This Volcano is Active

An active volcano is a great place for action of a human-kind. We, who have so much to say about the future of our blue-green planet, must act consciously these days or give in to our careless witness of earth’s wasting. With catastrophe around us and pain and suffering along myriad fault lines, people leap to nature’s stories of resilience after disaster, draw inspiration from the restoration of beautiful balance, and resolve to act in better relationship with life and each other.

Mount St. Helens Institute’s (MSHI) inaugural edition of Rumblings last November reported the fresh eruption of our organization’s newly purposed mission to advance understanding and stewardship of the earth. January’s issue resounded with opportunities to make a difference through MSHI program participation and support in the New Year. This third Rumblings is a call to action, inspired by what is one of the most accessible and studied active volcanoes in the world.

Mount St. Helens is one of those rare places, as Robert Michael Pyle says, “of initiation, where the borders between ourselves and other creatures breakdown, where the earth gets under our nails and a sense of place gets under our skin.” *

Look at the schedule and descriptions of engagement in science, education and exploration through the following months. Join a guided climb on the volcano and learn about our active landscape. Take part in a field seminar on the biology or geology of this ever-changing mountain. Learn about Native American myth and meaning of the special place above Loowit’s tree line.

Volunteer to interpret or assist with teaching about the volcano. Train to help people along the trail. Host visitors from around the world as they enjoy and are inspired by this unique spot on our globe. “It is through close and intimate contact with a particular patch of ground that we learn to respond to the earth, to see that it really matters.” *

If you cannot physically participate in the exciting activity on Mount St. Helens presently, or if you want to do more to spread the understanding and inspiration that MSHI intends to broaden, then act by recruiting a MSHI Member, sponsoring our Volcano Outdoor School, giving a scholarship, or supporting our cause with a contribution. Just act. “When people connect with nature, it happens somewhere.” *

What could be a better somewhere than the volcano in your own front yard? Enjoy this issue of Rumblings and sign up for action.

Richard Meyer, Executive Director

* With gratitude to Robert Michael Pyle for his special words in The Thunder Tree
Corporate Memberships

All Corporate Members will receive 10 copies of our Rumblings newsletter bimonthly, your business name listed as a corporate contributor to the Mount St. Helens Institute, opportunities to volunteer and special reports on programs or projects of special interest to your business. We will spread the news of your business contribution to thousands of people who appreciate the value of science, education, exploration and informed discussion of our natural world, and want to know the values of your business.

Contact Richard Meyer at rmeyer@mshinstitute.org or (360) 891-5107 for more information on Corporate Memberships.

Mission

Mount St. Helens Institute is a non-profit 501(c)(3) organization that advances understanding and stewardship of the earth through science, education and exploration of volcanic landscapes.

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The Rumblings newsletter is published bi-monthly by the Mount St. Helens Institute. Please submit articles by the 8th of the month to Luke Wakefield - lwakefield@mshinstitute.org

We depend on your contributions.
Poetry Corner

What if I Chose?

Taken from -- In The Blast Zone - Catastrophe and Renewal on Mount St. Helens -- OSU Press

By Kim Stafford

What if I chose, said alder, to only do what only I can do?
What if I chose, said penstemon, to only do what gives me joy?
What if I chose, said coyote, to take in one quick bite
what gives me joy, and what only I can do:
a song that raises thunder in the human heart?

What if I chose, said silver fir, to only fall as seed
where the wind wills?
What if I chose, said fireweed, to follow through
disturbance into Eden?
What if I chose, said someone small, to hide my cache
of seed on the pumice plain?

What if I chose--by seeing and receiving, by singing
and believing--to be a human being?

What if I chose, said the western toad, to come down
over snow at night to find my native pool?
What if I chose, said the dormant bud beneath the bark,
to unfurl my little flag?

What if--so schooled by water, stone, flower, and tree--
I chose to be a human being?
Then I would be chosen to do what only I can do.
I would be chosen to only do what gives me joy.

Friends, you may glimpse me now and then.

