

Health and Safety Plan

Winter Backcountry Travel
Snowmobile Safety

Mountain Hydrology Research Group

University of California, Merced
Sierra Nevada Research Institute

1.0 Ski and Snowshoe

Winter travel to field sites may include traveling on ski or snowshoes. There are inherent risks of travel during the winter, so extra precautions should be taken.

1.1 Individual Responsibilities

It is the individual employee responsibility to become adequately trained in use of skis or snowshoes. Different types of equipment are available and require specialized skills. These skills can be developed through classes taken at ski resorts and through outdoors gear suppliers. If you have any questions about appropriate gear/training please speak with your supervisor.

1.2 Equipment Maintenance Responsibilities

It is the individual employee responsibility to maintain personal and group equipment. Do to the extreme weather and abuse that ski and snowshoe equipment encounters, the equipment will eventually break or need repair. If using group equipment, tell your supervisor about the equipment failure. If a repair can be made, make it. If replacement gear needs to be ordered, order it.

1.3 Job Hazard Abatement

❖ Hypothermia and Frostbite:

Wear adequate clothing. Always carry a radio and a spare battery.

Either wear or have with you water proof pants, warm hats, gloves, and a warm jacket. Wear footwear that keeps your feet reasonably warm and dry. Be conscious of you and your buddies condition as far as cold is concerned. Look for white or discolored splotches on face or hands that indicate frostbite. Be conscious of the beginning of hypothermia (Shivering, slurring of speech, slowed reactions, disorientation). Make sure to stop and take the time to warm up before you reach the initial stages of hypothermia. The National Forest maintains storage sheds for emergencies during the winter; know which sheds in the area contain the emergency food and sleeping bags. Take goggles or sunglasses and WEAR them to prevent snow-blindness and protect eyes. Other recommended winter field equipment includes: clothing including parka, wind pants, gortex jacket and gaiters, 1-2 quarts of water, extra food, bivouac shelter or tarp, extra socks.

❖ Terrain Hazards:

Do not go on terrain above your skill level. Be cautious of buried rocks, sticks and other obstacles. Remember that snowmobiles may be in the area. Watch for snowmobiles and don't assume that the rider will see you. Have good, dependable equipment. Know the snow conditions and ski in control. **Ski in groups** of two or more unless you follow the **Single Person Ski Protocols** exactly (see below).

❖ Poor Visibility and Hidden Obstacles:

Be trained and skilled at skiing. Use good winter travel sense. Stay on established routes. If leaving established route carry a compass and map and know how to use them. If visibility is poor, cancel your outing. If already out, wait until it clears or improves and/or proceed very cautiously. Travel at speeds that allow you to slow and stop.

❖ Avalanche Hazard:

Be knowledgeable on avalanche hazards and conditions (see the **Avalanche Safety** section below). The most likely time for an avalanche is during and approx. 48 hours after a storm. Wet-snow avalanche hazard increases greatly after 12 noon. Do not go into areas that have avalanche potential if weather is changing and/or during a snowstorm. Pre-plan your route, have knowledge of local terrain, avalanche paths, and snow stability. Avoid travel across avalanche zones and pay extra attention to potential avalanche run-out zones. When in avalanche prone areas it is **required** to wear avalanche beacons and carry probe poles and snow shovels for backcountry travel. If you are unsure if the area you are working is avalanche prone, speak with your supervisor.

1.4 Single Person Ski Protocol

Travel during winter conditions is hazardous and travel alone is inherently dangerous! While traveling alone you must still use the "buddy-system" by keeping communications with your **Contact Person**. These protocols are set up assuming that sometime in the next decade someone will brake or severely sprain an ankle, knee, hip or leg and that that person will lie where they fall until help arrives. The shortest expected

response time for assistance is 90 minutes and could be up to 6 hours. By following these protocols you are trying to avoid severe hypothermia being added to their injuries. These protocols will be of limited help if someone gets a concussion or breaks their back. Do not engage in any activity that has even a remote possibility of the above two injuries. Also, do not ski fast!!

