the watershed from remote sources also affects ecosystem health.

El Yunque Caribbean National Forest

Puerto Rico is an island in the Caribbean Sea southeast of Florida. The Caribbean National Forest, on the eastern end of Puerto Rico, is commonly called El Yunque (el•YOONG•kay). El Yunque gets its name from the cloud-shrouded mountaintops. Those same clouds provide abundant, warm rainfall all year, producing a lush tropical rain forest. El Yunque has abundant, diverse vegetation, which supports populations of unique birds and amphibians.

El Yunque has a long history as a tropical forest reserve. In 1876, when Puerto Rico was still under Spanish rule, King Alfonso XII of Spain proclaimed El Yunque a forest reserve. He did this not to preserve its diversity and beauty, but because the forests were filled with trees that were used to build ships. Because El Yunque is a reserve, the forest was used sparingly, and it was not destroyed for cities and agriculture.

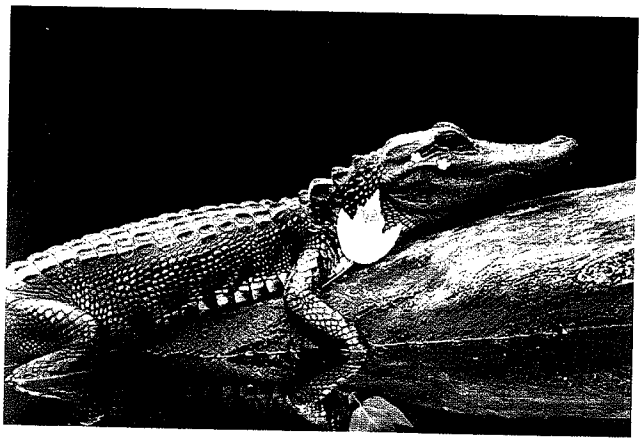
The primary concern for tropical forests, including El Yunque, is how to deal with habitat loss and destruction in the past, present, and future. Worldwide, rain forests cover 2% of Earth's surface, yet contain half of all plant and animal species. The rain forests, and the species that live in them, are being lost very rapidly. It is estimated that each hour about 3600 hectares (9000 acres) of rain forest are cleared. At the same time, six plant or animal species go extinct.



Everglades National Park

Everglades National Park is a subtropical wilderness on the southern tip of Florida. The wet prairies of saw grass, sometimes called the river of grass, give this ecosystem its name. The Everglades is a slow moving, very shallow, very wide river in which saw grass grows. This river starts at Lake Okeechobee and flows south to the Atlantic, Florida Bay, and the Gulf of Mexico. The Big Cypress Swamp borders the Everglades on the west, and to the east there is a low coastal ridge.

Ernest F. Coe is sometimes called the father of the Everglades because of his efforts to preserve this habitat. In 1928 Coe wrote to the director of the National Park Service, proposing that some of the south Everglades become a national park. Luckily, the director of the National Park Service had already been thinking that some of this ecosystem should be designated as a park. Everglades National Park was established in 1947. It is the largest designated wilderness area east of the Rocky Mountains and covers 610,684 hectares (1,509,000 acres). The Everglades area is very flat, with the highest elevation only 2.5 meters (8 feet) above sea level.



Water use and water quality are the primary issues concerning Everglades National Park. Water diversion for agriculture and development, especially in the last 50 years, has reduced the Everglades ecosystem to less than half its original size. Other issues include mercury pollution, endangered species, and introduced species.

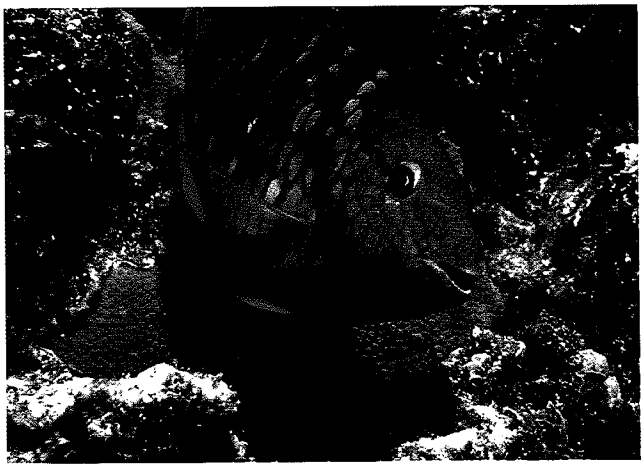
Florida Keys National Marine Sanctuary

The Florida Keys are 1700 islands. They are the high points of a huge coral reef system that begins at the tip of Florida and curves southwest for 202 kilometers (km) (126 miles). It ends 145 km (90 miles) north of Cuba.

