

MOUNT SHASTA WILDERNESS

Climbing Ranger Report

2023





Season Summary

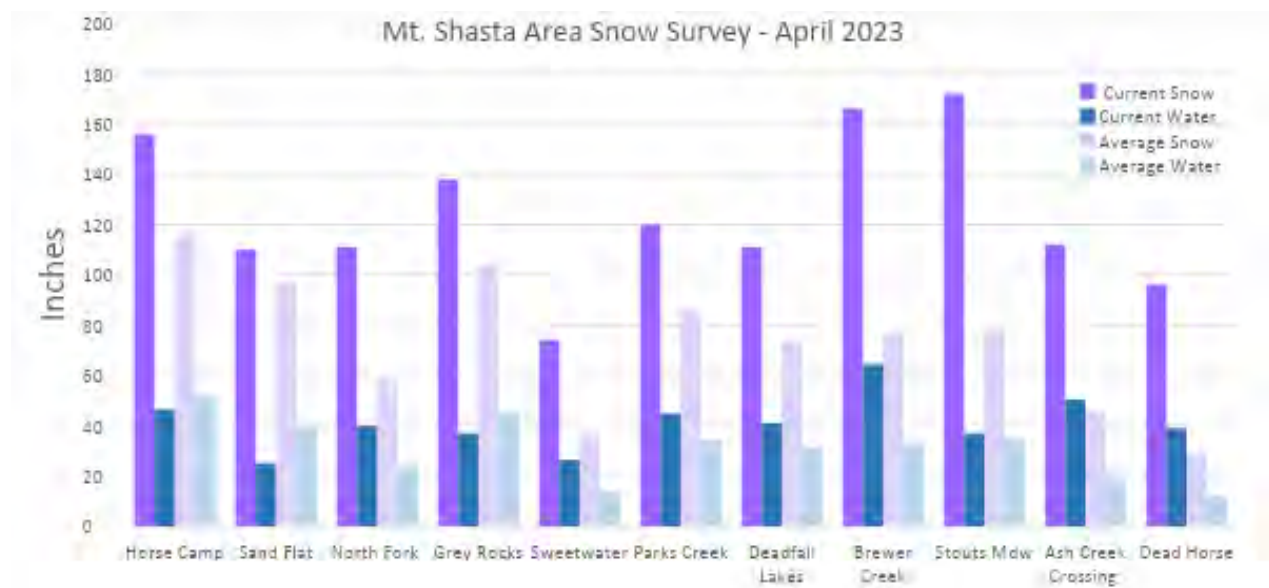
The 2023 climbing season kicked off in early April, after a robust winter that brought well-above average snowfall. With a nearly 200 inch base at 7,000 feet, it's safe to say skiers and climbers were eager to get on the mountain. Strong north wind events throughout the winter left north facing climbing routes with a thin snowpack. Windy winter weather also resulted in a thinner snowpack above treeline compared to below treeline.



The climbing season began in early April, primarily consisting of ski mountaineers hoping to shred 7,000 vertical feet from summit to parking lot. Seasonal weather

provided excellent climbing and skiing conditions through most of April and May, except for a

few late season snow storms. Daily temperatures continued to rise into summer, and naturally, ski conditions deteriorated. In early June, primary use of the mountain shifted from skiers to climbers and guide operations. Upper mountain use hit a seasonal high during this time, when climbing and weather conditions were excellent. In late June, the thin snowpack on the upper mountain began to melt and affect south side climbing routes. Rockfall became the primary hazard for climbers, resulting in multiple rockfall accidents. By July, snow receded from the Bunny Flat parking lot at 6,950 feet, pushing most skiers off south side routes, shifting to the east side. In late July, climbing rangers began advising climbers not to climb Avalanche Gulch due to poor conditions. The remainder of the summer remained busy on east and north facing climbing routes. The Clear Creek route remains a popular alternative for mid to late season climbing and for novice mountaineers. The route does not host any rockfall due to its generally low angle. The route is not to be taken lightly however as we've had plenty of slips, trips and falls on loose rock over the years, resulting in twisted and broken ankles. We've also had numerous exposure related injuries from climbers becoming lost in poor weather. If off route, steep terrain does exist and slips/falls are not as friendly.