Before a final decision to ski alone, the **weather must be checked** after 4 PM the day prior to the ski. Weather conditions can be checked using the internet. Talk to your supervisor for information on area specific forecasts. Adjust weather conditions for specific locations. Remember, the elevation of your research site may be several thousand feet higher than the weather station forecast location. Example: elevation increases of 1000 ft should be about 4 °F colder. Hearsay from someone else in the office does not count as checking on the weather.

- ❖ There must be less than 30% chance of precipitation.
- ❖ Forecasted daytime high temperatures must be higher than 36 °F at the closest weather station.
- ❖ There must not be a high wind advisory, or winter storm warning predicted for the next 24 hours.
- ❖ A **Contact Person** must agree to monitor their radio/phone during the time you are in the field.

Activities not allowed as a single skier:

- ❖ Taking a route that deviates from the route written down for **Contact Person**
- ❖ Crossing perennial streams when not on a road/trail crossing
- ❖ Doing anything that involves putting any part of your body in the water for more than 5 seconds or straddling the creek
- ❖ Reaching down over a high snow bank into a stream
- ❖ Troubleshooting solar system or 12 volt batteries

You will start skiing back to the vehicles if any of these things happen:

- ❖ Your first radio/phone battery goes dead
- ❖ You have felt cold for more than one hour
- ❖ Several clothing items are soaked (example: both socks and jacket or both gloves)
- ❖ It starts snowing
- ❖ You see or hear two large branches fall off a tree or the wind is making you uncomfortable

You must be back at the vehicle by 5:30 PM or 1 ½ hours before sunset, whichever is earlier.

1.5 Personal Protective Equipment

You must at all times wear water-resistant pants and a non-cotton under-layer. Hopefully this clothing will allow you to sit on the snow, until a rescue arrives. These rules do not change because it is sunny and 70°F. As long as you are on snow the clothing rule is intact.

It is highly recommended that you carry:

- ❖ First-aid kit
- ❖ Matches
- ❖ Heat packets
- ❖ Sunglasses or ski-goggles
- ❖ Sun-block or sunscreen
- ❖ A shade hat: non-cotton ball cap, full brim, etc.
- ❖ Snow shovel (**Required for everyone in avalanche prone terrain**)
- ❖ Avalanche probe (**Required for everyone in avalanche prone terrain**)
- ❖ Avalanche Transceiver "Beacon" (**Required for everyone in avalanche prone terrain**)

The following items must be in your backpack or on you:

- ❖ Radio/phone, spare battery if you have one
- ❖ Warm, water resistant jacket
- ❖ Warm hat
- ❖ Spare gloves or mittens
- ❖ Drinking water
- ❖ Energy bar or emergency food
- ❖ Flashlight or Headlamp

2.0 Winter Travel Communication Protocol

2.1 Local Resources and Contact Person(s)

Local resources (people near/at your research area) are available in many locations. These people may include: research partners (PSW, National Park Service, private companies, etc), local agencies (police, search and rescue, CalFire, etc), and people in the community (friends, relatives, etc). These people can be contacted in case of emergencies and will have a much faster response time than a rescue initiated from Campus. Ask your supervisor about potential contacts in the area, and make sure that your **Contact Person** has the appropriate information.

Contact Persons should be set prior to departing for the research site. Your **Contact Person** may be your supervisor or part of your research group, a research partner (such as a PSW or NPS employee), a **Local Resource**, or a close family member. If the **Contact Person** is not your supervisor, let your supervisor know the name and information of your **Contact Person**. This person will be responsible for your life, make sure that they have everything that they need:

- ❖ An itinerary of sites you are visiting
- ❖ A map and knowledge of the area
- ❖ Familiarity with the Safety Protocol
- ❖ Contact information and ability to initialize a rescue!

2.2 When Traveling as a Pair or Group:

Traveling as a group or with another person is much safer than travel alone. If you have a Forest Service Radio, use the standard radio procedure during the workday. After the workday is over, call your **Contact Person** to check in. If you are limited to a cellular phone or a land-line, establish reasonable times to check in with your **Contact Person** at the end of the day.

