

As the echo of the May 18, 1980, eruption fades, the vibration of change resounds, bringing us new perspectives.

10th Anniversary Issue

Photo by Lyn Topinka USGS/CVO

VOLCANO REVIEW



Mount St. Helens National Volcanic Monument Newspaper • Summer/Fall 1990

Mount St. Helens: Taking a Nap or Deep Sleep?

As the time since the last eruption of Mount St. Helens increases, so do the number of questions that geologists are asked about its future volcanic activity. Is the volcano quietly building pressure that will lead to another big explosive eruption? Has the volcano returned to a long period of silence, or is the current quiet state just a short nap in geologic time? Given the amount of time the volcano has been quiet, what is the significance of recent small explosions of ash from the lava dome and continued earthquake activity beneath the mountain?

Formed by seventeen eruptive episodes since October 1980, the lava dome inside the crater of Mount St. Helens is about 1,150 feet tall on its north side and 3,300 feet in diameter. The last dome-building event occurred on October 21, 1986, when magma (molten rock below ground) intruded into the lava dome's molten core and was pushed out as lava onto its surface. The most significant activity since 1986 includes intermittent swarms of earthquakes, generally only a few hours in duration, and minor explosions of ash. One such explosion occurred on January 6, 1990, and produced a thin ash layer in the crater and a trace of ash in Yakima, Washington, about 85 miles to the east.

The continued earthquake activity and intermittent explosions may reflect adjustments still taking place within the lava dome and in areas surrounding the magma reservoir system beneath the volcano. At this time (February, 1990) the volcano is not showing signs that could be interpreted as the beginnings of stronger eruptive activity. A possible explanation for the recent explosions is that as the magma cools in the dome and below the crater, volcanic gas is released into cracks and crevices in surrounding rocks. At some critical point, the gas overcomes the confining pressure and rises toward the surface. The rapid rise of gas along rock fractures generates earthquakes and abrades the rocks to form fine particles of ash that are released into the atmosphere.

One problem that geologists face in trying to address the question of whether the volcano has entered a prolonged period of quiet is time. Since geologists cannot accurately reconstruct the volcano's life history to increments of time less than a few hundred years, the current four-year quiet interval is far too short to make meaningful forecasts of future eruptive activity.

Steve Brantley
United States Geological Survey
Cascade Volcano Observatory

WELCOME

On May 18, 1980, Mount St. Helens captured the world's attention with an explosive eruption. In 1982 the President and Congress of the United States created the Mount St. Helens National Volcanic Monument and designated the USDA Forest Service to manage the Monument for research, education, and recreation for present and future generations. The Monument was dedicated to protect and preserve this opportunity to observe the dynamic forces of nature and the natural recovery of the land.

Ten years have now passed and the volcanic landscape continues to change. Plants and animals have returned to much of the area impacted by the volcano. Scientists and researchers continue to be amazed at the rate at which nature heals itself.

Since the Monument was established, visitation has grown to over a million visitors per year. Over the last ten years 120 miles of trails have been rebuilt, 50 miles of road have been reconstructed and numerous viewpoints and other recreation facilities have been completed.

On May 18, 1980, Mount St. Helens made history. I would like to welcome you to the Monument and encourage you to explore the effects of this historical event and the dynamic changes that have occurred in the last ten years.

Bradley Powell
Monument Manager

Photo by Jim Nieland



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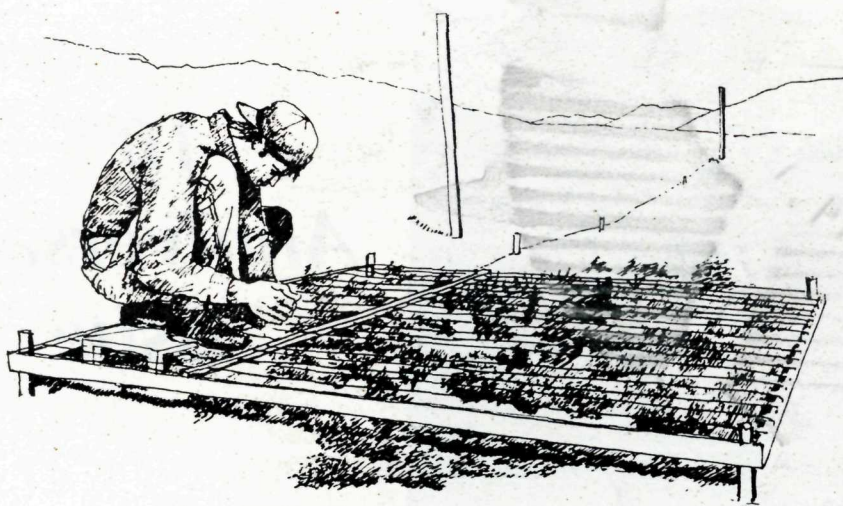
Gifford Pinchot National Forest



USDA • Forest Service

CAUTION-DISCOVERIES IN PROGRESS

Research projects are an exciting part of the monument. You may come across them alongside many trails. Please do not disturb these sites. If you would like more information, check the information board at the trailhead or contact Monument Headquarters, 206-247-5473.



"IT'S JUST A FEW FEET AWAY"

Many reflect on "the way it was" and wonder if "it" will ever return. In the monument you can help this natural process by being aware of your impacts and by staying on the trail. Taking just a few steps off the developed path leaves a scar on the land. An extensive trail system and numerous viewpoints have been developed to provide you with the most spectacular views, solitude, and opportunities to enjoy the area. Whether you're on the trail, road, or at a viewpoint, please resist the temptation to roam "just a few feet" off the trail.

JUST FOR KIDS—5 TO 105

Mount St. Helens is an exciting place to explore and learn about the natural world. Here's a checklist of activities to do while you visit the monument:

(COMPLETE 5 OF THESE AND RECEIVE A PRIZE)

- ☐ Join a forest interpreter on a walk or hike or listen to a talk.
- ☐ Share what you have learned about the monument with someone.
- ☐ Pick up and pack out three handfuls of litter.
- ☐ Stump a forest interpreter with a tough question about the area.
- ☐ Enjoy a slide program or movie at the Visitor Center or Pine Creek Information Station.
- ☐ Climb the sand ladder at Windy Ridge.
- ☐ Crawl through a tree mold at Trail of Two Forests.

BONUS QUESTIONS Inquiring minds want to know:
(COMPLETE 5 OF THESE AND RECEIVE A BONUS PRIZE)

- ☐ Discover three reasons life survived the eruption in the blast area.
- ☐ Why is it illegal to take pumice, ash, or any natural features from the monument?
- ☐ Why are there no garbage cans in the monument?
- ☐ How did Ape Cave get its name?
- ☐ Is Spirit Lake larger or smaller because of the eruption?
- ☐ How big is the lava dome?
- ☐ What if Spirit Lake didn't have an outlet?
- ☐ Why are some areas greener than others?
- ☐ When was the mountain last active?

Just For Fun!!!!

- Draw a picture or write a poem about your visit to the monument.
- What do you think the area will look like on its 15th or 20th anniversary?
- Come back in a few years and see how things have changed!

After completing this checklist show it to a forest interpreter (in the field, Pine Creek Information Station, or the Visitor Center) and receive your PRIZE!

GLISTENING GEMS OF BLUE

Ten years after the eruption of Mount St. Helens, the green forest is slowly returning to the gray landscape. Although the return of life to the land has just begun, the recovery of the many lakes affected by the 1980 eruption is nearly complete.

Prior to May 1980, Spirit Lake and other nearby lakes were typical alpine/sub-alpine lakes. Their waters were cool and clear, saturated with oxygen but low in nutrients, plants and animal life. They were glistening gems of blue, ringed by majestic forests.

