



# SIERRA ALPINE CLIMBING EQUIPMENT CHECKLIST

The primary goal of any alpine climber should be to carry as little as necessary. What is left out of a backpack is often just as important as what is placed inside. Conditions in the mountains vary dramatically from season-to-season. This can make the process of selecting equipment for an alpine climb difficult. On the one hand, a climber wants to be light. But on the other hand, a climber wants to have everything they need if there is a storm or other emergency.

This list was designed for the “worst case scenario,” a trip with significant inclement weather. In serious conditions it’s not uncommon for a climber to need every piece of clothing and equipment on this list. However, if a program does not encounter significant weather, there may be items here that are not used. As you prepare for your trip, it’s important to plan for the worst and hope for the best.

On the first day of your program, an AAI guide will work with you to refine your mountain kit to ensure that you bring exactly what’s needed given the forecast. It is acceptable to bring too much clothing or equipment to your initial meeting. And it is acceptable to bring things that you have questions about. Extra equipment can always be left behind in the cars.

**Sierra Nevada, CA:** Temperatures and weather conditions in the Sierra Nevada are also typically great for climbing conditions. Thunderstorms are also somewhat common and intense rainstorms often last a few hours in the afternoons. Nighttime temperatures in the high peaks often drop to slightly above freezing while daytime highs range anywhere from 35°F to 70°F. Summer temperatures for low elevation rock climbing around the Mammoth Lakes area can be quite warm, with averages ranging from 80°F to 90°F. Mountain breezes are not uncommon and should be taken into consideration when planning your clothing system. Another thing to consider for climbing in the Sierras, is the potential for wildfire smoke in the late summer months, like August - September.

**PROVIDED EQUIPMENT:** Climbing rope, anchors, solid waste bags

**Call or Email the Equipment Shop for Advice on Gear:** Please feel free to contact the shop to help you get ready for your trip. Your comfort and safety depend on being well equipped. Whether you get your gear from us or just get advice, we’re here to help you prepare.

Call: (360) 671-1570 - Email: [shop@AlpineInstitute.com](mailto:shop@AlpineInstitute.com) - Website: <https://shop.alpineinstitute.com/>

Please be sure to check the forecast several days prior to your course to ensure that you are properly prepared.

[NOAA Bishop / Lone Pine Area, CA](#)

# CLOTHING

## Beanie/Toque

Wool or synthetic. Must fit under a helmet.

Buy  
 Own

## Sun Hat

Ideally fits under a helmet. Ball caps with a button on top are NOT recommended. Visors or athletic hats are more comfortable, vent better, and are easier to clean and dry out.

Buy  
 Own

## Buff/Neck Gaiter

Look for one that is UPF-rated. Lighter colors are better for warm conditions and darker for colder conditions.

Buy  
 Own

## Glacier Glasses

MANDATORY. Look for a pair that fits well and has side shields. The lenses should not let more than 12% of light through. Photochromic are more expensive, but usable in a wider range of light.

*Examples: Julbo Spectron, Julbo Reactiv Performance, Julbo Reactiv High Mountain*

*NOTE: Those using contacts should also bring a pair of prescription glasses in the event that your contacts or solution are lost or damaged. If you only use glasses, get a pair of over-the-glasses glacier glasses.*

Buy  
 Own

## Headlamp

Bring extra batteries or a charger for rechargeable battery style. Ideal range is 200-350 lumens.

*Examples: Petzl Swift RL, Petzl Actik*

Buy  
 Own

## Liner Gloves

Thin, lightweight, wool or synthetic gloves. Size to fit snug but not too tight. These could be worn alone in temps greater than 25°F when it is dry. UPF rated are ideal.

*Examples: OR Vigor Sensor, The North Face Etip Grip*

Buy  
 Own

## Midweight Softshell Glove

These gloves are used for belaying, tying knots, rope management, etc. Dexterity and durability are key. They provide slightly more insulation than a liner glove and are generally used in temps of 15°F to 30°F while actively using your hands. Water-resistant is recommended because they will dry faster.

*Examples: Mountain Equipment Super Alpine, Rab Vapour-rise*

Buy  
 Own

## Hard Shell Glove

Waterproof and insulated. If the glove lacks insulation, size it to fit a liner glove inside. Mainly used in wet conditions, cold temps, or when not moving.