2.3 Solo Travel with a Cellular Phone:

Traveling alone without a Forest Service radio or a comparable long-range communication device during the winter is not advised. Cellular coverage at most remote field sites is questionable. Know your terrain and the areas that you have cellular coverage. Make these locations waypoints to **check-in** with your **contact person**. If you are carrying a satellite phone: check in according to the protocol established for Forest Service Radio use, in the following section **1.5.3**. If traveling alone with only a cellular phone:

You will call your Contact Person:

- ❖ Before you leave cellular coverage
- ❖ If coverage is available in the entire area, follow the Forest Service Radio Protocol
- ❖ If hotspots of coverage are identified in the research area, use these to check in on a regular basis:
 - Traveling between sites
 - Arriving/departing from a site
 - Skiing out of the research area
- ❖ When you regain cellular coverage after returning to the vehicle

At the end of the day:

- ❖ You will **call** the **Contact Person** when you arrive on Campus, Home, or the Safe Overnight Location, saying the workday is done.
- ❖ Calling the **Contact Person** at home is acceptable.
- ❖ Travel to and from the research site by automobile is the most dangerous part of the job, so don't forget to call when the day is over

The Contact Person will:

- ❖ Have an itinerary of the sites the person plans to visit and in what order
- ❖ Keep track of each time the skier calls in and his/her location
- ❖ Know the standard routes to the field sites, or have a map of them (not drawn by hand!!)
- ❖ Be able to initiate a rescue and contact **Local Resources**
- ❖ Initiate a rescue if there has not been contact for 4 hours. If a skier is not at the car at sunset, a rescue will be initiated unless continuous radio contact is established.

2.4 Solo Travel with Forest Service Radio:

If skiing alone with a Forest Service radio you must have adequate training on radio use. Contact your supervisor to get this training. Your contact person can be part of your lab group, a partner with the local Forest Service branch or Research Forest, or a local resource that is nearby.

You will never go more than 3 hours without radioing in to your Contact Person. If a person goes 4 hours without calling in, a **rescue will be initiated.**

The person skiing will radio when:

- ❖ Leaving the vehicle
- ❖ Arriving at the first site
- ❖ Changing sites
- ❖ Starting the ski out
- ❖ You have arrived back at the vehicle and know that it starts

At the end of the day:

- ❖ You will **call** the **Contact Person** when you arrive on Campus, Home, or the Safe Overnight Location, saying the workday is done.
- ❖ Calling the **Contact Person** at home is acceptable.
- ❖ Travel to and from the research site by automobile is the most dangerous part of the job, so don't forget to call when the day is over.

The Contact Person will:

- ❖ Have an itinerary of the sites the person plans to visit and in what order
- ❖ Keep track of each time the skier calls in and his/her location
- ❖ Know the standard routes to the field sites, or have a map of them (not drawn by hand!!)
- ❖ Be able to initiate a rescue and contact **Local Resources**
- ❖ Go on alert after 3 hours and call The Forest Dispatch to see if the skier checked in with them.
 - Sierra NF Dispatch: 559-291-1877
 - Tahoe NF Dispatch:
- ❖ Initiate a rescue if there has not been contact for 4 hours. If a skier is not at the car at sunset, a rescue will be initiated unless continuous radio contact is established.

3.0 Avalanche Safety

The best way to avoid avalanches is to be informed, travel with appropriate gear, and avoid high risk areas. Check with your supervisor to learn more about avalanche training, beacon use/training, or general safety concerns. Check www.avalanche.org for more information. Before you enter avalanche prone terrain check the latest forecast. The avalanche forecast is available online or by phone, **check it daily**. There are times to stay out of the forest. Heed the warning signs. There are two avalanche forecasting centers in the Sierra Nevada:

- ❖ Sierra Avalanche Center (SAC)
 - For areas north of Sonora Pass
 - www.sierraavalanchecenter.org 530-587-3558
- ❖ Eastern Sierra Avalanche Center
 - For the eastern Sierra from Sonora Pass to the south of Bishop
 - www.esavalanche.org 760-924-5510

If traveling in avalanche prone terrain, always travel with a partner. Have a rescue plan before you begin. Answer the questions: What will you do if you trigger an avalanche? How will you respond if you are the rescuer? Rescue gear is only useful if **everybody** has a set. Make sure that each group member is carrying all of the appropriate avalanche gear. If your partner does not have the appropriate gear/training, then you are the one at risk!

