

# KATAHDIN WINTER ASCENT INFORMATION PACKET



## 2023 Dates

Dec 17-18  
Dec 31- Jan 1, Jan 14-15, Jan 28-29  
Feb 11-12, Feb 25-26  
Mar 11-12  
Or private arrangement

Be one of the few who reach the top of "The Great One" in winter. This trip is for winter enthusiasts who are seeking the challenge of Katahdin in winter. Katahdin is New England's most challenging winter ascent. You can expect the same weather as Mount Washington - cold temperatures, strong winds, frequent snowfall, and low visibility make Katahdin a serious but extremely rewarding endeavor.

The remote location and arctic environment of Katahdin make this one of the most rewarding winter alpine ascents in New England. Reaching the summit of Katahdin at any time of year is an accomplishment but in the winter it holds just a little more magic and a lot less people. Our climb begins with a half-day snowshoe or ski into the base of the mountain to a winter camp where basic winter camping skills and relevant mountaineering skills are taught and reviewed. We start the climb early the next morning and return in time to travel back to trailhead by early evening. This trip is physically demanding but requires no previous winter climbing or camping experience. The trip will be led by Registered Maine Guides who are, more importantly, experienced winter mountaineering guides who are also trained in avalanche assessment and wilderness medicine.

**Tuition:** \$400.00. The fee includes guiding and climbing instruction; park fees; technical gear such as micro spikes, crampons, ice axe, transceiver, double boots, skis, snowshoes, dinner & breakfast, & cooking gear. You are responsible for providing your own clothing, sleeping bag, lunch snacks, etc. -20 degree sleeping bags are available to rent for \$10.00

**Reservations, Refunds & Cancellations:** Call 207 866 7562 to register! Full payment is required for registration. Registration deadline is 14 days before the start of trip in order to allow time to send in reservations to Baxter State Park by BSP deadline.

**Cancellation:** When you book a course with Acadia Mountain Guides you are agreeing to our cancellation policy. Please realize that if your travel does not go according to plan in any way and for any reason, we are unable to provide credits or refunds outside of what is described below. We

## Acadia Mountain Guides Climbing School

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strongly recommend that you purchase trip insurance to protect your activity purchase against unforeseeable circumstances which include but are not limited to:

- Anticipation of Inclement Weather
- Flight and Travel Delays and Conditions
- Personal or work schedule changes
- Injury or illness of self or family member
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If you cancel more than 21 days in advance you may put the deposit toward a future course or receive 75% refund. Cancellations made within twenty-one (21) days of program forfeit full tuition rate. Alternatively, if you find a replacement you will receive a 100% refund. A full refund will be given if Acadia Mountain Guides Climbing School must cancel the course.

**NOTE:** Extreme weather, avalanche conditions, inadequate personal fitness, difficult terrain, or park weather / travel closures may make it impossible to achieve our stated objective of the summit. No refunds will be made in anticipation of inclement weather or for not reaching the summit. We will make every reasonable effort to reach the summit.

### Sample Itinerary

**Day 1:** Meet at 9:00 am at Acadia Mountain Guides / Alpenglow Adventure Sports office at 92 Main St. in Orono.

- Go over equipment, boot fitting, pack gear and leave for Abol Bridge.
- Snowshoe or ski to Abol Campground - 5.5 miles. We will boot-pack, snowshoe or ski to reach the campground. Participant who have backcountry / off trail ski touring experience may use skis if approved by the guide.
- Relax in camp with options to learn basic skills.
- Review ascent plan. Dinner and sleep.

**Day 2:** Up early for hearty breakfast and a 7:00 am departure for summit. Approximately 6 hours (weather permitting) will be allotted to ascend. In most conditions, this is ample time to reach the summit.

Descend back to camp for soup and drink, pack and begin the snowshoe or ski back to Abol Bridge.

**Objectives:** The primary objective of this trip is to attempt to reach the summit of Katahdin. Along the way guides will share tidbits of their mountain wisdom on a variety of topics largely dependent on the needs of the day. Likely subjects include:

- Preparing and dressing for extreme cold
- Personal gear preparation and packing. Towing a sled.
- Key navigation and route planning skills
- Preventing / caring for hypothermia and frostbite
- Pacing, travel techniques - use of crampons, ice axe
- Basics of interpreting weather
- Principles of winter camping

**Pre-Requisites:** Participants must be capable of skiing or snowshoe 12 miles in a day with a 30 pound pack. Participants must also possess appropriate clothing to stay warm and dry on cold and windy winter days while both moving and stationary.