Board Spotlight

Casey Roeder

Executive Director
Skamania County Chamber of Commerce

Casey is a native of the Pacific Northwest, having been raised in Scappoose, Oregon where, during her childhood, she had a lovely view of Mount St. Helens before the eruption. She now lives just up the Columbia River in North Bonneville, Washington. Skamania County has been her home for the past 26 years. For most of that time she has worked in the hospitality/tourism industry, first at Skamania Lodge and then for the Sternwheeler Columbia Gorge in Cascade Locks. Since 2006 Casey has served as the Executive Director for the Skamania County Chamber of Commerce.

In 2009, Skamania County Chamber of Commerce was one of the main partners in the drive to re-open the Pine Creek Information Center on the southeast side of Mount St. Helens. Through this partnership, Casey became familiar with the efforts of the Mount St. Helens Institute and was invited to join the MSHI Board by former Executive Director, Jeanne Bennett. She was a member of the federally appointed Mount St. Helens Advisory Committee which made recommendations to the US Forest Service on the management of the National Volcanic Monument. Visitation on the mountain is key to the economic viability of the surrounding rural communities and the programs of MSHI are wonderful assets to enhance the visitor experience.

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Page 7 - Science
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Pages 9-11 - Field Notes - John Bishop
Page 12 - Membership Benefits

Tune in to the Nat Geo Wild Channel to view our very own volcano featured in the mini-series, 'Going Wild'. Premiers Monday, March 3rd at 9pm ET. Check local listings.
2014 SUMMER PROGRAMS

Geology on High Climb

July 25-26
August 1-2
August 8-9 (Sold out)
August 29-30

Description: Expert Geologists provide geology and history lessons the night before and along the route.
Length: Approx. 10 miles
Elevation gain: Approx. 4,400 feet
Hike time: Approx. 10 hours
Difficulty: Strenuous with off trail travel, weather and dust.
Accommodations: Camping at Climber’s Bivouac. S’mores will be provided around the campfire the night before :)
Friday (7 pm) – Saturday (5 pm)
Cost: $200

Southside Crater Rim Climb

Description: Expert guides provide natural history talks along the route.
Length: Approx. 10 miles
Elevation gain: Approx. 4,400 feet
Hike time: Approx. 10 hours
Difficulty: Strenuous with off trail travel, weather and dust.
Accommodations: Camping at Climber’s Bivouac.
Saturday or Sunday (6 am – 5 pm)
Cost: $175

For more information and to sign-up, visit: mshinstitute.org
### Into the Crater Hike

**Description:** Expert geologist and biologist conduct interpretive talks along the route.

**Length:** Approx. 12 miles

**Elevation gain:** Approx. 3500 feet

**Hike time:** Approx. 12 hours

**Difficulty:** Extremely strenuous with off trail travel, weather and dust and stream crossings.

**Accommodations:** Dinner on Friday and Saturday, lunch on Saturday, breakfast on Saturday and Sunday. Saturday night lodging is optional.

**Cost:** $600

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### Crater View Climb

**Description:** Expert guides provide natural history talks along the route.

**Length:** Approx. 8-9 miles

**Elevation gain:** Approx. 1300 feet

**Hike time:** Approx. 8 hours

**Difficulty:** Strenuous with off trail travel, weather and dust

**Accommodations:** Dinner on Friday, breakfast and lunch on Saturday.

**Cost:** $300
The Crater: A Window Into a Volcano’s History

Viewing the crater at Mount St. Helens is a bit like looking into the past. It is also a rare and unique educational opportunity that is restricted to a limited number of participants a year.

As 2/3 of a cubic mile of Mount St. Helens slid and blasted to the north during the May 18, 1980 eruption, part of the volcanic history of the volcano was exposed in the gaping horseshoe crater. The Crater Rim stands 2,100 feet above the crater floor. The pastel-colored crater walls expose remnants of past eruptions – the white dacite domes from 2,500 years ago, the cross-cutting dikes of younger basalts and andesites, and a cinder cone from 2,000 years ago. The past has become present.

Now, rocks as big as a VW bug fall down the walls with echoing crashes. Crater Glacier, black with rock fall and ash, advances toward the opening of the breach. The lava dome formed between 1980 and 1986 is shadowed by the dome formed between 2004 and 2008; this one stands 1,350 feet tall (taller than the Empire State building) and 3,450 feet wide. A sense of scale is disorienting – both spatially and temporally.

