U.S. Department of Agriculture	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
Natural Resources Conservation Service	Winter Travel through Avalanche Terrain	Boise, ID	Snow Survey
JOB HAZARD ANALYSIS (JHA)	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
	Jeff Anderson	Hydrologist	3/19/2007

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
For more information and excellent pictures please read the attached "Avalanche Safety" brocheres		
Pre-Trip Planning	Being caught by surprise in hazardous weather conditions that may increase avalanche danger	Check Weather Forecast before beginning travel. Look for red-flag weather conditions which increase avalanche instabilities: 1) heavy snowfall or rain in past 24-36 hours 2) winds that transport snow and load lee slopes 3) significant temperature increases 4) non-freezing conditions overnight Check current avalanche advisory for local area at www.avalanche.org Note: more people are killed during "considerable" avalanche danger than any other rating. Adjust plans accordingly if weather may preclude safe return prior to darkness or if avalanche advisory is for dangerous avalanche conditions
	Forgetting or being unfamiliar with avalanche rescue equipment	Be sure that each person in the party has packed an avalanche beacon with fresh batteries, shovel and probe. Travel leader should have maps, inclinometer, compass, gps, satellite phone and first aid gear. Each person in travel group should be skilled with the operation of how their beacon, probe and shovel work; those unskilled with this equipment are a liability and should not be traveling in avalanche terrain. Take opporunities to practice with this equipment as a staff at least once per winter.
	Poorly planned travel route	Analyze travel route prior to leaving to determine safest path. When possible choose a route that doesn't go below or across slopes that are steeper that 30 degrees. Avoid steep valley or gully bottoms which can act as terrain traps. Stick to ridges or wide valley bottoms. Use avalanche advisories to help choose the safest aspects to travel on. To aid in navigation, especially during bad weather, load waypoints for a safe travel route into a gps.
	Lack of communication	Leave itinerary and planned travel route with supervisor or someone on the office staff. If office is closed (weekend), leave with a snow survey staff member. If this is not possible or practical, leave itinerary with significant other or other responsible person who has a copy of emergency procedures and call-out list. Check in upon returning. Take satellite phone with you. Notify responsible person if you anticipate arriving back late. Upon arrival, contact the responsible person to confirm your safe return from field. If field crew does not contact responsible person by an agreed upon time the responsible person should begin activation of emergency procedures.

Before leaving the truck	Malfunctioning or forgotten avalanche beacons.	Check each person in the group to make sure that their avalanche beacon is transmitting properly and that they have a shovel and probe in their pack. Wear your avalanche beacon under your outer layers. Do not keep the your beacon in your pack or on your snowmobile.
	Not having a shared mental model	Travel leader should discuss travel plan with the rest of the group, noting what the greatest concerns are for the day and where these concerns are likely to be encountered. Also discuss areas where it will be important to travel one at a time. Ask for input from the group about other concerns regarding travel to the site.
Travel to site through avalanche terrain	Missing Red Flag Warning Signs	As you travel look for red flag warning signs which indicate dangerous conditions. Observing any of these signs may cause you to alter your travel plan and avoid avalanche terrain 1) Recent avalanches, if there are new avalanches more are possible 2) Signs of unstable snow: cracking or collapsing snowpack, whumpfing sounds, hollow drum-like sounds on hard snow 3) Heavy snowfall or rain in past 24 hours – significant snowfall is defined as >12 inches. 4) Wind blown snow depositing on your intended route, this loads lee slopes very rapidly, move to scoured terrain which will be safe. 5) Significant warming or rapidly increasing temperature, especially when temperatures increase above freezing.
	Becoming disoriented and straying from a safe travel route	o Use your map, compass and gps to stay on your intended travel route. o Carry and use a inclinometer to perform ongoing terrain evaluation based on slope angle and terrain configuration. o Avoid traveling near or on slopes greater than 30 degrees if the avalanche hazard is considerable or higher. o Avoid unfamiliar terrain.
	Crossing avalanche terrain in questionable conditions	If the group must travel through avalanche terrain in questionable conditions, the travel leader should take time to perform tests such as shovel compression tests and/or Rutschblock tests to determine the stability of the snowpack If the snowpack is stable, then travel using the following techniques: o Never expose more than one person to avalanche danger at a time. One on a slope at a time (stay well spread out if you must expose others). o Watch each other closely from safe locations. If unable to watch either other, such as when crossing a wide avalanche path, use radios to communicate. o Avoid stopping in or beneath avalanche paths. Stay out of avalanche run out zones when stopped. o Never descend or travel directly above a partner or another group. o Communicate within your group
	Potentially unsafe terrain features	o When possible avoid steep terrain (30-50 degrees). Avalanches generally don't occur on slopes less than 30 degrees. For reference most expert ski runs at ski resorts are about 34 degrees. o Avoid traveling above terrain traps such as gullies where deep burial is likely if an avalanche did occur. o Avoid travel near common trigger points where avalanches are likely to start, these include rock outcroppings, convex rollover slopes where mid-slope steepening occurs and wind deposited snow on the lee side of ridges. o Keep track of what aspect you are traveling on with relationship to the sun or wind, avalanche problems may exist on only certain aspects.