**What and Where to Meet:** Meet at 9:00 am at Acadia Mountain Guides / Alpenglow Adventure Sports office at 92 Main St. in Orono. Here we will go over equipment, boot fitting, pack gear and leave for Abol Bridge. We like to carpool from Orono to Abol Bridge in order to minimize fuel consumption and conserve parking spaces. This drive is about one hour and forty minutes. Please let us know if you have a vehicle and can drive other participants.

Meet at 92 Maine St. in Orono, ME. Located just off of Interstate 95. If you are traveling on I-95, take exit 191 (Kelley Road). Go east on Kelley Road (right turn if coming from Bangor or left turn if coming from the north). Go approximately 1 mile to a T intersection with red light. Turn left and go approximately 1 mile. Alpenglow Adventure Sports is at 92 Main St. – a large green house/building. If you pass the fire station, you have gone too far.

### **Food and Lodging:**

- We will eat well. A hearty dinner is provided on day 1 along with breakfast on day 2. We will provide electrolytic drinks, cocoa, and tea.
- You are responsible for lunch snacks (eaten in the ascent)
- Please let us know if you have any food allergies or requests. We will do our best to accommodate various food requests and preferences.
- We will be staying in three sided open lean-tos.

**Pre/Post Trip Lodging:** Contact us for referrals in the Orono or Millinocket area.

**Risk and Rescue:** Enjoying the outdoors necessitates a certain degree of risk-taking. You are participating in this trip and entering the winter backcountry environment at your own risk. You are choosing to engage in an activity in which participants have been injured and killed. While such accidents are rare, they may occur at any time and be out of our control. Our guides draw upon solid guide education coupled with extensive experience to manage significant hazards inherent to mountain travel. Some of the hazards that can lead to injury or death associated with this trip include but are not limited to extreme weather, demanding physical travel, avalanche, vehicle transportation and falls or collisions while skiing or snowboarding. Please be sure that you are fully aware of such risks. It is our goal to interpret the environmental, situational and group variables and to make educated decisions to minimize dangers to you while at the same time providing an enjoyable and memorable experience.

Ultimately, it is your responsibility to minimize various hazards through the application of good judgment gained from a foundation of education and experience. On this course we ask that you ski or ride with good control at all time.

Self-reliance in the face of adversity is expected on the part of the wilderness traveler entering the wilderness. Rescue is not automatic. For all practical purposes, our party is alone and must depend upon our own resources for self-rescue and be equipped for an extended emergency. Cellular phones and radios should not be relied upon in an emergency.

Finally, this is a group trip and good expedition behavior is critical. Participants are asked to stay with the group until everyone has safely exited the backcountry.

Baxter State Park Rescue: “Although it is the policy of Baxter State Park to attempt to assist those in need, a rescue effort on the mountain or in the park backcountry should not be expected. Search and rescue operations are conducted on a discretionary basis. The level and urgency of the response is determined by field personnel based on their evaluation of the situation. A rescue will be initiated only when necessary and when within the reasonable technical ability of available personnel and provides rescuers with a reasonable margin of safety. A helicopter rescue is risky and will only be used when medical or technical demands warrant it. Rescue is not automatic. For all practical purposes, a party is alone and must depend upon its own resources for self-rescue and be equipped for an extended emergency.”

**Inclement Weather:** Inclement travel weather is to be expected at this time of year. Snow is what we want. Please adjust your travel plans to accommodate weather and travel conditions.

**Summit or Bust Policy:** Of course our goal is to reach the summit. We will make every reasonable effort to reach the summit, however, extreme weather, avalanche conditions, inadequate personal fitness, difficult terrain, or park weather / travel closures may make it impossible to achieve our desired summit.

**Minimum Registration Requirement:** A minimum of three (3) participants are needed to run this program and there is a maximum of 5 per guide with a maximum of ten (10) clients total. The decision to run the program will be made at three weeks prior to the start date. In the case of low registration, you will have the options of joining another trip, receiving a refund or possibly paying an additional amount to allow the trip to run with low numbers.

