

MOUNT SHASTA WILDERNESS

Climbing Ranger Report

2024





Season Summary

The 2024 climbing season began strong in mid-April, with excellent snow coverage across all major routes. At 7,000 feet, the snowpack measured an impressive 170 inches, attracting skiers and climbers to the upper mountain whenever the weather allowed. However, several winter-like storms in late April and early May elevated avalanche risk and made summiting more challenging. While the upper mountain boasted a robust snowpack, the lower mountain experienced thinner coverage due to the warmer-than-average winter temperatures.

April primarily saw skiers and outfitter guides taking advantage of the conditions. As always, skiers are eager to score the coveted 7,000-foot descent from summit to car. Despite generally favorable conditions, late-season winter storms brought some spice. Early-season accidents primarily involved climbers ascending during storm conditions, resulting in two separate avalanche incidents and confirming the avalanche risk. (See SAR Narratives)

By May, the weather improved significantly, drawing large numbers of recreational climbers. Weekends became particularly crowded, culminating on Memorial Day weekend, one of the busiest weekends of the year. As May progressed, ski conditions deteriorated, prompting a shift in focus to mountaineering, sans skis. The stretch of excellent weather resulted in a flurry of successful summits, though climbing rangers also responded to multiple accidents, many involving rockfall injuries requiring helicopter rescues.

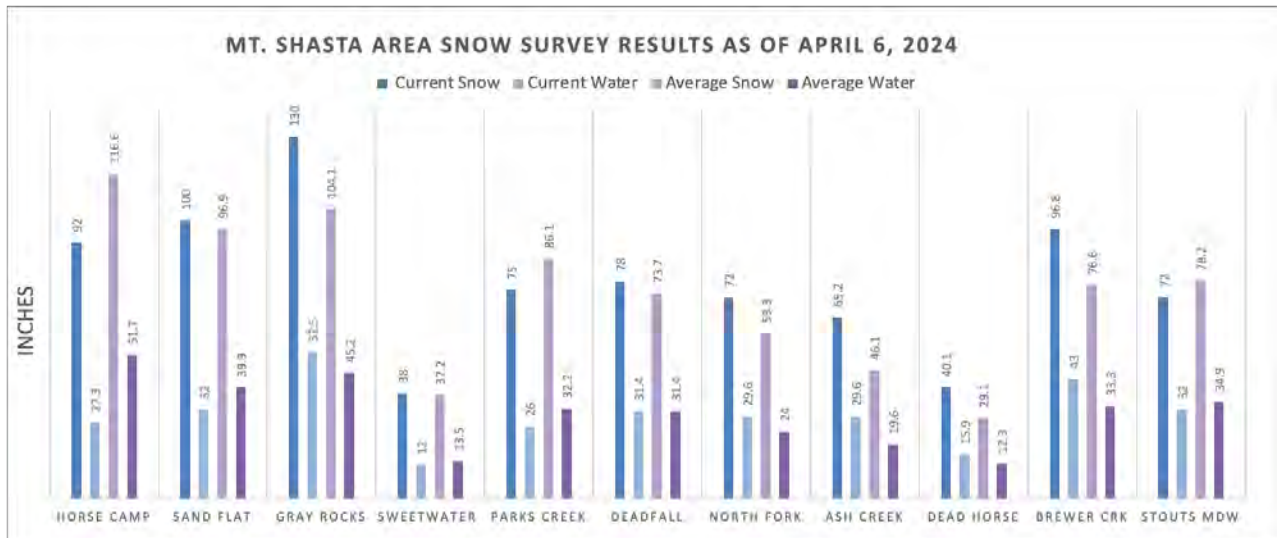
By mid-June, snow had receded from the Bunny Flat parking lot and much of the lower mountain was snow free. Climbing conditions on the south side began to decline by July, pushing climbers

to alternative trailheads such as Clear Creek and North Gate. In August, rangers advised against attempts on Avalanche Gulch due to poor conditions. Summer continued with climbers favoring the north and east sides of Mount Shasta, while day hikers explored the dry, lower elevation southern flanks.