	Getting caught in an avalanche	o The BEST defense to this hazard to is be safe and try not to get caught, 25-30% of avalanche fatalities are due to trauma during the slide. If you get completely buried, the odds of survival are only 30%. o Attempt to get off the slab, skiers angle to get to the edge of the slide, snowmobilers try to outrun a slide. If the slide knocks you down tie to hang onto the downhill side of the trees. o Once caught in a slide skiers attempt to discard skis and poles o Do not discard your backpack as it will protect your spine from trauma and increase your bouyancy in the slide. o Attempt to roll onto your back with feet downhill. SWIM HARD, fight, grab trees, dig into the bed surface. o As the avalanche slows or even before, thrust some part of your body above the surface and try to make an airspace around your mouth. o If completely buried, attempt to push through the surface of the snow, you may only be a few inches deep. If this doesn't work remain calm – you life is in the hands of your partners.
	Avalanche burial and rescue	o You don't have time to go for help – it is up to you! After 15 minutes the victim's chances of survival decrease very rapidly. o Yell, alert others. Watch the victim! Establish a last seen point. o Make sure it is safe to search. Don't become a victim yourself. o Establish a leader, make a rescue plan. o Have everyone switch their beacons to receive. o Look for and check surface clues: gloves, boots, equipment. See if a person is attached to any of these items? Leaving these items in place allow you to determine the vitcims line of travel which may help later in the search. o Conduct a beacon search, as demonstrated in the DVD "Take Charge: Leading a Group Rescue" o Get close and probe, BEFORE you dig. o When you locate the victim, dig fast but carefully. Free the victims mouth and chest of snow first. It's not over yet! Have first aid gear and be alert for airway problems, hypothermia and injuries. o If the victim was not wearing a beacon don't give up! Look carefully for surface clues and probe in likely catchment areas such as near trees, in gullies, and directly downhill from the last seen point or surface clues. o Most of the time, a snowmobiler caught in an avalanche will be located about 40 feet upslope from their machine. Generally the snowmobile stays on the surface.
	Spending night outside	If avalanche conditions worsen and weather makes it impossible to follow a safe path it may be necessary to spend the night outside until conditions improve. Always bring necessary survival equipment including shovel, headlamp, spare batteries, spare socks, knit hat, spare gloves, down parka, candles, cup, space blanket, first aid kit, matches, energy bar, water.
10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
Previous edition is obsolete	(over)	

JHA Instructions

The JHA shall identify the location of the work project or activity, the name of employee(s) writing the JHA, the date(s) of development,and the name of the appropriate line officer approving it. The supervisor acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:

a. Research past accidents/incidents
b. Research the Health and Safety Code literature.
c. Discuss the work project/activity with participants
d. Observe the work project/activity
e. A combination of the above

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures listed below are in the order of the preferred abatement method:

a. Engineering Controls (the most desireable method of abatement). For example, ergonomically designed tools, equipment, and furniture.

b. Substitution. For example, switching to high flash point, non-toxic solvents.

c. Administrative Controls. For example, limiting exposure by reducting the work schedule; establishing appropriate procedures and practices.

d. PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills portable water pumps)

e. A combination of the above.

Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

Emergency Evacuation Instructions

Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

a. Nature of the accident or injury (avoid using victim's name).
b. Type of assistance needed, if any (ground, air, or water evacuation)
c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
d. Radio frequency(s).
e. Contact person.
f. Local hazards to ground vehicles or aviation.
g. Weather conditions (wind speed & direction, visibility, temp).
h. Topography.
i. Number of person(s) to be transported
j. Estimated weight of passengers for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgement

We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:

SIGNATURE	DATE	SIGNATURE	DATE

avalanche safety

snowmobilers beware

I wanted to help him get his sled unstuck. When I rode above him & turned, **the snow gave way** beneath me and the last time I saw him, **he was tumbling.**

They weren't even riding. They were sitting on the flats, talking, **while we made a few runs up the hill.**

These quotes should give you an idea of what your friends and relatives will say if you die in an avalanche. **Snowmachiners now lead the list of those getting caught and killed in avalanches in North America.** The good news is that these "accidents" are completely preventable.

STOPPING the TREND BEGINS with YOU!

I **wish I'd** taken my helmet off and just **looked around.** Then I might have seen that the slope we were on had much **steeper slopes above it.**

HIGHMARK'N safety

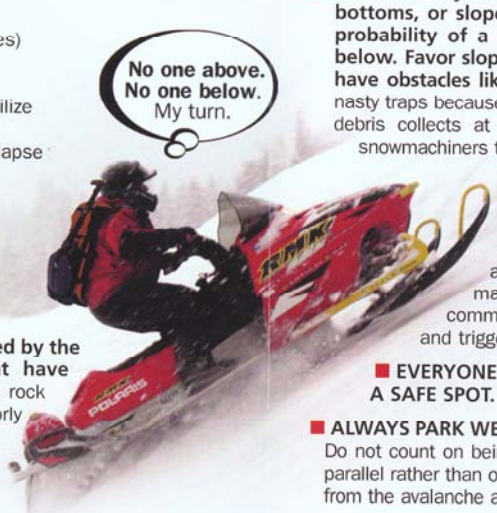
If you learn nothing else, remember that if you like to ride onto steep slopes do so ONE AT A TIME, with the rest of your group watching from a safe spot. DO NOT PARK AT THE BOTTOM of a steep slope and DO NOT GO HELP SOMEONE WHO HAS THEIR SLED STUCK. These travel procedures alone would cut the number of fatalities in half.

Anything steeper than 25° can avalanche, but prime time slopes are 30° – 45°, the same slopes most of us like to play on. You don't have to be on a steep slope to make it avalanche, you just have to be connected to it.

HIGHMARKING accounts for more than 60% of the avalanche deaths involving snowmachiners in North America. **Tracks do not mean that a slope is safe. TIMING IS EVERYTHING! You can play safely on steep slopes ONLY when the snowpack is stable.**

If you like to highmark, adopting the following habits will help keep you and the members of your group alive:

- **Stay alert for clues to instability,** even while driving to the trailhead. Ride your sled onto small cutbanks to test snow stability. Periodically STOP your machine, remove your helmet, walk around to get a feel for the snow, and scan the area. If the snow is unstable, you should notice one or more of the following clues:
  - **Recent avalanches** (don't play on similar, unreleased slopes)
  - **New snow or wind-loading** (may be your only clue)
  - **Rain** (weakens snow quickly, will stabilize when refrozen)
  - **Whumphing noises** (indicate the collapse of a buried weak layer)
  - **Shooting cracks** (indicate snow is ripe for fracturing)
  - **Hollow-sounding snow** (indicates a buried weak layer)
  - **Signs of rapid or intense warming** (snow will weaken quickly)
- **Choose slopes that have been stripped by the wind (windward) over slopes that have been loaded (leeward).** Snow that is rock hard can still avalanche if it is poorly bonded to the layers below. **Be wary of steep, smooth, leeward slopes.**
- **Start out on the less steep slope angles and on the side of a slope instead of center-punching it.** Do your first runs low and fast rather than maximizing your commitment and exposure by climbing as high as possible right away. If possible, do your first runs from the top down to get a feel for the snow and improve your chances of escape.
- **Try to turn toward the edge of a slope rather than turning toward the middle.**
- **If unsure of the snow stability, favor slopes that have recently avalanched over those that have not yet slid.** You can still ride on unstable days—just choose slopes less than 25° that are not connected to anything steeper.
- **Do not approach steep convex rollovers or aim right for a large rock or tree isolated in the middle of a steep slope unless you know the snow is stable.** These are places where the snowpack is under greater stress, and thus where you are more likely to trigger a slide. Also be suspicious of steep areas where the snow is shallow and weaker.
- **Avoid deadly terrain traps such as gullies, steep-sided creek bottoms, or slopes that end in depressions because of the high probability of a deep burial. Do not ride on slopes with cliffs below. Favor slopes that are fan-shaped at the bottom and do not have obstacles like rocks or trees to crash into.** Concave bowls are nasty traps because the fracture propagates around the slope and all the debris collects at the bottom. This is why it is not uncommon for snowmachiners to be buried under 10-30 feet of debris.