The Mount St. Helens Institute offers two guided adventures that let you experience this amazing history firsthand. Our Into the Crater Hike is an extremely strenuous but rewarding 12 mile hike that takes you to the crater breach and the snout of Crater Glacier with an expert geologist or biologist on hand to discuss fascinating features of the landscape. Our Crater View Climb is a challenging but more moderate 8 mile roundtrip hike to a breathtaking viewpoint of the glacier, the crater walls and the two lava domes.

These adventures begin on a Friday evening at our Ridge Camp with a delicious backcountry dinner and a campfire talk. We drive to the trail head the next morning and start hiking early. The routes begin on-trail but quickly take us off-trail through pumice, ash and boulder fields. There is no shade. The little life that we see is astounding and a fascinating story in and of itself. We stop for short breaks to talk about the geology and biology of the landscape before us. Sometimes the wind is blowing ash. Sometimes the sky is brilliant and clear. Our skilled guides and volunteers ensure that the routes are safe and that all participant needs are cared for. Exhausted and thrilled by the power of change, we return to the vehicles to begin the long drive back home.

Your participation in these two guided adventures help support our education and volunteer programs.

Species Spotlight!

The Pacific Chorus Frog, *Pseudacris regilla*, (also known as the Pacific Tree Frog) is perhaps the most abundant amphibian on the west coast of North America. Despite its name, this frog is chiefly a ground-dweller, living among shrubs and grasses typically near water. Pacific Chorus Frogs are active during both the day and night. They locate prey with vision and consume a variety of invertebrates, including flying insects. It is the most commonly heard frog in its habitat, and can be found on Mount St. Helens at the Hummock ponds created after the May 1980 eruption. Their “ribbits” have been used as a nighttime background sound in old Hollywood movies.

The Mount St. Helens Institute is proud to operate under a special use permit from the US Forest Service. Both the Into the Crater and Crater View hikes enter the Restricted Area 3 of the Monument and require signatures of acknowledgement to authorize entry.

- Abigail Groskopf, Science Education Manager

Mount St. Helens Fun Fact!

Crater Glacier is advancing 30m/year or 10cm/day due to the unique topography of the crater.
Field Seminars - Changing the Way You See Mount St. Helens

This month, I’d like to focus on our Field Seminar program. This program was one of the things that made me most excited about working for the Mount St. Helens Institute. Our field seminars immerse participants in the volcano’s science, culture and landscape first-hand, on hikes alongside experts. There are so many layers of fascinating landscape to discover around Mount St. Helens. What was once just a stroll through the seemingly desolate blast zone becomes a hike where your senses are overwhelmed with wonder. You’ll be enthralled with the bobcat tracks in the snow at Marble Mountain once you’ve taken our snow tracking class. Or be able to put a name to those enormous trees on the Blue Lake Trail after you’ve ventured out on one of our plant hikes. The landscape around us is overflowing with stories to tell -- you just need to be able to see and hear them!

So what’s it like to go on a field seminar? Let me tell you about my first seminar on staff with the Mount St. Helens Institute. Rick McClure, archaeologist for the Gifford Pinchot National Forest, led a “First People of Mount St. Helens” overnight field seminar. After a brief lecture and in-person look at an actual archaeological excavation going on near the Mount St. Helens National Volcanic Monument Headquarters, we departed to Lower Falls Campground on the Lewis River. We set up our tents and met for a wonderful dinner of salmon cooked over a traditional alder fire prepared by Ed Arthur of the Cowlitz Tribe.

The following morning we awoke and went for a short hike to the Lower Falls of the Lewis River. Native peoples gathered salmon below the falls for many years until a massive eruption of Mount St. Helens about 4000 years ago disrupted their use for over 1000 years! Rick pointed out exposed pumice layers from that eruption -- it was pretty amazing to stand in that spot and think of the thousands of years of use and disturbance that had gone on beneath our very feet.

From there, we drove a short distance to McClellan Meadows, an area where the McClellan expedition of 1853 passed through on their way to the Yakima country. This was an area of abundant camas and Native American use as well as a site of major disturbance by previous (and illegal) artifact seekers. Evidence of their digging abounded, with shards of knapped material littering the ground.

Our last stop of the day was a grove of culturally-modified cedars. These western red-cedar trees had been stripped of a portion of their bark to be used for mats, clothing, baskets and ropes. Again, I was awestruck to be standing in the same place as someone who 200+ years before had been stripping that bark.

