

The lofty volcanic terrain of the Pacific Northwest provides wonderful opportunities for backcountry skiing/boarding all year round. From the deep powder of winter to the sweet corn of summer, the mountain environment presents an exciting challenge to the skier/boarder willing to put his/her skills to the test. Mountain travel is not without its dangers though, and the responsibility for the safety and success of any trip depends upon YOU and the decisions you make. You must be prepared, responsible and self-reliant at all times. The risks inherent in backcountry skiing/snowboarding can be minimized but never eliminated.

The goal of this brochure is to make you aware of the many of the conditions you will face and how to prepare yourself for your adventures on the snow. Portland Mountain Rescue, the local Mountain Rescue Association-member search and rescue team, in cooperation with the Mazamas, is pleased to be able to provide this information to the skiing/boarding community. For additional information on mountain travel and rescue, please feel free to access our websites at www.pmr.org and www.mazamas.org.



WHAT TO EXPECT:

The weather and snow conditions of any ski climb can change drastically in a matter of minutes. You can expect the following:

Snow Conditions – Conditions can range from boilerplate ice to mashed potatoes, fluffy powder, breakable crud and corn.

Avalanche Danger – Three main factors contribute to increased avalanche hazard – terrain, snowpack and weather (both past and present). Be aware of constantly changing conditions in the backcountry and take a certified avalanche class to increase your avalanche awareness. Remember that most avalanche victims triggered the very avalanche that caught them.

Weather – Be prepared for the worst – whiteouts, rain, snow, ice, wind, cold and heat.

Terrain – be aware of steep slopes, cornices, cliffs, rocks, glaciers, streams, gullies, rock and ice fall, trees and tree wells.

Physical Conditioning – The physical demands of backcountry skiing/boarding are extremely challenging. You MUST be in excellent physical condition (stamina, endurance and strength). KNOW your limits and don't put your group in danger by going on a trip that is beyond your conditioning.

Mental Conditioning – Backcountry travel can quickly become demanding and stressful. The ability to make quality decisions in adverse conditions is as essential as any piece of equipment..

Group Dynamics – When traveling in groups, understand and respect the limits of others. Everyone in the group should be prepared to make the appropriate choices regarding current and future group safety.

BEFORE YOU LEAVE:

Study maps and get advice from people knowledgeable about the area. **Know your route!**

Check the current **weather forecast**.

Check current **avalanche reports**- carefully consider the weather, terrain and snowpack of the area you will be traveling in.

Test your transceiver and make sure that all the units in your party are compatible.

Obtain the appropriate **permits** needed for traveling in that area.

Tell someone at home your destination and route, time due back, members of the party, the equipment you are taking, and mobile phone number. In the case of an emergency, instruct them that if you are overdue to call 911 to initiate a search or rescue.

WHAT TO TAKE:

Pack – type depends on your outing (day only or overnight). Comfort and function are necessary. Carry all items you can't afford to lose inside your pack.

Compass, GPS Unit, Inclinator, Signal Mirror, Watch, Altimeter, and Topographic Map – plus the skill to use them under stress.

Matches, Fire Starter – in a plastic waterproof bag.

Candle – 24 hr. life.

Extra Clothing, Gloves & Socks – socks can double as mittens in an emergency.

Emergency Food and Water – high energy snacks (trail mixes, energy bars, etc). Plan at least 2 –3 quarts of water per day. Backcountry water sources can be contaminated with Giardia, Cryptosporidium and other infectious contaminants. Purification systems are highly recommended (iodine, filtration system).

Signaling Whistle – a very loud rescue type that can't freeze up (no ball).

Head Lamp – waterproof with headband, extra bulb and extra batteries

First Aid Kit – plus skill in mountaineering first aid.

Sun Protection – 100% UV blocking sunglasses, goggles and baseball-style cap with a neck guard plus SPF 30 or greater sunscreen and lip balm.

Tarp – plasticized nylon sheet, space blanket or two heavy duty plastic garbage bags.

Ground Insulation – closed cell foam pad and/or Thermarest-type pad.

Condition-Dependent “Essentials”

Helmet – UIAA certified alpine climbing model type.

Crampons – make sure that they work with your boots!

Ice Axe – lightweight alpine model.

Harness and Carabiner – alpine mountaineering type harness and oval locking carabiner.

Climbing Rope – dry-finish dynamic climbing rope, plus the skills to use it properly.

Bivouac (bivi) Sack — Gortex® (or similar type fabric) model.