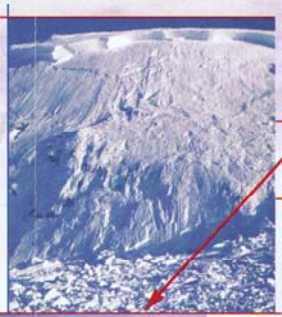


- **ALLOW ONLY ONE RIDER AT A TIME ON THE SLOPE. IF A PERSON GETS STUCK, DO NOT SEND A SECOND SLEDDER TO HELP!!!** *Facts:* Roughly 33% of snowmachiner fatalities occur when a sled is stuck. About 34% involve more than one machine on the slope at the time of the avalanche. It is common for a second rider to turn above the stuck person and trigger an avalanche onto the sitting duck below.
- **EVERYONE SHOULD BE WATCHING THE CLIMBER FROM A SAFE SPOT.**
- **ALWAYS PARK WELL AWAY FROM THE BOTTOM OF STEEP SLOPES.** Do not count on being able to outrun a slide. Get in the habit of parking parallel rather than one behind the other, have your machine pointing away from the avalanche and ready to start.

TRAVEL smaRt

TRAVEL SMART:

- **For mountain riding, limit your groups to three or four people.** There is decreased safety in numbers. In big groups it is difficult to communicate, make good decisions, and follow safe travel procedures. Do not split your group!
- **Stop periodically to look for clues to instability and discuss the avalanche hazard.**
- **NEVER travel above your partner. Remember, one at a time on steep slopes and park in safe spots while watching the person exposed to avalanche hazard.**
- **Each rider should wear a transmitting avalanche beacon and carry a probe and shovel in a small pack.** If the tools you need to save your friend are on your buried sled, your friend may die. Before you drive to the trailhead, confirm that every group member has this rescue gear and knows how to use it. Check to make sure all the beacons work in both transmit and receive mode.
- **Ride with your helmet securely strapped.** Full face helmets have saved a few buried avalanche victims by providing some built-in air space (though you can't count on this).
- **Assumptions can kill you. Avalanches don't care what you want to do or how skilled a rider you are.** Don't be reassured just because you've ridden in the area many times before. It doesn't matter that it is a nice day (most accidents happen on blue sky days after storms), there are tracks on the slope, or you're wearing a beacon.
- **Remember that you can have fun even on unstable days by staying away from steep slopes.**



The rider who parked here died under four feet of avalanche debris.

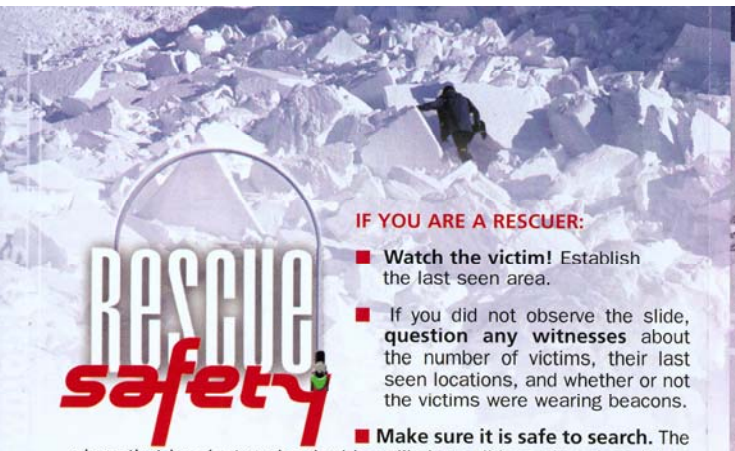
AVALANCHE RESCUE: The best defense is not to get caught. You don't have time to go for help. YOU ARE THE HELP!

