



MT. RAINIER ASCENT – KAUTZ GLACIER

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Temperatures and weather conditions in the summer on Rainier can change from minute to minute. You'll often hear the popular weather prediction, "If you can't see the mountains it's raining, and if you can see them it's going to rain." But when the sun comes out, it's glorious, and occasionally downright hot. Rain can fall at any time of year, and it is possible to get snow down below timberline before the beginning of July and after about mid-September. Lows at night often drop to slightly below the freezing point with daytime highs ranging anywhere from 35F to 70F.

The equipment you bring must function well in a wide variety of conditions. Your clothing should be warm and lightweight, dry quickly, and allow good freedom of movement. The layering principle, based on several thin layers of insulation (rather than one thick one), covered with an outer weatherproof shell, meets these needs well. Typically, Cascade mountaineers will wear a layer of long underwear made from polypropylene or a similar synthetic, another insulating layer of pile or fleece, and a Gore-Tex shell, in addition to gloves/mittens and a hat.

In the early summer season, which extends to about mid-July, and also in the last part of summer, from mid-September to the time the winter snows begin to fall in late October, the Cascade climber will also bring along an extra light insulating layer, perhaps a pair of expedition weight long underwear in addition to their lightweight pair, and a second warm hat.

To save weight in tents and stoves, course participants normally pair up at rendezvous at the morning of the first day of the course or at the meeting the night before. City clothes and other odds and ends that you won't need during your course can be left in a locked storage room at the hotel. Bring a duffel and lock for this purpose. Please take the time to prepare your equipment carefully, and if possible, become familiar with it by using it in the field, perhaps on a backpacking trip. If you have any questions don't hesitate to call AAI's office or equipment shop.

CLOTHING

Boots - Plastic climbing boots are highly recommended. Models of plastic boots such as the Koflach Degre, Lowa Civetta, and Scarpa Inverno perform well.

*Should it be deemed that leather boots will be adequate, they must be designed for heavy-duty mountaineering, they should be broken in, be thoroughly waterproofed, have

at least a 1/2 length steel shank. The AAI office can evaluate the acceptability of your leather boots prior to starting the trip.

Gaiters - Knee high. If you buy gaiters ahead of time make sure they are large enough to fit over plastic climbing boots. Gaiters can be rented or purchased at AAI before your course.

Socks - Wool or synthetic, (no cotton). Bring two complete changes. It is recommended one wear a thin liner sock, and one pair of thick socks like Smartwool Mountaineers or Thorlo Mt. Climbing socks.

Long Underwear Bottoms and Tops - This will be your base layer and should be lightweight polyester, polypropylene, capilene or similar synthetic.

2nd Layer (Top) - Expedition weight long underwear top, 100 weight powerstretch, very light weight fleece, Schoeller, or a lightweight windshirt (i.e. Marmot DriClima) are good examples of this multi-use layer.

2nd Layer (Bottom): Schoeller or nylon fabrics preferred. This will be your action layer for your legs and the layer that you will spend the most time in. This layer should be light, comfortable, durable, quick drying, and provide some protection from wind and water. Black Diamond Alpine Pants, Arcteryx Gamma pants, and Mammut Champ pants are good examples of this layer.

3rd Layer (Top): This will be your action layer and the layer that you spend the most time in. Schoeller or nylon fabrics preferred. Seek out soft jackets that are light, comfortable, durable, quick drying, and provide some protection from wind and water. Lightly insulated is ok but not required. Arcteryx, Moonstone, Marmot, Mammut, and many other companies make soft shell jackets that work well for this layer.

Insulated Jacket - Lightweight down or synthetic. Some good examples of insulating materials are Primaloft, Polarguard 3D or any down jacket/parka. This is different than your outer most waterproof shell jacket. Needed only in the earlier part of the season (before July).

