Welcome to a Living Laboratory

Photo by Charlie Crisafulli

In 1980, fiery avalanches of pumice and gas removed all traces of life from the Pumice Plain. The opportunity to study the rebirth of an ecosystem from scratch is providing scientists with important insight into processes of recolonization and habitat development. (Photo shows small mammal being weighed before release).

Crystal-clear mountain lakes were transformed into organic-rich microbial brews. Long-term studies are revealing how aquatic systems are responding to the 1980 eruption and the gradual return of forest vegetation.

Photo by Peter Frenzen, USFS.

We Invite You to Explore and Help Protect one of Nature's Youngest and Most Dynamic Landscapes

The Mount St. Helens National Volcanic Monument was established by Congress in 1982 to protect natural features and processes and provide access for recreation, research and education. The monument has become an internationally renowned laboratory for the study of earth processes and ecosystem recovery following large-scale disturbance. The quality and duration of data collected here over the last 28 years is unparalleled and the volcano continues to attract scientists, teachers, and students from around the world.

As you explore, look for evidence of the 1980 eruption and observe plants and animals that are thriving in a forest shattered by volcanic eruption. As you enjoy the wonder of nature's recovery please help us protect life's fragile foothold. Stay on developed roads, viewpoints and trails and have a very safe and enjoyable visit.

Return of Life Facts

Birds in the Blast Area: Standing dead trees provide important foraging and nesting habitat for birds like woodpeckers, mountain bluebirds, and swallows. Surprisingly, the Vaux's swift, a bird associated with old-growth forests, is common among standing dead trees in the monument.

Amphibians Thrive in the Blast Area: Although amphibians are declining in many places, they have fared much better than expected at Mount St. Helens. Frogs, toads and salamanders survived the 1980 eruption in many locations and are thriving in a landscape that has fewer predators, disease and parasite outbreaks.

Small Things Make a Big Difference: Tiny creatures like the willow stem-boring beetle have a big influence on ecosystem recovery. The larvae of the stem borer feed on and girdle willow stems often causing them to die. This greatly reduces the abundance of willow shrubs altering the habitat available for birds and small mammals.

Landscape Management is a Challenge: With few natural predators, elk populations have expanded in the open blast area. During severe winters, elk diebacks have occurred due to a lack of winter forage. Hungry elk are influencing the return of forest vegetation by eating and breaking shrubs and trees and trampling other plants. Elk are spreading the seeds of non-native grasses and other plants in their droppings. Federal and state managers are working together to try to protect natural processes and features in the monument and restore a more natural balance.

May 18, 1980 Eruption Facts

- In less than 10-minutes, the eruption leveled 230-square miles of forest.
- The mountain lost 1300 feet of height and 0.67 cubic miles of total volume.
- The eruption began with a massive landslide **(debris avalanche)** that buried 14 miles of river valley to an average depth of 150 feet.
- The landslide released trapped magma and gas, producing a sideways explosion **(lateral blast)** of hot rock and ash killing trees up to 17 miles north of the volcano.
- Cement-like slurries of glacial melt water and boulders called **lahars** scoured and buried streams draining the volcano.
- A vertical **ash eruption** rose to a height of 15-miles above the crater and continued for 9-hours. Ash drifted to the northeast.
- Fiery avalanches of pumice and hot gasses called **pyroclastic flows** flowed into the valley north of the crater.

Photos by Dan Dzurisin and Seth Moran, USGS

The 2004 to 2008 eruption provided an opportunity to develop and test new remote monitoring technology. Time lapse cameras in the crater (see arrow) allowed geologists to observe the dome building eruption safely. GPS "spider" instrument packages (see inset) provided for real-time measurement of dome growth (spider appears as black dot in yellow circle).