TOOLS FOR AVALANCHE RESCUE:
Brain, beacon, probe, and shovel.

IF CAUGHT IN AN AVALANCHE:

- **Try to ride to the side and stay on your machine.**
- If knocked off your sled, push away from it to reduce your chances of being injured and **FIGHT HARD** to stay on top of the moving snow by "swimming."
- Attempt to **roll onto your back**; you have a better chance of survival if buried face up.
- As the avalanche slows, **thrust some part of your body above the surface.** Expand your chest and use your arm to create an airspace.
- **Try not to panic** so that you will use oxygen at a slower rate.

Be prepared—have the **tools**, **know how** to use them, and have **a plan**.



RESCUE safety

IF YOU ARE A RESCUER:

- **Watch the victim!** Establish the last seen area.
- If you did not observe the slide, **question any witnesses** about the number of victims, their last seen locations, and whether or not the victims were wearing beacons.
- **Make sure it is safe to search.** The slope that has just avalanched is unlikely to slide again unless it has reloaded or has adjoining paths that have not released funneling into the same area.
- **Conduct a thorough initial search of the debris below the last seen area.** Look carefully for clues (e.g., sled, boot, glove, blood). Probe around clues and in likely catchment areas such as benches, dips, rocks, tree-wells, and the toe of the debris.
- **Leave clues (including sleds) in place; they may help establish the victim's line of travel.** Most buried snowmachiners are found no more than 200 feet from their sleds, in roughly the same fall line. More often than not, the victims are upslope and within 40 feet of their machines.
- **If wearing avalanche beacons, conduct a beacon search (which you should have practiced many times before!)** simultaneously with the initial search.
- **If the victim is not located by any of these methods, systematically probe the most likely search area.**
- **When you locate the victim, dig fast but carefully. Free the victim's mouth and chest of snow first.** It's not over yet! Have first aid gear and be alert for airway problems, hypothermia, and injuries.

AVALANCHE DANGER SCALE

LOW	• Natural avalanches VERY UNLIKELY. • Human triggered avalanches UNLIKELY. • Travel is GENERALLY SAFE. • NORMAL CAUTION is advised
MODERATE	• Natural avalanches UNLIKELY. • Human triggered avalanches POSSIBLE. • Use CAUTION in steeper terrain on certain aspects
CONSIDERABLE	• Natural avalanches POSSIBLE. • Human triggered avalanches PROBABLE. • Be INCREASINGLY CAUTIOUS in steeper terrain
HIGH	• Natural/human triggered avalanches LIKELY. • Travel in avalanche terrain NOT RECOMMENDED
EXTREME	• Natural/human triggered avalanches CERTAIN. • Travel in avalanche terrain should be AVOIDED and confined to low angle terrain well away from avalanche path run-outs.

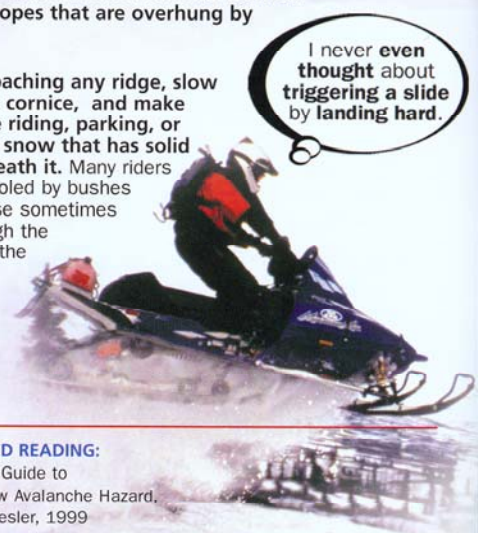
CORNICE safety

CORNICE BREAKS AND CATCHING BIG AIR:

Cornices are overhanging deposits of wind-drifted snow that form along the leeward side of ridgecrests and gullies. Cornice breaks are caused by additional new snow or wind-loading, warming, or the weight of a person or sled. If you like to jump cornices, know that even if you don't break the cornice, your landing shock-loads the slope (like a detonating bomb) and can trigger an avalanche.