*Examples: Black Diamond Renegade, OR Highcamp*

Buy  
 Own

## Sports Bra

Wool or synthetic. Avoid bras with adjusters and clasps, as they could get compressed by your pack straps. Racerbacks are a popular option.

Buy  
 Own

## Base Layer

A lightweight, wool or synthetic sun hoody is ideal. UPF 30+ sun protection is best.

*Examples: Patagonia Capilene Cool Daily Hoody, OR Echo, Rab Pulse*

Buy  
 Own

# CLOTHING CONTINUED

## Active Insulation Layer

Lightweight “gridded fleece” or lightweight synthetic insulated jacket. Hood preferred. Active insulation weight - 40g/m2. Heavier insulation weight - 60-80g/m2

*Examples: Patagonia R1, Patagonia Nano Air, Arc’Teryx Proton LT*

Buy  
 Own

## Soft Shell Jacket or Windproof Jacket

A soft shell jacket is considered an “action layer.” Its materials are designed to stretch and breathe while also maintaining wind and water resistance. This allows the user to leave this jacket on for a wide range of temps and conditions throughout the day without the hassle of constantly changing layers.

Windproof jackets are lightweight and packable but lack the breathability and stretchy nature of the soft shell. Windproof jackets are ideal for blocking wind and light precipitation during low-output activities.

*Example Softshells: Black Diamond Alpine Start Hoody, Rab Borealis, Mountain Equipment Squall, Patagonia Houdini Air*

*Example Windproof: Patagonia Houdini, Arc’Teryx Squamish Hoody*

Buy  
 Own

## Insulation / Puffy Jacket

Down or synthetic. This piece is worn in cold conditions or when not moving. Hood preferred. If choosing down, water-resistant down treatment is preferred to help prevent matting and loss of insulating ability if the jacket gets wet.

*Examples: Arc’Teryx Nuclei FL, Patagonia DAS Light, Patagonia Down Sweater, Arc’Teryx Cerium, Rab Alpine Series*

Buy  
 Own

## Hardshell Jacket (Waterproof Rain Jacket)

Non-insulated jacket with a waterproof and breathable membrane. Three-layer construction is recommended. It must have a hood, ideally helmet-compatible. When sizing, make sure it can fit over other layers. Ski jackets are discouraged because they are usually not waterproof and have heavy insulation.

*Look for Gore-Tex, eVent, Drilite, H2NO, Pertex Shield.*

*Examples: Patagonia Torrentshell, Arc’Teryx Alpha AR, Mountain Equipment Lhotse*

Buy  
 Own

## Undergarments

Wool or synthetic. Long, compression-style can help reduce inner thigh chafing.

Buy  
 Own

## Base Layer Pants (aka “Long Johns”)

Wool or synthetic. Optional, depending on weather.

*Examples: Patagonia Capilene midweight or thermal weight (Thermal is warmer)*

Buy  
 Own

## Soft Shell Pants

Thin, weather-resistant, breathable, and stretchy. You will wear these a majority of the time.

*Examples: Patagonia Altvia, Mountain Equipment Ibex, Arc’Teryx Gamma FL*

Buy  
 Own

## Hard Shell Pants (Waterproof Rain Pants)

Non-insulated, waterproof, and breathable membrane. Full side zips are recommended. When sizing make sure it can fit over a base layer and soft shell pants.

*Materials: Gore-Tex, eVent, Drilite, H2NO, Pertex Shield*

*Examples: Patagonia Torrentshell, Arc’Teryx Beta Pant*

Buy  
 Own

## CLOTHING CONTINUED

### Socks

Wool or synthetic socks that are at least mid-calf height. Modern boots are designed to insulate your feet, so a thicker sock is not recommended as these tend to lead to blisters and moisture retention. Using a lighter sock allows for a more accurate boot fit. Wearing a “silk-weight” liner sock beneath your hiking sock can reduce friction on the skin and mitigate blister development.

*Examples: Darn Tough Coolmax Lightweight*

- Buy  
 Own

### Approach Shoes or Trail Shoes

Made with sticky climbing rubber, used by many for approaches to and from the rock climbing areas as well as for climbing some of the easier routes.