The May 18 eruption dramatically altered the biology and chemistry of the lakes. Spirit Lake, the closest and largest body of water, received enormous amounts of sediment and nutrients from the lateral blast, debris avalanche, and air fall pumice. The sharp increase in temperature and nutrients created a soup-like broth—a bacterial buffet. The bacteria populations flourished, and within two months, quickly used up limited oxygen. In the absence of oxygen, new forms of bacteria which relied on metals, gases, and nutrients began to dominate. Within two years bacteria had decreased the level of nutrients to a fraction of the post-eruption levels. Oxygen once again circulated into the lakes from the mixing of air and water by wave action, and by the seasonal turnover of the water column caused by freeze and thaw.

By 1986, even heavily impacted lakes were supporting a vibrant and diverse population of microscopic plants, insects and amphibians, showing again the characteristics of typical alpine/subalpine lakes. Today, amidst the slowly changing landscape, these lakes are again glistening gems of blue.

Charlie Crisafulli
Ecologist

Ceese Brune
Forest Interpreter



Coldwater Peak
1940s

"THE TIMES, THEY HAVE CHANGED"

I first walked at the foot of Coldwater Peak in the summer of 1989, surveying along a proposed trail for the presence of artifacts scattered by the May 18, 1980, eruption of Mount St. Helens. As an archaeologist and historian with a mind-set geared to the distant past, I found this new outlook awkward.

Usually, a ground search focuses on discovering subtle hints of past events, such as jasper chips indicating an ancient Indian hunting camp or refuse piles representing a turn-of-the-century mining claim. Here I was looking for evidence of history that had occurred during my own lifetime!

Nevertheless, there is no doubt that the eruption of Mount St. Helens is a historical event even though it happened only ten years ago. I adjusted my outlook and skirted the base of Coldwater Peak above St. Helens Lake, less than seven miles north of Mount St. Helens.

Although I'd never actually set foot here before, I had visited it in my mind. Searching through early Forest Service records, I had read the memoirs of Miriam Hope Collier, a forest guard stationed on Coldwater Peak Lookout during the summers of 1943 and 1944. As I headed across the rim of St. Helens Lake, I recalled her eloquent descriptions of the lush meadows and forests, cathedral trees and crystal clear lakes. Her scenes added color and sharp contrast to this now barren landscape in the "blast zone" of the May 18, 1980, eruption.

Forest Guard Collier described the country due south of the lookout: "...forests stretch around without a blemish...I can sit and survey an unparalleled vista of wilderness beauty...The mountain stands still against the sky, letting the sky change around it and the clouds surround. Still it stands..."

I continued to compare the scene before me with her historic descriptions. These comparisons illuminated the wondrous power of the mountain. As she was once inspired by the "immovable beauty" of the mountain, I was now somewhat intimidated by the steaming lava dome looming to the south. Watching it steam, I became increasingly aware that the mountain is not passive.

As an archaeologist, I not only observe the physical evidence of the past but also try to imagine how people might have felt back then. Although I did not discover any artifacts near Coldwater Peak, I did discover a cultural landscape. Miriam Collier and I were inspired by the same mountain and our respect for the mountain seems mutual. Despite the time lapse and physical change between our experiences at Coldwater Peak, the beauty of the area remains.

Amy Gowan
Archeologist

TRAILS TRAILS TRAILS

Step into some of the most spectacular volcanic terrain in the world. Many miles of trails have been newly created or reconstructed, allowing you to explore a multitude of landscapes.

At every information station around the monument a variety of information on trails is available. A newly designed trail tree can help in finding the experience you are looking for. Recreational opportunity guides describe each trail in detail, and interpretive naturalists help send you on your way.

You can discover a forest buried by lava flows or floating on Spirit Lake. Experience the blossoming of life at Meta Lake. Discover sub-alpine meadows brightly painted with wildflowers. Piece the puzzle of the eruption together as you wander through the standing dead and blown-down forest. Discover quiet hiding places where the comfortable sounds of wind, water and wildlife fill the air. Reflect upon the healing power of nature as you travel through a landscape alive with change.

All of the above and more awaits as you begin to explore Mount St. Helens by foot or wheel. Please respect the fragile land and its recovering life by staying on the trail.



Randy Peterson
Recreation Planner

ADMINISTRATIVE CLOSURE: KNOW YOUR BOUNDS

On March 27, 1980, a large area surrounding Mount St. Helens was evacuated due to immediate volcanic hazard and was named the Red Zone. After the May 18, 1980, eruption the risk of volcanic activity lessened and the size of the red zone was reduced. In 1989, the red zone was renamed the Administrative Closure Area.

The Administrative Closure Area exists to protect fragile natural processes from the impact of human activities. Delicate life processes are returning in areas close to the mountain, and scientists from around the world have come to Mount St. Helens to research the recovery of plants and animals and the continuing geologic events. Visitors can enter the Administrative Closure Area only on designated trails, and off-trail travel is prohibited without a permit. This scientific research must continue undisturbed so that we can all gain new understanding about volcanic landscapes.

If you plan to travel within the Administrative Closure area, know the restrictions and the location of the current boundary.

Bob Loudon
Forest Interpreter

PACIFIC NORTHWEST FIELD SEMINARS

Do you have the urge to discover the wonders of an active volcano? Explore lava tubes and learn bat ecology? Observe the interactions of a hundred elk grazing on new vegetation in the shadow of Mount St. Helens? The Pacific Northwest Field Seminars is your opportunity to learn from recognized experts in these and many other subjects in natural areas throughout the Pacific Northwest.

The Pacific Northwest Field Seminars is a self-supporting, non-profit program sponsored by the Pacific Northwest National Parks and Forests Association in cooperation with the National Park Service and U.S. Forest Service. This program offers in-depth educational seminars in the field for an exciting and memorable learning experience.

Seminars at Mount St. Helens this year include: Geology of Mount St. Helens; Ecological Recovery: Ten Years Later; Cave Ecology; Elk Recovery; Landscape Photography; and Backpacking in Volcanic Terrains. For a free catalogue of PNW Seminars for 1990 contact PNNPFA (attention Alan Mebane) 83 S. King St., Suite 212, Seattle WA. 98104..or call (206) 442-7958.

Rich Ray
Forest Interpreter

ENVIRONMENTAL EDUCATION

The dynamic and fascinating volcanic landscapes near Mount St. Helens provide thousands of students and many educators an unparalleled opportunity to learn about ecology and earth science. A Living Laboratory: Volcanoes is a teacher-generated curriculum package for educators that encourages students to learn new thinking skills while discovering the many ways that volcanoes have shaped the earth. Accredited workshops for teachers are conducted each spring and fall on the south side of Mount St. Helens. These workshops allow teachers to experience the learning process firsthand. A Living Laboratory is a collaborative project with Washington Educational Service District 112. For more information please contact Sharon Bancroft (206) 574-3212.

Each year over 10,000 students come to the Mount St. Helens Visitor Center near Castle Rock, Washington, on school-sponsored field trips. Visitor Center interpreters meet these groups and start them on their way to a self-guided discovery tour of the center. Many of the groups use reference materials and learning activities provided in a Mount St. Helens Visitor Center Discovery Guide that is offered to teachers at a small cost through the PNNPFA Sales area at the center.

For more information regarding The Mount St. Helens Visitor Center Discovery Guide write to: The Mount St. Helens Visitor Center, 3029 Spirit Lake Highway, Castle Rock, WA 98611 or phone 206-274-6644.

PHOTOGRAPHING A CHANGING LANDSCAPE

Mount St. Helens is a dynamic landscape filled with diversity, contrasts, and surprises. It is a dramatic place where erosion is carving new valleys and colonizing plants are turning grey hillsides green. Using our cameras, we can record the way valleys, ridges, and streams appear today. Then, by returning to the same locations in a year or two we can personally observe and document the exciting changes occurring in this special place.



