

The Vulcan Voice

Crater Lake and Lassen Volcanic national parks, Lava Beds National Monument, Shasta-Trinity National Forest
July 4, 2023

Happy Fourth of July



Lassen Peak
Lassen Volcanic National Park
Shasta County, California

Hot and cold

With the exception of the year 2021 — for which there's an excuse I'll get to shortly — I've done a newsletter for the Fourth of July since 2009. The photography usually comes from a national park visit, and over those 14 years the visits have included [Lassen Volcanic](#), [Pinnacles](#), [Redwood](#), [Sequoia](#) and [Yosemite](#) national parks plus another kind of preserve managed by the National Park Service, the [Golden Gate National Recreation Area](#). They're all contained in [this part of my newsletter archive](#).

This year's newsletter is based on a mid-June visit to four federally managed areas in California's far northeastern corner and southern Oregon to video and photograph. I went to [Crater Lake](#) and Lassen Volcanic national parks, [Lava Beds National Monument](#) and Mount Shasta in the [Shasta-Trinity National Forest](#). There is also an 8-minute YouTube video at <https://youtu.be/uceWRodR7Bs> that accompanies this newsletter.

There's a separate story near the end of this newsletter that explains what these different "national" places are.

I've chosen them for the Fourth of July newsletters because they preserve important things about the American land and history. In 2021, my sister, Julie, and I made a 10-day July drive along the [Lewis & Clark National Historic Trail](#) to the Pacific Coast beginning at [Gateway Arch National Park](#) in St. Louis. We visited [Badlands](#) (South Dakota), [Yellowstone](#) (Wyoming, Idaho, Montana), [Glacier](#) (Montana) and [Mount Rainier](#) (Washington) national parks, [Mount Rushmore National Memorial](#) (South Dakota), [Devil's Tower National Monument](#) (Wyoming) and traveled through numerous national forests.

What unites this summer's places, in addition to their proximity to each other in a sparsely settled region, is hot and cold.

The natural wonder that all four areas share are volcanoes. What controlled where I could go and shoot in three of those areas was the snow that persists from last winter's record- and drought-breaking precipitation along the Pacific Coast.

Understand that at elevations as high as 14,179 feet / 4,322 meters (Mount Shasta), there is always snow. But when I was at Lassen on June 14, only 17 miles / 27 kilometers of the 30-mile / 48-kilometer park road was cleared, and snow at the parking lot for the Lassen Peak trailhead was still 9 feet / 2.7 meters deep. At Crater Lake the next day, only 5 miles of the 33-mile road Rim Road was plowed. The trail I had hoped to hike was closed due to avalanche danger.

None of that was a reason to go elsewhere. Among other things, the parks highlight nature's extremes. On my trip, as long as you stayed out of the shade, shorts and T-shirts were perfectly comfortable.

The cover and next three photo pages present one view from each of the places I visited. After that, there's a separate story for each park followed by one or more pictures from each.

There's more information about each of the photos at the end of the newsletter just before the concluding page.



Shonchin Butte

Lava Beds National Monument
Modoc County, California



Mount Shasta

Shasta-Trinity National Forest
Siskiyou County, California



Crater Lake

Crater Lake National Park
Klamath County, Oregon

Lassen Volcanic National Park

Lassen was the park for my [first Fourth newsletter](#) when Ken Henry helped me climb the 10,457 ft / 3,187 m volcano in 2009. Emily and I climbed Lassen again in 2014 when I did the [second Fourth newsletter](#) from there.

This time I focused on the park's northwestern entrance where I could hike around Manzanita Lake, which was snow- and ice-free, yet get views of the peak when the clouds would drift away.

I skipped the park's southwestern entrance, the one usually most convenient for me, because it doesn't offer good views of the main mountain along the portion of the park road that had been plowed when I was there June 14.

Lassen is the southernmost volcano in the Cascade Range, which begins at the northern end of the Sierra Nevada and continues into British Columbia, Canada. Like the Sierra, the Cascades wall off the Pacific Coast from the east and divide the wetter coastal regions of Washington, Oregon and California from the arid land of western North America's interior.