BOTTOMLINE:

- **Do not approach cornices from the bottom or ride on slopes that are overhung by cornices.**
- **When approaching any ridge, slow down, think cornice, and make sure you are riding, parking, or standing on snow that has solid ground beneath it.** Many riders have been fooled by bushes because these sometimes extend through the cornice from the slope below.



RECOMMENDED READING:
Snow Sense: A Guide to Evaluating Snow Avalanche Hazard, by Fredston & Fesler, 1999

CREDITS: This pamphlet was written by Jill Fredston and Doug Fesler of the Alaska Mountain Safety Center, Inc. and first published in Alaska in January 2003. Original funding was provided by the Alaska Department of Natural Resources, Snowmobile Trail Grants Program. For additional information or permission to reproduce any portion of the contents, please contact the Alaska Mountain Safety Center, Inc., 9140 Brewsteris Drive, Anchorage, AK 99516-3928, (907) 345-3566, or the Snowmobile Trail Grants Program, Alaska Division of Parks and Outdoor Recreation, 550 W. 7th Avenue, Suite 1380, Anchorage, AK 99501, (907) 269-8699.

PHOTOS: Alaska State Troopers, Byron Beauchene, Doug Fesler, Jill Fredston, Bill Glude, Dennis Heikes, Ron Johnson, Kip Melling, and Eric Sachs.

GRAPHIC DESIGN: Jennifer Munro, A.T. Publishing & Printing, Inc., Alaska.

U.S. Avalanche Centers

ALASKA

- Chugach National Forest Avalanche Center
  www.fs.fed.us/r10/chugach/glacier/snow.htm

CALIFORNIA

- Mount Shasta Avalanche Center
  www.shastaavalanche.org
- Central Sierra Avalanche Center
  www.r5.pswfs.gov/tahoe/avalanche.html

COLORADO

- Colorado Avalanche Information Center
  www.geosurvey.state.co.us/avalanche

MONTANA

- Gallatin National Forest Avalanche Center
  www.mtavalanche.com
- West Central Montana Avalanche Center
  www.fs.fed.us/r1/lolo/avalanche/advisory.htm
- Glacier Country Avalanche Center
  www.glacieravalanche.org

IDAHO

- Sawtooth National Forest Avalanche Center
  www.avalanche.org/~svavctr
- Payette National Forest Avalanche Center
  www.fs.fed.us/r4/payette/main.html
- Idaho Panhandle Avalanche Center
  www.fs.fed.us/ipnf/visit/conditions/index.html

NEW HAMPSHIRE

- Mount Washington Avalanche Center
  www.tuckerman.org

UTAH

- Utah Avalanche Center-SLC
  www.avalanche.org/~uac
- Bear River Avalanche Information Center
  www.avalanche.org/~uac/BRAIC
- Manti-La Sal Avalanche Center
  www.avalanche.org/~lsafc

WASHINGTON & OREGON

- Northwest Weather and Avalanche Center
  www.nwac.us

WYOMING

- Bridger-Teton National Forest Avalanche Center
  www.jhavalanche.org

AVALANCHE SAFETY

Photo by MarkKudlinski.com

AVALANCHE FACTS:

Some days the steep slopes are safe, some days they are unstable. Avalanche conditions are predictable.

90% of avalanche victims die in slides triggered by themselves or a member of their group.

After 35 minutes, a buried victim has only a 27% chance of survival.

WHAT YOU CAN DO ▷▷▷▷▷▷

YOU CAN:

RECOGNIZE RED FLAGS

1) Recent Avalanches

If there are new avalanches, more are possible.