1981



1984

(photo point near
Miners' Car
Interpretive site
on Forest Road 99)



1988

Photos and article
by Jim Quiring

Some suggestions for photographing changes at Mount St. Helens:

- Plan to arrive early in the morning or stay late into the afternoon, since morning and evening light will offer better contrast and sharpness.
- Make notes as to the exact locations where your photos are taken so you can return to these photo points in the future.
- Be careful not to get ash in your camera or on your film while loading.
- Keep camera in a plastic bag between shots to avoid damage from ash.
- Take a few extra minutes at your photo points to imagine how it might have looked there before 1980 and soon after the May 18 eruption. Also, consider how things might change in the next year, 10 years or 50 years.

To the Summit—Then and Now

Rising to 9,677 feet, ten years ago Mount St. Helens stood silent and proud, perhaps the most symmetric of all the Cascade volcanoes. In the colorful lore of one Klickitat Indian legend, this once lofty peak played the role of a beautiful yet elusive Indian maiden clad in white. For many years its graceful snow-covered silhouette beckoned many an adventurous climber. Prior to 1980, some ten thousand mountaineers journeyed annually to the picturesque shores of Spirit Lake, registered their climb at the St. Helens Lodge and trudged over snow bridges and glaciers up the northern slopes in search of the summit. In 1980, that familiar tradition was blown into the geologic "Halls of History" as the mountain's peaceful beauty abruptly crumbled and the spirit of yet another ancient legend, "Mount St. Helens, the mountain of fire," awakened.

Mount St. Helens, as an active volcano, today attracts not only veteran climbers wishing to compare the old with the new, but also hikers from across the nation and around the world. Since its reopening to climbing in 1987, over 50,000 visitors have ascended the now popular southern summit. The easy road access and nontechnical ascents make spring, summer, and fall opportune seasons for experiencing this landscape in dramatic change.

Permits are required above 4,800 feet from May 15 to October 31, to insure the protection of Mount St. Helens' slopes. To obtain more information about the climbing program, call our Climbing Hotline at (206) 247-5800 or write to:

Mount St. Helens National Volcanic Monument
Route 1, Box 369
Amboy, Washington 98601

Renee A. Corso Climbing Program Coordinator
Hans Castren Climbing Ranger



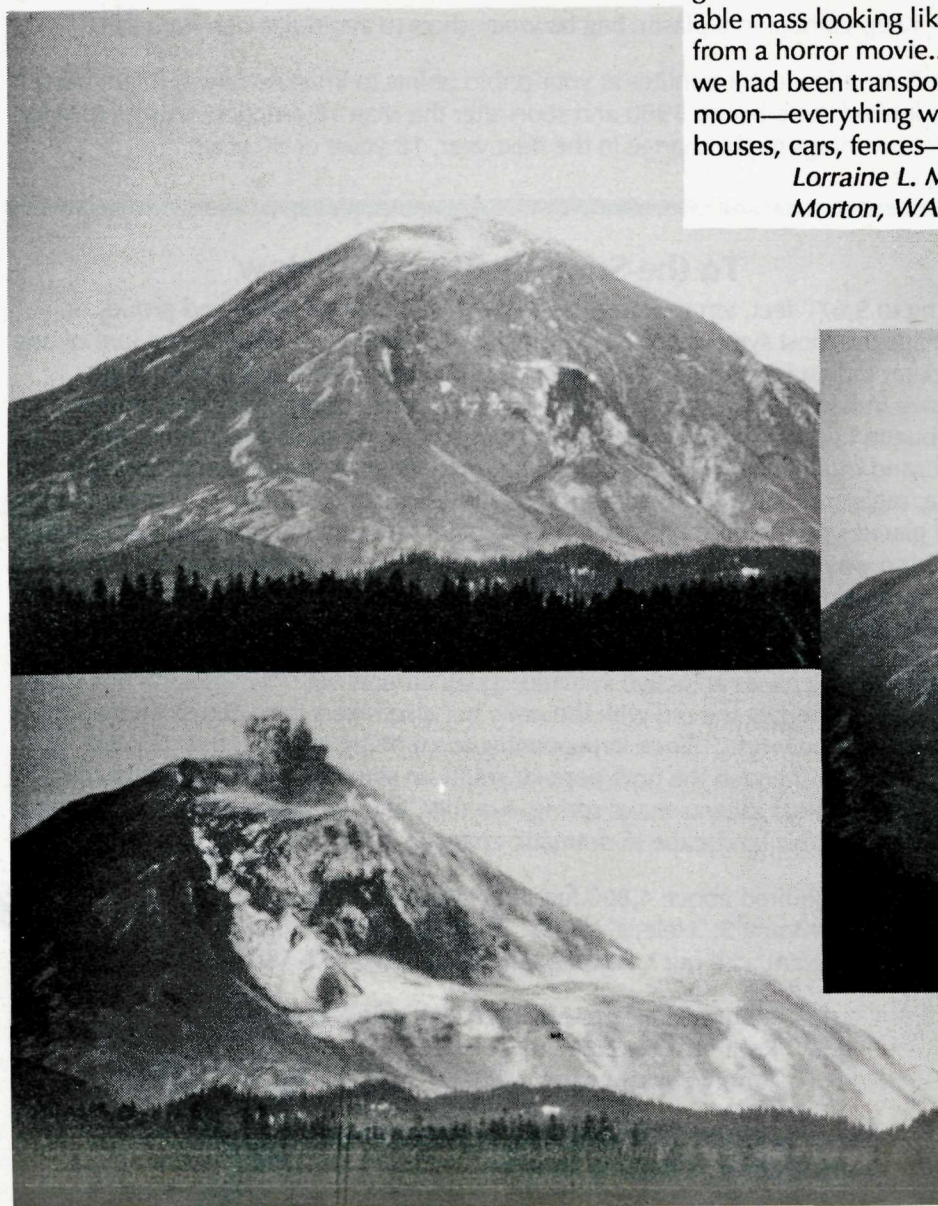
Photo by Lyn Topinka, USGS/CVO Mudflow marks on North Toutle River

▲ "THE MOUNTAIN IS GOING!!"

William Dilley, Joel and Linda Harvey, their ten-year-old son Joe, and Gary Rosenquist decided to avoid the throngs of people and venture to the north side of the mountain. They knew of a perfect vantage point called Bear Meadow, ten miles northeast of Mount St. Helens. They set up camp while observing the mountain. Gary took a few pictures and then settled in around the campfire to enjoy the evening. About 5:30 the next morning, Gary placed his camera on its tripod and took a picture of the first beam of light as it broke the horizon, engulfing the mountain in a beautiful golden hue. The rest of the party woke a few hours later.

About 8:20 a.m. they were overcome by a strange feeling. Everything was quiet. Willie became very anxious, grabbed the binoculars and began looking at the mountain. Joel told Gary to set up the tripod and take a picture. Willie said the "mountain looked fuzzy," so Gary took a picture of it. They all went back to what they were doing except Willie who became even more anxious. Suddenly he yelled "The Mountain's going!"

Gary dashed to his camera and accidentally bumped it as he reached out. Luck was with him, and the camera was aimed perfectly to capture the eruption. He started taking pictures as fast as possible. The sight was so overwhelming that he became dizzy and had to turn away to keep his balance. He watched a scene unfold like a silent movie. He never heard the blast. Somehow he managed to take 22 pictures in about 30 seconds.



▲ We heard absolutely nothing when the mountain blew!...I wanted to take pictures, but to no avail because of the darkness and huge ash cloud. We were actually too close anyway to capture the magnitude of the whole scene. We were soon forced to evacuate to southern territory.... As close as we were to the southern side of the mountain that morning, we sensed nothing. I would have no senses at all today if not for the last minute decision to postpone the tree planting to a later date.

Danny Cochran
Vancouver, WA

▲ There had been no sound, no rushing wind, no thunder of explosion to call our attention. But in those 5 or 6 minutes since I had last seen the mountain, the entire northern sky had turned ominously black....Taking up a position in my own front yard, I stayed there mesmerized until nightfall drove me inside, awestruck at the power of Nature God had created.

Battle Ground, WA.