Surrounding the keys is Florida Keys National Marine Sanctuary. This marine sanctuary covers 9600 square km (2800 square nautical miles). The reefs in the sanctuary form the third largest system of coral reefs in the world. The warm clear water ranges in depth from 0.6 to 610 meters (m) (2 to 2000 feet) with an average of 15.25 m (50 feet).

The reefs of Florida Keys National Marine Sanctuary are biologically diverse and extremely productive. The coral structure provides substrate for algae and habitat for fish, worms, and other marine animals. The Florida Keys also have beds of turtle grass and mangrove forests. These communities provide important nursery habitat for marine fish and other animals.

One of the world's major shipping routes passes along the Atlantic side of the Florida Keys. The keys attract thousands of visitors who enjoy diving, boating, and fishing on and around the reefs. There is danger of pollution from boats and recreational facilities throughout the keys. The delicate coral organisms, which build the reef, are threatened by the intense use of the reef areas.



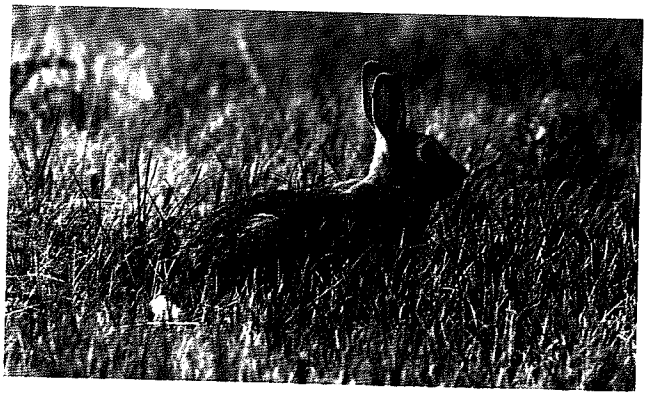
Monongahela National Forest

Monongahela National Forest is located in the Allegheny Mountains of West Virginia. This national forest covers over 363,500 hectares (909,000 acres), the fourth largest national forest in the northeast United States. The landscape is rugged with spectacular views of exposed rocks, spring wildflowers, and colorful fall leaves.

In the 1880s the Allegheny Mountains were logged extensively. Clear-cut logging removed all vegetation in many areas. Major forest fires added to the amount of deforested land. Soil erosion was widespread in the region. Streams filled with mud and silt, resulting in poor water quality.

President Theodore Roosevelt created the National Forest Service to protect forests and watersheds from damage. Some of the first land bought was 2900 hectares (7200 acres) near the Monongahela River. This land became Monongahela National Forest on April 28, 1920.

Today, the Monongahela ecosystem is primarily a second-growth forest of more than 75 species of trees, such as black cherry, oak, hemlock, and poplar. It is a popular vacation area, positioned within a day's drive of one-third of the population in the United States.



The Monongahela forest is in demand for many reasons, including recreation, logging and mining jobs, and water supply. Balancing the impact from each use is a challenge for forest managers. In addition, air pollutants from sources outside the forest produce damaging acid rain in the forest.

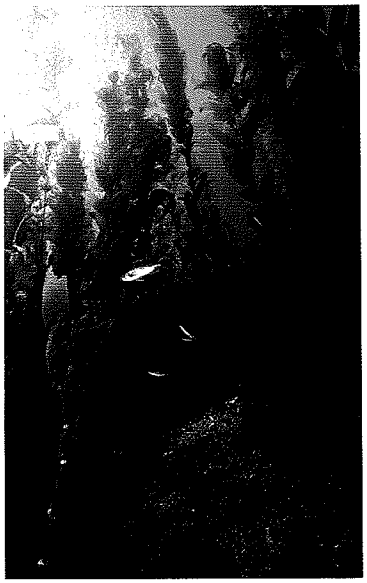
Monterey Bay National Marine Sanctuary

The central coast of California supports a unique ecosystem known as the kelp forest. Kelp grows from the rocky seabed to the ocean surface. These forests of kelp are home to fish, sea otters, snails, sea urchins, crabs, and many other organisms.