Our field seminars will change the way you see our amazing landscape!

-Ray Yurkewycz, Science Manager

Ray’s Book Pick

Images of America’s “Mount St. Helens
By: David Anderson

I’ve been seeing the images of Mount St. Helens that David has been accumulating over the past few years, but it really took an entire book of them to reveal the story that this mountain has to tell. David has been present for a lot of those stories in person. His family has roots in the Toutle Valley stretching back 100 years. He was at Spirit Lake before the eruption, he watched as the mountain bulged leading up to the 1980 eruption, and he has extensively explored the post-eruption landscape. This book is a collection of hundreds of painstakingly gathered photos that vividly illustrate the changing face of Mount St. Helens over the past century. The public has not seen most of these photos and this book is the most comprehensive collection of photographs of Mount St. Helens’ people and landscape ever published. It is a must-have for any one with even a passing interest in the mountain.

-Ray Yurkewycz, Science Manager
Volunteers Not Only Move Mountains - But They Climb Them Too!

It is often said the rewards of volunteering are priceless. At Mount St. Helens, that’s pretty much a guarantee. Endless vistas at the crater rim that take your breath away (just in case the climb up there did not) are just a small part of the ‘office culture’ available to Mountain Steward volunteers.

With the support of these passionate volunteers, the Mount St. Helens Institute and the Forest Service Climbing Rangers provide visitors with a wide range of services, from giving safety advice to interpretive talks to assisting search and rescue efforts. In 2013, forty Mountain Stewards contributed 2,103 hours, made 3,276 public contacts and hiked over 1,500 miles – that’s the equivalent of walking from Seattle to Portland nine times!

Primary duties include assisting groups on guided climbs to the crater rim and ‘roving’ the climbing route during peak season – and no two days are ever alike. “Ensuring a group returns safely from reaching the crater rim means I did my job,” said one veteran Mountain Steward. Of course, that job includes a 10-mile hike through a lush forest, over a jagged boulder field and up a steep slope of ash, pumice and scree that threatens to turn calf muscles into tight balls of knots, all the while constantly engaging the participants and keeping a watchful eye out for signs of fatigue and dehydration.

Roving the climbing route offers Mountain Stewards the opportunity to step outside (literally!) the group dynamics of a guided climb and interact with climbers on an individual basis along the climbing route. Another Steward’s favorite icebreaker is to ask climbers if they would like him to take their picture. He says they almost always want to know more about the climbing route, volcanic activity, trail conditions, where to eat nearby, etc., usually before he can finish identifying himself as a volunteer. Moving freely along the climbing route, Mountain Stewards regularly assist the Forest Service Climbing Rangers with re-supply missions, trail flagging, and signage repair and maintenance.

With an abundance of fresh air, beautiful scenery and a built-in whole body workout with each climb, the appeal of this ‘natural outdoor gym’ is readily apparent. Many Stewards also use this volunteer opportunity to expand their natural sciences knowledge through the many trainings, seminars and classes offered by MSHI and the U.S. Forest Service. To learn more and to apply for the Mountain Steward program, visit us at mshinstitute.org and click the “Get Involved” tab, or contact Amy Tanska at (360) 449-7826; atanska@mshinstitute.org.

- Amy Tanska, Volunteer and Membership Manager

“Participants in the Climbing Steward program are some of the most inspired and inspiring individuals on the volcano. Capable, fit, bright, and motivated are attributes that describe these stewards, and we are proud to have them as valuable members of the Mount St. Helens team.”

- Tom Mulder, Mount St. Helens National Volcanic Monument Manager
VIEWED FROM JOHNSTON RIDGE OR THE CASTLE LAKE OVERLOOK, WITH MOUNT ST. HELENS’ CONE AND CRATER AS THE BACKDROP, THE PUMICE PLAIN LOOKS LIKE A HUGE, SMOOTH, MOSTLY UNVEGETATED APRON SLOPING NORTHWARD TO THE UNSEEN BASIN OF SPIRIT LAKE, AND WESTWARD TO THE TOUTLE VALLEY FAR BENEATH THE VIEWPOINT.