▲ ... we felt no explosion, sound or vibration. Our neighbors drove up, honked and yelled, "Helen has blown her top." Eventually, black clouds were all across the sky. He asked, "What are you going to do?" I said, "Go back inside and close all the windows and doors" (I remembered the dust bowl days in Oklahoma)...It started raining pea- to grape-size mud balls.... We were in total darkness for the next two hours. Light wouldn't penetrate the falling ash the way it penetrates the fog or smoke. A flashlight beam appeared like a baseball bat....Other ham radio operators called, wanting to know what was going on....I reported to stations all across the U.S., Alaska, and Canada. This information was picked up and relayed to newspapers, T.V. and radio stations in several states. I didn't know it at the time, but mine was probably the first news out of this area.

James L. Lanterman
Bridgeton, MT

▲ "The mountain erupted!!" shouted my house guest...I raced to the deck to see this huge undescrivable mass looking like a giant ball of boiling brains from a horror movie... The next morning we thought we had been transported by space ship to the moon—everything was grey—the trees, lawn, houses, cars, fences—a true grey moonscape.

Lorraine L. Moffett
Morton, WA



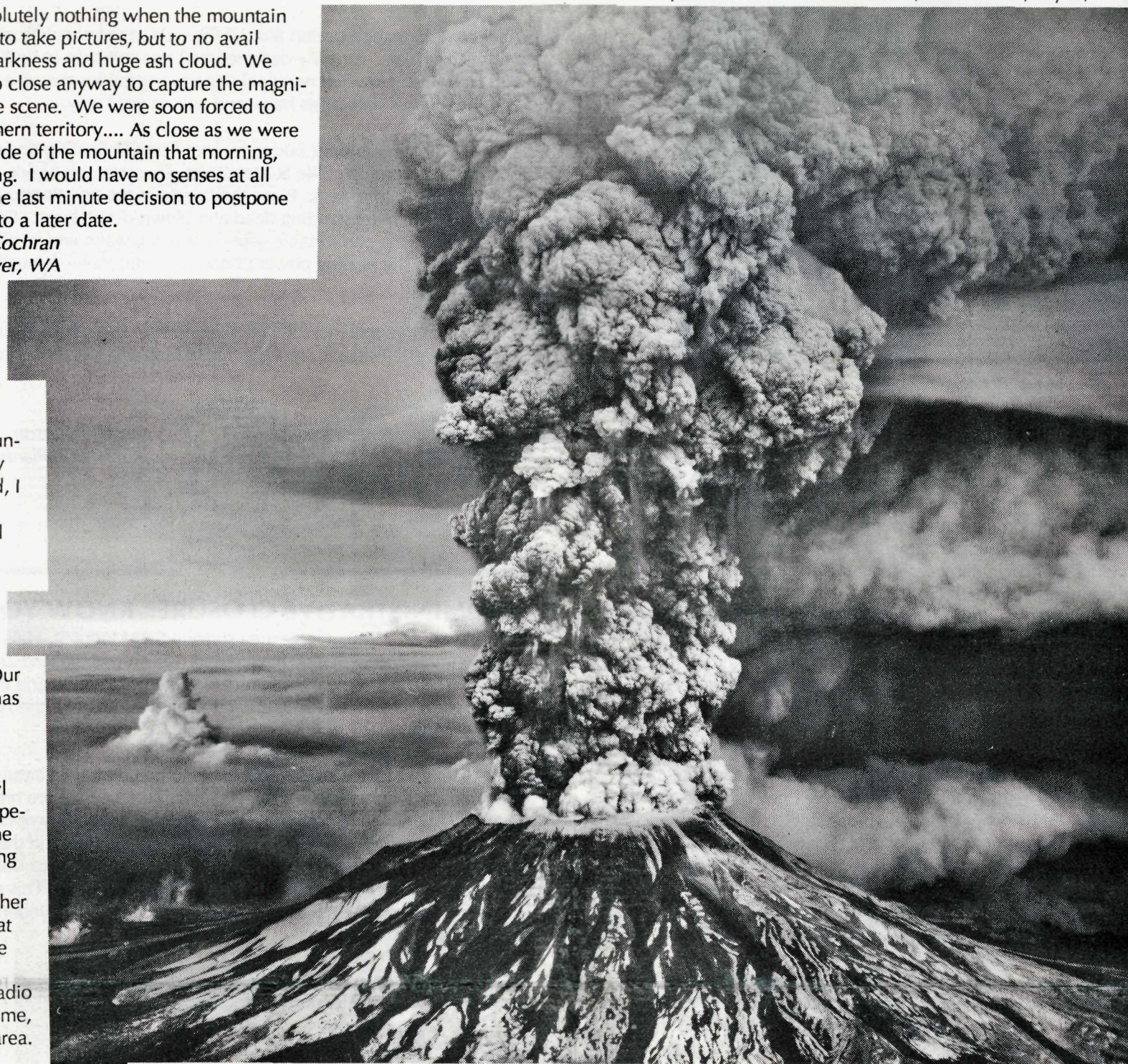
© Gary Rosenquist 1980

▲ It was like a large head of cauliflower, with the flower heads turning and blowing...It was the most breathtaking awesome sight I've ever seen, and hope to not see again.

Dorothy Graham
Vancouver, WA

Reflections

Photo by Robert Krimmel - U.S.G.S. Tacoma, WA 8053-139, May 18, 1980



May 18, 1980

For two months the earth trembled and ash plumes streaked the snow-white volcano gray. Extreme pressure built inside the volcano as molten rock beneath the mountain pushed toward the surface and caused the north slope to bulge outward. The bulge grew by more than 450 feet between March and May 17. The volcano was relatively calm in the weeks prior to the eruption, until 8:32 a.m. on May 18.

Within seconds after a 5.1 earthquake, the north flank of Mount St. Helens collapsed. Gigantic blocks of the volcano raced downslope, merging into a massive debris avalanche. Part of the avalanche surged into Spirit Lake, forming huge waves that sloshed 826 feet up the surrounding hillsides and sweeping thousands of trees and debris into the lake. Most of the avalanche roared 13 miles down the North Fork of the Toutle River in less than ten minutes, filling the valley with debris to an average depth of about 150 feet.

The avalanche rapidly released pressure within the volcano. A tremendous lateral explosion ripped

through the avalanche and developed into a turbulent stone-filled wind that swept over ridges and toppled trees. Nearly 230 square miles of forest within a fan-shaped area north of the volcano were blown over or left dead and standing.

Within minutes a mushroom-shaped column of ash rose thousands of feet skyward, and drifted downwind in a northeasterly direction. Day turned into night as the dark gray ash fell over eastern Washington. Wet, cement-like slurries of rock and mud scoured all sides of the volcano. Searing flows of pumice poured from the crater. The eruption lasted 9 hours, but Mount St. Helens and the surrounding landscape were dramatically changed within minutes.

This is the Mount St. Helens eruption story. It has been revealed by geologists who sifted through a mountain scattered across the landscape, and by countless individuals who witnessed a special moment in time.

▲ The store was busy with both people who wanted the usual things and those seeking information and souvenirs. Many bought printed T-shirts which had come out soon after the mountain began to stir in March. Some of the humorous sayings on the shirts just weren't funny anymore....We were asked many questions....Many people were stranded in the narrow strip....strangers were worried.... Our managers decided to keep the store open beyond regular closing time to accommodate some of those people who might need food or coffee. We finally closed at 3:00 a.m. I had been working at least 14 hours...It was "Totally Awesome!"

June W. Pumphrey
Castle Rock, WA

▲ To me the month of May has always signaled the awakening of the earth's spirit. The morning of May 18th, 1980, was no exception. The dawn rose with an exhilarating air of expectation. It held the promise of the budding warmth of a sunny spring day and the unique chance to closely observe a newly awakened volcano.

