

Balancing Safety, Research, Nature, Economy, Heritage, and Recreational Use in the Spirit Lake Area

Spirit Lake and Mount St. Helens have value to many diverse stakeholders. While Spirit Lake is the focal point of the Project Area, its management plays a role in the Toutle River, Cowlitz River, and Columbia River systems. Valued resources include:

1. Public Safety

- The tunnel was built in an emergency capacity to address the immediate danger of Spirit Lake overflowing after the Mount St. Helens eruption blocked its natural outlet. During the tunnel's lifespan, it has maintained the level of Spirit Lake at a safe elevation. The lake only approached its maximum safe operating level when the tunnel was closed for extended repair. Therefore, a reliable outlet is needed that would not require repeated and expensive interventions and extended tunnel closures. The area around Mount St. Helens, including Harry's Ridge where the tunnel is located, is geologically active with evolving subsurface conditions and shifting geologic structure. The tunnel crosses both strong and weak rock along faults and shear zones. The geological pressures in these weak zones have caused rock heave, compression, cracking, and support failures, which have necessitated periodic major repairs.
- The tunnel is subject to geologic pressures and will require extended closures for repair. If the tunnel fails, the result would be rising lake levels that could exceed the maximum safe operating level, at which point pressure from rising water levels could force the release of the natural debris blockage, putting the downstream population of approximately 50,000 people at risk of catastrophic flooding and mudflows (lahars). The overall purpose of this project is to find a long-term solution to this issue to improve the safety of downstream communities.

2. Pumice Plain Research Area

- The aftermath of the Mount St. Helens eruption in 1980 offered a unique opportunity to study how nature and wildlife recover from and adapt to a volcanic devastation zone. There are few places in the world that offer comparable research value to academics, conservationists, and students. Mount St. Helens provides a study of volcanic recovery similar only to sites such as Surtsey Island in Iceland, an UNESCO World Heritage Site. The U.S. Forest Service Pacific Northwest Research Station has led research efforts for over 40 years. The Forest Service has specific measures within the Gifford Pinchot National Forest Land and Resource Management Plan (Forest Plan) with the goal of "protecting the geologic, ecologic, and cultural resources, allowing geologic

forces and ecological succession to continue substantially unimpeded. Permit scientific study, research, recreation, and interpretation" (Forest Plan, IV-99). There are about 30 ongoing research studies in the pumice plain, and more than 300 peer-reviewed papers on ecosystem responses to volcanism have been published. The majority of this research pertains to ecological succession, biological community assembly, biological organization, biotic interactions, stream developments, soils, and small mammals.

- The 1982 National Volcanic Monument Act and the 1985 Comprehensive Management Plan establish research and scientific study except when it may be necessary to protect public health and safety and to prevent undue modification of the natural conditions of the Monument.”

3. Sensitive Species and Habitat

- The Spirit Lake area provides potential habitat for species that are listed under the Federal Endangered Species Act, including gray wolf, North American wolverine, marbled murrelet, northern spotted owl, yellow-billed cuckoo, bull trout, monarch butterfly, and whitebark pine. Additional species, such as Van Dyke’s salamander and mountain goat, are included on the Regional Forest Sensitive Species List.

4. Recreational Use

- Mount St. Helens is a unique place, offering visitors the opportunity to view and experience the result of a massive volcanic eruption. Spirit Lake is in the middle of the Mount St. Helens National Monument which is part of the Gifford Pinchot National Forest. National Monuments are protected areas that are of great historical, cultural, and/or natural value. Thousands of visitors travel to see the devastation zone and recreate in the area. While Spirit Lake is not directly used for recreation (e.g., paddling, fishing), the lake plays an important role in popular recreation activities such as hiking, wildlife viewing, and limited big game hunting. The Truman Trail offers limited hiking access to the pumice plain along the western side of Spirit Lake.

5. Cultural and Religious Value

- This active volcano has been listed as a Traditional Cultural Property in the National Register of Historic Places due to the sacred significance of the site to tribes from time immemorial.

6. Local Economy

- Tourists and visitors from across the world travel to Mount St. Helens and the local economy benefits greatly from these visitors. Visitors buy goods and services that support local business, including gas stations, restaurants, hotels,

guide services, and outfitters. All these purchases generate tax revenues which fund schools, public services, and infrastructure improvements.