The current volcano last erupted in 1915 and is one of the largest plug dome volcanoes in the world. But it stands on the rim of what once was a much larger volcano, Mount Tehama, which exploded about 27,000 years ago leaving only a crescent-shaped ridge, of which Lassen is a part. There are 22 volcanic vents in the park and at least one example of each of the four main types of volcanoes.

The mountain is still "alive" and there are several places in the park, notably at Bumpass Hell, where fumes, caustic boiling waters and mud from deep underground still bubble to the surface.

Types of volcanoes

A volcano is a rupture in the surface of a planet that allows material and gasses from the planet's interior to escape. Because that material tends to pile up over successive eruptions, volcanoes usually produce a mountain. [In addition to Earth, volcanoes have been found on Mercury, Venus, the moon, Mars and Io, one of Jupiter's moons. Active volcanoes have been found on Earth and Io.](#)

Type	Description	Lassen Park example
Shield	Wide, gradually sloping mountains formed by the spread of thin, fast-flowing lava	Mount Harkness
Plug dome	Like a shield volcano except formed of thicker, slowly flowing lava that piles up into a taller mountain	Lassen Peak
Cinder cone	Resembles giant piles of sand, like ant hills, formed from the eruption of volcanic cinders	Cinder Cone
Composite or stratovolcano	Very steeply sloped volcanoes built of layered thick lava and other solid materials from one or more vents	Brokeoff Mountain



Shady trail
Manzanita Lake
Lassen Volcanic National Park



Kayaker

Manzanita Lake

Lassen Volcanic National Park



Queen of the hill
June 14, 2014 atop Lassen Peak

Mount Shasta

This composite, or stratovolcano, is the tallest in California and second tallest peak in the Cascades to Mount Rainier. Seven glaciers flow down its sides: Whitney, Bolam, Hotlum and Wintun from its peak, and Watkins, Konwakiton and Mud Creek from cirques at about 11,000 ft / 3,350 m. It takes 2 hours from the first time you see the snowy top from I-5 at 70 mph / 112 kph to reach the base of the mountain.

The last geologically dated eruption was about 750 years ago but there is a disputed report of an eruption in the records of a French naval expedition sailing along the California coast in 1786. Like Lassen, Shasta is merely sleeping; climbers have found and smelled many vents near the peak that continue to emit stinky gases from the underworld.

All of that would seem to make Shasta a natural national park candidate. Scottish naturalist John Muir, whose advocacy helped convince the United States to create national parks and who is credited with Yosemite's inclusion in the national system of parks, argued in 1888 for creation of a Shasta park. "The Shasta region is still a fresh unspoiled wilderness, accessible and available for travelers of every kind and degree," [he wrote](#). "Would it not be then a fine thing to set it apart like the Yellowstone and Yosemite as a National Park, for the welfare and benefit of all mankind, preserving its fountains and forests and all its glad life in primeval beauty?"

Other factors came into play as Congress began to consider bills to enclose the mountain within a national park, but two stand out. In 1914, when Shasta and Lassen national park bills were both up for votes, Lassen erupted, making it the only active volcano in the then 48 states. It got Congress' attention. The other was a National Park System philosophy to make only the greatest example of a natural phenomenon a park. Mount Rainier — bigger, taller and more heavily glaciated — had already attained park status by 1899.

Nevertheless, since 1984 the mountain has been within the Mount Shasta Wilderness, one of five wilderness areas within the Shasta-Trinity National Forest.

[More than 10% of Earth's active or potentially active volcanoes are located in the United States](#), the greatest share of any country. The U.S. Geological Survey periodically assesses the threat they pose to the public based on 24 criteria. In 2018, the most recent update identified 161 volcanoes of concern. Most are in the five states with a Pacific coast: Alaska, California, Hawaii, Oregon and Washington. The USGS ranked 18 volcanoes in its "very high threat" category. Here's the list, with the volcanoes in this newsletter listed in **boldface**.