I was working for the U.S. Forest Service at the Mount St. Helens Ranger District as a tree planting inspector. We were to plant an area only 1 1/2 miles from the mountain's south base. Apprehension as well as excitement filled both me and my co-workers. Would we witness an eruption? Were we safe at such a close distance?

When we arrived at the unit at 7:30 a.m., the mountain's ominous gray flanks dominated the horizon. She looked deceptively peaceful beneath a soft blue sky. As we made our preparations to start the day, we kept a cautious eye trained on the volcano. Suddenly at 8:32 a.m. I looked up to see an enormous eruption shattering the still morning air. A boiling cloud of steam and darkened ash shot upward. Fear instantly gripped my heart and I started to run, yelling for the others to follow. I heard their cries of panic as they realized what was happening. That this was not a minor blow! I turned to look and what I saw stopped me in my tracks. I stood in awe as an entire mountain seemed to disintegrate before my eyes. Would this be the last scene of my life? Shouts of encouragement convinced me to continue on. I ran, my heart pounding in my throat. I passed out ash masks to everyone as they reached the vehicles. Fear was etched upon their faces. We contacted the Forest Service via radio and informed them of the eruption and then waited for word on the best escape route. Meanwhile a menacing cloud of ash billowed 700 feet above our heads and lightning streaked across the sky. The day became night. The Forest Service radio crackled; there would be no assurance, no contact with the geologist could be made. We were on our own. We raced down the rough logging roads toward the hopeful refuge of Cougar, checking the bridges as we went. Upon reaching safety, cries of joy and relief were expressed by all.

Ten years later I find the memories of that morning, the feelings of fear, awe and exhilaration are still vividly imprinted upon my mind. Yes, the month of May will always signal the awakening of the earth's power and spirit for me.

Valerie Pierson
Cougar, WA

▲ I awoke early that crystal-clear morning in Vancouver, feeling refreshed after an eventful May 17, when I had spent all day in the field monitoring Mount St. Helens, which had included spending an exhilarating 45 minutes walking around on top of the volcano. I walked to the U. S. Geological Survey's temporary headquarters in downtown Vancouver, thinking I would be spending the next several nights at Coldwater 2, our observation post on the ridge (now known as Johnston Ridge) just north of the Toutle River. I would have spent the night of May 17 there too, but I had a visitor from Germany whom I wanted to escort around the volcano before he was to leave on Sunday, so Dave Johnston had agreed, somewhat reluctantly, to spend the night there instead. At about 7 a.m., Dave radioed in that he had just completed measurements from Coldwater 2 indicating that the bulge on the north flank of the volcano was continuing to grow. I began preparing to leave Vancouver, and at 8:32 a.m. was impatiently pacing the floor of the seismograph room when I noted a whopping seismic event just starting. I immediately ran upstairs to the radio and called Dave but received no answer. I alerted others to the event, and soon thereafter reports of a big eruption in progress began to arrive. The seismographs continued their frantic twitching, and it was clear that something important was happening.

The next few minutes are a blur. We quickly decided to fly to the volcano in the Forest Service spotter plane. Somehow a pilot was rounded up,

▲ The eruption of Mt. St. Helens was the most exciting event of my life....I don't know the name of the pilot we found who was willing to make the trip. He was as curious as we, and as ignorant of the fact that the airplane engine could have been destroyed by the ash....The only camera we'd brought on the trip was a Polaroid, useless for clear pictures of the eruption. But the sight was one that will remain in my memory forever.

Jean Ferry
Vancouver, WA

▲ As told by an ex-logger
We logged many places in the 5 years [after the eruption]. My feet were always blistering hot. I went through a pair of logging boots in 3 months. I filed my chainsaw a zillion times. I cut through logs measuring 5-7 ft. In the middle of the log was nothing but concrete...A lot of times, while working, I could actually feel the earth move.

Brain R. Lanphear
Woodland, WA.

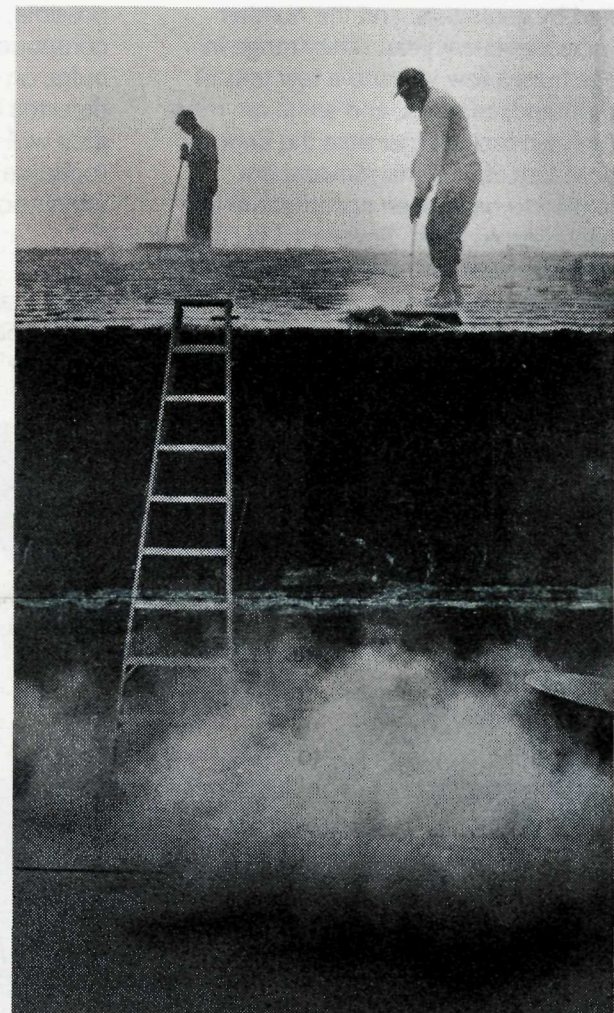


Photo by Yakima Herald

three or four Forest Service employees and I got to Pearson Airpark in Vancouver, and by about 9:10 we were flying to the volcano. As soon as we lifted off, a towering eruption column dominated the view toward the mountain. As we continued, something seemed strange; the volcano had a flat top, not a sharply rounded one as it had had the day before!

Flying above the south flank of the volcano was an eerie and marvelous experience. Eerie, because the eruption column, only a mile or two away, was so huge and yet was soundless to us because of the drone of the airplane engines. Marvelous, because we were so close to one of nature's most exciting displays. I took many photos and movies of the seething, uprushing column of pumice and ash, observed an increase in vigor and a lightening in color of the column soon after noon, and, surprisingly perhaps, kept my ear glued to the cockpit radio, which was our only means of learning what was happening away from the volcano. Because the air was so filled with ash (and lightning bolts, especially east of the volcano), we could fly only back and forth above the south flank, limiting views of the eruption area.

It wasn't until the next day that we put two and two together, and began to appreciate the magnitude, the beauty, and the tragedy of what we had witnessed a small part of on May 18.

Don Swanson
United States Geological Survey
Cascade Volcano Observatory

WHEN A VOLCANO'S FLANK COLLAPSES

The 1980 eruption of Mount St. Helens captured the attention of volcanologists throughout the world to a degree matched by few eruptions in this century. It showed how a volcano's flank can collapse catastrophically to trigger a violent explosion that spreads volcanic debris over a large area. With this unforgettable example in mind, geologists in many countries have taken a new look at the dangers posed by volcanoes. They have discovered scores of similar events—eruptions marked by a partial collapse of a volcano, sometimes accompanied by a lateral explosion—preserved in the geologic record and described in historic documents.

Since 1980, scientific exploration into this previously underrated natural phenomenon has yielded provocative insights into the power of volcanoes. More than 200 large rockslide avalanche deposits formed by the collapse of a volcano's flank have been identified by geologists, and the number increases every year. They range in age from a few years to a few tens of thousands of years, and some are more than ten times larger than the deposits at Mount St. Helens. Several are known to have been accompanied by lateral explosions. Seventeen such deposits have formed in the past 400 years (about four per century), claiming as many as 17,000 lives. Collapse of a large sector of a volcano is now

recognized as one of the most important hazards at large steep-sided volcanoes. Anticipating where and when a collapse will occur is an ambitious goal that scientists are striving to meet.