Pack Rescue Gear:

- ❖ Wear an avalanche beacon
 - Know how to use it
 - Check compatibility with partners beacon
 - Carry extra batteries
- ❖ Snow shovel
- ❖ Avalanche probe
- ❖ Cellular phone and/or Radio
 - Emergency numbers
 - GPS device if possible

3.1 Travel in Avalanche Terrain

When traveling in avalanche prone areas, use the terrain to your advantage.

- ❖ Follow ridges, thick trees, and slopes with safer consequences.
- ❖ Avoid traps: gullies, creek beds, and depressions
- ❖ Don't stop at the bottom of steep slopes
- ❖ Watch for evidence of previous avalanches
- ❖ Avoid steep slopes
 - Any slope steeper than 25° can avalanche
 - Slopes 30° to 45° are more prone to slide
- ❖ **Smooth, steep, wind loaded slopes can be dangerous**
 - Check stability before attempting these slopes
 - If on these slopes, ski/ride one person at a time
 - ❖ Never ride above your partner
 - ❖ If a snowmobile gets stuck, don't send help the extra weight on the slope may trigger an avalanche.
 - ❖ Always watch your partner cross the slope
- ❖ Old tracks do not mean a steep slope is safe
 - Always check for instability
- ❖ Avoid traveling on Cornices
 - Make sure the snow trails you are on have solid ground underneath.
 - Do not travel on slopes that are overhung by cornice.

Periodically check for clues to an unstable snow pack. These clues include:

- ❖ Recent avalanches
- ❖ New snow
- ❖ Wind loading
- ❖ Rain
- ❖ Whumping noise
- ❖ Hollow sounding snow
- ❖ Shooting cracks
- ❖ Signs of rapid or intense warming (roller balls)

3.2 Avalanche Prevention Strategies

When you are in the same research area day after day, pay attention to the layers of snow as they build up. Notice sugar and corn snow layers. These form the "rotten layers" of snow that cause avalanches. Notice when weather warms and snow becomes wet on the top of powder snow. The weight of wet snow will push light powder snow off of the mountainside. How can you tell when snowstorm conditions change? As snow becomes wetter (heavier), it begins to fall out of tree branches, which can initiate a snow slide. To check the snow conditions in your area, dig a 4-5 foot deep pit and check the constitution of the layers of snow.

3.3 Escaping an Avalanche

Attempt to ski or ride out to the side of the avalanche onto stable snow. If you become caught in an avalanche, try to:

- ❖ Push yourself away from your snowmobile (if you have one)
- ❖ Stay on the surface of the avalanche by using a swimming motion
- ❖ Work yourself toward the side of the avalanche
- ❖ Grab trees, rocks, etc., to avoid being tumbled down slope
- ❖ Keep your mouth closed and your teeth clenched

When the avalanche slows, attempt to:

- ❖ Push yourself toward the surface
- ❖ Make an air pocket in front of your face using one arm
- ❖ Push the other arm toward the surface

When the avalanche stops:

- ❖ Stay calm
- ❖ Breathe deeply
- ❖ Relax
- ❖ If you can move, determine which direction is up and which is down (try spitting)
- ❖ Dig slowly to conserve your use of available air
- ❖ Shout only when a searcher is near

4.0 Snowmobile Safety

Use of snowmobiles is a dangerous activity that requires specialized skills and knowledge. Only individuals with the appropriate knowledge and training certifications will be allowed to operate University or loaned snowmobiles. Copies of certification need to be on file with your supervisor and with U.C. Merced Facilities. Certification needs to be renewed every 3 years. **When operating a snowmobile an avalanche beacon must be worn at all times.** Training must be completed annually. The following information is condensed from the Tahoe National Forest Snowmobile Guide. For more complete information and information on basic riding techniques please refer to the original document on file in the lab, with U.C. Merced Facilities and the office of Environmental Health & Safety.

