

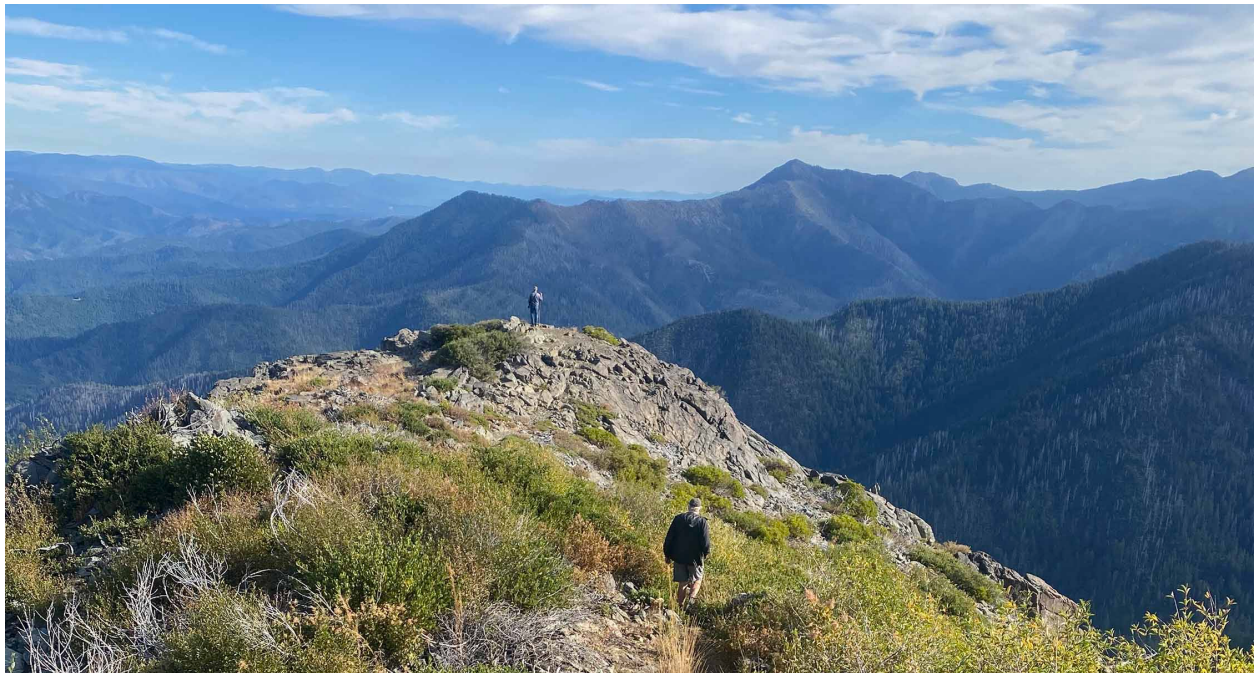
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Not My Fault: The Siskiyou Mountains are a special place to visit

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Tom Lisle and Rees Hughes enjoying the Siskiyou Mountain vista atop Bear Basin Butte.

Last week I spent a few days in Del Norte County's Siskiyou Mountains. Being with close friends and family made it more special, especially when three of them were geologists. The Siskiyous are often bypassed by vacationers who head further inland for the majesty of the much higher Trinity Mountains. Don't fall into this category as they offer remarkable sites to visit, hold clues to the origins of our region, and are only a few hours away.

You've been to the Siskiyous whether you knew it or not. Heading to Oregon on 199, you enter the world of the Siskiyous around Gasquet. You may note the shift in vegetation from the dense forests of the coast range terrain and the much sparser vegetation in the steep Siskiyous. The Siskiyous range far beyond Del Norte, extending roughly between the Klamath and Rogue Rivers, bounded on the east by the much younger Cascade range and a western border about 15 to 25 miles inland of the coast.

It's not entirely clear where the name 'Siskiyou' comes from. It's not a Karuk word or related to the Shasta, Takelma, Tolowa Dee-ni', Tutuni, or Chetco peoples who lived and traveled through the region prior to the arrival of Europeans. It first appears around 1828 as the "Siskiyou Trail," by beaver trappers moving between California and Oregon. Hudson Bay Company fur trappers

included many with Canadian Cree origins and one of the name origin stories involves a pack horse lost in a snowstorm. Members of a trapping party spent days searching for the horse who had the Cree name Siskiyou.

The Siskiyou Trail became a major throughfare over the next decades, extending the trapping route from Sacramento to Portland. Settlers followed, and the trail became a route for moving cattle between the regions. I wonder if scattered groups of feral cattle still occasionally seen near the Klamath trace ancestry to those days, augmented by more recent escapees as more farmers and ranchers moved into the area. The Gold Rush midcentury brought thousands of miners along the trail and the building of hostels and trading posts along the trail. Gasquet owes its establishment to this period when Horace Gasquet left France to seek his fortune and quickly realized that supplying other fortune seekers would provide a more reliable income source.