*Example Approach: La Sportiva TX4, TX2, Scarpa Rapid*

*Example Trail Shoes: Topo Athletic Terraventure, Altra Lone Peak, La Sportiva Kaptiva, Salmon Sense Ride*

- Buy  
 Own

### Mountaineering Boots

Must be stiff (full-shank or equivalent), crampon compatible, mountaineering boots. Double boots recommended prior to Mid-June. For courses after Mid-June, single boots should be used.

*(Optional)* Some participants opt to use a 3/4 shank pair of boots. The 3/4 shank boots are better suited for approaches and rock climbing in warmer temps or on routes that require extensive technical snow and rock

*Example Double Boot: Scarpa Phantom 6000, La Sportiva G2SM*

*Example Single Boot: La Sportiva Nepal Cube, Scarpa Mont blanc Pro*

*Example 3/4 Boot: La Sportiva Trango Cube, Scarpa Charmoz*

- Buy  
 Own

### Gaiters

Knee or calf height. Best used in early-season conditions. Optional for mid and late season. Gaiters do help protect pants from crampon holes regardless of the season.

*Examples: OR Crocodile*

- Buy  
 Own

## CLIMBING

### Helmet

Must be UIAA-rated for climbing. Be aware that foam, break-away style helmets like the ones listed below are susceptible to damage if being loaded in a checked bag.

*Examples: Petzl Meteor, Black Diamond Vision*

- Buy  
 Own  
 Rent

### Harness

Make sure the harness has a belay loop and gear loops. When sizing, it should fit over your clothes when you have multiple layers on. A more robust, padded harness is ideal for this program.

*Example: Petzl Adjama, Arc’Teryx AR-395a*

- Buy  
 Own  
 Rent

### Crampons

Must be steel crampons with front points and compatible with your mountaineering boots.

*Example: Petzl Vasak, Petzl Sarken*

- Buy  
 Own  
 Rent

# CLIMBING CONTINUED

## Ice Axe

A straight or slightly curved shaft ice axe is recommended. Adze is required. Please contact the Equipment Shop if you have any questions.

Use the following info as a rough guide on length. Ice axe leashes are discouraged and not recommended.

Personal Height	Recommended Length of Axe
5'8" or shorter	50-55cm
5'9" - 6"	55-60cm
6'1" and up	60-65cm

*Example: Petzl Glacier, Petzl Sum'Tec, Black Diamond Raven Pro*

- Buy  
 Own  
 Rent

## Rock Shoes (Optional)

Focus on comfort, so they can be worn all day. Avoid technical or aggressive rock shoes with a downturn. Avoid curled toes when sizing.

*Example: La Sportiva Tarantulace, La Sportiva TC Pro*

- Buy  
 Own

## Slings

Bring one 48in (120cm) and one 24in (60cm) pre-sewn sling. Slings must be UIAA-rated for climbing.

*Examples: Mammut Contact, Black Diamond Nylon Runner*

- Buy  
 Own

## Belay Device

Bring an auto-blocking device that accepts 2 ropes.

*Examples: Black Diamond ATC Guide, Petzl Reverso*

- Buy  
 Own

## Carabiners

Must be UIAA-rated for climbing. Must have:

- 4 large pear-shaped munter-style locking carabiners
- 5 non-locking wire gate carabiners

*Examples: Petzl Attache, Camp Photon Wire*

- Buy  
 Own

## Rappel Backup

The Sterling hollow Block or Beal Jammy are recommended for their heat resistant properties. A 4ft length of 6mm nylon accessory cord will also suffice.

*Example: Beal Jammy 35mm, Sterling Hollowblock 2 13.5*

- Buy  
 Own

## Trekking Poles

One is required, two are highly recommended. Poles help with balance while hiking with a heavy bag and increase security during stream crossings. They also decrease the pressure on your knees during steep descents. For early season programs, your poles should have snow baskets.

*Example: Black Diamond Expedition 3*

- Buy  
 Own

## Prusiks

6mm nylon cord in three lengths; 13 ft, 6 ft, 5 ft. We recommend getting three different colors for easy identification.

- Buy  
 Own

## CLIMBING CONTINUED

### Day Pack (Optional)

A 25L to 35L is an ideal size. Can be used as a summit pack. Ideally, this pack is frameless so that it can be packed inside your larger pack if you decide to bring it on the mountain.