The Clear Creek route remains a popular mid-to-late season option, especially for novice mountaineers. Its generally low slope angle minimizes rockfall hazards, though it is not without risks. Slips, trips, and falls on loose rock have resulted in numerous twisted and broken ankles over the years. Additionally, exposure-related injuries have occurred, particularly when climbers became lost in poor weather. While the route is less technical, venturing off-course can lead to steep and hazardous terrain where falls can be severe.



The Summit Plateau on a busy weekend. Many of the routes up Mount Shasta converge on this plateau, ~14,000 feet. The top of Misery Hill is the bottom right of the photo where numerous climbers are gathered. A string of climbers can be seen across the plateau and up to the summit pinnacle. During limited visibility conditions, it's very easy to become lost high on the mountain, and descend the wrong aspect. Never climb into a whiteout and always carry navigation tools!



The Shasta-McCloud Management Unit of the Shasta-Trinity National Forest completes monthly snow and water data surveys during winter at the sites listed in the table above. Data collected in April shows snow and water to be at or above historic average.



Ranger Sam Clairmont takes a core sample from the Gray Rocks snow survey site, conducted monthly by Forest Service employees. Important data such as height of snow and water content is derived from measurements. This information is essential for state water allocations

April 7, 2024

MT. SHASTA AREA SNOW SURVEY RESULTS AS OF April 5, 2024

Course	Elevation(ft)	Snow(in)	Snow(in)	Water(in)	Snow(in)	Water(in)	Snow(in)	Water(in)
Horse Camp	7900	105	92	27.3	156	46.5	116.6	51.7
Sand Flat	6800	94	100	32	110	25	96.9	39.9
Gray Rocks	6200	136	130	52.5	138	37	104.1	45.2
Sweetwater	5850	41	38	12	74	27	37.2	13.5
Parks Creek	6700	77	75	26	120	45	86.1	32.2
North Fork Sac	6900	N/S	72	29.6	111	29.6	59.3	24
Deadfall Lakes	7200	82	77.9	31.4	111	41	73.7	31.4
Averages of Courses Sampled			2024	2024	2023	2023	Hist. Average	Hist. Average
			Snow(in)	Water(in)	Snow(in)	Water(in)	Snow(in)	Water(in)
			84	30.1	117.14	35.9	82.0	34.0
Percent (%) of Historic Average			102	89	143	106		

N/S = Not Sampled

Similar Years 1999, 2004, 2019

McCloud Watershed*

Course	Elevation(ft)	Last Month Snow(in)	2024 Snow(in)	2024 Water(in)	2023 Snow(in)	2023 Water(in)	Hist. Average Snow(in)	Hist. Average Water(in)
Brewer Creek	6250	95	96.8	43	166	64.5	76.6	33.3
Stouts Meadow	5400	56	72	32	172	37	78.2	34.9
Ash Creek	5000	N/S	65.2	29.6	112.1	50.5	46.1	19.6
Dead Horse	4500	N/S	40.1	15.9	96	39	29.1	12.3
Averages of Courses Sampled			2024	2024	2023	2023	Hist. Average	Hist. Average
			Snow(in)	Water(in)	Snow(in)	Water(in)	Snow(in)	Water(in)
			69	30.1	137	47.8	57.5	25.0
Percent (%) of Historic Average			119	120	237	191		



The Sierra Club Alpine Lodge, a.k.a Horse Camp, 7,900 feet with Avalanche Gulch in the background



Your 2024 US Forest Service Climbing Rangers, left to right: Sam Clairmont, Hayden MacArthur, Nick Meyers, Eric Falconer, Cory Beattie

The Rangers

This year's crew was made up mostly of returning members, with one new addition: Hayden MacArthur. Hayden joined the team with a background in the US Forest Service as a hydrologist, as well as being an avid skier and frequent winter touring partner. Though new to the climbing ranger role, Hayden quickly found his stride, spending numerous days on the mountain to familiarize himself with the terrain and respond to accidents.

Cory Beattie returned for his second summer, building on his experience from a rookie avalanche forecasting season. Eric Falconer and Sam Clairmont also came back for their second summer, having both joined the program during the winter of 2022–23. All four rangers are permanent US Forest Service employees.

Rounding out the team, Nick Meyers continued his remarkable 23rd year with the program, currently functioning as the climbing and avalanche program director. The crew successfully completed the season without injuries or complications.

