

GLOSSARY OF ACRONYMS AND SNOW SAFETY TERMS

ACRONYMS

AADT	Average Annual Daily Traffic
ARSG	Animas River Stakeholders Group
AT	Alpine Touring
ATV	All Terrain Vehicle
BA	Biological Assessment
BC	Backcountry
BLM	Bureau of Land Management
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAIC	Colorado Avalanche Information Center
CDOT	Colorado Department of Transportation
CDPHE/APCD	Colorado Department of Public Health and Environment/ Air Pollution Control Division
CEQ	Council on Environmental Quality
CNHPP	Colorado Natural Heritage Program
CR 2	San Juan County Road 2 (includes the road formerly called State Highway 110B)
CR 52	San Juan County Road 52
CR 110	County Road 110 (formerly State Highway 110A)
CSC	Colorado Ski Country]
DAC	Durango Archaeological Consultants
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation and Management Areas
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FSM	Forest Service Manual
ID Team	Interdisciplinary Team
LAU	Lynx Analysis Unit
MCL	Maximum Contaminant Level
MPA	Microscopic Particulate Analysis
NAAQS	National Ambient Air Quality Standards
NATO	North American Telemark Association
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NOI	Notice of Intent
NSAA	National Ski Area Association
OB	Out-of-Bounds
PSOC	Potential Sources and Contamination
PUD	Planned Unit Development
PWA	Public Water Supplies
RAMP	Recreation Area Management Plan
RMP	<i>San Juan/San Miguel Planning Area Resource Management Plan</i>
ROD	Record of Decision

ACRONYMS (cont'd)

ROS	Recreation Opportunity Spectrum
SAFO	Silverton Avalanche Forecast Office
SHPO	State Historic Preservation Office
SIP	State Implementation Plans
SOLRC	Silverton Outdoor Learning and Recreation Center
SRMA	Special Recreation and Management Areas
SRP	Special Recreation Permit
SWAA	Source Water Assessment Area
SWAP	Source Water Assessment and Protection
TMDL	Total Maximum Daily Load
VRM	Visual Resource Management
VTF	Vertical Transport Feet
WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division

SNOW SAFETY AND AVALANCHE TERMS

(Sources of snow safety and avalanche term defined in this glossary include the American Avalanche Institute, Inc., Silverton Avalanche School [based on *The Snowy Torrents*, Colorado Geological Survey Special Publication #39], and project team snow safety specialists.)

Artificial Avalanche: Triggered by an animal, man, or his equipment.

Aspect: (or Exposure): The compass direction is which a slope faces. A north-facing slope has a north aspect.

Avalanche: A mass of snow sliding, tumbling, or flowing down a mountainside. Synonymous with snowslide.

Avalanche Control: Artificial means of releasing an avalanche or testing the stability of the snowpack. Commonly used methods are protective skiing, test skiing, hand charges, and artillery fire. Synonymous with *avalanche mitigation* and *hazard mitigation*.

Avalanche Cycle: A period of one to several days during which many avalanches fall as a result of a major storm or thaw.

Avalanche Danger: Synonymous with *avalanche hazard*.

Avalanche Debris: A mass of snow, soil, rock, trees, etc., brought down by an avalanche.

Avalanche Hazard: A threat to life and property from avalanches. Synonymous with *avalanche danger*.

Avalanche Mitigation: Synonymous with *avalanche control* and *hazard mitigation*. Use to reduce the risk of natural avalanches.

Avalanche Path: The entire area down which an avalanche moves, made up of the starting zone, track, and runout zone. Also called slide path.

Avalanche Rescue: The act of rescuing an individual or individuals who have become partly or completely buried beneath the snow or otherwise injured or stranded as a result of an avalanche.

Avalauncher: A commercially available, compressed-gas gun that launches an explosive projectile. Used for avalanche control.

Boot Packing: Trampling the snow by boot to densify and strengthen the snowpack in avalanche starting zones.

Climax Avalanche: Avalanche which involves layers of older snow.

Control Route: A predetermined itinerary for the delivery of hand charges from safe locations above the avalanche paths.

Cornice: An overhanging mass of snow formed from wind-drifted snow along the crest of a ridge. The steep slope below a cornice is often the starting zone for an avalanche.

Crystal: Any domain of ice which has a common orientation of the orderly array of molecules which makes up the solid structure.

