Volcanism is one of the major geological forces which has shaped the earth, as an area that contains all of the manifestations of the volcanic process has worldwide significance. Within Yellowstone National Park is a clear record of volcanic eruptions throughout much of the past 38 million years, with the potential that another could occur in the relatively near future.

Yellowstone Park is largely forested by fire-resistant species of coniferous trees. Lodgepole pine (Pinus contorta), which in major areas forms a climax forest, covers by far the largest part. Where it does not exist, climax, the fire also plays a major role to the spruce-fir zone. Ponderosa pine, and Pinus albicaulis are important away trees. Also present in the park are small areas of montane spruce, and lodgepole pine stands. The species diversity of vascular plants is represented, including two which are found nowhere else in the world— make two species and eleven species. Thermal areas also contain specialized groupings of plants and insects which are uniquely adapted for survival in these unusual conditions.

The park contains six species of ungulates (elk, moose, bison, pronghorn, bighorn sheep, buffalo), two species of bear (black and grizzly), and 46 other species of mammals, including mountain lion and rattlesnake. The park’s diverse wildlife supports a wide-ranging fauna of the United States whose numbers are naturally regulated, including those of the Yellowstone area which have now mixed with introduced plant species.

Virtually all of the park’s 380,000 native plants provide either food or habitat to some wildlife species. Both a rich variety of birds and mammals depend on the native plants. In addition, many of the fire-resistant species of coniferous trees provide excellent protection against fire, which is a major force in maintaining diversity in the park's vegetation.

The idea of a national park is one of extending national achievement of a nation so that all its citizens may share a portion of its land to preserve its natural and historic heritage. Yellowstone commemorates the beginning of a new land-use ethic articulated as an accomplishment of a stage. John Muir, a distinguished American naturalist, conservationist and historian, wrote, “The American experience of Parks is that since the establishment of Yellowstone, we have explored the wilderness, we have enjoyed the beauty, and we have been led to respect the fact that these places are for the enjoyment of all, not just for the benefit of a favored few.” It is fittingly because the concept of a national park reflects some of the central values and experiences in American culture.

In 1982, the Second World Conference on National Parks was held in Yellowstone and Grand Teton National Parks in recognition of the National Park Centennial. This Conference was co-sponsored by the United States and the International Union for Conservation of Nature (IUCN). The bicentennial conference was held at Madison Junction in Yellowstone National Park for all engines in recognition of the origins of the national park idea.

Today, more than 180 nations have designated one or more national parks as equivalent reserves. In all likelihood, one of the natural and cultural sites selected for the World Heritage List also will be national parks because they preserve sites of overwhelming significance to individual nations. The World Heritage List now adds another dimension to such preservation; it provides recognition for those sites whose importance transcends the boundaries of any nation.