2) Signs of Unstable Snow as You Travel

MOTHER NATURE'S WARNING SIGNS

- Cracking or Collapsing Snowpack
- Whumpfing sounds
- Hollow drum-like sounds on hard snow

3) Heavy Snowfall or Rain in the Past 24 Hours

Significant snowfall or rain can make the snowpack unstable.

Avalanches are often triggered the first clear day after a storm. Because it is sunny does not mean it is safe.

4) Wind Blown Snow

Wind blown snow loads leeward slopes, even when it is not snowing out.

5) Significant Warming or Rapidly Increasing Temperatures

Warm temperatures and gravity can cause the snow to creep downhill and become less stable.

RECOGNIZE AVALANCHE TERRAIN

SLOPE ANGLE

Avalanches generally occur on slopes steeper than 30 degrees and most often occur on slopes 35 to 50 degrees. Most expert ski runs have sections 34 degrees or steeper.

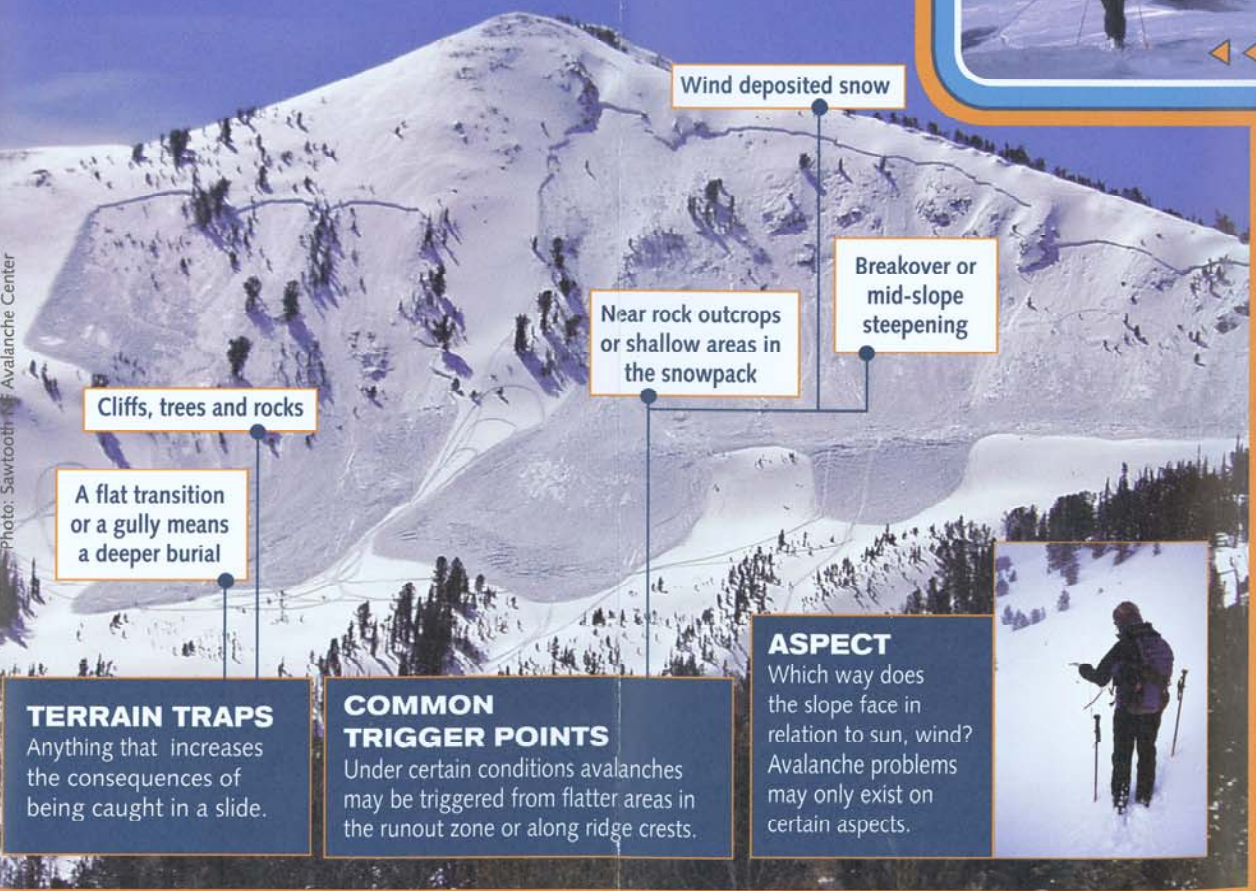


Photo: Sawtooth Avalanche Center

TERRAIN TRAPS

Anything that increases the consequences of being caught in a slide.