**Waiver Release/Assumption of Risk/Health Statement:** You will be asked to complete these in advance or at the start of the trip. Please give them to your guide on the first day of your trip. Please provide us with emergency contact information at the time of registration. Forms are on-line at [acadiamountainguides.com/info/info.html](http://acadiamountainguides.com/info/info.html), or can be filled out by adults on the day of the climb.

**Travel In:** We will boot-pack, ski, or snowshoe to reach Abol Campground. Participants who have backcountry / off trail ski touring experience may use skis if approved by the guide.

**Tipping Your Guide:** Tipping is never expected but always greatly appreciated. Like many in service industries, instructors and guides supplement their income with tips generated from satisfied clients.

## PERSONAL CLOTHING CHECKLIST

Please dress in layers and it is very important that you pack as lightly and compactly as possible.

Footwear

**Wicking Base Layer** - recommended materials: Wool, Meco, Capilene, not cotton

- sock liners and / or vapor barrier sock
- liner gloves
- extra liner gloves
- long sleeve shirt
- pants

**Insulating Layer** - recommended material: any type of pile such as Polartec or wool, not cotton.

- winter hat covering your whole head
- balaclava or neck warmer
- medium weight jacket / vest
- expedition weight jacket (down or synthetic)
- heavy socks
- extra insulating socks
- warm mittens
- extra mittens
- warm gloves
- pants (pile lined soft shell with integrated gaiter –grommets useful)
- Insulating pants with side zips
- Down or synthetic fill booties for use in camp

**Shell Layer** - recommended materials: waterproof / breathable fabric such as Gore-tex, eVent, etc.

- Goggles & Sunglasses with side protection
- hooded jacket
- pants (full length side zips useful for venting)
- over mitts
- gaiters

## PERSONAL EQUIPMENT CHECKLIST

Any gear you may need can be purchased ahead of the course from our gear store - Alpenglow Adventure Sports - where you get a 20% off purchases made prior to the course and up to a week later as well as a 15% discount off MSRP for life!!! Purchases may be made in-store or online. Alpenglow will also price match any in-stock inventory if you find a better deal on the web for the same item. Simply send a link when you are ready to order to [shop@alpenglowgear.com](mailto:shop@alpenglowgear.com).

**PERSONAL CLOTHING:** Please dress in layers and it is very important that you pack as lightly and compactly as possible.

Footwear - Double mountaineering boots

**Wicking Base Layer** - recommended materials: Wool, Meco, Capilene, etc. not cotton

- Sock liners and/or vapor barrier sock liner gloves
- Extra liner gloves
- Long sleeve shirt
- Pants

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**Insulating Layer** - recommended material: any type of fleece such as Polartec or wool, not cotton.

- Winter hat covering your whole head
- Balaclava - full-face covering
- Medium weight jacket/vest
- Heavy wool or synthetic insulating socks
- Extra insulating socks
- Warm mittens with waterproof shell over mitts
- Extra inner mittens
- Warm ski like gloves
- Insulating pants with side zip or good quality softshell pants ideally with an integrated gaiter
- Down or synthetic fill booties for use in camp (optional)

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**Shell Layer** - recommended materials: waterproof/breathable fabric such as Gore-tex, eVent, etc.

- Goggles & Sunglasses with side protection
- Expedition weight hooded jacket (down or synthetic)
- Waterproof / breathable shell to large enough to cover Expedition jacket
- Shell pants (full-length side zips useful for venting)
- Gaiters (if no built-in pant gaiter)

**PERSONAL EQUIPMENT:** if you need rental gear be sure to reserve it well in advance!

- Lunch Snacks
- Personal lightweight Sol style bivvy sac or heavy-duty plastic bag
- Headlamp with spare batteries
- Unbreakable bowl, insulated cup, & spoon
- Personal toiletries, sunscreen, & lip balm
- 2 Insulated, wide-mouthed, water bottles or thermos
- Large, sturdy pack <5000ci / 80L (rentals available)
- 2-4 nylon stuff sacks to sort and organize gear
- Day pack approximately 30 – 35L capacity (rental available)
- -20-degree sleeping bag (rental available)
- EVA 1/2" foam full-length ground pad (rental available)
- EVA 1/4" foam pad 3/4 length or ThermaRest ground pad (rental available)
- Snowshoes in good condition (provided if necessary). Touring skis with guide approval
- Adjustable Ski poles (optional, provided if needed)
- Mountaineering ice axe (provided if needed)
- Crampons (provided if needed)
- Climbing helmet (provided if needed)
- Avalanche equipment (provided if needed)

## **Pre-trip Preparation and Resources**

Fitness is important on this trip. We recommend a regular routine of walking, running or cross country skiing in weeks leading up to the trip. Even better if you can do these activities with a light pack.