TRACING THE PLAIN’S WESTWARD DESCENT, IT REACHES A PHALANX OF ALDERS AND WILLOWS THAT SEEM TO HAVE FROZEN PART WAY UP ON THEIR MARCH TO THE PUMICE PLAIN. DEEPLY BURIED IN 1980, BEFORE THE ERUPTION THE PUMICE PLAIN WAS CLOTHED IN FOREST FROM SPIRIT LAKE TO A POORLY DEFINED TREE LINE NEAR TIMBERLINE PARKING LOT, NEAR THE JUNCTION OF TODAY’S LOOWIT TRAIL (216) AND TRAIL 216E. WHETHER STUDYING TODAY’S PUMICE PLAIN LANDSCAPE FROM AFAR AT JOHNSTON RIDGE OBSERVATORY, OR EXPERIENCING IT UP CLOSE BY HIKING THE TRUMAN OR LOOWIT TRAILS, SCIENTISTS AND CASUAL VISITORS ALIKE WONDER HOW LONG IT WILL TAKE A FOREST TO RETURN TO THE PUMICE PLAIN.

BECAUSE SOILS AND BIOLOGICAL MATERIALS (SEEDS, WOOD, MICROBES, ETC.) WERE COMPLETELY LACKING ON THESE NEW VOLCANIC SURFACES, LIFE HAS RETURNED MORE SLOWLY IN THIS REGION THAN IN MOST OF THE BLAST ZONE. A NEW FOREST HAS BEEN GROWING ON THE PUMICE PLAIN, AND SINCE 2002 MY LAB AT WASHINGTON STATE UNIVERSITY HAS BEEN KEEPING TRACK OF TREES IN THIS NEW FOREST WHILE TRYING TO UNDERSTAND WHAT DETERMINES WHICH TREES ESTABLISH AND WHERE THEY ARE SUCCESSFUL. THESE FIELD NOTES ARE A FIRST GLIMPSE OF OUR FINDINGS.

ONE WAY TO GAUGE HOW LONG IT WILL TAKE FORESTS TO RETURN IS TO EXAMINE THE PAST. 1980 WAS NOT THE FIRST TIME LOOWIT DESTROYED THE FOREST. IN 1480 AND 1482 SHE ERUPTED VAST QUANTITIES OF EJECTA IN BACK TO BACK ERUPTIONS THAT DWARFED THE JUVENILE MATERIAL OF 1980. THESE ARE KNOWN AS THE WN AND WE LAYERS. NEARBY FORESTS WERE BURIED BY UP TO 2.8 METERS OF TEPHRA, CONSISTING OF LARGE PIECES OF PUMICE, WITH BLOCKS UP TO 12CM ACROSS, THAT STRIPPED TREES OF FOLIAGE AND LIMBS, KILLING 65 KM² NORTHEAST OF THE CONE (1480) AND ANOTHER 30 KM² TO THE EAST IN 1482. HOW LONG DID IT TAKE THE FOREST TO RECOVER AFTER THOSE ERUPTIONS? BY APPLYING DENDRONOLOGICAL METHODS TO THE TREES KILLED IN 1980, DAVID YAMAGUCHI WAS ABLE TO ESTIMATE WHEN TREES ESTABLISHED AND THE TIME IT TOOK FOR A CLOSED CANOPY TO FORM, DETECTABLE BY DIMINISHED TREE RING GROWTH CAUSED BY COMPETITION. HE FOUND THAT FEW TREES ESTABLISHED DURING THE FIRST 20 YEARS, PROBABLY BECAUSE DEEP DEPOSITS OF LARGE CLASTS DRIED TOO QUICKLY FOR SEEDLINGS TO ESTABLISH. FURTHER WORK ESTABLISHED THAT DEPOSITION OF FINE ASH (LAYER X) IN THE EARLY 1500’S PROBABLY IMPROVED THE MOISTURE HOLDING CAPACITY OF THE DEPOSITS, AND THE OLDEST TREES ESTABLISHED AT THIS TIME. TREE ESTABLISHMENT CONTINUED FOR ONE TO TWO CENTURIES BUT MOSTLY OCCURRED IN THE FIRST 60 YEARS. ON THE RIDGES AND HILLSIDES JUST EAST OF SPIRIT LAKE IT TOOK ABOUT 200 YEARS FOR A CLOSED CANOPY TO DEVELOP AND THE PERIOD OF ESTABLISHMENT WAS LONGEST. IN AREAS CLOSER TO SEED SOURCES CANOPY CLOSURE WAS FASTER, IN SOME CASES AS FAST AS 40 YEARS.