The Program

- **Current climbing, avalanche and weather information** – www.shastaavalanche.org
- **USFS Climbing Rangers on the mountain, serving the public and protecting Wilderness**
- **The Human Waste Packout bag program** – over 2.5 tons of waste is transported off the mountain each year.
- **Trail Maintenance** – Five climbing rangers perform 100+ hours of trail maintenance a season
- **Sewage pumping at trailhead toilets** – 3,000 gallons per year are pumped from the trailhead vault toilets
- **Maintenance and cleaning of trailhead toilets** – Climbing rangers perform 2-4 times weekly maintenance and cleaning of Wilderness trailhead toilets at Bunny Flat, Clear Creek, Brewer Creek and North Gate.
- **Garbage Removal** – Approximately 6 tons of garbage is removed from trailheads and Wilderness each year
- **Road Maintenance** – Select years: roads rocked, re-graded, improved drainage, new culverts for north and east side trailheads
- **Search and Rescue by USFS Climbing Rangers** – An average of 19 SAR missions and 1 fatality occur each year. MOU with Siskiyou County Sheriff's Department renewed and valid. New SAR equipment purchased (skiable toboggan)
- **Safety and Education to climbers** – About 5-6,000 climbers attempted Mt Shasta this past season, about half make it to the summit. Climbing Rangers provide crucial information to thousands of people each year, highlighting climbing safety, avalanche awareness and wilderness ethics. Youth education programs provide learning topics such as Leave No Trace, Wilderness ethics and backcountry safety and history/lore.
- **Maintaining Mt Shasta Summit Register** – Monthly updates of summit register and archival into the Bancroft Library, UC Berkeley, California

Climber safety and sanitation on Mount Shasta is a primary focus of the climbing ranger program. Through boots-on-the ground patrols, education programs and trailhead maintenance and service, the climbing rangers make contact with thousands of visitors, informing them on mountain safety, wilderness etiquette, weather warnings, climbing route hazards, federal rules, regulations and the fee demo program (summit pass) compliance checks.