Recommended text:

NOLS Winter Camping. John Gookin. 2005 or similar book.

## OTHER FREQUENTLY ASKED QUESTIONS (FAQS)

### **Can the mountain be climbed in a single day?**

Yes, but only by an extremely fit team with a very early alpine start. This is about a 20 mile round trip day in winter conditions and we do not recommend it for most people. The two day trip is a significant challenge for most people.

**Can we get snowmobiled in to Abol Campground?** This service is available for an extra fee on privately arranged ascents. It is not available on open enrollment trips. Early morning snowmobile access does open the possibility of a one day ascent for private parties.

**Staying Connected:** Cell service is not usually available in this area - especially at camp. You may be able to send a picture from above treeline depending on your carrier.

**Emergency Communications:** AMG guides carry cell phones, VHF radios, and InReach devices. We have direct communication with park rangers if needed for an emergency.

**Medical Care:** While all AMG guides are certified Wilderness First Responders or above. Our Katahdin guides also carry injectable medications to treat pain and anxiety associated with traumatic injuries.

**What medications do the guides carry?** In addition to a well-stocked medical kit and the following medications are carried:

- Aspirin (cardiac and pain), Acetaminophen (pain and fever), Ibuprofen (pain, inflammation)
- Epinephrine (anaphylaxis)
- Ketamine (severe pain and sedation)
- Tranexamic Acid (severe internal hemorrhage control)
- Lidocaine 1% (anesthetic for wound cleaning)
- Ophthalmic antibiotic
- Immodium (diarrhea), Bismuth Salicylate, Zofran (GI upset)
- Nasal decongestant

**What if a group member is unable make the ascent?** All participants should understand that this is group trip - essentially a mini open enrollment expedition. We want to afford each participant the opportunity to reach the summit. However, if a person(s) is unable to continue it will be the guide's decision as to how to proceed with regard to the rest of the group. Per our commercial use agreement with Baxter State Park our options are:

1. Entire group turns around. This is more likely if there is a single guide on the trip.
2. Client(s) is left in safe place for maximum of 90 minutes and group returns to descend together. This is only an option in reasonable weather and when close to summit and communication can be maintained.
3. Client(s) descends with second guide while remainder of group continues toward summit. No more than six clients should be with a single guide.
4. Client(s) returns on own to camp and must wait at camp until group returns. This should only be utilized if well below tree line, trail is easily followed and each party has communication option.

5. If a client decides at the campground that they don't want to attempt the climb it will be the guide's decision as to whether client should or should not return to trailhead on their own.

**Trip Leader:** All overnight trip leaders are required by the state of Maine to be Registered Maine Guides. AMG guides are also trained in wilderness medicine, avalanche safety and technical mountaineering skills - skills that are not addressed in the Maine Guide program.



## ADDITIONAL WINTER CLOTHING AND EQUIPMENT INFORMATION

**Staying Warm:** Staying warm outdoors in the winter is primarily a function of the following factors: dressing properly, drinking plenty of fluids, eating well (and often), and having the proper equipment. It is important to eat and drink enough during the day and to make sure you have the proper clothing and equipment. If you get cold, you can further help to warm yourself by increasing your activity level (e.g., walking faster, skiing faster, jogging in place, etc.) You will also need to get plenty of rest each night. By keeping yourself well-fed, properly clothed, and well-rested, you will be able to enjoy a warm and comfortable trip.