Shell Layer (Upper): This will be your outermost layer and it needs to be waterproof, breathable, and durable. Two or three-ply Gore-tex or other waterproof breathable materials are required. Your parka needs to have a hood and should be sized to fit over your clothes. Lightweight and compressible layers are ideal but don't sacrifice too much weight for durability. Models like the Arcteryx Beta and Gamma jackets, Marmot Alpinist and Precip, and Patagonia Stretch Armstrong are top of the line.

Shell Layer (Lower): Full side zips recommended for easy on and off over boots and crampons. Make sure they fit over all of your layers when fully dressed. Pants or bibs are acceptable and each have their advantages and disadvantages. Materials should be Gore-tex or other similar waterproof and breathable fabrics. Examples include Marmot Cirrus

and Minima pants, Arcteryx Alpha SV bibs and Beta AR Pants, Patagonia Stretch Element and Microburst pants work well.

Liner Gloves - Polypropylene / polyester.

Warm Hat- Should be reasonably thick, warm, offer protection for your ears, and fit under your helmet if possible. Some people bring a thick and a thin hat for different uses.

Balaclava- Thin polypropylene or Powerstretch is recommended.

Sun hat- A baseball cap or Kavu type visor serves well.

Gloves: Gloves for mountaineering should be waterproof, dexterous, durable, and appropriately insulated for the temperatures expected while in the mountains. Leather palms are preferred and increase the durability of the glove. Most of your climbing time will be spent in either your polypro gloves or these, heavier gloves. There are many modular systems for gloves out there that allows liners to be inter-changed. Models like the Black Diamond Ice and Verglas glove, Patagonia Stretch-Element and Work gloves, and models by Outdoor Research are recommended.

CLIMBING GEAR

Ice Axe - 60 cm to 70 cm length with standard curve pick and wrist loop. If your axe doesn't have a wrist loop, pre-sewn ones are available commercially or you can bring about 6 feet of 9/16 inch tubular webbing and we'll tie it on the course.

Technical Ice Tool - 45 - 50 cm hammer. Models such as the Black Diamond Black Prophet or Cobra, Charlet Moser Pulsar or Axar, Grivel Rambo and Machine, work well. Straight or curved shafts can be used, and they must have a pre-sewn or tied leash.

Crampons: Flexible or semi-flexible. Step in crampons are easier to put on with cold fingers but they are not compatible with all boots. Only modern strap on, step-in, or pneumatic crampons are acceptable. Older Scottish style strap-on crampons are not adequate. The Black Diamond Sabretooth and Contact, Grivel 2F, and Charlet Moser Black Ice are examples of acceptable crampons. Anti-balling plates are highly recommended.

Climbing Harness - Should fit over bulky clothing. Adjustable leg loops help in this regard. Consider purchasing a lighter weight harness but one with gear loops.

Carabiners - Bring four, two of which should be large, locking, pear shaped (or MÜNTER) biners.

Climbing Helmet - Kayak, bicycle or construction helmets are not acceptable.

Prusiks - Prusiks are specially tied loops of 6mm cord used for crevasse rescue. If you don't have a set of prusiks from a previous AAI course then bring three lengths of 6 mm

perlon, 13 ft, 6 ft, and 5 ft. (each different color). Pre-cut cord available for sale at AAI.

Trekking Poles – These are optional but highly recommended items that is useful in two ways:

- 1) taking the burden off your knees when coming downhill with a big pack and
- 2) giving you good balance points when making tricky stream crossings.

Telescoping (adjustable) poles are ideal, but non-adjustable ski poles at a length used in alpine (downhill) skiing will work too.

CAMPING GEAR

Tents – Lightweight 4-season tent capable of withstanding winds to about 40 mph and continuous, multi-day rain. We normally pair up in tents so if you don't have one, you may be able to share a rental.

Sleeping Bag - Down or synthetic, rated to about 15 F. To help keep your sleeping bag dry, down bag users should bring an extra large garbage bag with which you can line your sleeping bag stuff sack and use for storage in the tent.

Sleeping Pad - Full length closed cell or Thermarest. If you already own a 3/4 it will be adequate but your bag may get wet if not otherwise protected and your feet will not be insulated when camping on the snow.

