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Native Plant Society of Oregon

Dedicated to the enjoyment, conservation and study of Oregon's native plants and habitats

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Kalmiopsis leachiana: Survival in a land of extremes

Michael Kauffmann

This article was originally posted on the author's blog (July 2010). For more on travels in conifer country, visit his website at www. conifercountry.com. All photographs for this article have been provided by the author.



In a land of rain, porous soils and summer heat make fire a common occurrence. Kalmiopsis leachiana flourishes eight years after the Biscuit Fire of 2002.

7ith the end of my middle school **V** teaching responsibilities in site, my calcifuge tendencies had me running to the hills. Ever since our winter trip to Hawaii in 2009 I have been pondering the Ericaceae family, gaining a new found love for this diverse group of plants. I also knew that they, like me, had a propensity to 'flee from chalk' so to speak. Ericaceous plants generally prefer, if not acidic soil, a harsh medium on which to grow. Could this familial disposition—to thrive in the presence of harsh soil—be due to the extant members of this tribe having evolved from a common ancestor? I thought I must visit one of the oldest members of the

family and get to know where they grew and what they knew or could share. Though I have been planning to visit the Kalmiopsis for many years, I had failed to yet make the trek into this remote country. With snow lingering this spring, keeping me from my typical high Siskiyou destinations, the time was right for Oregon's second largest wilderness. The lower elevation wilderness is so named after a relict plant Lilla and John Leach discovered here in 1930.

Eighty years ago to the month these Oregon botanists were walking in the mountains west of Cave Junction when Lilla hesitated while gazing at a red patch of flowers, she got down on her knees and exclaimed "I have never seen anything like it before! Isn't it beautiful? I believe it is new." Her first impressions of the plant led her to conclude it might be a new form of pale laurel (Kalmia polifolia). The collection was first sent to LF Henderson. who worked on it for some time and tried to put in the genus *Rhododendron*. However, the plant was also sent to Alfred Rehder of the Arnold Arboretum who placed it in a new genus Kalmiopsis due to its resemblance of members in the genus *Kalmia*—the greek root "-opsis" meaning "seeing, like, sight, appearance". The specific epithet leachiana was aptly named after Lilla and John Leach. The two spent the following years searching for other locations throughout the rugged Siskiyou Mountains where the plant might be. Ultimately, a total of 20 individual locals have been identified—all of which

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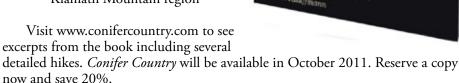
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Conifer Country: A natural history and hiking guide

Conifer Country is an innovative natural history and hiking guide that uses conifers as a lens to explore the astounding plant diversity of the Klamath Mountains.

Educator, plant explorer, and author Michael Kaumann introduces readers to the magic of this little known botanical wonderland through:

- the most accurate range maps ever created for conifers in northwest California and southwest Oregon
- Lively species descriptions
- Color plates to assist in identifying 35 conifers
- 29 hikes with maps to locate and explore the conifer diversity
- Stunning photos from across the Klamath Mountain region



Conifer Coun

What are people saying about Conifer Country?

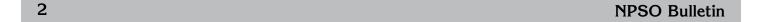
"Michael Kaumann has prepared a feast for all conifer lovers. The banquet consists of 35 courses (species), with 29 adventures skillfully road tested and with clear maps for hikes to savor them all. One thing immediately becomes clear from reading Michael's book: the extraordinary love and contagious enthusiasm he has for his subject. Novice and professional alike will find much of interest here, and if you do not follow at least a dozen of Michael's directions for hikes, I would be very surprised. Readers beware: you are about to become infected with a love and appreciation for California's Conifer Country."

-David Charlet author of Atlas of Nevada Conifers

"John Muir would have loved this book. California's matchless diversity of pines, firs, sequoias and other genera was very close to his heart, and *Conifer Country* approaches the subject in a way that he would have thoroughly approved... Michael's attitude toward the trees is very much in Muir's tradition, seeing them not just as objects of study – "plants," part of "the scenery," – but as highly evolved beings, companions and friends on the path of life, and that comes across strongly in *Conifer Country*'s lively descriptions of the species and their wild environments... Anyone who wants to know why the region's forest biodiversity is considered a biotic treasure of primary international importance can now buy this book, access its extraordinary wealth of information, and take some of the hikes it recommends."