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|-------------------------------------|--------------------------------|----------------------------------|
| 1. Kilauea (Hawaii) | 7. Three Sisters (Oregon) | 13. Newberry (Oregon) |
| 2. Mount St. Helens (Washington) | 8. Akutan Island (Alaska) | 14. Mount Baker (Washington) |
| 3. Mount Rainier (Washington) | 9. Makushin (Alaska) | 15. Glacier Peak (Washington) |
| 4. Redoubt (Alaska) | 10. Mount Spurr (Alaska) | 16. Mauna Loa (Hawaii) |
| 5. Mount Shasta (California) | 11. Lassen (California) | 17. Crater Lake (Oregon) |
| 6. Mount Hood (Oregon) | 12. Augustine (Alaska) | 18. Long Valley Caldera (Calif.) |



Shasta vista

Looking south on U.S. 97
Shasta-Trinity National Forest

Lava Beds National Monument

In a mountainous region, the Lava Beds are remarkably flat. In an area of deep green forests, the Lava Beds are notably brown and desiccated. But they are an example of another kind of volcanism, the part that's underground.

The Lava Beds also are where Alfred Meacham was nearly scalped. I did one of the newsletters from Julie's and my 2021 Lewis & Clark trip on Al, my possible relative, [which you can read here](#). The part of his story that ties into the Lava Beds, which lie between Mount Shasta and Klamath Falls, is why I added it to my itinerary.

Meacham, who was involved in Oregon politics and was an advocate for Native American rights, was appointed in 1873 to the Modoc Peace Commission, which had been created to negotiate a peace treaty to end the Modoc War between the tribe and the United States. The Modoc were losing their land to white settlers, forced onto the same reservation as their regional enemies, the Klamath, and not getting the compensation the government had promised them in return.

About 60 Modoc warriors and their families under the command of their chief, Kintpuash or Kientpoos — choose a spelling you like, the white folks called him Captain Jack — decided they would make their last stand in the desolation of the Lava Beds. They cover 73 square miles / 189 square km with jagged and jumbled lava boulders underlain by more than 700 lava tube caves. They formed when lava oozed from the ground and cooled first on the outside while the liquid rock beneath continued to flow. When the flow ceased, miles of the tubes remained beneath the surface. Occasionally their ceilings collapsed, opening them to the surface.

Today the caves are home to bats and icy stalactites and stalagmites preserved in perpetual dark subterranean cool. In 1873, they became home and battlefield for the small Modoc band that held off a thousand U.S. Army troops for six months.

At the peace talks in the Lava Beds, Meacham's interpreter was a Modoc woman, Winema, also called Toby, who had defied her tribe and family to marry Frank Riddle, a white settler from Kentucky. The peace talks turned out to be an ambush. Captain Jack and his compatriots drew pistols, killed Gen. Edward Canby and the Rev. Eleazar Thomas, and severely wounded Meacham. Before Meacham could be killed, Winema yelled that she had spotted more soldiers coming. The Modoc fled.

Captain Jack was eventually captured and hanged. The surviving Modoc were banished to Oklahoma. Meacham and the Riddles did a national speaking tour on the injustices the tribe had endured.

If you are a Florida school student, there are new laws in your state intended to keep you from learning about this kind of stuff so you don't have to feel the way I felt. I hiked through the area called Captain Jack's Stronghold — once on the shore of Tule Lake before white farmers drained it to create more farmland — to get a better feel for the place. The feeling was weird, but I'm glad I got to feel it.

There's a dot on the Oregon state map up near Pendleton with Meacham's name on it. The [Fremont-Winema National Forest](#), formed by the 1992 administrative merger of the Fremont and Winema national forests, covers 3,500 square miles / 9,116 square kilometers of south-central Oregon near Klamath Falls and Crater Lake. You can see Mount Shasta from there.



Lava and cinder cones

Devil's Homestead Flow
Lava Beds National Monument



Trail
Captain Jack's Stronghold
Lava Beds National Monument



Captain Jack's cave
Lava Beds National Monument



Reclaimed Tule Lake fields
View from Captain Jack's Stronghold
Lava Beds National Monument

Crater Lake National Park

Without highway signs, there is little visible evidence in this area 50 miles / 80 kilometers north of Klamath Falls, Oregon, that you're in the presence of a great volcano. Because the mountain part of the volcano is no longer there to see.