The Shasta-McCloud Mangement Unit of the Shasta-Trinity National Forest completes monthly snow surveys during winter and the sites listed in the table above. April numbers show snowpack above historic averages, with the McCloud River watershed nearly doubling its average water content. Overall, snow totals were well above average and water totals only slightly above.



Ranger Sam Clairmont crunches the numbers during one of the many snow surveys conducted by Forest Service employees

April 13, 2023

MT. SHASTA AREA SNOW SURVEY RESULTS – APRIL 2023

Sacramento, Shasta and Trinity Watersheds*

Course	Elevation(ft)	Last Month Snow(in)	2023 Snow(in)	2023 Water(in)	2022 Snow(in)	2022 Water(in)	Hist. Average Snow(in)	Hist. Average Water(in)
Horse Camp	7900	N/S	156.5	46.5	30	13	116.89	52
Sand Flat	6800	N/S	110	25	9.5	4	96.85	40.04
North Fork	6900	N/S	111	40	0	0	59.17	23.96
Grey Rocks	6200	N/S	138	37	23.5	10.5	103.72	45.13
Sweetwater	5850	66	74	26.5	5.5	2.5	37.17	13.55
Parks Creek	6700	N/S	120	45	22	10	86.19	34.32
Deadfall Lakes	7200	101.5	111	41	19.5	8.4	73.63	31.38

	2023 Snow(in)	2023 Water(in)	2022 Snow(in)	2022 Water(in)	Hist. Average Snow(in)	Hist. Average Water(in)
Averages of Courses Sampled	117	37.3	16	6.9	81.9	34.3

Percent (%) of Historic Average	143	109	19	20
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Similar Years: 1940, 1952, 1956, 1969, 1978, 1999, 2011, 2019

McCloud Watershed*

Course	Elevation(ft)	Last Month Snow(in)	2023 Snow(in)	2023 Water(in)	2022 Snow(in)	2022 Water(in)	Hist. Average Snow(in)	Hist. Average Water(in)
Brewer Creek	6250	N/S	166	64.5	9	4	76.37	33.17
Stouts Meadow	5400	N/S	172	37	18.5	9	78.2	34.9
Ash Creek Crossing	5000	N/S	112	50.5	0	0	45.8	19.5
Dead Horse Canyon	4500	N/S	96	39	0	0	28.95	12.28

	2023 Snow(in)	2023 Water(in)	2022 Snow(in)	2022 Water(in)	Hist. Average Snow(in)	Hist. Average Water(in)
Averages of Courses Sampled	137	47.8	3.0	1.3	57.3	25.0

Percent (%) of Historic Average	238	191	5	5
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N/S = Not Sampled

Similar Years: 1952, 1963, 1983, 1999, 2011



Left to right: Cory Beattie, Eric Falconer, Colleen Greene, Sam Clairmont

The Rangers

This season brought an entirely fresh crew of USFS climbing rangers to Mount Shasta. Sam Clairmont and Eric Falconer were rookie year forecasters for the Mount Shasta Avalanche Center in the winter, and then rolled into climbing ranger positions in April. Sam came from a previous climbing ranger position on Mount Hood. Eric came to the rangers with a background in guiding on numerous mountains across the west, including Mount Shasta. The team also picked up two additional seasonal rangers, Colleen Greene and Cory Beattie. Having previously worked for the Forest Service, Colleen was a valuable addition to the team and offered a kind and passionate mountain perspective to the public. Cory Beattie was previously a Forest Service snow ranger in Montana, quickly finding comfort in the alpine conditions of Mount Shasta. Last but not least, Nick Meyers continued for his 22nd year as the lead climbing ranger and program director. Despite Cory suffering a minor knee injury, the crew was able to complete a safe and successful climbing season.

The Program

- **Current climbing, avalanche and weather information** – www.shastaavalanche.org
- **USFS Climbing Rangers on the mountain, serving the public and protecting the 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** – Roads rocked, re-graded, improved drainage, new culverts for north and east side trailheads
- **Search and Rescue by USFS Climbing Rangers** – An average of 12 SAR missions and 1 fatality occur each year. MOU with Siskiyou County Sheriffs Department renewed. New SAR equipment purchased
- **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 presentations to over 2,000 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).