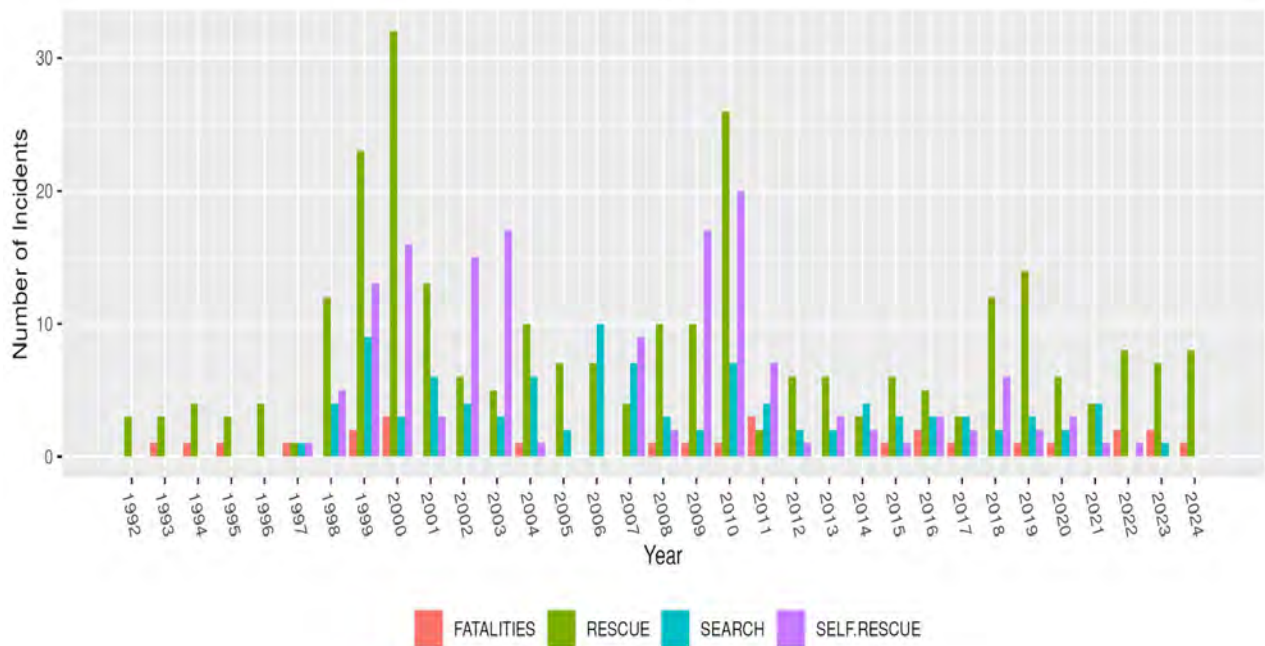
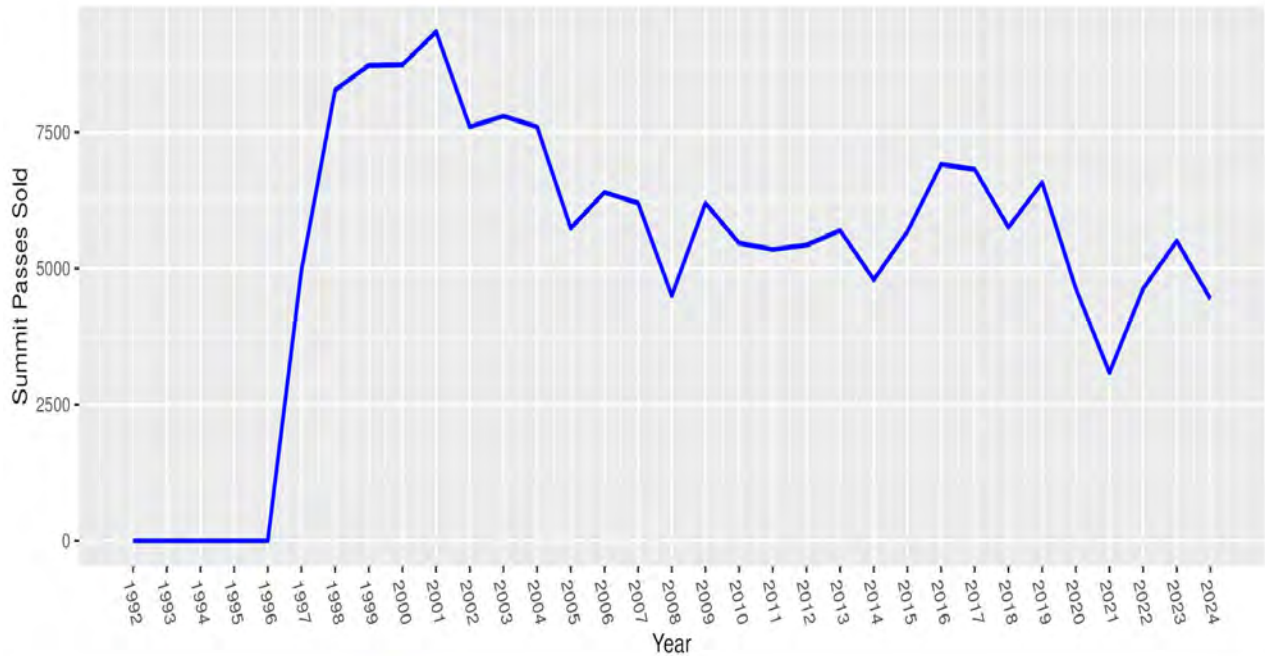
The Helen Lake Forest Service climbing ranger tent. Rangers spend most weekends here during the prime climbing months of May, June and July. Making contact with climbers is a primary duty. Thousands of climbers camp and climb from the Helen Lake base camp during the height of the season. It is a high use area where much of our attention is focused



The Helen Lake camp was established in mid-May and staffed throughout the summer. Popular climbing routes were regularly patrolled, with route observations and photos published on our website, www.shastaavalanche.org, as well as on social media platforms like Instagram and Facebook. These updates provided the most current route, snow, and weather information. Our website remains the go-to resource for all things related to climbing and mountain conditions.

Search & Rescue

USFS climbing rangers continue to conduct search and rescue operations on Mount Shasta under a current and valid memorandum of understanding (MOU) with the Siskiyou County Sheriff's Department, the lead agency for search and rescue operations in the county. In 2024, we had 9 SAR incidents. This is just under half of the 19 incidents per year average since 1992. These consisted of 8 rescues, and 1 fatality.