About 7,700 years ago, a volcano now called Mount Mazama exploded so violently that the entire magma chamber (magma is the name for lava before it reaches the surface) within the mountain emptied. Without the liquid rock inside to support it, the top mile of what was a Shasta-size 12,000 ft / 3,700 m mountain collapsed into a hole surrounded by a jagged circular ridge that had been Mazama's base. Over time, the hole filled with rainwater and snow melt to within a couple of thousand feet / 600 m of its rim. Crater Lake was born.

But the lake was sacred to the Klamath and other native tribes that lived there and believed — not without reason — that to look upon its waters meant death. So, they kept the existence of the lake secret. It wasn't until 1853 that the first white people accidentally discovered the lake. It became the fifth national park in 1902.

Several things about Crater Lake are different from ordinary lakes because of how it came to be. There are no streams leading into or out of the lake because it sits entirely above the surrounding landscape like a coffee cup.

That means there would be no fish in the lake — where would they come from? — if park management hadn't stocked it with rainbow trout and kokanee salmon between 1888 and 1941. Then the practice was halted.

Yet while no streams flow out, it's not a salty lake like the Great Salt Lake, the Dead Sea or Caspian Sea, which also have no outlets. Those lakes are salty because the streams that flow into them carry dissolved salts from the earth they flow over. Once that stream water is trapped in a lake with no outlet, it evaporates, leaving the dissolved salts to concentrate in the remaining water. Crater Lake's water falls directly from the sky.

Like most other early national parks, which were in the isolated West (the first 10, in chronological order, were: Yellowstone, Sequoia, Yosemite, Mount Rainier, Crater Lake, Wind Cave, Mesa Verde, Glacier, Rocky Mountain and Grand Canyon), grand lodges were built to accommodate visitors from the East, who would be expected to be wealthy because they could afford the long train trip.

The 71-room [Crater Lake Lodge](#) opened in 1915 and is perched on the southwestern rim at an elevation of 7,100 ft / 2,165 m above sea level. The lake's water level is 6,173 ft / 1,882 m. Reservations for the May-October season are usually necessary a year in advance.



Chip (or maybe Dale)

Discovery Point
Crater Lake National Park



Blue
Discovery Point
Crater Lake National Park



Summer warmth

Crater Lake Lodge
Crater Lake National Park

National parks / national forests — they're not the same

Except for the narrow strip of land along its Pacific Coast, the western half of the United States is dry. Because of that, it is also empty. Only two of every 10 Americans live in the West, and outside the cities where they congregate, for many of them their neighbor is over the horizon.

Once you realize that, it's no surprise that of the 3.5 million square miles / 9 million square kilometers of [federally owned land](#), 92% of it is in 12 western states. The federal government owns 80% of the land in Nevada, 63% of Utah, 62% of Idaho, 61% of Alaska, 52% of Oregon, 47% of Wyoming, 45% of California.

Pennsylvania? 2%. New York? Less than 1%.

Outside of land for military uses, which represents just 1.3% of federal holdings, this government land — 27% of the combined 50 states — is managed by four agencies: the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management and the U.S. Forest Service. But really, the land management is divided between the Department of Interior, which is over the first three bureaus, and the Department of Agriculture, which is over the Forest Service.

Interior and Agriculture represent two different land management philosophies within the government. They are the legacies of two men, neither of whom was from the West, where the first and biggest national parks and national forests are found. [John Muir](#) (1838-1914) was a Scottish immigrant, deeply religious and romantic, a lover of wilderness and founder of the Sierra Club. [Gifford Pinchot](#) (1865-1946) was born into New England wealth, a friend of presidents, a governor of Pennsylvania, a scientifically trained forester at Yale and in France.

They were friends who became public policy adversaries.

Muir's advocacy in books and speeches led to the creation of the National Park Service and, in particular, Yosemite and Sequoia national parks in California, where he lived. He was a "preservationist." National parks (monuments, historic sites and other NPS-managed sites) preserve nature and history.