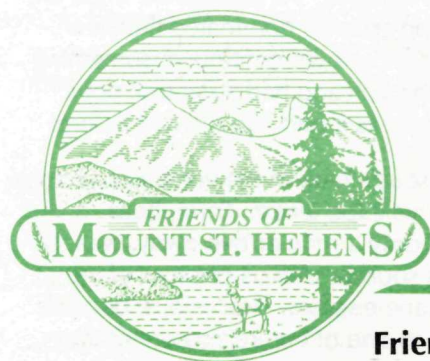
Can scientists use this experience to predict when and on which volcano a massive rockslide avalanche is likely to occur? What telltale signs would geologists look for? Between March 20 and May 18, 1980, the north flank of Mount St. Helens swelled dramatically, forming a prominent bulge as magma (liquid rock underground) pushed up from below. Surveys of the north flank showed that this bulge had grown outward by as much as 450 feet at a rate of five to six feet per day. Intense earthquake activity and small steam eruptions accompanied the growth of the bulge. Even in hindsight, it was not possible to predict either the time or the magnitude of events that took place on the morning of May 18. It is now possible, however, to estimate the consequences of development of a bulge on other volcanoes. If a bulge is detected on another volcano, geologists will be mindful of the giant rockslide avalanche and lateral blast which occurred at Mount St. Helens.

*Steve Brantley
United States Geological Survey
Cascade Volcano Observatory*



Mount St. Helens

Photo by Lyn Topinka, USGS/CVO



Friends of Mount St. Helens

Mount St. Helens allows us to observe firsthand the forces which have shaped the planet. By studying it, we can unravel the history of similar areas around the world. This volcano, a mystery itself, is a key to solving numerous natural puzzles.

Friends of Mount St. Helens is a nonprofit international organization committed to identifying, promoting and expanding upon the potential of Mount St. Helens for recreation, research, interpretation, and education.

This spring we commemorate the tenth anniversary of the 1980 eruptions. Mount St. Helens has changed from a vast, gray, inaccessible environment to a brilliant, growing and accessible National Volcanic Monument. We are celebrating the return of wildlife and people to this unique area with a variety of fun and educational activities. Join us and make a difference.

For more information please contact: Friends of Mount St. Helens, P.O. Box 1287, Castle Rock, Washington 98611 or ask at any of the information stations around the monument.



Bezymianny

Photo by Inst. of Volcanology, Petropavlovsk, Kamchatka, USSR

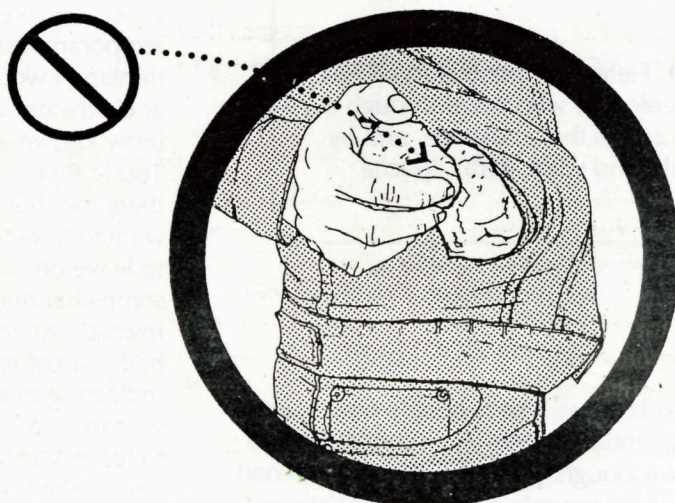
PERESTROIKA FULFILLS VOLCANOLOGIST'S DREAM

The Ring of Fire, to which Mount St. Helens belongs, encircles the Pacific Basin. Northward from Mount St. Helens, the Ring includes the Aleutian Islands and continues southwest into the Soviet Union, passing through Kamchatka and the Kuriles before entering Japan. In 1956, a volcano named Bezymianny (Russian for "No Name") erupted in Kamchatka, USSR. Many of the characteristics of this eruption resemble those of the eruption of Mount St. Helens on May 18, 1980. Since 1956, Bezymianny has experienced remarkable dome growth interspersed with explosive activity, a reasonable future scenario for Mount St. Helens. Clearly a detailed comparative study of the two volcanoes is of scientific interest and should lead to improved evaluations of the hazards associated with such explosive volcanoes.

But no such study has been done, because Kamchatka is considered a militarily sensitive area by the Soviet Union. No westerner has visited any of the Kamchatka volcanoes in many decades, and large parts of the peninsula have been off limits to all except volcanologists and military personnel. Soviet volcanologists attending international meetings have eagerly shared photographs and discussions about Bezymianny and other Kamchatka volcanoes, but that is not the same as visiting the site and making firsthand observations. Our Soviet colleagues have been discouraged that we could not visit. By the early and mid-eighties, even before glasnost and perestroika, they began to express cautious optimism. This optimism has been realized (possibly) in the Gorbachev era. Documents now exist, signed by both Soviet and American authorities, that will allow exchange visits of Americans to Kamchatka to study Bezymianny and an adjacent volcano, and of Soviets to visit American volcanoes, especially Kilauea in Hawaii and Mount St. Helens. A group of four U.S. Geological Survey volcanologists, and a team of four from NASA, are scheduled to spend a month at Bezymianny in the summer of 1990. The exact time is still uncertain owing to military operations. Nonetheless, the odds are in our favor for the first time in memory, and we are busy trying to learn a few words of Russian before our visit to the scenic wilderness of Kamchatka's volcanoes.

*Don Swanson
United States Geological Survey
Cascade Volcano Observatory*

Don't Be A Pumice Picker



THE IMPORTANCE OF PUMICE

Taking "just one" piece of pumice may seem trivial, but when multiplied by millions of visitors, drastic damage is done. Wind whipping across the land and the rays of the sun remove moisture from the soil. How can life return under such dry conditions? One important element is pumice, the light-colored rock found throughout the monument. Wind-swept seeds and nutrients (leaves and insects) get stuck on the coarse texture of the pumice. In the shade of the pumice tiny seeds are able to sink their roots into the soil. Please respect the importance of pumice and leave it where it belongs.

MY VISIT TO MOUNT ST. HELENS

Mount St. Helens in its glory once stood
 Along with Rainier, Adams and Hood
 Until the 18th day in the month of May
 It no longer stood in its glorious way
 At 8:32 with the sky so blue
 The top and the side of St. Helens blew
 Then up in the sky
 Over 15 miles high
 Rose an awesome cloud of pumice and steam
 Creating a wind in the extreme
 It blew over trees and scattered the ash
 Destroying all in its path, as quick as a flash
 The people were warned of this coming event
 And most people left on their own intent
 But Old Harry Truman of Spirit Lake
 Believed the geologists were all a big fake
 He stayed in his lodge 'til it was too late
 And poor Harry Truman met his ill fate
 His body now lies under ash and debris
 So deep in the mud he'll never be free
 Now that St. Helens has lost her white crown
 Her sister mountains might look down and frown
 Except that more people from shore to shore
 Come visit St. Helens than ever before
 I dedicate this poem to a Ranger called Jim
 I'd know a lot less if it weren't for him
 He showed us how nature and man
 Worked hand in hand mending the land
 He guided me on roads not seen by most men
 He filled in the puzzle of how, why, and when
 A piece of the puzzle is still missing called time
 To restore Mount St. Helens to be a Great Lady
 As she was in the fateful year of 1980
 Hail to the Rangers of the Gifford Pinchot Station
 For restoring this park to our great nation
 This poem's our thanks for all to see
 From Grandma, grandpa, and from me.