Stove – Pump type, white gas stoves, such as the MSR models are preferred. Bring a cleaning needle. Compressed butane or propane stoves are acceptable. Course participants often pair up on stoves. Due to airline restrictions** you may not bring used fuel bottles on the airline. If you already own a MSR stove bring it and your pump and AAI will loan you a fuel bottle. If you do not own a stove you can rent everything.

Fuel – For early season prior to mid July course participants need a liter of fuel* per person the extra fuel is required to melt snow for drinking and cooking water. Later season when water is accessible, 3/4 liter is sufficient for 6 days for one person.

* (As a reminder, fuel cannot be taken on airplanes.) **Bring two lighters.**

Fuel Bottle – ** - Leak-proof bottles such as Sigg or MSR are best. Can be rented or loaned if you already own a stove.

**United Airlines has indicated that backpacking stoves with detachable fuel containers may be taken on board, but only the stove itself (the fuel container-new or used- MUST be left at home). The stove must be air dried of any fuel and be sent via checked baggage, not carry on. Further information on this regulation may be found by a United Airlines employee under Hazardous Materials: Camping equipment; footnote.

Pots - One 1 1/2 or 2 quart pot is enough for one person. Two people sharing a stove should bring two pots.

Utensils - Large thermal mug or cup with lid (pint size best) and spoon minimum. Most

people also bring a bowl (small tupperware bowl with lid works well).

Lighters - Bring one (storm proof matches may be useful as a backup)

Hydration: 3 liters of water capacity are the minimum. Hydration packs or bladders like the Camelback or Platypus with appropriate accessories are recommended. Two water bottles, usually one-quart Nalgene type, are required. Other plastic bottles, similar in nature can work as well.

Water Purification - Bring tablets such as Potable Aqua. These are lightest and most efficient. If you want to use a filter pump realize that streams will not be accessible until mid season and make little sense prior to this time. Glacier silt in the water sources will also cause pumping difficulties.

MISCELLANEOUS

Food - Your trip will take place over four days so you need to plan accordingly. Three nights and four days worth of food. The first breakfast and last dinner can be purchased in Seattle. See the MEAL PLANNING FOR ALPINE MOUNTAINEERING for food suggestions.

Large Pack: Large internal frame pack, minimum 5000 cubic inches required. External frame packs make movements necessary for climbing difficult and are not acceptable. Models such as the Dana Designs Terraplane, Arcteryx Bora 80-90, and Gregory Robson work well.

Headlamp - Halogen or powerful LED bulbs are OK. Bring an extra bulb and batteries. Flashlights are not acceptable.

Pocket Knife - Multipurpose tools like the Leatherman Tool are great, Swiss army knives work well also.

Compass - Liquid filled. Appropriate USGS topographic maps can be purchased at AAI.

Repair Kit - Needle and thread, a small amount of adhesive tape, stove repair kit, Thermarest repair kit, 20 to 40 feet of light cord, crampon adjustment tools if your crampons need them.

Personal Medical Kit - For blisters, cuts, scrapes, etc.

Insect Repellent: Optional. If bringing bug repellent, look for more concentrated repellent in smaller containers. Make sure the container is backpack worthy. If you use a repellent containing Deet be sure to store it away from any climbing gear and clothing. Deet destroys products made of nylon and will break down webbing, cordage, and rope.

Glacier Glasses - With side shields make sure they are 100% UVA/UVB to protect from snow blindness.

Sunscreen - With a protection factor of at least 30. SPF 50 for people with fair skin. Just remember that the glare from the snow significantly increases the intensity of the sun.

Lip Protection - With a protection factor of at least 20. For the fair an SPF of 30 is better.

Personal Toiletries - Bring half a roll of toilet paper or less.

Garbage Bags - Bring two or three large ones. They serve a large variety of uses.

Stuff Bags - Bring three or four of varying sizes and colors to help keep your gear or food organized.

Camera - With lots of film and an extra battery.