4.1 Snowmobile Operator Responsibility

The snowmobile rider is responsible for: **maintaining the machine, inspecting safety equipment** (probes, transceivers, and helmets), **maintaining the trailer**, and **keeping required certifications current.** Before leaving the snowmobile storage site you must inspect the snowmobiles for any potential safety or maintenance issues. Check the track, skis, handlebars, chassis, breaks, shocks, drive belt, fuel level, and oil level. Make sure that you have the required personal protective equipment. Check your helmet for signs of material fatigue that could lead to failure. Make sure that trailer is maintained and that snowmobiles are secured for travel. Make sure that you snowmobile certification is recent (every 3 years). Report any maintenance or safety issues to your supervisor. Check the **Snowmobile Maintenance Checklist** at the end of this document

At the end of the day: Fill the gas and oil

4.2 Transporting Snowmobiles

The snowmobile trailer must be properly maintained, with running taillights, properly inflated tires, proper sized tire chains, spare tire, and secondary attachment chains/cables attached to the vehicle. Make sure

that snowmobiles are properly secured and that the trailer "tip" bed is locked and secure. Drive slow!! Avoid travel in questionable weather.

4.3 Personal Protective Equipment

You must at all times wear water-resistant pants and a non-cotton under-layer. Follow the PPE guidelines in **section 1.5**. In addition to the standard winter travel PPE, all snowmobile operators must have the following on or with them:

- ❖ DOT approved snowmobile helmet
- ❖ Face shield or goggles
- ❖ Snowmobile Clothing
- ❖ Over-the-ankle boots (insulated snow boots)
- ❖ Gloves or mittens
- ❖ Flashlight
- ❖ Matches or cigarette lighter
- ❖ Avalanche Beacon
- ❖ Avalanche probe
- ❖ Snow shovel
- ❖ Snowshoes or skis

Check the **Snowmobile Gear Checklist** at the end of this document.

4.4 Snowmobile Breakdown and Survival

If you experience operational problems or breakdown, stay with your sled and stay on the trail. You have packed your emergency equipment that will help you survive if stranded. Know how to build a snow cave for protection. Know the fuel range of your machine. Always make sure that you have the essential tool kit:

- ❖ Spare starter cord
- ❖ Screwdrivers
- ❖ Pliers
- ❖ Wrenches
- ❖ Rags
- ❖ Electrical or Duct tape
- ❖ Spark plugs
- ❖ Spark plug socket
- ❖ Drive belt (spare)
- ❖ Wire or "P" cord
- ❖ Map and compass (and know how to use them)

If a snowmobile stops running, check the fuel level first. You may have just run out of gas. Check the spark plugs, drive belt, and oil level. Become familiar with your machine and know its range. Become familiar with your snowmobile-its features and potential problems. If the track will not move, stop your machine and inspect it. Tracks tend to pack up with snow and freeze, so check for ice buildup. It is possible to **tow a broken snowmobile:**

- ❖ Remove the drive belt
- ❖ Get rid of any excess weight
- ❖ Hook rope to both spindles (the part the skis hook onto) then to the back of the other sled
- ❖ Move out of the way before the towing sled begins pulling!

When all else fails it may be necessary to prepare for a survival situation. This is when you will be happy for bringing everything on the gear checklist. The following list has items that will be useful in a survival situation, and includes the use of snowmobile parts to aid in survival:

- ❖ Aluminum foil (use as a pot to melt snow)
- ❖ Candles
- ❖ Flashlight (with extra batteries)
- ❖ Extra key for the snowmobile
- ❖ First-aid kit
- ❖ 55-gallon plastic garbage bag
- ❖ Pocket knife
- ❖ Nylon tow rope (20m)
- ❖ Map and Compass
- ❖ Waterproof matches
- ❖ Small cigarette lighter
- ❖ High-energy food/food bars
- ❖ Flares