Each year, climbing rangers work to refine their skills across the many facets of their duty. Training sessions play a vital role in maintaining and improving these skills. In early spring, climbing rangers hosted the annual interagency helicopter search and rescue training. This event brought together all agencies involved in Mount Shasta search and rescue operations to train with the helicopters used for mountain rescues. Participating groups included the Siskiyou County Sheriff's Department, US Forest Service, California Highway Patrol, and local outfitter guide services. This year, the training took place at Mott Airport and was a success.





Outreach and Education

The US forest service continues to grow its relationship among the community, working with various partners to provide free forms of outreach and education. The USFS Rangers gave numerous presentations, including

- Climbing presentations titled: “So, You Want to Climb Mount Shasta?”. Sharing knowledge to climbers before they attempt their climb is an effective way at preventing search, rescue and/or fatality accidents, as well as ensuring a positive wilderness experience
- Avalanche Awareness and Companion Rescue - In the U.S., avalanches kill 25-30 and injure many more each winter and spring. Some days are dangerous, some are not. Know Before You Go: Avalanche safety and awareness presentations are a great first step in getting into the winter backcountry and offered by our program.
- Siskiyou County School Groups: Organized by Rebeca Franco, summer and Fall education programs are accompanied by rangers and continue with Siskiyou County elementary and middle school groups. Students embark on a 3.7-mile round trip hike to the Shasta Alpine Hut (Horse Camp) with wilderness, flora, fauna, geologic and avalanche/climbing based topics discussed. Out of 171 students, 131 visited Horse Camp for the first time!



Mt Shasta Wilderness Trailhead Stats

Bunny Flat continues to be the busiest trailhead on the mountain and accesses all south and west side routes. Bunny Flat experiences hundreds of climbers on a spring weekend, with cars parked a half mile or more down the Everitt Memorial Highway. Clear Creek is the second most used trailhead for climbing, popular mid and late season when the snow is melted. The Clear Creek route is the easiest on the mountain, but not to be taken lightly. The North Gate trailhead is the third most used trailhead, with Brewer, Old Ski Bowl and Sand Flat bringing up the rear.

Summary for Mt. Shasta Summit Collections

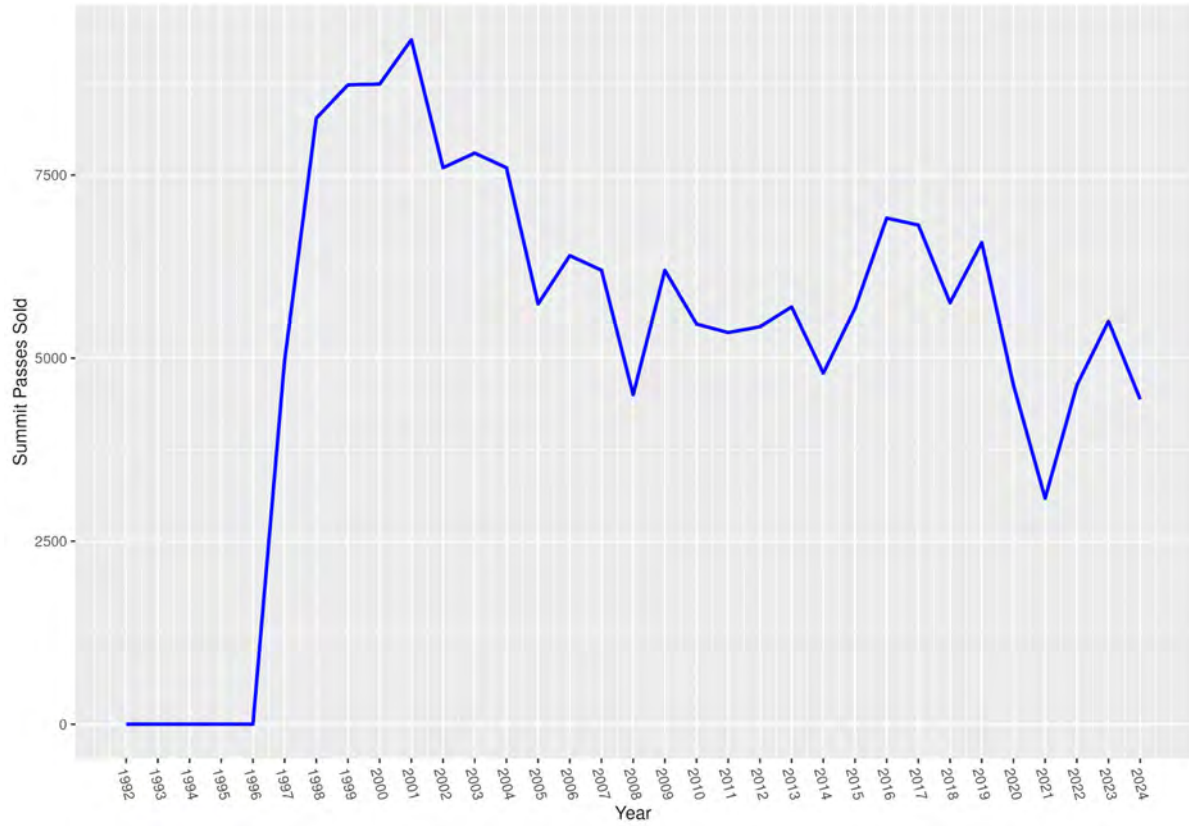
Source	Number of Sales	Total Collected
Fee Tubes	1,936	60,463.11
Pass Sales	2,503	59,407.50
Grand Total for FY 2024	4,439	119,870.61