*Examples: Black Diamond Blitz 28, Mountain Equipment Tupilak 37+*

- Buy  
 Own

### Internal Frame Pack

A 65L to 75L pack is the recommended size range. Mountaineering-specific packs, instead of backpacking packs, are a good way to shave weight. Should also have the ability to carry weight well.

*Examples: Black Diamond Mission 75, Mountain Hardware AMG 75, Arc'Teryx Bora 75*

- Buy  
 Own  
 Rent

## CAMPING

### Tent

3 season tents can be used if the rain fly goes all the way to the ground on all sides. A "bathtub" floor for the inner tent is also recommended. This means that the inner tent has a water-resistant floor material that scoops up from the floor 4-12" before changing to mesh. If your tent does not have wind lines, an additional 6-10ft of 3mm accessory cord is needed for rigging your rainfly in a mountain environment.

- Early Season: Double wall 4-season tent recommended.
- Mid Season: 4-season or 3-season tent.
- Late Season: 4-season tent recommended.

*Example 4-season: Hilleberg Unna, Black Diamond Eldorado*

*Example 3-season: Big Agnes Copper Spur, REI Half Dome*

- Buy  
 Own  
 Rent

### Sleeping Bag

Synthetic or down. If you bring a synthetic bag, bring one on the lower end of the temp range since synthetic bags tend not to be as warm as down. If you sleep cold, bring a warmer bag than required. If choosing down, water-resistant down treatment is preferred to help prevent loss of insulating properties if the bag gets wet.

- Early Season: 0° to 20°F (-18° to 6°C)
- Mid Season: 20° to 30°F (-6° to -1°C)
- Late Season: 15° to 20°F (-10° to -6°C)

*Examples: Mountain Equipment Fireflash, Western Mountaineering Alpinilite, Rab Mythic Ultra 180*

- Buy  
 Own

### Compression Stuff Sack

For your sleeping bag. If it is a down bag, a waterproof compression sack is recommended.

- Buy  
 Own

### Sleeping Pad

- Early Season: Bring 2. One inflatable and 1 closed-cell foam. The foam pad helps insulate from the snow and serves as a backup to the inflatable pad.
- Mid/Late Season: One inflatable pad or closed cell foam pad.

*Example: ThermaRest XTherm*

- Buy  
 Own

### Stove and Fuel

Liquid fuel or canister stove.

*Examples: Soto Windmaster, MSR Windburner*

- Buy  
 Own

# CAMPING CONTINUED

## Pots

Bring 1 pot.

- Early Season: Bring a bigger pot for melting snow, 1.5L to 2L
- Mid/Late Season: 0.5L to 1L

*NOTE: If you have a complete stove system like the Jetboil or MSR Reactor and plan on eating out of your integrated pot, then you do not need to bring another pot.*

- Buy  
 Own

## Utensils

Long-handled spoons make stirring hot liquids safer, and metal ones tend to not break as easily in cold temperatures.

- Buy  
 Own

## Bowl

*NOTE: If you have a Jetboil or MSR Reactor type stove and plan on eating out of your integrated pot, then you don't need to bring a bowl. The same applies if you plan on using commercially packaged dehydrated or freeze-dried meals.*

- Buy  
 Own

## Lighters

Bring 2.

- Buy  
 Own

## Hydration

3L capacity is recommended, though some people need more. A common approach is to bring a 2-3 liter bladder and a 1 liter hard sided bottle. The bottle is an important backup to the bladder if it gets punctured.

- Early-season: Bring more water carrying capacity, usually in the form of bladders (4L to 8L) to reduce the number of times you need to melt snow.

*Example: Nalgene 32 oz bottle, Hydrapak Seeker 2-3L, MSR Dromedary 4-8L*

- Buy  
 Own

## Water Purification

Water purification of some form is required. Pills that take an hour or less to purify are recommended. Steripens are an acceptable alternative to purification tablets. It is strongly encouraged to use the brand Aquatabs, as they work the fastest and have the least amount of flavor once administered.

- NOTE: Pumps can be damaged by silt in the glacial water and can easily freeze at night and crack. However, many of our guides are finding success using some of the integrated pump/bladders like the BeFree and Quickdraw.