"God never made an ugly landscape," Muir wrote. "All that the sun shines on is beautiful, so long as it is wild."

The [NPS mission statement](#) is "to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations."

Pinchot was a "conservationist" who defined that resource management philosophy as "the greatest good to the greatest number of people for the longest time." The U.S. Forest Service, of which Pinchot became the first chief in 1905, allows timber cutting, mining and other extractive activities in national forests as well as outdoor recreation.

"Without natural resources life itself is impossible," Pinchot said. "From birth to death, natural resources, transformed for human use, feed, clothe, shelter, and transport us. Upon them we depend for every material necessity, comfort, convenience, and protection in our lives. Without abundant resources prosperity is out of reach."

Notes on photos

All pictures on these pages, except for Emily standing atop Lassen Peak, were shot June 14-17, 2023.

LASSEN PEAK — Lassen Peak and the park that surrounds it don't get as much respect as they should. The park is a much longer drive from the Southern California and Bay Area population centers than the more famous Yosemite or Sequoia, so its visitation figures suffer in comparison. Yosemite got 3.7 million visitors last year; Lassen had 446,000. The mountain itself doesn't have the conical symmetry of Japan's Mount Fuji; it looks like a gray baked potato lying on its side. But on this day, the mountain looked pretty good with its snowy makeup and cloud obscuring its cosmetic flaws.

SHONCHIN BUTTE — This is one of several cinder cones that pockmark the Lava Beds and is named for Old Shonchin, a Modoc chief who was a child in Captain Jack's band of holdouts during the Modoc War. The top elevation is 5,306 ft / 1,617 m, and there's a $\frac{3}{4}$ -mile / 1.2 km trail to the top, where there's a fire lookout tower. Don't be fooled by the burned trees. The last eruption was 30,000 years ago; the trees burned in the most recent forest fire.

MOUNT SHASTA — This view is from Lake Siskiyou just southwest of the mountain in Mount Shasta City. The cool bridge is for hikers to cross an arm of the lake, which is a reservoir just a few miles from the source of its main feeder stream, the Sacramento River. From this lake, the river flows south 400 miles / 640 km to San Francisco Bay. Shasta snowmelt is a main contributor to the river, whose watershed contains 30% of California's fresh water.

CRATER LAKE — The volcanic cinder cone is Wizard Island, which formed from eruptions after Mount Mazama collapsed and filled with water. The top of the cone is 6,940 ft / 2,116 m above sea level and about 700 ft / 235 m above lake level. There are other cinder cones within Crater Lake, but Wizard Island is the only one to grow above the water's surface. The high point along the caldera rim is Llao Rock, 8,049 / 2,453 m above sea level. The lake itself is about 6 miles / 10 km across and 1,943 ft / 592 m deep, making it the deepest lake in the United States and ninth deepest in the world.

SHADY TRAIL and KAYAKER — These pictures were shot just a few hundred yards apart along the trail that circles Manzanita Lake. I cannot identify the pointy peak in the background of Kayaker, but it may be Mount Helen.

QUEEN OF THE HILL — Behind Emily in this June 14, 2014 photo you can see the dark, rocky rim of Lassen Peak's crater, and behind that you can see the snowy top of Mount Shasta poking its way into the overcast. The two volcanoes are about 75 miles / 120 km apart. The climb to the peak and back is 4-5 hours.

SHASTA VISTA — This angle on Mount Shasta reveals that the mountain really contains two volcanoes. Shasta is the name of the taller peak. On the right flank of the mountain is Shastina, a decent-size mountain itself at 12,335 ft / 3,760 m, which would make it third highest peak in the Cascade Range if it stood alone.