Fee Tube Collections

Site	Number of Sales	Total Sales
Brewer Creek	19	581.00
Bunny Flat	1000	35,882.45
Clear Creek	535	13,420.40
Mt. Shasta Office	300	8,392.76
North Gate	72	1,903.50
Old Ski Bowl	10	283.00
Sand Flat	0	0.00
Total	1,936	60,463.11

Mt. Shasta Summit Pass Sales

Type of Pass	Number of Passes	Total Sales
3 Day Pass	348	8,650.00
3 Day Pass-Senior Discount	1	12.50
3 Day Vendor Sales	1700	38,250.00
Annual Pass	163	4,650.00
Annual Pass Senior Discount	1	15.00
Annual Pass Vendor Sales	290	7,830.00
Total	2,503	59,407.50



Helen Lake base camp on a busy weekend, where hundreds of climbers spend the night and attempt to climb early the next morning [Photo: California Highway Patrol]

The Glacier's

Rangers participate in the ongoing glacier re-photo project (<http://rephoto.glaciers.us/>). Twenty-five pre-determined photo locations exist on the mountain. During the fall months, rangers visit as many location points as weather and time allow, submitting photos to the website listed above. Unfortunately, simple photo comparisons illustrate shrinking glaciers.

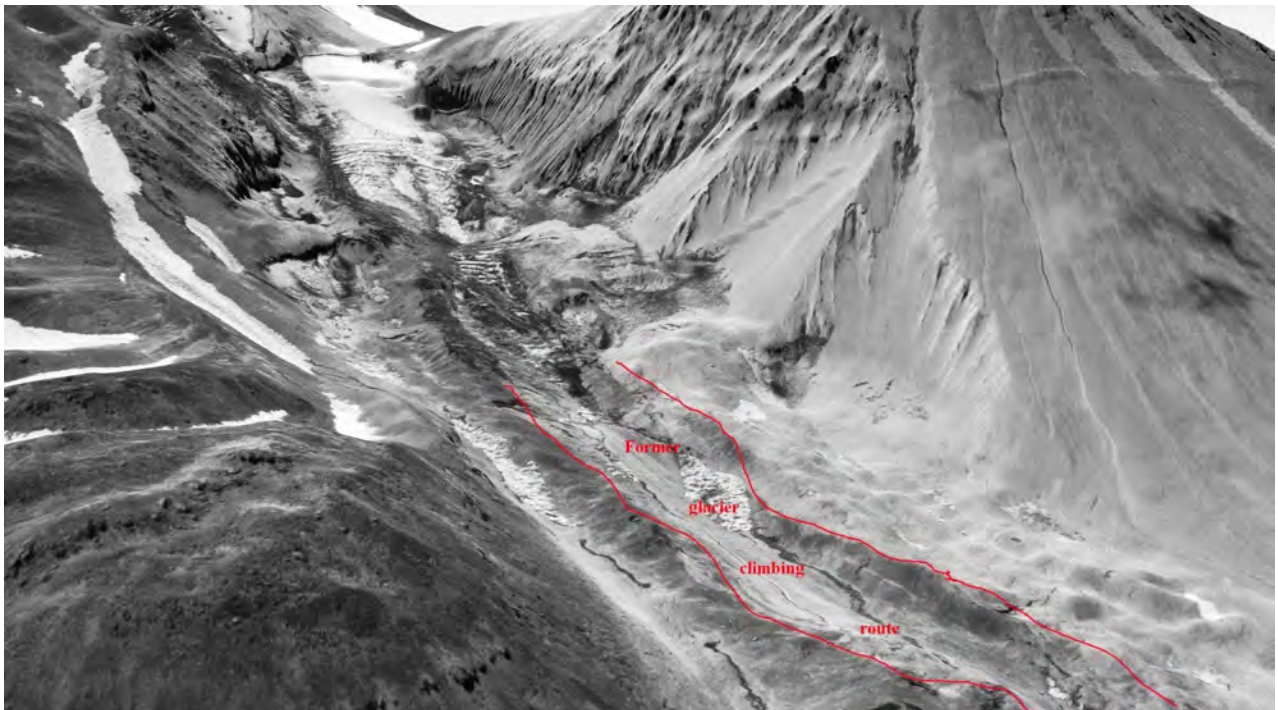


Negative impacts to Mount Shasta's glaciers can be attributed to several ideas:

- The northward shift of the Pacific polar jet stream reducing storms bringing moisture from the south through the Sacramento Valley, while increasing those from the west, which pass over the moisture-stealing Klamath Mountains. This will intensify the "rain shadow" effect on the east side of the Klamath Mountains, including Mount Shasta and the Shasta Lake watershed.
- Reduced snowfall resulting in earlier melt-off around and below the glaciers resulting in sun heating of earth and rock around the glaciers, exposing them to warmer air
 - Destruction of forests below the glaciers due to fires and logging, resulting in reduced transpiration evaporative cooling of the air which moves up the mountain on summer

days. As with previous bullet, this will warm the air flowing over the glaciers

- Slower cooling of the atmosphere above the glaciers due to the blanketing effect of higher CO₂ and smoke from forest fires