*Examples: Aquatabs, SteriPen, Katadyn BeFree, Platypus Quickdraw*

- Buy  
 Own

## Food

You are responsible for your own food for the duration of the course. Please consult our meal planning page. You should arrive on the first morning of your course with enough food for your program length.

- Buy  
 Own

# OTHER ESSENTIALS

## Toothbrush and Toothpaste

Travel size recommended

Buy  
 Own

## Hand Sanitizer and/or Wet Wipes

Required. Used after going to the bathroom and before eating. Wet wipes can be used for the "mountain shower."

Buy  
 Own

## Alarm Clock

You will be responsible for waking up at certain times throughout the program.

Buy  
 Own

## Toilet Paper

The provided solid waste bags have a small amount of toilet paper with them, but most people do not find this to be adequate. Estimate how much you'll need for a program of this length and place that in a plastic zip-lock bag. An extra zip lock bag can be helpful for pack-out of used paper. If you plan to use wet wipes, be wary of scented or exfoliating types as these can be an irritant for some people.

Buy  
 Own

## Pee Cloth (Optional)

A reusable, antimicrobial pee cloth, used in the place of toilet paper or wet wipes.

*Example: Kula Cloth*

Buy  
 Own

## Urination Device (Optional)

Pee funnels such as the GoGirl or Freshette.

Buy  
 Own

## Menstrual Cup (optional)

There are many things to consider about backcountry menstruation, click on the link below for more information. [Click here for more info](#)

*Example: Diva cup, Saalt, Lunette*

Buy  
 Own

## Sunscreen

At least SPF 30+, zinc based is preferred. Small travel size tubes are recommended so you can put them in a close by pocket for easy access.

*Example: ZBlok 45, 2oz containers are a nice size*

Buy  
 Own

## Lip Balm

Make sure it is SPF rated.

*Example: Blistex Gold Five Star Protection SPF 30*

Buy  
 Own

## Personal First Aid Kit

- Band-aids; Blister Treatment
- Prescription Drugs
- Ibuprofen, etc
- If you wear contacts, make sure you have spares if you can't see without them

Buy  
 Own

## Repair Kit

- Inflatable sleeping pad patch kit
- Duct tape (can be wrapped around a trekking pole or water bottle)
- Zip ties
- 6-10ft of 3mm accessory cord
- 2 trash bags that are big enough to line the inside of your pack with

Buy  
 Own



## OTHER OPTIONAL ITEMS

*These items are not required, although many are nice "luxury" items that can make your expedition more enjoyable. Remember that a few ounces here and there add up to extra pounds on your back and knees during your expedition.*

### **Gaia Navigation App**

Optional smartphone app.

Buy  
 Own

### **Map and Compass**

Map should be of the program area. Compass must have declination adjustment.

Buy  
 Own

### **Belay Gloves**

Lightweight and breathable glove with a durable leather palm.

*Example: Petzl Cordex*

Buy  
 Own

### **Assisted Braking Device**

If you have a Petzl GriGri or similar assisted braking device, we suggest bringing it.

*Example: Petzl GriGri, Edelrid Megajul, Black Diamond ATC Pilot*

Buy  
 Own

### **Chalk Bag and Chalk**

Nice for hot days and sweaty hands.

Buy  
 Own

### **Altimeter Watch**

If you have one then bring it. It is a great tool to have in the backcountry, especially for navigation.

Buy  
 Own

### **Pee Bottle**

Used at night or when the weather is poor so you don't have to get out of your tent. A 32oz or larger capacity is strongly recommended.

*Example: Hydrapak Seeker 2L, Collapsible 48oz Nalgene*

Buy  
 Own

### **Entertainment**

Books, games, cards, music player, kindle, etc.

Buy  
 Own

### **Portable Charging Device and/or Car Charger**

Phone charger, battery pack, or solar panel.

Buy  
 Own

### **Ear Plugs**

For defense against snoring and high winds.

Buy  
 Own

### **Insect Repellent**

Biting insects such as mosquitoes and blackflies can be prevalent during different times of the season depending on conditions and location. Sometimes even a headnet is a nice.

Buy  
 Own

### **Camera**

Phone cameras or small point-and-shoot cameras are preferred.

Buy  
 Own

### **Comfortable Clothing and Footwear**

Breathable footwear, like flip-flops, as well as some comfortable cotton clothing can be nice to change into after you get back to the car.

Buy  
 Own