LAVA AND CONES — The lava flows at Lava Beds National Monument came from the Medicine Lake Volcano, most of which lies outside the southwestern corner of the park. From within Lava Beds, the 7,921 ft / 2,414 meter tall volcano doesn't even appear to be a mountain with a peak but simply a long, low ridge. That's because it's a "shield volcano," a type of volcano that emits very thin, fluid lava that spreads very far. Rather than building higher and higher like other types of volcanos such as Mount Shasta, shield volcanos like Medicine Lake and Hawaii's Mauna Loa spread horizontally and appear, from the air, like a warrior's shield lying on the ground. Medicine Lake's shield is 22 miles / 35 kilometers across from east to west and 31 miles / 50 kilometers across from north to south. What you see in this picture is one of the dark, northward

flows across a plain toward several cinder cones, small volcanoes built by the upward ejection of hard rocky material, not lava. There's a heap of geology going on in this picture.

TRAIL, CAPTAIN JACK'S CAVE and RECLAIMED TULE LAKE FIELDS — These pictures all come from my hike at Captain Jack's Stronghold, the northern edge of a lava flow that once ended at the southern shore of the shallow Tule Lake. The lake still exists in much smaller form after being partly drained to create more farm land for white farmers, which was at the root of the Modoc tribe's complaint. The Trail pictures give you an idea just how rugged the Stronghold was and why such a small number of Modoc were able to hold off a much larger military force that did not know the land. The rock gave the warriors protective cover and the elevation allowed them to see approaching soldiers. Captain Jack's cave was where he lived with his two wives and their children. But it's also illustrative of the more than 700 lava tube caves at Lava Beds, some of which run for miles, that visitors can explore today. The National Park Service provides maps to the more accessible caves, but many require advanced spelunking skills and shouldn't be attempted by novices. Some caves require visitors to crawl on their hands and knees, and all are unlighted. The Lava Beds visitors' center has knee pads, flashlights and helmets for loan and strongly recommends their use. Lava rock can be sharp and painful to fall on. I fell outdoors on the Stronghold trail and there is no good place to land.

CHIP (OR MAYBE DALE) — Chipmunks and birds have been the only wildlife I've seen in my summer trips to Crater Lake (I did a winter trip for a [Christmas newsletter](#)). On my first visit with Emily and an elementary school-aged Gordon, a particularly friendly chipmunk jumped into our car and didn't want to leave.

BLUE — The first white people to see Crater Lake were members of a gold prospecting expedition organized in 1853. One of them, named "Skeeters" [in the park's online history](#), named it "Deep Blue Lake." Nine years later, another prospecting party stumbled across the lake and Chauncey Nye wrote about it for a local newspaper. Perhaps deciding Skeeters' name was too complicated. Nye went with the simpler "Blue Lake." Standing anywhere on the rim, it's easy to grasp the inspiration for the similarity of their names.

SUMMER WARMTH — Maintenance and business at the Crater Lake Lodge suffered during the Depression but visitors returned after World War II. However, the lodge was closed in 1989 because structural engineers said the Great Hall, where this fireplace is, was in danger of collapse. It took six years — working only in summers because of the park's heavy snows — to rebuild and modernize the lodge for reopening. If you look carefully, you'll notice the fireplace andirons are decorated with chipmunks.

HIKERS' VIEW — After the Rim Drive is fully opened in summer, which usually happens in late June or early July, it's possible to get to the only hiking trail down from the rim to the lake. That one-mile / 1.3-km trail is on the north rim, toward which these hikers are facing. At the bottom, the park service offers 2-hour boat cruises that circle the lake. Boats stop at Wizard Island, where visitors can hop off to swim or hike the two island trails, one of which goes to the top of the cinder cone. Those who choose to hike must wait for a subsequent boat that has room to pick them up. The last boat of the day is just to pick up remaining Wizard Island hikers. No overnight stays are allowed on the island. [Boat tickets are \\$55 for adults, \\$37 for children 3-12.](#)

Annual attendance at these parks

Crater Lake National Park	527,259 (2022)	704,512 (2019, last pre-Covid year)
Lassen Volcanic National Park	446,291	517,039
Lava Beds National Monument	130,969	109,630
Shasta-Trinity National Forest	797,000 (2018 estimate. Most national forests do not have controlled entry points but do require permits for some activities like camping or some trail usage.)	



Hikers' view
Discovery Point
Crater Lake National Park