- ❖ Axe or saw
- ❖ Space blanket
- ❖ Mirror/reflective material
- ❖ Avalanche Transceiver/probe
- ❖ Shovel
- ❖ Snowshoes or Skis
- ❖ Drive belt cover:
 - can be used to melt snow and function as a cup
 - can serve as a shovel
- ❖ Breather hose:
 - take gas out of the gas tank to help start a fire
 - A container to carry a small amount of gas. Cut plugs from a branch to plug the ends.
- ❖ Snowmobile hood:
 - Sled to carry your survival gear (use the spare starter cord as a tow strap)
 - Shelter
- ❖ Starter cord:
 - Spare rope
 - Pull the starter rope all the way out, when it is fully extended cut it off.
- ❖ Spark plug:
 - Fire starter. Try to start a fire using toilet paper dipped in gas. Ignite it with your spark plug. To assist in igniting the toilet paper, first heat the gas-soaked toilet paper on the warm exhaust system.
- ❖ Rear flap:
 - Snowshoes when cut in half, even better with seat foam for increased floatation
- ❖ Seat Cover Foam:
 - Insulation from the ground
- ❖ Snowmobile skis:
 - Take off all hardware and strap them to your feet
 - Cut a pole to help you move through the snow

4.5 Job Hazard Analysis- Snowmobile

This section contains information about the Tasks, Hazards and Abatement actions for using a snowmobile on the job.

Snowmobile Job Hazard Analysis

Task	Hazard	Abatement Actions
Before you leave the office	Storms, stranded situation	Know the current weather and avalanche forecast. Use the sign-out board for vehicles and snowmobiles. Never ride alone. Know and recognize potential avalanche areas. Set up your Contact Person with all of the required information that they need.
Pre-Ride Snowmobile Check	Stranded situation	<u>Extra drive belt & extra spark plugs.</u> Tool kit, first aid kit, shovel, tow rope/strap, full tank of gas and proper oil for snowmobile. Make a visual safety inspection of the snowmobile. Make sure the track is free to rotate by rocking the snowmobile from side to side. Insure the kill switch works properly.
Dress and PPE	Exposure, Frostbite, hearing loss, Death	Be prepared for the worst possible conditions. Dress in layers, use waterproof outer gear. Gloves, warm hat, balaclava. Bring extra food, <u>water</u> , and clothing. Insulated or double boots. Snowshoes or skis. Helmet that fits comfortably. Always wear an avalanche beacon and carry collapsible or sectional avalanche probe. Cellular phone and Radio (if available). Map and Compass. Rope and webbing. Space blanket or other shelter. Flares. Sun protection, lip balm, sunglasses or goggles. Hand axe or small saw and shovel. Flashlight or headlamp with extra batteries. Earplugs.
Travel to staging area, Unloading/loading equipment	Back injuries, Towing trailers over icy roads, slipping on ice	Use trailer jack to assist lifting while attaching trailer to vehicle. If chain controls are on, all vehicles (including 4 wheel-drive) must be chained while towing a trailer. The trailer also needs to be chained if it has brakes. Watch for snow. Use proper lifting techniques (lift with legs) to tip trailer up. Drive snowmobiles onto/off of trailer, or use a hand winch if possible. Make sure of footing while loading and unloading machines. Make sure snowmobiles are securely fastened down when transporting. Make sure "tip-up trailer is fastened down.
Operation	Injury, becoming lost/stranded, breakdowns, collisions, Potential Avalanche Slopes	<p>Certification. Only qualified personnel will operate snowmobiles. Qualification certificates will be on file with your supervisor and UC Merced Facilities before operation of vehicle. Operation includes: getting un-stuck, riding over various terrain features and conditions, turning the snowmobile, riding positions (sitting, kneeling, standing, posting), towing sleds, side hilling, loading/unloading, starting the machine, etc.</p> <p>Communication. Always check in with your Contact Person in the office and check out at the end of the workday.</p> <p>Snowmobile Operation Always operate with a minimum of two people and two machines. Never stop facing uphill! Keep feet away from revolving track and on the running board. Only carry a passenger if the snowmobile is designed to carry two people. Never carry more than one passenger. Never overload the storage rack on the snowmobile (most have a weight limit posted on them). Never operate the snowmobile at speeds higher than safety, terrain, conditions, and common sense dictate. Avoid obstructions and "suspicious-looking" areas. Slow down around people and other snowmobiles. Avoid frozen lakes and waterways. Watch for hazards at all times. Look for: low hanging branches, guy wires, fence posts and sign posts, ditches, roadways, fences, open water, rocks. Avoid following too closely on snowmobiles (exhaust inhalation hazard). Minimize exposure to exhaust fumes from snowmobiles! Only traverse open and potential avalanche slopes one at a time. The rest of the group can keep an eye on whoever is caught and then begin searching.</p> <p>Know the basic snowmobile hand signals: STOP- left arm raised from shoulder and extended straight up over head with palm flat. LEFT TURN- left arm extended straight out from shoulder and pointed in the direction of turn. RIGHT TURN- left arm raised at shoulder height, elbow bent and forearm vertical with palm of hand flat. SLOWING- left arm extended out and down from the side of the body with downward flapping motion of the hand to signal warning caution.</p>