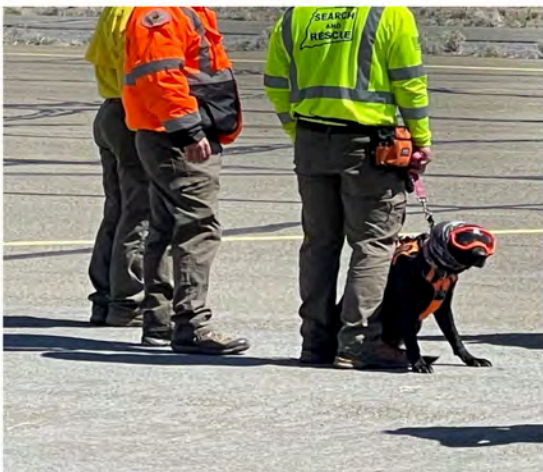


Club Fed! The Helen Lake ranger tent, home away from home. Rangers spend most weekends here during the prime climbing months of May, June and July. Making contact with climbers is a primary duty. Thousands of climbers camp and climb from the Helen Lake camp during the height of the season

The Helen Lake camp was established in late May and staffed throughout summer. Popular climbing routes were regularly patrolled. Route observations and photos were published on our website www.shastaavalanche.org and on the socials (Instagram & Facebook), illustrating the most up-to-date route information. Our website remains the best and most popular place to find all things climbing, snow and weather related.



In early Spring, all rangers attended two helicopter training sessions. First, USFS rangers hosted the annual interagency helicopter search & rescue training. This opportunity is for all agencies who participate in search and rescue on Mount Shasta to come together and train with local helicopters used for rescue on the mountain. Parties include Siskiyou County Sheriffs Department, US Forest Service, CalOES, California Highway Patrol, Army National Guard and local outfitter guide services. The weather was good and a safe and essential training was held. The second training was a multi-day helicopter crew member course hosted by the USFS Trinity Helibase. New rangers received a trainee certificate. The course taught in depth helicopter specifications, communications, and operational risk management protocols. This training added to the competency of the rangers' relationship with helicopters. In addition, the rangers continued to pursue other professional development opportunities. These included medical rescue training, weather forecasting courses and attendance to the International Snow Science Workshop in Bend, Oregon.



The annual interagency helicopter training was an excellent day of training, essential for safe and efficient rescues in high risk environments

Outreach and Public 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 several climbing presentations titled, "So, You Want to Climb Mount Shasta?". These were hosted locally by LOGE Inn in the spring. Sharing knowledge to climbers before they attempt their climb is an effective way at preventing search, rescue and/or fatality accidents.



USFS climbing ranger Sam Clairmont with one of many kids groups led on hikes to the Shasta Alpine Hut this season. Many thanks to Rebeca Franco's coordinating efforts for these trips!

Much of the summer/fall education by rangers continued to be with Siskiyou County elementary and middle school groups. Students typically embark on a 3.7-mile round trip, ranger lead hike to the Shasta Alpine Hut (Horse Camp) with wilderness, flora, fauna, geologic and avalanche/climbing based topics discussed. A huge thanks to Rebeca Franco for organizing and facilitating these field sessions.

Search & Rescue

USFS climbing rangers continue to conduct search and rescue operations on Mount Shasta under a memorandum of understanding (MOU) with the Siskiyou County Sheriff's Department, the lead agency for search and rescue operations in the county. The MOU is reviewed and renewed every five years. This season, the MOU was renewed.

In 2023, we had 10 SAR incidents. This is about half of the 20 incidents per year average since 1992. These consisted of 1 search, 7 rescues, and 2 fatalities.



California Highway Patrol helicopters conducted all aerial rescue on Mount Shasta this season

The first fatality of the year occurred January 1st 2023. On New Year's Day, Siskiyou County SAR and CHP helicopter responded to a report of an elderly, lethargic female on Mount Shasta near the Sierra Alpine Hut. USFS Ranger Nick Meyers was informed of the incident after CHP was on scene and performing the rescue. Siskiyou County SAR and CHP helicopter crew members conducted the rescue. She was later pronounced dead. The cause of death is suspected to be hypothermia and environmental related. No information is known about possible events leading up to.