**Dressing Properly:** A critical objective on winter trips is staying dry. Wet clothing can lead to hypothermia, a condition in which the core body temperature drops. You can stay dry by:

**Layering:** The layering system, allows you to adjust your level of insulation according to the various conditions you encounter. You can add or take off layers as needed in order to stay warm and dry. In colder weather, one of the most overlooked dangers is becoming wet through perspiration; you should shed a layer (or layers) before you start to sweat. In general, all clothing should be loose enough for uninhibited range of motion and not constrict blood flow. The layers are as follows:

- Inner Layer:** This is long underwear and briefs. In cool weather, the purpose of this layer is insulate and to wick (draw) moisture away from the body into the outer layers, keeping the your skin dry.
- Light Clothing Layer:** This layer is designed to absorb perspiration and provide light insulation. This includes shirts, pants, and sweaters. A couple of light- to midweight shirts or sweaters work better than one thick one (layering principle).
- Heavy Clothing Layer:** Over the shirts and/or sweaters should come a thicker insulating jacket or vest. The purpose of this layer is to provide additional warmth. The jacket or vest should be down, synthetic fill, or wool. Down should be avoided if there is a likelihood of getting wet! This layer is typically used around camp and is not used while active.
- Protective Layer:** This layer is designed to protect the person from wind, water, and rain. It consists of a lightweight, windproof, water-resistant (or waterproof) jacket and pair of pants. This layer may be attached to an outer insulating garment (e.g., a parka) and is generally made out of nylon or a nylon/cotton blend. Side zip vents are nice, and if looking for pants with inner gaiters, grommets are nice!

**General Tips To stay Dry:** Brush snow off your clothing immediately! Never allow snow to melt on your clothes.

If your inner layers do become damp, you should usually keep wearing them; your body heat will dry them fairly quickly. Take off enough layers so that you stop perspiring. Cotton clothing is not recommended as it loses its insulating capacity when wet and takes a long time to dry out.

### Special Adaptations for Persons with Poor Circulation

If you have poor circulation and/or mobility problems, you should be aware that we use a few items to assist you in keeping warm. Specific adaptations include portable, safe, water-activated body warmers, which work fairly well in keeping immobile parts warm. This system is augmented by frequent temperature checks of areas with no sensation.

## **Eye Protection**

Eye protection is essential above tree-line. Each person should have goggles that will provide full protection against blowing snow and sunlight. Glacier glasses may also be carried but do not afford complete protection. An extra set should be available in each party.

## **Footwear**

Whether you are skiing, snowshoeing or climbing, footwear should be designed for expedition use and offer the warmest possible rating. Temperatures often exceed twenty below zero for extended periods of time. Backcountry travellers should use military vapor barrier (mousse) boots or wool felt lined Sorel-like boots. Skiers should wear high quality double plastic boots. Many climbers choose plastic double boots as well. High end, insulated single leather boots may be adequate on warm, single day trips but should be avoided for extended trips. New high end lightweight synthetic double boots are now available let us know if you're in the market for boots and want some help. Boots should be fitted with sock layers and broken in prior to journeying in the park. An inner vapor barrier and outer gaiter or supergaiter is suggested to help keep the boot insulation dry and provide additional insulation. At night, feet should be dried and the insulating boot liners should be placed in a sleeping bag to dry.

## **Handwear**

Mittens keep your hands warmest, but they also limit your dexterity. You should bring a thin pair of wool or synthetic gloves or fingerless gloves in addition to big mittens (the gloves are worn underneath). The mittens should have an outer waterproof or water-resistant shell (or nylon shell). This shell can be separate or attached. Leather over mitts are ok, but make sure they are well oiled. Want the best of both worlds? Check out the split finger style like the BD Soloist Finger glove. Mittens are warmer than gloves and wind/water proof shells over these provide added protection. Spare pairs are always useful as are some wool gloves for using around the stove.

## **Clothing**

Clothing must be adequate for the most severe conditions and follow the general principles of layering to accommodate often widely fluctuating temperatures. A moisture transport and insulating layer should be worn next to the skin. One or more bulky insulating layers of synthetic fleece or wool should follow. An outer layer offering head to toe protection against wind and rain completes the system. Since most of us don't like to sit around camp during bouts of precipitation, this layer should be breathable to allow that sweat to evaporate. A large expedition weight down or synthetic parka with a good hood is essential for evenings in camp and insulated booties will make camp life more pleasant.

## **Headwear**

Since much of one's heat loss is through the head and neck, wool or synthetic balaclavas or a hat and neck warmer are recommended. Hats should fit under climbing helmets. Face protection against sunlight, wind, and snow is essential for above tree-line travel. We recommend bringing sunglasses with side protection as well as ski goggles.