Snowmobile Maintenance Checklist

Operator: _____ Dates of Operation: _____

Sled Used: **Blue** **Black**

Note any damage to general sled appearance:

Protective Equipment in good condition (note problems next to item):

- Helmet and Goggles
- Boots
- Gloves
- Pants
- Jacket
- Snowshoes or skis
- Shovel, Avalanche probe and Beacon
- Flashlight
- Matches or cigarette lighter

Snowmobile in good condition (note problems next to item):

- Track
- Track rails
- Skis
- Handlebars
- Emergency shutoff switch
- Battery
- Chassis and suspension
- Drive belt and
- Spare drive belt, Spark plug, Ignition Key, and tool kit
- Brakes
- Storage area
- Fuel Level is Full
- Oil Level is Full
- Sleds are secured to trailer properly
- Registration is current

Trailer in good condition (note problems next to item):

- Tires and Wheels
- Tire Chains
- Tail lights
- Break lights
- Turn Signals
- License plate light
- Secondary vehicle attachment (chains or cables)
- Tilt-bed is secure
- Registration is current

Snowmobile Gear Checklist

Safety gear (what you need to wear and to carry on your body)

- DOT approved snowmobile helmet
- Face shield or goggles (clear lens and colored lens)
- Snowmobile clothing
- Over-the-ankle boots (insulated snow boots)
- Gloves or mittens
- Flashlight
- Matches and cigarette lighter
- Transceiver and probe

SNOWMOBILE SAFETY CHECKLIST Wear the right layered clothing

- Snowmobile suit (wind proof) Face shield or pullover face mask (balaclava)
- Layers of clothing underneath suit
- Mitts or insulated gloves
- Thermal weave underwear Light inner glove
- Wool shirt High bulk socks
- Heavy pants Snowmobile boots
- Safety certified helmet with eye protection (goggles/visor)
- Extra mitts and socks

Pack for survival

- Extra key
- Mirror/reflective material/fluorescent tape
- Knife, axe, saw Shovel, probe, transceiver and extra batteries
- Map and compass Radio/cell phone (Emergency Dispatch)
- Candles
- Waterproof matches GPS (Global Positioning System)
- Flashlight, flares and strobe Thermal blanket
- High energy food and bars Large metal cup or pot

A first aid kit is a must Have the tools to “fix it.”

- Triangular bandages Screwdrivers
- Micropore tape Pliers
- Gauze pads (small/large) Wrenches
- Roll gauze (small/large) Rags
- Band aids (small/large) Electrical/duct tape
- Antibiotic ointment Starter cord
- Wet wipes Spark plugs
- Alcohol wipes Spark plug socket
- Pain reliever Spare Drive belt
- Razor knife Wire
- Scissors and tweezers 20 m nylon tow rope
- Latex gloves
- Thermal (space) blanket