

# MOUNT ST. HELENS

A RESILIENT LANDSCAPE



# Mount St. Helens

On the morning of May 18, 1980, a magnitude 5.1 earthquake shook beneath Mount St. Helens and triggered an enormous eruption. The entire northern side of the volcano collapsed, releasing pressure that sent a hot stone-filled wind surging across the landscape at speeds over 200 miles per hour and temperatures of 680 °F. The eruption buried some areas in debris avalanches and mudflows, scoured other areas with hot gases, blew down or scorched forests on slopes several miles away, and dusted forests farther away with volcanic ash. The area was left to recover naturally in the 110,000-acre Mount St. Helens National Volcanic Monument in the state of Washington, officially dedicated in 1982 to research, recreation, and education.

Scientists were on the ash-covered ground within days of the eruption. Since then, the volcano has been a living laboratory for ecological and physical research, conducted by scientists from many universities, federal laboratories, and federal and state agencies. The USDA Forest Service Pacific Northwest (PNW) Research Station has had a major role in this

research. What station scientists have learned since 1980 has provided many insights to the science of disturbance ecology—the study of how life survives and recovers after events like volcanic eruptions, forest fires, and floods.

Not everything died in the area around Mount St. Helens. Station scientists and their collaborators found that thousands of small pockets of plants and animals survived in much of the disturbed area. These survivors and decaying pieces of the destroyed forest—called “biological legacies”—played vital roles during recovery. In the years since the eruption, wind carried insects, spiders, and seeds into the ash-covered ground and numerous other organisms walked, crawled, flew, hopped, or hitchhiked into the area. Plants began to grow and, slowly, much of the area turned green again. A surprisingly diverse array of plants, animals, and fungi have colonized the area.

This poster is a stylized depiction of the area around Mount St. Helens 25 years after the 1980 eruption, as viewed from Norway Pass, approximately

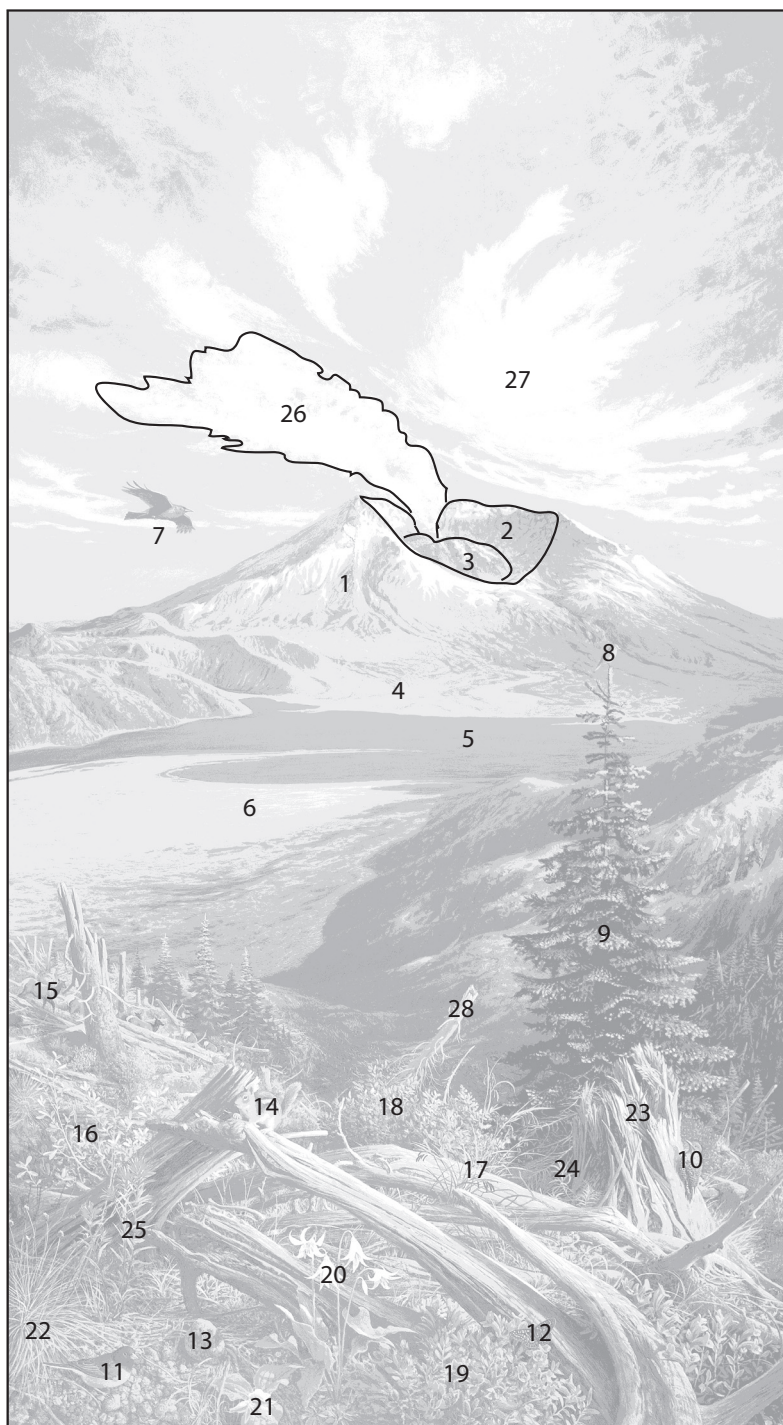
9 miles north of the crater. After 18 years of inactivity, Mount St. Helens began erupting again in late 2004. Plumes of steam and ash rose from new vents and a large new dome grew within the crater. Mount St. Helens has a rich eruptive history, and geologists think that the volcano will likely be active off and on in years to come. The repeated episodes of eruption followed by ecological recovery make Mount St. Helens a fascinating place to learn about the forces of nature and resiliency of life.