-David Rain Wallace author of *The Klamath Knot, The Turquoise Dragon*, and *Chuckwalla Land*





NPSO CALENDAR

Blue Mountain

For information on Blue Mountain Chapter call Jerry Baker, 541-566-2244. At the moment, Blue Mountain chapter is still dormant, but we hope to start chapter activities in the Fall. For additional information, contact Jerry Baker at 541-566-2244.

Cheahmill

For more information, visit the chapter Web site, www.oregon-nativeplants.com. To be added to the e-mail list for upcoming programs and events, please contact cheahmillchapternpso@frontier.com.

Corvallis

For questions, information on upcoming events, or to be on the Corvallis chapter e-mail list, contact Esther McEvoy at co_president@NPSOregon.org or 541-754-0893.

July 9, Saturday, 8 am

Hike: Iron Mountain. Spectacular wildflowers with over 200 species of vascular plants recorded along this botanically rich trail west of Santiam Pass. The all-day hike will be approximately 5 miles through moderately difficult terrain with plenty of stops to identify plants. Bring good boots, lunch, and water. Meet at the OSU parking lot SW of The Beanery coffee shop, 26th and Monroe, Corvallis. Information: Dan Luoma at 541-752-8860.

July 16, Saturday, 9 am

Field Trip: Coast hike to search for *Sidalcea hendersonii* and *Sidalcea hirtipes*. Join Melanie Gisler on a full day of adventures at the coast. Meet at the OSU parking lot SW of the Beanery coffee shop, on 26th and Monroe. Bring a lunch, rain gear and walking shoes. Information: Esther at 541-754-0893.

July 23, Saturday, 9 am Field Trip: Marys Peak with Phil Hays and Esther McEvoy. We will hike from the camp ground through the Noble Fir along meadow edge trail and up to the rock garden. Meet at the OSU parking lot SW of the Beanery coffee shop, on 26th and Monroe, for car pooling. We will return mid to late afternoon. Bring a lunch, water, good walking shoes and raingear (maybe not in July?). Information: Esther at 541-754-0893.

August 14 and September 11, Sunday, 1-3 pm

Work Event: Avery House Work

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips take place rain or shine, so proper dress and footwear are essential. BRING WATER AND LUNCH. Trips may be strenuous and/or hazardous. Participation is at your own risk. Be prepared to sign a release form indicating this. For a sample copy check out the NPSO website. Please contact the trip leader or chapter representative about difficulty, distance, and terrain to be expected on field trips. Dogs are not allowed. All NPSO field trips are open to the public at no charge (other than contribution to carpool driver) and newcomers and visitors are always welcome. National Forests require a Northwest Forest Pass for some field trip locations. Permits can be acguired at forest headquarters and ranger districts.

NOTICE TO FIELD TRIP CHAIRS AND LEADERS

The Forest Service and other agencies have set policies limiting group size in many wilderness areas to 12. The reason is to limit human impacts on these fragile areas. Groups using wilderness areas should be no larger than 12.

Party. We will be weeding and mulching at the Native Plant Avery House Garden so bring gloves, a trowel and water. Information: Esther McEvoy at 541-754-0893.

Emerald

Visit the Emerald Chapter Web site at http://emerald.npsoregon.org to learn more about the latest chapter events, plant lists and botanical information about Lane County plants and the people who love them.

July 23, Saturday, 8 am-4 pm Field Trip: Upper Elk Meadows.

Alan B. Curtis leads a tour to upper Elk Meadows southeast of Cottage Grove. The site is 30 miles from Cottage Grove on paved roads. Elevation of the meadow is 4,000 feet. Over 200 species of vascular plants have been identified here. Of special interest is Frasera umpquaensis at its most northerly known location. Surrounding the meadow is an old-growth forest of Abies amabilis, Abies grandis, and Pseudotsuga menziesii. We will walk about 1.5 miles through moist meadow. There is no trail. Wear boots and bring lunch and water. Location: Meet at South Eugene High School at 8 am. Information: Alan at 541-345-2571.