- Faster melting of glacier ice due to reduced snow cover on the glaciers. And less perennial snow accumulation on the glaciers for the same reason
- Faster melting of glacier ice due to forest fire ash deposited on the glaciers
- A longer melt season due to more sunny and warm days due to fewer spring, summer and fall Pacific storms that cool the air and bring sun reflecting clouds
- As related to the previous, fewer summer snowstorms that sometimes blanket the glaciers with fresh snow for days and even weeks at a time. For example, in mid-August 1976, a foot of fresh snow was observed at Lake Helen. Around the September equinox of 1986, close to three feet of snow fell at Horse Camp. In mid-July 1987, about 20 inches of snow fell at Horse Camp. These snowstorms led to a major reduction of net snow and ice loss to the glaciers during the ablation seasons of 1976, 1986 and 1987



The Whitney Glacier has, or had, a center strip of relatively clean ice that descended from the Shastina Saddle between bands of debris-covered ice originating off Shastina and Mount Shasta. Climbers naturally gravitated toward the clean ice. The clean ice area persisted relatively unchanged in length for several decades. It was there in 1972 and still largely intact in 2007. This clean strip of ice has retreated over 2,000 horizontal feet between 2007 and 2023, nearly one-third of the Whitney Glacier climbing route's length from the highest snow at the Shastina Saddle and the lowest point of clean ice in 2007. [Image: Phil Rhodes]

General Recreation & Dispersed Camping Patrol

Typical violations include:

Illegal Motorized Use: Unauthorized use of snowmobiles, snowcats, or ATVs in the Mount Shasta Wilderness.

Dogs in Wilderness: Dogs are prohibited in the Mount Shasta Wilderness and on Sierra Club land.

Illegal Camping: Frequent issues include camping less than 100 feet from springs or creeks (e.g., Clear Creek spring above the tree line), camping in day-use areas, or within Panther Meadows' Traditional Cultural Property (TCP).