Author Tammy Arfsten
 Co-Authors: Grandma and Grandpa

Age 13
 Grade 9
 Petaluma Ca
 Date of visit: June 24, 1989



Pacific Northwest National Parks and Forests Association

VIDEOS, BOOKS, SLIDES, POST CARDS AND POSTERS are among the items offered at sales outlets within and nearby the Mount St. Helens National Volcanic Monument; the Mount St. Helens Visitor Center, Pine Creek Information Station, Woods Creek Information Portal and Apes' Headquarters at Ape Cave. Each sales outlet has a variety of educational materials for visitors. Current information on the eruptions, changing landscapes, guides to plants, animals, trails and viewpoints are among the informative items available at reasonable prices.

The Pacific Northwest National Parks and Forests Association is a nonprofit organization with the purpose of providing interpretive and educational sales materials. Money generated by sales helps establish new outlets and provides a base for projects and services for National Park and National Forest visitors. To obtain a free catalogue of sales items available at Mount St. Helens, write to: PNNPFA, Mount St. Helens Visitor Center, 3029 Spirit Lake Hwy., Castle Rock, WA. 98611.

NAME _____

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Donations to the Pacific Northwest National Parks and Forests Association are encouraged to help in covering costs of printing, mailing, and other association activities. Make donation checks payable to: PNNPFA. Tax-deductible memberships (Student \$3.00; Regular \$5.00-\$100.00) to the association entitle members to a 15 percent discount on merchandise at any branch. ☐ Donation or ☐ Membership



Bicycles on Road!!

June 29, 30, July 1, 1990

Join us for an exhilarating three-day, 200-mile bicycle event around Mount St. Helens to benefit the American Cancer Society.

For more information contact:
 Christine Lolich (503) 224-7364
 Steve Overton (206) 834-3339

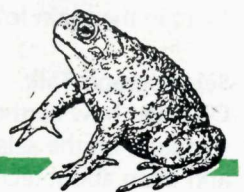
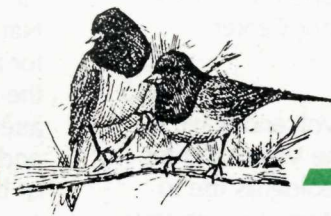


Deceivingly Simple

Scientists entered the blast zone immediately after the eruption and found a seemingly lifeless landscape covered with shattered trees, enveloped in ash; an ecosystem in its earliest, most simplistic state. It wasn't until scientists took a closer look at the barren landscape that they were confronted with their greatest single surprise: the realization that plants and animals survived the eruption! The survival of plants and animals was exciting to scientists because previous studies of catastrophically disturbed areas indicated that successional processes were strongly influenced by survivors. Within the "islands of survivors" at Mount St. Helens, scientists found many of the plant and animal species that were present before the eruption. The simple landscape at Mount St. Helens suddenly became quite complex.

A complex mosaic of plants and animals survived the eruption, protected beneath the snow and soil. Later, some of these survivors perished in the harsh post-eruptive environment, while others went about their business. One such survivor, the northern pocket gopher, continued to burrow beneath the ground in search of roots and bulbs of plants. As they burrow, pocket gophers push soil to the surface, mixing the sterile volcanic ash with the rich buried soil. Scientists have discovered that the gopher mounds create seedbeds for colonizing plants such as the magenta-flowered fireweed and vibrant purple lupines. Many of the seeds perish, but those that take hold are the first step in the reestablishment of the forests that once framed the volcano. These early colonists also provide food for deer and elk that have returned to the blast area.

One of the first insects to return to the blast area, other than ant colonies that survived underground, were beetles. These winged insects can travel great distances on prevailing winds. They are scavenging predators that feed on other insects blown into the blast area. Scientists estimate that 80 pounds of insects are blown into each acre of the monument during the summer months. Insects experienced difficulties in the blast area, in part due to the sharp ash particles that wore away at their protective body coverings, often resulting in their death. Wind-blown insects provide an important food source for scavenging insects and a source of organic matter for future plant growth.



Many of the summer resident bird species probably had not yet returned to Mount St. Helens from their wintering areas by May 18, 1980. Other species ventured into the blast area only days or weeks after the eruption. Species that nest and feed on the ground surface were the first to colonize areas where the forest was removed or blown over. In areas where trees were killed but remained standing, several species such as the Hairy woodpecker, Red-breasted nuthatch, and Northern flicker are common residents. Today, the diversity of bird life continues to grow; osprey can be seen hunting for fish that survived in lakes and Great Blue herons are often found feeding on tadpoles.

Burrowed in the bottoms of lakes and streams or beneath logs and rocks, most frogs were inactive when the volcano erupted. Following the eruption, during cool wet weather, surviving frogs and toads were able to travel considerable distances and colonize newly formed habitats. The mobility of amphibians can be demonstrated at Spirit Lake, where amphibians didn't survive, but the air is filled with the sound of frogs at sunset. Some survivors, such as western toads, have remained in place. During the summer months, thick black masses of their tadpoles swarm in warm shallow portions of lakes. As the summer progresses, lake shores become "toad mats" that attract a variety of predators.

It is difficult to predict the future composition of plant and animal life at Mount St. Helens. However, it is certain that the ecosystem at Mount St. Helens will become increasingly complex and remain in a continual state of change. The cycle of volcanic activity followed by biologic recovery has been underway for more than 40,000 years. It is likely that the cycle will be repeated many times in the future.

Todd Cullings
 Forest Interpreter

Charlie Crisafulli
 Ecologist



OPEN WINDOWS OF DISCOVERY

JUNE 18 – SEPTEMBER 3

Forest interpreters have scheduled a wide range of activities to help you understand and enjoy the Mount St. Helens National Volcanic Monument.

These programs provide you with an unrivaled opportunity to ask questions, opening new windows of discovery into the colorful past of Mount St. Helens and its exciting future.

EVERYDAY

NORTHSIDE

Windy Ridge Talk 11:30 to 4:30
What did volcano watchers witness during the Mount St. Helens eruption? Join a forest interpreter to relive the incredible power unleashed on May 18, 1980, and find out what's happening now. Talks once an hour on the half hour at the Windy Ridge amphitheater, Forest Road 99; 30 minutes.

Meta Lake Walk 12:00 & 3:00
How could life have survived the shearing rock force and heat of the 1980 eruption? Stroll with a forest interpreter to this emerald lake teeming with life and hear stories about survivors and newly established life. Meet at the Miners' Car; junction of Roads 26/99; 45 minutes.

SOUTHSIDE

Ape Cave Lantern Walk 12:30, 1:30, 2:30
Explore the cool underground world of this 2,000-year-old lava tube as a forest interpreter sheds light on the life and features in Ape Cave. Meet at Apes' headquarters, 3 miles north from 83/90 junction; 30 minutes.

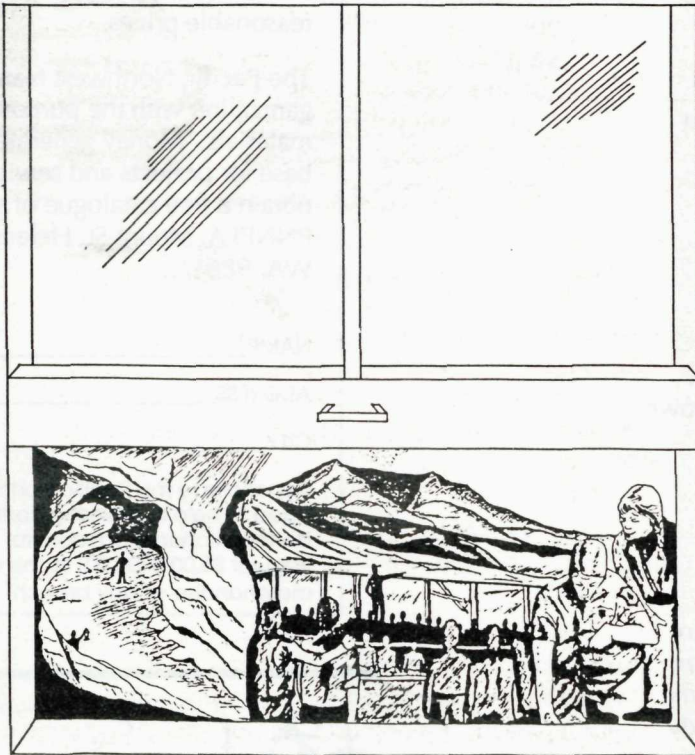
Lahar Walk 4:00
Discover the power of an immense mudflow which scoured this landscape and how life survives in these newly created surfaces. Meet at the Lahar Viewpoint, 11 miles east of 83/90 junction; 30 minutes. Road 83 is subject to 30-minute delays due to construction. Please plan ahead.