July 31, Sunday, 8 am

Field Trip: Balm Mountain. Come explore this rarely visited high point of the Calapooya Mountains. There are terrific plants, great views, and amazing rock formations along a mostly open ridge. For the adventurous only: be prepared for some bushwhacking as there is only a faint remnant of a trail. About 4 miles round trip. For photos and more info about the area, go to http:// westerncascades.com/sites/douglascounty/balm-mountain. Meet at South Eugene High School at 8am or at the Lowell Covered Bridge at 8:30 am. Registration required: contact Tanya Harvey at 541-937-1401 or tanya@ westerncascades.com.

August 5, Friday, 8:30 am-4 pm

Field Trip: Blair Lake. This easy hike is co-hosted by the Middle Fork Ranger District (MFRD) of the Willamette National Forest. We'll explore this beautiful lake and wet meadow to look for flowers and butterflies. Meet at MFRD in Westfir at 9 am or Lowell Covered Bridge at 8:30 am. Registration required: call MFRD front desk at 541-782-2283 or e-mail leader Molly Juillerat at mjuillerat@fs.fed.us.

High Desert

The High Desert chapter is inactive at this time. If you are interested in participating in organizing chapter events, please contact membership@npso.org.

Klamath Basin

For information on the Klamath Basin Chapter, contact Sarah Malaby at 541-884-5703 or smalaby@cs.com.

Mid-Columbia

For information on the Mid-Columbia Chapter, contact Sara Wu at wusara96@yahoo.com.

The Mid-Columbia Chapter will not have formal meetings in July and August. Watch your e-mail for announcements of field trips. If you would like to lead a trip, please contact Sara Wu, wusara96@yahoo.com or Dell Rhodes, rhodes@reed.edu.

North Coast

For information on the North Coast Chapter call Janet Stahl at 503-842-8708.

Portland

If you would like to receive the chapter's semi-official e-mail newsletter, The Calochortus, e-mail Don Jacobson at donjphoto@gmail.com.

Siskiyou

The Siskiyou chapter e-mails meeting

reminders and last-minute information such as field trip cancellations. To be added to the list, please send your e-mail address to Kristi Mergenthaler at coprolitemergie@yahoo.com.

July 4, Monday, 10 am-4 pm

July 4th Wildflower Show! Siskiyou Chapter's annual wildflower show will occur as usual on the Fourth of July, as our contribution to the holiday celebration in Ashland. Come and see the amazing variety of native flowers that can be found in bloom near Ashland in early July. Location: Community Center at 59 Winburn Way in Lithia Park adjacent to downtown Ashland.

July 16, Saturday, 9 am

Field Trip: Midsummer on Grizzly Peak. Walk between walls of Tower
Larkspur and Monkshood to the top of
Grizzly Peak, and then check out the
summer bloom along the loop trail.
Distance: 5 mi; elevation gain: 1,350 ft.
Meet behind the Oil Stop on Ashland
St, just west of the BiMart/ Shop 'n
Kart parking lot in Ashland, about 1/4
mi west of I-5, exit 14. Information:
Alex Maksymowicz at 541-482-1964.

July 23, Saturday, 4 pm

Field Trip: Lee Webb's Traditional Evening Mt Elijah and Bigelow Lakes Hike! Lee will show us ideal places for botanizing and long-eared owl and bat watching. Bring dinner, warm clothes, flashlight and sturdy hiking boots. A good way to escape the valley heat- even if it is 105° in the valley, it will be nice on the mountain. Meet at 4 pm at the Illinois Valley Visitor Center, Cave Junction (1/2 block from HWY 199 on HWY 46); return by midnight. Information: Lee, 541-479-6859.