Monterey Bay National Marine Sanctuary is one of 13 national marine sanctuaries. A marine sanctuary is like a national park in the ocean. Every national marine sanctuary protects ocean waters, the habitats found in them, and the local cultural history. Some activities, like dumping waste and drilling for oil, are not allowed in Monterey Bay National Marine Sanctuary. Other activities, like fishing and recreation, are permitted but regulated.

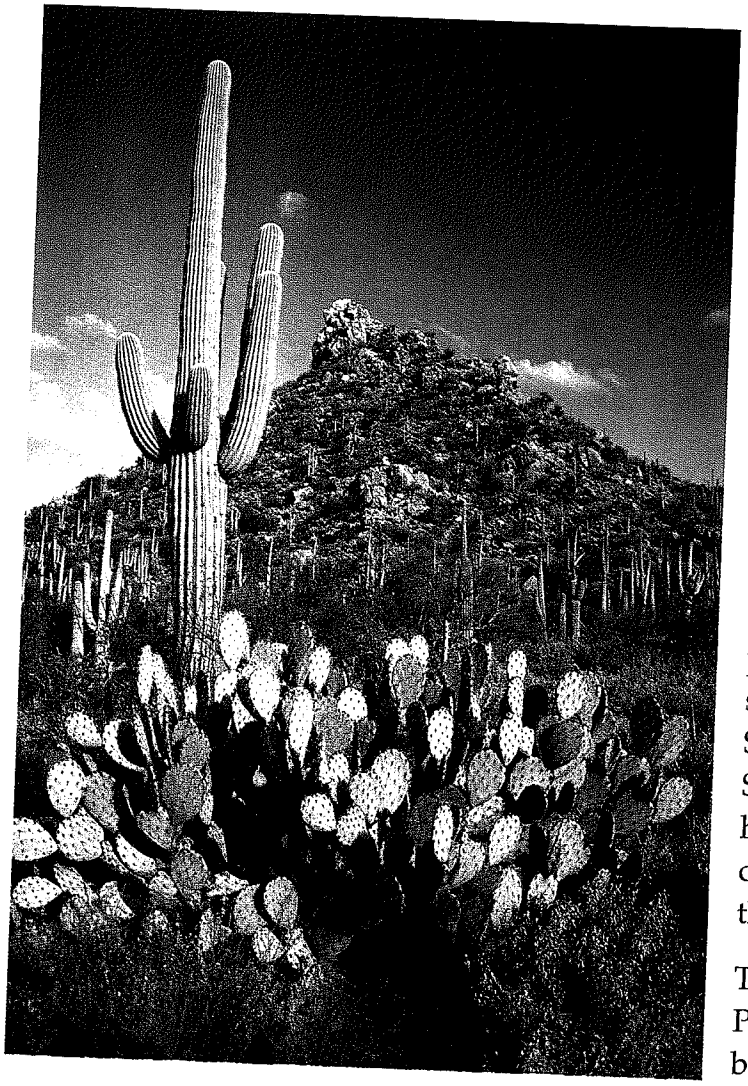
In the spring, water from deep underwater canyons flows up to the surface. The water is cold and contains lots of nutrients that phytoplankton need in order to grow. This upward movement of water is called upwelling. Upwelling results in tremendous productivity by phytoplankton, the base of the food pyramid in Monterey Bay National Marine Sanctuary.

The national marine sanctuary system was founded in 1972. Monterey Bay is the largest of the marine sanctuaries, covering 13,730 square kilometers (km) (5360 square miles). The sanctuary stretches from San Francisco to Santa Barbara, from the shoreline out into the ocean an average of 50 km (31 miles).



A primary concern for the kelp forest is the impact of fishing, kelp harvesting, and mariculture. Other issues include sea-otter abundance, jade collecting, and seabed disturbance.