Another notable accident occurred on May 5th. A 52-year-old male separated from his party at the summit of Mount Shasta around 2:45pm. The now solo climber mistakenly descended the north side of the mountain off the summit plateau and onto the Whitney Glacier. With winter weather bearing down on the climber, and daylight nearly gone, the climber called 911 for rescue. Siskiyou County Sheriff's Department and USFS Climbing Ranger Nick Meyers began communication with the climber via cell phone and developed a rescue plan. The uninjured, lost climber attempted a descent from his location, but soon decided to shelter in place after encountering large crevasses. With nightfall, poor visibility, rain and snow, rescue teams made the tough decision to launch in the early morning, hoping for better weather and visibility. At 0530 the next morning, whiteout conditions prevented any aerial helicopter rescue. USFS Climbing Rangers launched a ground rescue effort via the North Gate Trailhead on snowmobiles and skis. Siskiyou County SAR supported with a snowcat and communications. Contact was made with the climber at 1230 at 11,600 feet on the Whitney Glacier. Miraculously, he was ambulatory with a minor cold injury. The man was escorted out to the North Gate Trailhead by 1600. Siskiyou County Sheriff's Department transported him via snowcat from the trailhead several miles down the road to parked vehicles. This was a long day for rescuers and an even longer one for the climber. He was humble, appreciative and many lessons learned:

- Check the weather before you climb and monitor as you climb. Do not climb into whiteout conditions. Flexibility is one of the most important skills to have in the mountains. Be willing to change plans. Check your summit fever at the door. Do not summit late in the day
- Carry navigation tools: map, compass, GPS, extra thumb charger, etc. Know how to use them
- Don't separate from your party. Make sure everyone is using the same mode of travel
- Play the "what if" game...if things don't go as planned, what are you going to do? Often incidents don't involve injury, but could involve environmental hazards like an unplanned overnight. A small pad, bivy sack or tarp and an extra down jacket can make the difference

San Francisco Chronicle Article:

<https://acrobat.adobe.com/id/urn:aaid:sc:US:29a976b6-4728-495d-8b6e-34fc6a9e9c>



Visibility during most of the Whitney Glacier rescue



Photos from the Whitney Glacier rescue. Blue skies provided good visibility at the last moment while searching for the benighted climber near 11,600 feet on the north side of Mount Shasta

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 can see 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.



Bunny Flat trailhead, a busy place in the spring and early summer, when climbing Mount Shasta peaks

Trailhead/Site	Number of Sales	Total Sales
Brewer Creek	18	454.00
Bunny Flat	2196	54,908.00
Clear Creek	453	11,335.40
Mt. Shasta Office	342	8,568.50
North Gate	83	2,079.50
Old Ski Bowl	13	329.00
Sand Flat	1	25.00
Total	3,106	\$77,699.40



Whitney Glacier, Photo: Meyers

The Glacier's



Hotlum Glacier / Photo: Phil Rhodes

Rangers participate in the ongoing glacier re-photo project (<http://rephoto.glaciers.us/>). Twenty-five pre-determined photo locations exist on the mountain. During fall months, rangers visit the majority of the location points, 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 presented by citizen scientist and Mount Shasta glacier expert, Phil Rhodes. These include:

- Climate change driven northward migration of the Pacific storm-steering polar jet stream, resulting in fewer storms bringing moisture from the south via the geographic open door of the Sacramento Valley and more from the west passing over the

moisture-stealing Klamath Mountains. This will amplify 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 #2, 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



Hotlum Glacier / Photo: Phil Rhodes

Dispersed Camping/Recreation Patrol

Common Warning Notices, Violations and Incident Reports issued by FPO Rangers every year:

- Motorized use in Mount Shasta Wilderness: This involves either over snow vehicles (snowmobile/snow cat) and/or ATV use
- Dogs in Wilderness: Dogs are not allowed inside the Mount Shasta Wilderness or on Sierra Club land.
- Illegal Camping: Incidents are often visitors camping <100 feet from springs/creeks inside the Mount Shasta Wilderness, specifically in the Clear Creek spring area just above tree line. Other illegal camping incidents involve camping in day use areas, or inside the Traditional Cultural Property (TCP) area of Panther Meadows.
- Sanitation/Litter: Rangers find climber camps on the mountain or transient camps outside the Mount Shasta Wilderness in the Sand Flat/Bunny Flat/Panther Meadows area that are unsanitary with abandoned property and trash. Climber camps involve improperly securing equipment/trash upon leaving for a summit attempt. Animals and wind will spread climber tents and gear far and wide. Rangers also find a lot of “micro-trash” at major base camps on Mount Shasta. Tear off’s of wrappers, match sticks, tea bags, tent stakes, food scraps, etc. account for much of the trash hauled off the mountain.
- Abandoned camps/vehicles: Abandoned camps and vehicles are ongoing and most often found in the dispersed camping areas along the Everitt Memorial Highway, Sand Flat, Bunny Flat and Upper Ski Bowl. The South Fork Flats, Twin Arrows, and Bear Springs areas also host abandoned equipment issues.
- SMMU District Trash: Rangers patrol other areas of the SMMU district. Trash, waste dumps, shooting ranges, abandoned camps are found every year.
- Parking: On occasion we get vehicles parking and obstructing the Everitt Memorial Highway at or near Bunny Flat. It’s not uncommon to observe 150+ cars at the Bunny Flat Trailhead on a busy weekend. This is a dead-end road that terminates in the Old Ski Bowl.
- Fire/Campfire in Wilderness: Small campfire rings are found each year and are dismantled. Campfires are not allowed inside the Mount Shasta Wilderness. Fire rings are naturalized, and ashes packed out.
- Oversize Group: Group size is limited to 10 inside the Mount Shasta Wilderness, as well as in Panther Meadows. This also includes groups of over 75 people outside Wilderness boundaries.
- Illegal Commercial Guiding: Commercial guiding on Mount Shasta without a permit is an ongoing occurrence. Most illegal commercial use lies within the spiritual/new age realm and outside of Wilderness. Some involves climbing groups.
- Exceeding Stay limit: We often run into folks in



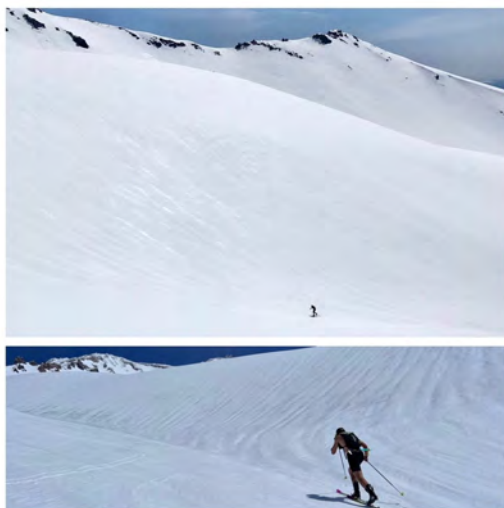
Mount Shasta who want to spend the whole summer living on the Mount Shasta/McCloud district. Rangers monitor visitor overstay, but it's a game of cat and mouse.

Other Highlights & Accomplishments

- Climbing mountains quickly is a passion for a select few. This season, we saw the fastest known time on Mt Shasta broken by Jack Kuenzle, with an incomprehensibly fast ascent time of 1:28:58. Current and previous FKT's are timed from Horse Camp to the summit.

Jack Kuenzle	1h 28m 58s	2022-04-01
Tom Goth	1h 35m 26s	2019-07-06
Ryan Ghelfi	1h 37m 5s	2016-07-06
Rickey Gates	1h 38m 10s	2012-01-07
Robert Webb	1h 39m 0s	1985-07-05

Past and current FKT times for Mount Shasta



Jack in action during his ascent, wearing not much more than skivvy shorts!

- Rangers assisted the developed recreation department by installing numerous signs, markers and trailheads around the district. New signs included, but not limited to, Gumboot, Algoma, Middle McCloud Falls, Cattle Camp, Centipede Gulch, Snowmans Hill, Panther Meadows and Pine Tree Hollow



- 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 300lbs of inert waste was removed.



- Assisted with the YCC kids crews, functioning as fill in crew leads. Teams conducted trail work and slash piling
- Assisted with the USFS Fire sector during the McBride prescribed burn
- New automated fee station at Bunny Flat Trailhead. Climbers will now be able to get their summit pass, 3-day or annual, at Bunny Flat and pay with a credit card
- On August 21st, a large debris flow (lahar) breached culverts and flooded across the Everitt Memorial Highway near McBride Springs. The debris flow was caused by a significant rain event centered on the south side of the mountain and caused the lahar to rage down Cascade Gulch



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

Program Manager: nicklaus.meyers@usda.gov

Instagram: @shastaavalanche / Facebook: Mt Shasta Avalanche Center and Home of the Climbing Rangers