July 30, Saturday, 8 am

Field Trip: Kangaroo Lake Botanical Area (Siskiyou Co., California) with Alex Maksymowicz. Located in the Eddy Mountains west of Mt. Shasta, the Kangaroo Lake area contains a diverse and interesting flora in a small area with unique dry and wet habitats, including a Darlingtonia fen. Glaciation, rock and soil types, high elevation (6500 ft), and water have combined

to produce a unique environment for plants. Easy-to-moderate 2 mi round trip hike, with 600-ft elevation gain. Meet behind the Oil Stop on Ashland St., just west of the BiMart/Shop 'n Kart parking lot in Ashland, about 1/4 mi west of I-5, exit 14. Information: Kristi Mergenthaler at coprolitemergie@yahoo.com.

Umpqua Valley

Visit www.umpquavalley.npsoregon.org for more information on chapter activities.

July 10, Saturday, 7 am

Field Trip: Iron Mountain. Enjoy one of the best summer wildflower hikes in Oregon. Iron Mountain has over 300 different species of flowers amid stands of trees and meadows. John Savage will lead the all-day hike over a seven-mile loop with elevation gain. Bring food and water. Free and open to the public. For information and to register call 503-399-8615 after 7 pm.

Willamette Valley

For program information, contact John Savage at 503-399-8615 or Alexandra Ninneman at 503-391-4145.

July 10, Saturday, 7 am

Field Trip: Iron Mountain. Enjoy one of the best summer wildflower hikes in Oregon. Iron Mountain has over 300 different species of flowers amid stands of trees and meadows. John Savage will lead the all-day hike over a seven-mile loop with elevation gain. Bring food and water. Free and open to the public. For information and to register call 503-399-8615 after 7 pm.

William Cusick

Visit our Web site at http://williamcusick. npsoregon.org or contact Laurie Allen at 541-805-0499 for updates and general information.



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Kalmiopsis leachiana, *continued from page 1* are protected within the Kalmiopsis Wilderness.

I chose a different corner of the wilderness to explore for my first trip than did Lilla and John. At the end of a long and winding drive from Brookings, Oregon the Vulcan Lake trailhead materialized in the mist. Through light rain and heavy fog my dog Skylar and I departed into the unknown, following the Johnson Butte trail to Dry Butte and Salamander Lake. This trail is along a rocky spine that is circumvented by the serpentlike Chetco River—whose headwaters are filtered by the refined relict I was searching for. The trail ultimately leads a hiker to the most extensive habitat this rare species has secured—once on the ridge near Dry Butte Kalmiopsis leachiana occurs over several square

Upon entering this realm, it seemed I had traveled back in time. When the Tertiary forests dominated the northern landmasses of Earth—beginning around 60 million years ago—gymnosperms were in decline and angiosperms were evolving rapidly. Vast forests of magnolia, beech, chestnut, elm, alder, birch, aspen, sequoia, and ginkgo shared a common canopy. As the climate cooled these forests became restricted to regions where temperate conditions remained—places like the southern Appalachians, the mountains

of eastern China, and the Klamath Mountains. Today, the Klamath Mountains still hold relicts from that time in the form of Brewer spruce, California pitcher plant, redwood, and one of the most restricted and rare plants in the world—*Kalmiopsis leachiana*. The species that were able to find these refugia and discover success over millennia of climatic changes, have an ancient stock of genetic codes—a library with a refined message.

The Kalmiopsis Wilderness is a crossroads. Rainy season storms can nourish the land with nearly 250cm of precipitation each year but this rain appears to have fallen in a virtual desert if one visits the in summer. Why is this? Because of the harsh soil derived from ancient ultramafic rocks—high in iron and magnesium. These ophiolites are known locally as serpentine outcrops and the heavy metals they contain are restrictive to plant growth. The rich soils of the coast foster the tallest trees in the world with 250cm of rain but the harsh soils of the Klamath Mountains foster diminutive species with almost the same annual rainfall just inland and upslope. Serpentine is not only restrictive to plant growth it is also porous—so plants must be adept at water storage or retention to survive here. With heavy rain comes erosion and the Kalmiopsis Wilderness typifies the big shouldered canyons common throughout the Klamath Mountains, sculpted by downpours. Here, along

Johnson Butte trail, the Chetco River is cut from serpentine origins and spills toward the ocean, thousands of feet below. Where I stand is the chosen outpost—over millions of years—for one of the oldest (if not the oldest) members of the Ericaceae family.