Saguaro National Park

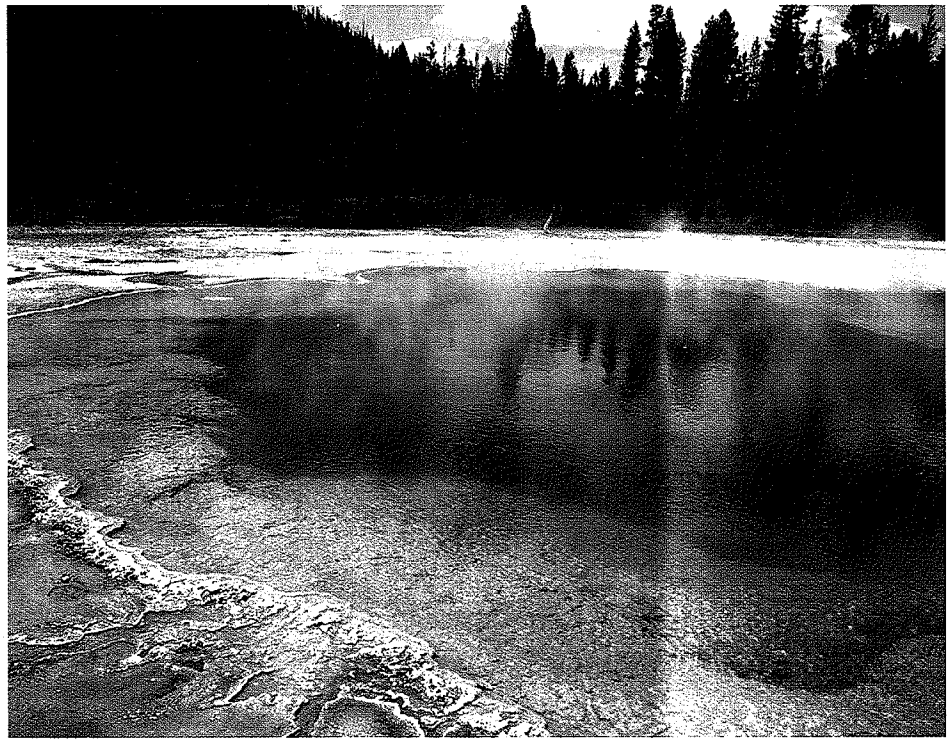


The southwestern United States includes California, Nevada, Arizona, Utah, New Mexico, and Texas. This region of the United States has many dry habitats, including deserts. The Sonoran Desert is in Arizona, part of California, and a bit of Mexico. This hot, dry desert is the most lush and diverse of the North American deserts. This ecosystem has many unique plants, including saguaro cacti, mesquite trees, ocotillos, and other succulent plants. During the day, the desert seems quiet, except for the occasional bird. A closer look might reveal rabbits and piglike peccaries resting in the shade. Lizards and snakes might surprise you as they move from a place where they had been sunning to a cooler place.

Tucson, Arizona, is surrounded by the Sonoran Desert. In 1933 an extensive forest of saguaro cacti was preserved as a national monument by the federal government. The winter of 1937 was very cold, and some of the saguaros were damaged by frost. People thought that the freeze damage was a disease, and they worried that all saguaros were at risk. This worry led to the preservation of another forest of saguaros to the west of Tucson. In 1994 Saguaro National Monument became Saguaro National Park, preserving the habitat for the forests of the unusual cacti and all the populations that live in the desert ecosystem with them.

The primary issue in Saguaro National Park is damage to plants and animals by off-road vehicles. Expansion of cities into the desert is another concern. In the past an important issue was cattle grazing.

Yellowstone National Park



In 1872 the U.S. Congress established Yellowstone National Park, the first park of its kind in the world. The park is in the Greater Yellowstone ecosystem, which also includes Grand Teton National Park and several national forests in Wyoming and Montana.

Yellowstone National Park includes several distinct ecosystems. There are unusual thermal pond ecosystems, freshwater lakes and streams, grasslands, and forests. The dominant habitat is taiga, or boreal forest. Taiga thrives in cold continental or subarctic climates. The dominant taiga plants are trees like pines and spruce.

Yellowstone National Park supports a diverse community of large wildlife, including elk, moose, deer, coyotes, and bears. Lucky visitors may see a wolf or one of the three species of large cats that inhabit the park.

The most unusual feature of Yellowstone National Park is the geothermal activity. Magma close to the surface of Earth creates geothermal pools and geysers. Old Faithful is a geyser that throws superheated water more than 55 meters (180 feet) into the air every 76 to 100 minutes. Geothermal pools contain water heated by the same underground geothermal activity. The water in these pools is so hot that few organisms can live in them. They harbor several species of colorful cyanobacteria and algae, which turn the geothermal areas bright shades of yellow and orange.

A primary issue in Yellowstone National Park at this time is the reintroduction of wolves. Other issues are fire management and winter snowmobile use.