THE PUMICE PLAIN RANGES FROM 3300 FEET AT SPIRIT LAKE TO 4500 FEET AT ITS SOUTHEAST CORNER NEAR WINDY PASS, A RANGE THAT FALLS ALMOST EXCLUSIVELY WITHIN THE PACIFIC SILVER FIR FOREST ZONE BUT ISCLOSE TO THE LOWER ELEVATION WESTERN HEMLOCK ZONE AND THE HIGHER ELEVATION MOUNTAIN HEMLOCK ZONE. THOUGH NAMED AFTER THE SHADE TOLERANT, LATE SUCCESSIONAL DOMINANT PACIFIC SILVER FIR (ABIES AMABILIS), FORESTS IN THIS ZONE TYPICALLY INCLUDE DOUGLAS-FIR (PSEUDOTUGA MENZIESII), NOBLE FIR (ABIES PROCERA), WESTERN HEMLOCK (THUJA PICTATA), WESTERN RED CEDAR (THUJA PICTATA), AND WESTERN WHITE PINE (PINES MONTICOLA). DOUGLAS-FIR IS THE TYPICAL PIONEER IN THE LOWER ELEVATION ZONE, WHILE NOBLE FIR TAKES OVER THIS ROLE AT ELEVATIONS ABOVE 3000 FT. BOTH SPECIES ARE FAST GROWING AND INTOLERANT OF SHADE, FAIRLY DROUGHT TOLERANT, AND CAN START WELL ON BARE MINERAL SOIL. FOLLOWING 1980 THE NEAREST SOURCES OF CONIFER SEEDS TO THE WINDWARD WERE 1-2 MILES AWAY AND SEPARATED FROM THE PUMICE PLAIN BY RUGGED TERRAIN.

CONTINUES ON PAGE 10...
Few formal vegetation studies were conducted in this area prior to 1980, but a regional forest survey by Emstrom and Emmingham had two study sites in the area: “plot 393” was 1km south of Spirit Lake and plot 135 was nearby on the east slope of Windy Ridge. Prior to the eruption, Douglas-fir, western hemlock and silver fir dominated plot 393, while plot 125 was composed of noble fir, silver fir, and mountain hemlock. Art Kruckeberg led a Washington Native Plant Society field trip to the Timberline parking lot area for the Society’s first annual study weekend in 1979 (the 1980 trip was cancelled). He noted that tree line was at 1340m, compared to 1840-1980m on adjacent volcanoes, more than 500m (1600 ft) below normal because of frequent eruptions and avalanches. Kruckeberg describes a ragged tree line composed of, in order of abundance, lodgepole pine, subalpine fir, mountain hemlock, noble fir; and finally silver fir. Doug-fir, western hemlock, and western white pine were least abundant. Also present were black cottonwood and Sitka alder. The composition of these sites was striking for its variability and its mix of species from higher elevations (mountain hemlock and subalpine fir) and from lower elevation and dry sites – Kruckeberg describes black cottonwood as “out of place”, and lodgepole is common further east, and on lower elevation lava flows.

How fast is the forest returning to the Pumice Plain in the 34 summers since May 18, 1980? And what does it look like? In 2002 with support from the National Science Foundation we began monitoring tree regeneration by surveying 35 hectares (about 88 acres) divided into 175 large plots arrayed along 9 km of transects spanning the Pumice Plain. In 2002 the density of conifers in these plots was about 23 trees per hectare, which means that an area the size of an American football field would have 9 trees on average. These trees were mostly small saplings, with an average stem diameter of 1.4cm. 52% were noble fir, 35% were Douglas fir, 11% were western hemlock and the remaining 2% were split between lodgepole and white pines.

Note that several species previously found on the Pumice Plain were missing or very rare: no mountain hemlock, subalpine fir, cedar, or pacific silver fir, and pine comprised a tiny fraction. Instead, the returning forest is dominated by the typical colonizers from low and mid elevation, Doug-fir and noble fir.