Sanitation/Litter: Unsanitary climber and transient camps near Sand Flat, Bunny Flat, and Panther Meadows, with scattered trash and unsecured gear. Major base camps accumulate "micro-trash" like wrappers, matchsticks, tea bags, and food scraps.

Abandoned Camps/Vehicles: Common in dispersed camping areas along Everitt Memorial Highway, Sand Flat, Bunny Flat, Upper Ski Bowl, South Fork Flats, Twin Arrows, and Bear Springs.

SMMU District Trash: Trash, waste dumps, shooting ranges, and abandoned camps are found annually throughout the district.

Parking: Vehicles occasionally obstruct Everitt Memorial Highway near Bunny Flat, where up to 150+ cars gather on busy weekends.

Fire/Campfires in Wilderness: Campfires are prohibited in the Mount Shasta Wilderness. Rangers dismantle fire rings, naturalize the area, and pack out ashes.

Oversized Groups: Group size is limited to 10 in the Wilderness and Panther Meadows, and 75 outside Wilderness boundaries.

Illegal Commercial Guiding: Unauthorized guiding occurs, often involving spiritual/new age activities and some climbing groups.

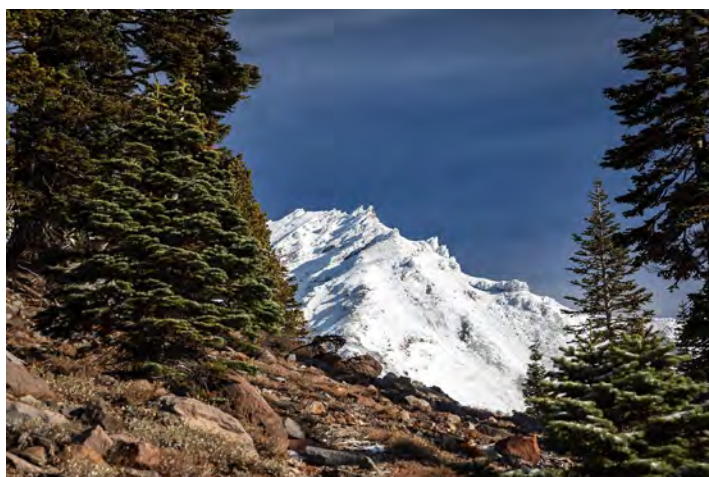
Exceeding Stay Limits: Rangers monitor overstays, as some visitors attempt to spend the entire summer in the Mount Shasta/McCloud district.



Other Highlights & Accomplishments

- Rangers and a California Highway Patrol helicopter assisted the Sierra Club Foundation (Shasta Alpine Hut aka Horse Camp) with the annual removal of composted human waste from their property on the mountain. Approximately 300 lbs of inert waste was removed.
- Ranger retreat - Climbing Rangers took a 3-day surf retreat to the Pacific Coast. This retreat offered a chance to get away from work, bond with the crew and have a little fun together. We talked about things that are going well and improvements to make. Nick cut his eyebrow open on a surfboard, spent six hours in the Crescent City ER and received nine stitches. Good times.
- Presidents' Day Avalanche - A large (D4) avalanche with visible crown at 10,500 to 11,000 feet which ran in a historic slide path to 7,150' knocking over mature trees and leaving large, scoured features in its wake. Vertical walls of 50'+ with obvious large flowing debris and toe over 50' tall.
- Internal high and low angle rescue training - Rangers conducted an in house rescue training covering topics such as patient packaging, lowering techniques and skiing with a toboggan in the outstanding training ground of the Old Ski Bowl
- Continue to maintain the Mount Shasta summit register. Full summit registers are mailed to, and kept at the Bancroft Library in Berkeley, CA
- Participation in California State Snow Surveys - 11 different courses are surveyed for water content data, crucial for making water allocation decisions by state resources. The end of April is the last survey month for the water year. Surveys pick up again at the end of January.
- Immaculate safety record: Rangers completed the season without any on the job

injuries



[Photo: Ai generated version of the climbing rangers in front of the ranger station]

A big thanks to the US Forest Service - Shasta/Trinity National Forest for continuing to support the Mt. Shasta Climbing Ranger and Avalanche Center Programs

All information compiled and written by the USFS Mt. Shasta Climbing Rangers Program

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