This landscape is not only sculpted by precipitation and geological character but by fire as well. The greatest fire in Oregon's modern history swept through the southwest corner of the state in 2002. Named the Biscuit Fire, it burned nearly 500,000 acres across a landscape that receives significant rainfall but one which is also exposed to extreme summer heat. The porous nature of the soil compounds the drying and in the summer of 2002, after a dry winter, the forest was ripe for burn. The small amount of intact forest which survived the burn—whether it was luck or slope or a combination—is not composed of large and/ or old tree specimens. This evidence suggests to me that frequent fire is a common and complex component of this ecosystem—and has been for several thousand years. This diversity is compounded by these harsh extremes—wet and dry, cold and hot, serpentines, fire or not. All of these conditions create a proliferation of microsites for deep time evolution—a refined and diverse genetic code is written here.

Conifer saplings are flourishing, shrubs are returning, and *Kalmiopsis*



The orographic effect defined—mountains in the Kalmiopsis Wilderness trap dense coastal air masses where west side meets east side.



The striking cinnamon smelling Kalmiopsis leachiana flower.

leachiana—which many feared may disappear due to the fire—may be expanding its range. At a minimum it is burgeoning where fire occurred. Diverse plant growth is re-establishing complex vegetation types that, to my amateur botanist eyes, were often so complex as to be confusing. In and around the Salamander Lake/Dry Butte area I saw associations I had never seen before. For instance, Brewer spruce (Picea breweriana) growing near Pacific



After a fire, survival is achieved by only the hardiest conifers and angiosperms in the Kalmiopsis—a land of extremes.

madrone (*Arbutus menziesii*) and salal (*Gaultheria shallon*)—where coastal meets mountains. The most confounding message sent by this diversity is that it exists because of, rather than in spite of, the harsh conditions fostered here—intuitively it would seem that the extremes would inhibit diversity. However, this is an ancient meeting ground.

As the fog rolled in, I spent my last few moments in the wilderness with my new favorite relict—enough time for it to share itself and its landscape one last time before my return. I realized *Kalmiopsis leachiana* is a keystone member of this dynamically primal landscape and clearly of ancient stock. It has shared—over millions of years of deep time evolution—its

primordial genetic code. My wife taught me that Kalmiopsis leachiana exhibits numerous characteristics that generalize the Ericaceae family. For example, the petals are fused, it has a woody stem, leaves are leathery, simple, and oval with entire margins, and they thrive on harsh soils. Kalmiopsis has surely shared these characteristics with other Ericaceous plants over time. We find many uses for it progeny, a heritage which includes food sources (think blueberry pie!) and delightful landscaping companions (think rhododendrons). Clearly, we are all quite familiar with this family. In that way Kalmiopsis leachiana—a purveyor and steward—is a part of us all.

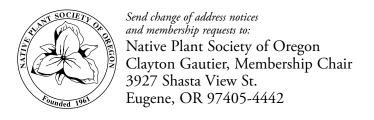


Surviving on a lonely, rocky ridgeline high above the Chetco River is just fine with the ancient Kalmiopsis. Notice the pattern of burn across the landscape—caused by the Biscuit Fire in 2002. Fire has been a common occurrence here for thousands of years.

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Native Plant Society of Oregon Membership Form

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The Oregon Flora Project is developing a comprehensive reference about the plants of Oregon that includes distribution maps, images of live plants and herbarium specimens, descriptions, and identification tools. The information is available to the public via our website, http://oregonflora.org. Funding for the Oregon Flora Project comes exclusively from competitive grants and donations from organizations and individuals. The contributions people give of their time and fi-

nancial resources are a critical part of our operating budget. If you would like to be a part of the team that keeps the OFP progressing, please contact us at ofpflora@oregonflora.org, or phone 541-737-4338.

Contributions can be mailed directly to: Agricultural Research Foundation, Oregon State University, 100 Strand Ag Hall, Corvallis, OR 973311-2219. Please make checks payable to the Ag. Research Foundation, and include "Oregon Flora Project—4482" on the memo line.

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