The PNW Research Station generates and communicates scientific knowledge to help people understand and make informed choices about people, natural resources, and the environment. The Station is headquartered in Portland, Oregon, with 10 laboratories located in Alaska, Oregon, and Washington. It has about 500 employees.

Learn more about Mount St. Helens ecology on the Web at: <http://www.fs.fed.us/pnw/mtsthelens/>

## MOUNT ST. HELENS POSTER KEY

1. Mount St. Helens
2. The crater
3. The lava domes
4. Pumice Plain
5. Spirit Lake
6. Raft of logs blown into the lake by the eruption
7. Common raven (*Corvus corax*)
8. Mountain bluebird (*Sialia currucoides*)
9. Pacific silver fir (*Abies amabilis*)
10. Northern flicker (*Colaptes auratus*)
11. Dark-eyed junco (*Junco hyemalis*)
12. Chalcedon checkerspot (*Euphydryas chalcedona colon*)
13. Pumice rocks
14. Cascade golden-mantled ground squirrel (*Spermophilus saturatus*)
15. Roosevelt elk (*Cervus elaphus roosevelti*)
16. Sitka willow (*Salix sitchensis*)
17. Merten's sedge (*Carex mertensii*)
18. Big huckleberry (*Vaccinium membranaceum*)
19. Cardwell's penstemon (*Penstemon cardwelli*)
20. Avalanche lily (*Erythronium montanum*)
21. Western trillium (*Trillium ovatum*)
22. Small-winged sedge (*Carex microptera*)
23. Shattered tree stumps
24. Fireweed (*Epilobium angustifolium*)
25. Scarlet paintbrush (*Castilleja miniata*)
26. Steam plume
27. Cirrus clouds
28. Tree that was snapped off by the blast



Artwork © John Charles Pitcher 2005

The Pacific Northwest Research Station (PNW) has worked with many partners in conducting a program of ecological research at Mount St. Helens for the past quarter-century. PNW appreciates the dedication and support of many important collaborators, including:

- Gifford Pinchot National Forest
- Mount St. Helens National Volcanic Monument
- USGS Cascades Volcano Observatory
- USDA Agricultural Research Service
- Washington Department of Fish and Wildlife
- Utah State University
- University of New Mexico
- University of California, Riverside
- University of Washington
- Washington State University
- Portland State University
- California State University at Chico
- University of Victoria
- Oak Ridge National Laboratory
- Weyerhaeuser Company