## **Sleeping Gear**

A good night's sleep hinges upon being warm and dry. For those sleeping in tents, lean-tos, or snow shelters, an expedition quality sleeping bag is essential. Down or synthetic fiber filled bags should be rated to at least - 20F. Allow extra room in the sleeping bag for wearing layers of clothing, inner

boots, and storing a water bottle. A great deal of heat loss can be prevented by using one or more closed cell foam pads made of EVA underneath your sleeping bag. A combination of closed cell foam pad with an insulated inflatable pad are comfortable and common. Foam pads are provided if you do not have your own.

## **Food**

Food is the source of heat. A diet high in carbohydrates, along with some fats is recommended. Dry foods such as pasta, rice and powdered potatoes, cheeses and freeze dried meals are good choices because of their light weight. Liquids and canned goods should be minimized due to freezing. "GORP" (Good Ole Raisins and Peanuts) is good, high energy trail food. Granola based GORP is discouraged as it is often difficult to avoid spilling it and thus feeding wild animals unnatural foods. Plenty of drink mixes and instant soup mixes make refreshing hot drinks upon one's return to camp and help restore body liquids. Be sure to let us know if you have dietary restrictions before the trip.

## **Snowshoes or Skis**

A pair of snowshoes or skis per person must be taken along with tools and repair materials. Snowshoes should be sturdy with traction devices for steeper sections and side hill traversing. Only experienced skiers should attempt to ski and it is wise to practice skiing with a heavy pack and sled before arriving at the park. An alpine touring set up works well for those seeking a pure ski experience. Climbers normally opt for an approach ski set-up where the crampon compatible double boots fit into AT bindings. Climbing skins are very useful in some areas. Extendable trekking poles are also very useful with snowshoes. An extra pole and repair kit in each party often comes in handy. We normally boot-pack or snowshoe to approach the mountain on this trip. If you have your own approach skis feel free to bring them, but the guide will make the final call, as we need to keep the group together, and minimize risk to maximize our chance at the summit!

## **Sleds / Pulks**

Many people choose to carry some of their gear in a sled or pulk. Providing that your harness system works, a 30 - 40 lbs (13 - 18kg) load can be easily hauled. Lightweight plastic sleds such as those found in department stores are adequate and may be equipped with 7mm cord. These are provided.

## **Stoves**

Carry at least two stoves of proven efficiency that work in extreme cold along with spare parts. If you are using large pots for a group use a stove with a very stable base (such as an Optimus Hiker+ or the lighter weight MSR Dragonfly) to prevent accidental spills and burns. Before leaving home, take your stove apart and put it back together, then try it blindfolded. White gas is recommended as disposable gas cartridges are less environmentally friendly and sometimes difficult to obtain near the park and may not be pressurized enough for the extreme cold. Plan on 8 ounces (.30 liters) of white gas per person per day if you are staying outside. All full and empty fuel containers must be packed out. These are provided.

## **Tents**

Tents should be four season rated and capable of withstanding wind and heavy snow. A three person dome shaped tent with a rainfly works well for two people allowing extra room for gear and passing time if tent bound due to bad weather. A vestibule adds a welcome measure of convenience and comfort. The tent and fly - if not a single wall style - should have plenty of guy points and enough cords attached to use them all. An extra pole section or pole splint and repair materials are important. Always be prepared for a tent failure with a strategy to build a snow shelter. We will stay in covered lean-to shelters, no tents are necessary.

### **Ice Axes, Crampons & Trekking Poles**

For those attempting a summit one ice axe per person should be available along with crampons. An ice axe 70cm or taller is more practical for non-technical climbs such as the Saddle, Abol, Doubletop or Cathedral. Tape the grip area on the head of the ice axe with closed cell foam and duct tape to reduce cold conduction. Learning to properly use an axe to climb, descend, anchor and self-arrest is essential. Crampons should be adjusted to the boot and gaiter prior to leaving home. Extended trips should have spare parts. A trekking pole is not a substitution for an axe but is extremely useful for ascending snow covered trails and takes some pressure off the knees upon descent. These are provided.

### **Shovel**

A sturdy shovel is extremely useful to clear out lean-tos, remove snow from around tents, pile and hollow out snow shelters, and sculpt snow kitchens. Those travelling in avalanche terrain should always have one. These are provided if necessary.

### **Avalanche Transceiver (beacon)**

Avalanche transceivers should be worn by all individuals venturing into possible avalanche terrain. A beacon is irrelevant if it is in your pack or if party members are not familiar with search strategies. A beacon must be worn close to the chest and turned on. A beacon is no substitute for avalanche knowledge and cannot prevent a disaster. These are provided if necessary.