COMMON TRIGGER POINTS

Under certain conditions avalanches may be triggered from flatter areas in the runout zone or along ridge crests.

ASPECT

Which way does the slope face in relation to sun, wind? Avalanche problems may only exist on certain aspects.

SAFE TRAVEL PROTOCOL

Better Your Odds, Minimize the Risk

- Never expose more than one person to avalanche danger at a time.
  - One on a slope at a time *(stay well spread out if you must expose others).*
  - Watch each other closely from safe locations.
  - Avoid stopping in or beneath avalanche paths.
  - Never descend directly above a partner or other group.
- Stay alert to changing snow stability due to changes in aspect, elevation, or weather factors *(heavy precipitation, wind, or warming).*
- Communicate within your group, have options.
- Be prepared to do a rescue.

Skiers and Snowboarders:

- Always choose the safest route possible on the ascent. Stick to low angle ridges and dense trees.
- On the descent, ski or board one at a time, from one safe point to the next.

Snowmobilers:

- Highmark one at a time and never ride up to help a partner get unstuck.
- While highmarking, the rest of the group should park in a safe zone and watch.
- Snowmobilers cover much more terrain on a given day. If an instability exists you are more likely to find it. Remain alert to changing conditions and don't let your guard down.

Snowshoers:

- If you travel into avalanche terrain you are at just as much risk as other recreationists.

AVALANCHE RESCUE

You Don't Have Time to go For Help. It is Up to You! You only have 15 minutes for a good chance to recover someone alive.

- Yell, alert others. Watch the victim! Establish a last seen point.
- Make sure it is safe to search. Don't become a victim yourself.
- Establish a leader, make a plan.
- Look for and check surface clues: gloves, boots, equipment. Put them back in place. Listen.
- Conduct a beacon search. Get close and probe BEFORE you dig.
- If the victim is not wearing a beacon, do not give up! Probe around surface clues and in likely catchment areas.
- Are you prepared to perform first aid and possibly spend the night out?

It is critical to practice rescues before you are faced with the real thing.

If You Are Caught in an Avalanche: Remember, the BEST DEFENSE is not to get caught. 25-30% of fatalities are due to trauma during the slide. If you get completely buried, the odds for survival are only 30%.

- Attempt to get off the slab, hang onto the downhill side of trees – Angle to get to the edge of the slide. Snowmobilers in a few but not all cases may be able to outrun a slide.
- Skiers and snowboarders: Attempt to discard skis, poles, or board.
- Snowmobiles often end up at or near the surface and victims are found nearby.
- Attempt to roll onto your back with feet downhill. Swim hard, fight, grab trees, dig into the bed surface.
- As the avalanche slows or even before, thrust some part of your body above the surface and try to make an airspace around your mouth.
- If completely buried, attempt to remain calm – your life is in the hands your partners.

SAWTOOTH NATIONAL FOREST AVALANCHE CENTER

CHECK THE AVALANCHE ADVISORY

www.sawtoothavalanche.com
www.avalanche.org
(208) 622-8027

ICON	DANGER	DESCRIPTION / RECOMMENDED ACTION
	LOW	Backcountry travel is generally safe in the region described. Be alert for isolated unstable slopes. Normal caution advised.
	MODERATE	Be alert for localized unstable slopes in the region described. Use good travel habits to minimize risk.
	CONSIDERABLE	Unstable conditions exist in the region described. Uncertainty requires conservative decision making and careful route finding.
	HIGH	Unstable conditions are common in the region described. Travel in avalanche terrain or avalanche run out areas is not recommended.
	EXTREME	Widespread unstable conditions are certain in the region described. Travel in avalanche terrain or avalanche run out areas should be avoided.

More people are killed during Considerable Avalanche Danger than any other Danger Rating.