In 2007 the density and composition were almost identical to 2002, but average stem size had doubled. At the next survey, in 2010, the picture changed. The number of coniferous trees had surged from 23 per hectare to 41. The surge continued over the following three years. In the 2013 survey last summer, there were 54 conifers per hectare, or about 22 per football field. This is still sparse regeneration – >600 saplings/ha is typical after burns in the silver fir zone, and seedlings can be far more numerous.

Both noble fir and Doug-fir continued to increase, but the real surprise was western hemlock, the low elevation late successional dominant, which increased by seven fold since 2007, while new noble fir seedlings were nearly absent from 2010 to 2013. In 2013 for the first time we also found handful of cedars and silver and subalpine firs. The new composition of this young “forest” is 38% noble fir, 29% Doug-fir, and 31% western hemlock! However, most of the western hemlocks are tiny, no more than a few millimeters in diameter and 5-14cm tall, while many nobles and Doug-firs are beginning to produce cones.
Why western hemlock recruitment has accelerated is a mystery. Perhaps the last 6 years were very good ones for seed production in surrounding forests. On the other hand, western hemlocks are tolerant of shade and nutrient deficiency, but not very drought tolerant, so they may have favored the cool wet early summers of the last 5 years. If they survive, then a species typical of mature forests will have arrived and established at nearly the same rate as the typical pioneer species. This would have remarkable implications for how succession occurs, implying that it doesn’t progress from one species to the next as conditions become suitable for later species, but instead the forest might begin its life with a full plate of late successional trees. In a recent article, Dan Donato and Jerry Franklin proposed that rather than starting off as an even-aged, uniform looking stand of one or two species, that some forests may be born with complex species composition and architecture, hastening their progress toward old-growth structure. While they did not have a blank slate like the Pumice Plain in mind, it is possible we will see something like that here, but only time will tell. Currently, it is clear this forest has only partial resemblance to the pre-1980 forest. I look forward to updating you about this new forest in the future.

Acknowledgements: In 2002, the conifer survey was led by Nathan Reynolds, now a biologist with the Cowlitz Tribe. In 2007, the Mount St. Helens Institute’s Ray Yurkewycz was in charge; and in 2010, Keith Birchfield expanded the effort and wrote his thesis on factors affecting conifer regeneration. In 2013, surveys were led by WSU student Angela Kroon. The results presented here are forthcoming in a journal article by K.M Birchfield and J.G. Bishop.

Sources [1-6]

1. Birchfield KM, Bishop JG: Climatic variation and site characteristics control the first 30 years of conifer establishment in volcanic primary succession but regional cone production does not. Journal of Vegetation Science In Preparation.


Mount St. Helens Institute is starting a Corporate Membership Program with encouragement from a generous supporter of our mission and work in the Pacific Northwest. The donor has offered to contribute up to $5,000 by matching each Corporate Membership registered during the month of March. Your business contribution will deliver twice the benefit. Levels of membership:

$500 - Corporate Member – Supports our non-profit organization’s reach in the region.

$1,000 - Corporate Sponsor – Sponsors a science class or field seminar on Mount St. Helens.

$10,000 - Corporate Partner – Enables one of 15 MSHI programs of your choice.

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** Individual Membership Levels and Benefits **

$25 - Introductory – A year’s subscription to the MSHI bi-monthly newsletter, *Rumblings*, and a cool sticker

$50 - Base Camp – Above, PLUS 10% discount on MSHI Guided Programs and Field Seminars* plus 15% discount at Discover Your Northwest gift shops

$75 - Hummocks – Above, PLUS one year free admission to Johnston Ridge Observatory

$100 - Lahar – Above, PLUS exclusive access to limited block of 2015 Climbing Permits**

$250 - Loowit – Above, PLUS 20% discount on MSHI Guided Programs and Field Seminars


$750 - Glacier – Above, PLUS MSHI logo outerwear

$1,000 - Summit – Above, PLUS one “Into the Crater” hike admission

* Excludes “Into the Crater” hike ** Two permits available for purchase to first 250 registered Members

To Become a Member....

mail: enclosed return envelope - email: membership@mshinstitute.org - website: mshinstitute.org - phone: (360) 449-7826