Sleeping Bag – Gortex® (or similar type fabric) shell with synthetic liner insulation.

Avalanche Transceiver (beacon) – Each person in the group must carry a 457 kHz single frequency unit and have the skill to use it.

Avalanche Probe – Each person in the group must carry a lightweight, collapsible probe.

Snow Shovel – Each person in the group should have an sturdy shovel that is readily accessible.

Utility Cord – 25 ft. of 4 mm kernmantle cord

Duct Tape – small roll for emergency repairs

Repair Kit – multipurpose pocket tool, spare ski pole tip, pole basket, hoseclamps, binding parts, wire, ski and skin wax.

Climbing Skins for skis or split boards, **Snowshoes** for those without a split board – for uphill travel and in some cases, downhill travel in deep and fresh snow.

Telescoping Ski Poles – for adjusting to conditions in backcountry travel. Probe conversion models and self-arrest grips are optional – *though these are valuable aids, they have serious limitations. Do not rely on them to save your life.*

Mobile Phone – optional. Know its limits, and if used for medical/emergency reasons, understand the consequences of calling for a rescue. Self-rescue is your first and best option.

Warning: Some aspects of ski mountaineering and related activities, including but not limited to technical rock, ice and snow climbing, are potentially hazardous and dangerous. Any person participating in such activities is personally responsible for learning the proper technique involved, and assumes all risks and accepts full and complete responsibility for any and all damages and injury of any kind, including death. Books and brochures like this one can help, but they are no substitute for personal instruction by a qualified person well versed in all appropriate safety techniques.

Stove, Fuel, & Pot – lightweight alpine camping type, that uses white gas fuel recommended..

Mt. Hood Locator Unit – applicable for Mt. Hood climbs.



What to wear:

Layering is key- know how to stay warm and dry!

Wind/rain resistant pants and parka and with hood (Gore-tex or similar breathable fabric recommended)

Wool or fleece pants, synthetic long underwear, synthetic shirt, socks, hat and gloves in insulating layers. NO COTTON

Wind/rain resistant overmitts

Glacier sunglasses or goggles

Sunscreen and lip protection

Appropriate ski or snowboard boots previously fitted to bindings and crampons



What to do in the case of:

Avalanche – A buried person must be rescued immediately. A speedy rescue provides the best chance for survival, so you are his/her best hope. Do not go for help. Mark the place where you last saw the victim and begin your transceiver search here AFTER making a quick visual search for items and partially buried victims. If the victim is not wearing a transceiver, probe the snow downslope in the most likely areas with an avalanche probe, ski, or ski pole. When a victim is found, clear snow from airway and administer first aid.

Whiteout – Zero visibility due to blowing snow or ground level clouds causes disorientation. Learn how to use and trust your map and compass skills.

Frostbite – Symptoms are loss of feeling and white, dead-looking skin. Stay warm, move around, and seek medical attention as soon as possible. Do not attempt to thaw frostbite on the mountain if there is any chance for refreezing.

Hypothermia – Symptoms are uncontrolled shivering, slurred speech, memory lapses, drowsiness, and a lurching walk. It results from lowering of the body's inner temperature caused by exposure to cold, wind, wet and overexertion. Be able to recognize the symptoms of hypothermia in others. Keep the patient dry, warm and out of the wind, giving warm fluids unless internally injured. Death can result if left untreated.

Altitude Sickness – Symptoms include headache, breathlessness and faintness caused by lack of oxygen in the blood. Symptoms can be debilitating. Immediate descent is the only treatment.

Surviving a Night Out – If you become lost, stay put! Try to stay warm by moving. Find a treewell or build a snowcave in which to rest. If available, use your bivi sack, sleeping bag and pad to keep warm. Hydrate with warm fluids if you have a stove available. Eat food for energy. Do NOT take alcohol or drugs. During the daytime, make yourself "BIG" or visible by signage or bright colors in the open, above ground.

Avalanche and Weather Forecast

Phone numbers:

Mt. Hood: 503-808-2400: **Washington:** 206-526-6677

Avalanche Websites:

Northwest Weather and Avalanche Center

www.nwac.noaa.gov

Westwide Avalanche Network

www.avalanche.org

Weather Websites:

National Weather Service

www.wrh.noaa.gov/Portland/

www.wrh.noaa.gov/Seattle/

Photos courtesy of Dan Sherwood.



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Safety Essentials

Ski & Snowboard Mountaineering

A guide to traveling safely in alpine terrain