The Siskiyou Mountains cover an area of nearly 6,000 square miles and is the largest subregion of the Klamath Mountains. Geologists divide the Klamath Mountains into four distinct arc-shaped belts of rocks based on age and composition. Most of the Del Norte part of the Siskiyou range sits in the Western Jurassic Belt, the youngest arc of Klamath terrain. It is comprised of an unusual suite of rocks. Formed over 150 million years ago, it was once the leading edge of a subduction zone where an ancient oceanic tectonic plate was slowly pulled beneath North America not unlike the west coast of South America today.

Subduction is a complicated process. Some rocks are pulled deep into the earth; others are scraped off and smeared against the landscape. Imagine an offshore island arc with volcanoes and ocean sediments sitting atop oceanic crust and upper mantle. These rocks were squeezed, crushed, and mixed up as they entered the subduction conveyor belt. At great depth, some of the rock became hot enough to melt and cool slowly, forming crystalline rocks like granite and uplifting the land above. This process occurred over and over again as successive island arcs formed and were subsumed. It's a great puzzle for the geologist to sort out the past history of the jumbled mass exposed on the surface, made more difficult by extremely steep terrain and vegetation cover.

A geologic map of the Siskiyou looks a bit as if an abstract painter splattered random arcs of color onto paper. But the colors all have meaning and the boundaries between them determined by years of painstaking field work. In Del Norte County, most of the colors represent rocks of the ancient seabed. Massive bodies of hard, dense rocks called peridotite dot the surface. In many areas the peridotite has been altered by contact with ocean water and extreme pressure to form serpentinite, California's shiny greenish to black state rock. Formed miles beneath the seafloor, these rocks are now exposed several thousand feet above sea level.

Much of the Smith River National Recreation Area and the Siskiyou Wilderness is underlain by the Josephine Ophiolite, a beautifully preserved 350-square mile section of the Jurassic seafloor now sitting above ground. Discerning geologists can view the view the entire layer cake from deep sea muds that once covered the ocean floor, to pillow basalts where lava erupted under water, atop the gabbro and peridotite of the deeper ocean basement. See Not My Fault 6/17/23 for a deeper dive into the Josephine Ophiolite.

A lot happens to the land surface over 150 million years of subduction. The land rises and erosional processes cut it down. Unlike the Trinity Alps and higher parts of the Klamath Mountains, the Siskiyou range was never covered by glacial ice sheets. Preston Peak at just over 7300 feet is the highest Siskiyou point in the California Siskiyou Mountains and a cirque on the north face is a remnant of a valley glacier that sat there in the past. Most of the range never experienced the great glacial smoothing of the ground surface. The result is extremely steep terrain, giant landslide scars, and talus slopes. At 5,000 to 7,000 feet, Siskiyou terrain might not seem very high, but the deepest valleys are only a few hundred feet above sea level, and the relief is impressive.

The geology and terrain have created a unique environment for plants. The Klamath-Siskiyou ecoregion is considered an Area of Global Botanical Significance, one of only seven in the U.S. Accounting for only 15% of California's land surface, it boasts 65% of our native plant species. It's the highest concentration of temperate conifers anywhere in the world with 35 distinct species. The mixed chemistry of the bedrock and the steep topography have created botanical refugia, areas where plant species can thrive without outside competition. David Rains Wallace coined the term "Klamath Knot" in 1983 to describe this interweaving of geology, ecology, and human history.

The unusual geology in the Siskiyou has provided opportunities for mining operations. Gold was not the only object of 'get-rich' schemes. Copper, zinc, and chromite have all been the target of prospecting ventures. Current environmental concerns are focused on large-scale nickel strip mines proposed by international interests in the Oregon part of the range. Nickel is essential for electric vehicle batteries and renewable energy infrastructure. Mining interests have focused on the Eight Dollar Mountain Botanical Area, the Rough and Ready area, and the Josephine Creek watershed.

Large earthquakes are rare in the Siskiyou area and there are few mapped surface faults. Like all of the Pacific Northwest, it would experience ground shaking in a Cascadia earthquake. The biggest hazard is wildfire. At least five major fires have scorched the range in the past decade burning over a million acres of forest land. The drive up to Bear Basin Butte last week was mainly through burnt lands and flames had reached nearly up to the Lookout on its peak. The warming climate, steep terrain, decades of fire suppression, and summer lightning strikes all contribute.

Accessing the heart of the Siskiyou is difficult. Forest service roads provide access to hiking spots, but the roads are steep (don't look down) and very windy. There are several waysides just off 199. The Darlingtonia Botanical Trail just east of Gasquet provides an accessible walk to a Darlingtonia bog. Darlingtonia or cobra plant is one of the plants that thrives in the iron-rich rock that makes up much of the Siskiyou region. Deprived of nutrients most soils provide, it attracts and traps insects. Further north is the Botanical Wayside on Rough and Ready Creek 4.5 miles south of Cave Junction. The arid-looking landscape is a result of the peridotite boulders and gravel where most trees and plants can't grow. In the spring rare, endemic wildflowers that have adapted to the toxic environment carpet the ground.

Note: See David Rains Wallace "The Klamath Knot: Explorations of Myth and Evolution" and "The Klamath Mountains A Natural History" by Michael Kaufman and Justin Garwood for a much more thorough dive into the Siskiyou Mountains.

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