VISITOR CENTER

Map Talk 9:15 & 10:30
Meet with a forest interpreter and learn about the past, present, and future of Mount St. Helens, as well as exciting places to visit around the volcano. Meet in the main lobby of the Visitor Center.

Seismograph Talk 4:15
Discover how earthquakes at the volcano leave a signature on the seismograph in the Visitor Center and learn about techniques that geologists use to monitor the mountain's activity. Meet at the seismograph in the research area of the Visitor Center.

Special Presentations Between 2:00 and 4:00
Enjoy a special aspect of Mount St. Helens, the surrounding area and the people who live here. Feature films, slide-illustrated talks, trail walks and living-history presentations are just some of the avenues of discovery offered. The location of talks or walks will be posted daily.



MOUNT ST. HELENS VISITOR CENTER

Come in and discover an array of information that unveils the past, present, and the future of Mount St. Helens. Displays, audio-visual presentations, interpretive activities and a wide range of sales items from videos to post cards tell the story of this volcano. Located 5 miles east of Castle Rock on Highway 504, the Visitor Center is open daily from 9:00 a.m. to 5:00 p.m. For more information call (206) 274-4038 or (206) 274-6644.

WOODS CREEK INFORMATION PORTAL

Woods Creek Information Portal is an information facility for people traveling to Mount St. Helens National Volcanic Monument from the north and for those looking for exploration opportunities in the area. Have your questions answered by an attendant without leaving your vehicle, or come in and visit with an interpreter, look over the displays, or browse through the books, brochures, slides, maps and post cards.

The grand opening of the portal is May 18, 1990. Woods Creek Information Portal is located 6 miles south of Randle on Forest Road 25 and is open daily—May 18 to September 30—from 9:00 a.m. to 5:00 p.m.

PINE CREEK INFORMATION STATION

If you are driving to Mount St. Helens from the south, be sure to stop at the Pine Creek Information Station located 17 miles east of Cougar on Forest Road 90. Enthusiastic help is available here for travel directions, picnic spots, trails, camping, and how to make the most of your visit. Video, book-sales, and a short movie will get you ready for your adventure into the monument. Open daily from 9:00 a.m. to 5:30 p.m.

APES' HEADQUARTERS

You will "lava" Ape Cave. Explore the furthest reaches of a lava tube formed from an eruption of Mount St. Helens 1900 years ago. Lantern rentals, booksales, and interpretive walks into the cave are available daily. Apes' Headquarters is located on Forest Road 8303 and is open daily from 10:00 a.m. to 6:00 p.m.

MOUNT ST. HELENS NATIONAL VOLCANIC MONUMENT HEADQUARTERS

The USDA Forest Service headquarters for the national monument is located three miles north of Amboy on Highway 503. Information on traveling, permits, and road conditions is available here. Open daily from 7:30 A.M. to 5:00 P.M.

Photo by Todd Cullings

WEEKEND SPECIALS

Cedar Creek Talk 2:00 & 2:30
What happened to Spirit Lake during the May 18, 1980, eruption? How has the lake's ecosystem changed since the eruption? Join a forest interpreter and discover what scientists have revealed about the remarkable recovery of Spirit Lake. Meet at Cedar Creek Viewpoint on Forest Road 99. 15 minutes.

Smith Creek Talk 3:00 & 3:30
Will the lava dome within the crater of Mount St. Helens continue to grow? Will Mount St. Helens erupt catastrophically again? Discover the fascinating world of monitoring an active volcano, and how geologists are striving to answer these questions and more. Meet at Smith Creek Viewpoint on Forest Road 99. 15 minutes.

Harmony Falls Hike 1:30
Discover the favorite hideaways of those who relished the Spirit Lake basin of the past. Join a forest interpreter for a view into the crater and a walk back in time to the shores of Spirit Lake. Meet at the Harmony Viewpoint; 3 1/2 miles west of 26/99 junction on Road 99. Two miles round trip; allow 1 1/2 hours.

Clearwater Car Caravan 10:30 & 11:15
Join a forest interpreter and discover how the Forest Service and nature are together rebuilding a forest within the Clearwater Valley. You may sight an elk resting in the shade of millions of planted trees. Discover how scientists have uncovered the mystery of the tailed frog. This 12-mile gravel road is usually closed to visitors. One-way travel, 12 car limit. 1 1/2 hours. Meet at the Clearwater Viewpoint on Forest Road 25.

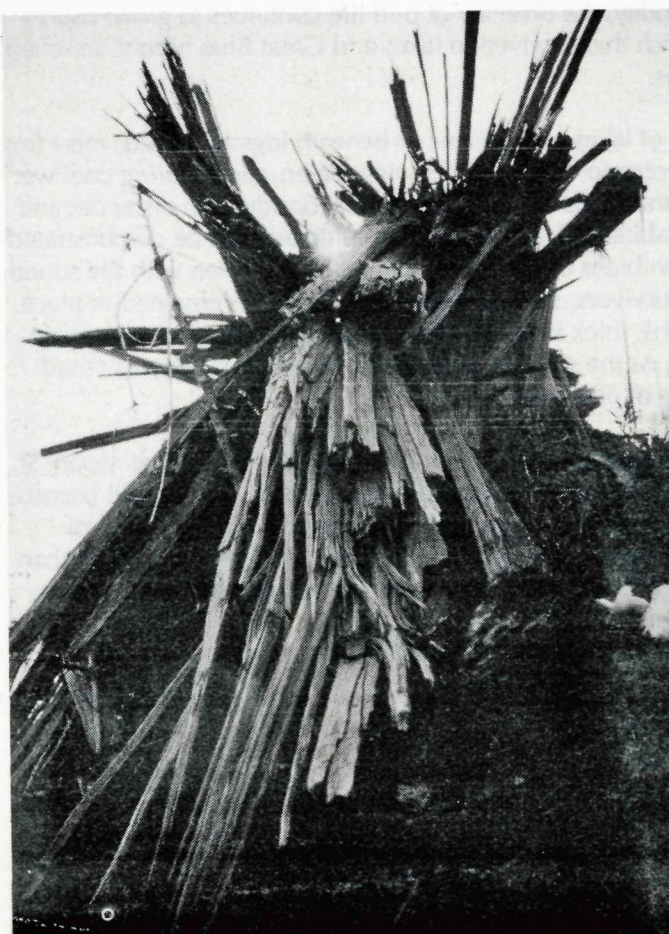
Campfire Programs

Join a forest interpreter for an evening of stories, songs, and fun for all ages.

Swift Camp: Saturdays 8:00 p.m. June and July.
7:00 p.m. August.

Cougar Camp: Saturdays 8:30 p.m. June and July.
7:30 p.m. August.

Iron Creek Campground: Saturdays
8:00 p.m. June and July.
7:30 p.m. August.



".....One is constantly reminded of the infinite lavishness and fertility of Nature's inexhaustible abundance amid what seems enormous waste. And yet when we look into any of her operations that lie within reach of our minds, we learn that no particle of her material is wasted or worn out. It is eternally flowing from use to use, beauty to yet higher beauty."

John Muir

*Please recycle
this paper.*