### **Avalanche Probe**

Avalanche probes should be carried by all individuals venturing into possible avalanche terrain. Choose a probe length suitable for the snowpack you are travelling in. These are provided if necessary.

## GENERAL CLOTHING MATERIAL INFORMATION

**Wool:** Because of its hollow fiber construction (sheep hair), wool provides excellent insulation even when it is wet. It also dries out quickly. The curly fibers also trap air in tiny pockets. Wool has little wicking action and raw wool has oils that repel water. Repeated dry cleaning will remove these oils. Wool also burns slowly and does not melt.

**Wool Blends:** Sometimes nylon and other synthetics are added to wool to give it longer wear life, maintain shape, etc. Look at the percentage of wool as given on the tag--it should be higher than 35% wool. The higher the percentage of wool, the better. We like Rab MeCo® fabrics for their quick drying, wicking, and anti-odor properties.

**Silk:** Silk is the lightest and softest natural fiber insulator. Like wool, it is a hollow fiber. Although very comfortable, its major drawback is cost.

**Synthetics:** Synthetic materials are used both as fill material for sleeping bags and jackets and woven into fabric for clothing. These fabrics include polypropylene; polyesters and pile. Sleeping bags and jackets are typically made from fabrics such as PrimaLoft®, Polarguard® while pants, sweaters, hats, mittens, innerwear and socks are made from Pimaloft®, Polartec®, Capilene®, Thermal Q Elite®, and Cool Max®. Like wool, these materials provide insulation even when wet; however, they dry more quickly than wool and are not as scratchy. Polypropylene has one of the highest insulating powers and even floats. Many synthetics are also very good at moisture transport although this may not be desirable in every climate. Finally, most current fabrics are treated to resist bacteria and decrease odor retention. Many people prefer to bring these synthetic materials for those reasons. New synthetic materials are being developed constantly. This list is not exhaustive; a reputable outdoor equipment retailer should be able to provide you with information concerning current state of the art materials. Synthetics burn and melt readily.

**Down:** Down is used as a fill material for sleeping bags, jackets, and vests. It has the greatest insulative value per ounce of any natural or synthetic fabric. It is extremely lightweight and compactable, but it loses its ability to keep you warm when it gets wet. Most manufacturers are moving towards using the treated down, but this worth checking out. Rab uses Nikwax's® Hydrophobic Down, or Mountain Hardware uses DownTek. Gary Peterson, owner of Western Mountaineering does not use treated down. He is "confident that our down is very water resistant without any treatment...it is pure and has very little handling or processing in order to retain much of the original fat/oil that would have protected the geese in a wild and natural waterfowl habitat." If you bring down clothing or equipment, you must take extreme care to keep it dry at all times.

**Nylon:** Nylon is a synthetic material used in lightweight shells and in raingear. It is also used in conjunction with other materials (e.g., wool or cotton) as a reinforcing fiber. It is lightweight and dries quickly when wet. We recommend that your rain suit be made of coated nylon (avoid vinyl).

**Waterproof/breathable laminates:** Gore-Tex® and other similar materials (such as eVent®) are used as shell materials in outerwear. These materials are relatively waterproof, windproof, and breathable (i.e., air and vapor molecules can pass through the fabric from the inside, but cannot come in from the outside). To be most effective, there must be a strong enough humidity and temperature gradient between the body surface and the atmosphere to allow vapor movement but not so high as

to turn the vapor to liquid or ice before escaping. These materials tend to be expensive, but high quality garments typically work very well.

**Cotton:** Cotton is a comfortable, breathable natural fabric. Light colored cotton is excellent for hot, dry situations due to its breathability and water retention. When damp or wet, cotton provides little or no insulation, and it can take a long time to dry. This is because the fibers are completely saturated and there are no air-filled spaces. In cold weather, cotton shirts and pants should not be worn next to your skin, as they will transfer heat away from your body. Cotton burns easily but does not melt.

**Leather:** Leather is used in shoes, boots, and gloves. It cuts the wind well and is very durable; however, it is heavy and not very good for insulation. When wet, leather is very hard to dry out. Make sure that all leather outerwear is waterproofed with Sno Seal™ or some other wax or oil. Leather should never be dried by a fire, as this will remove the protective oils and possibly burn.