Depth Hoar: Large, coarse grains of snow formed by temperature gradient metamorphism within the snowpack. Depth-hoar grains have distinct faces and corners, sometimes appear as pyramids and cups, and can grow to a size of 10mm. Often growing just above the ground where the temperature gradient is largest, depth hoar forms a very weak layer which is highly susceptible to shear or collapse.

Directed Skiing: Deliberate skiing in avalanche starting zones to focus the stabilizing effects of skier compaction on areas where the greatest gains in safety can be achieved.

Directional Signage: Signs posted by a ski area to direct skiers to open and safe terrain or away from hazardous terrain.

Faceted Snow: Snow containing angular grains with sharp corners and smooth faces, or facets. These grains have been recrystallized by temperature gradients within the snowpack. The early stages of depth hoar.

Fracture Line: A well-defined line where the moving snow breaks away from the more stable snow above. Also called crown face.

Guided Skiing: Skiing under the guidance and supervision of guides familiar with the terrain and snow safety and avalanche rescue procedures.

Hand Charge: An explosive charge thrown by hand onto an avalanche slope. Used for avalanche control

Hard Slab: A snow slab having a density greater than 300 kg/m^3 . Results from high winds or compaction. Often leaves angular blocks of snow in the debris of an avalanche.

Hazard: The risk of an avalanche accident when a man or his works is exposed to snow avalanches.

Hazard Avoidance: The main approach to skier safety employed by private or commercial backcountry skiers. This approach centers on identification and avoidance of areas of avalanche hazard, cliff bands, terrain traps, and other risks. In guided operations, guides are generally responsible for hazard avoidance. Synonymous with *risk avoidance*.

Hazard Marking: Marking of hazards with signs, flag lines, poles, or other measures so they are clearly visible and easily avoided by skiers.

Hazard Mitigation: Synonymous with *avalanche control*.

Hazard Padding: Padding or cushioning of large hazards or obstructions (such as skilift towers) to reduce impact in the case of a skier collision.

Hazard Reduction: The main approach to skier safety employed by ski areas. This approach centers on identification and reduction of hazards using techniques such as avalanche control, directional, signage, hazard marking, etc. Hazard reduction is generally the responsibility of the ski area's snow safety staff. Synonymous with *risk reduction*.

High Hazard Areas: Areas with high avalanche hazard.

Leeward: The side of a mountain protected from the wind.

Metamorphism: Changes in the texture and structure of snow on the ground caused by pressure and temperature conditions.

Operator Boundary Closures: Closures by a ski area of terrain within their boundary for hazard reduction or protection of private property.

Post-control Release: An avalanche that releases naturally or artificially within minutes to hours following avalanche control measures.

Risk Reduction: Synonymous with *hazard reduction*.

Risk Avoidance: Synonymous with *hazard avoidance*.

Risk: A general qualitative assessment of avalanche hazard at a given place and time.

Run-out Zone: The lowest part of an avalanche path where the avalanche debris stops because of a decrease in slope angle or a natural obstacle.

Ski Cutting: Deliberate skiing across an avalanche starting zone with the intent of assessing stability or triggering a controlled release. The skier typically traverses and checks strongly to transmit energy to the snowpack.

Ski Packing: Deliberate day-to-day trampling of snow with skis to densify and strengthen the snow in avalanche starting zones.

Skiable Terrain: The amount of terrain that is open and available for safe use by skiers.

Skier Compaction: Compaction of snow that occurs with repeated skiing of an area. Skiing effectively densifies and strengthens the snowpack, thus reducing avalanche hazard.

Slab Avalanche: An avalanche involving a discrete, cohesive layer of snow. The presence of a crown surface, or fracture line, is the key indicator.

Slab: A cohesive layer or layers of snow.

Slide (Snowslide): Synonymous with *avalanche*.

Slide Path: Synonymous with *avalanche path*.

Slope Stability Evaluation: Synonymous with *snow stability assessment*.

Sluff: Small avalanche running less than 75 vertical feet. Usually harmless with small volume of moving snow.

Snow Crystal: Particle of snow in the atmosphere.

Snow Density (Density): Mass per volume, in scientific units, kg/m^3 (kilograms per cubic meter). The density of water is $1,000 \text{ kg/m}^3$. New snow density is often 60 to 80 kg/m^3 .

Snow Safety Program: The program developed and implemented by a ski area to provide for the safety of guests, particularly in terms of reduced avalanche hazard. A snow safety program includes: (1) a plan (typically incorporated in the operating plan and including an avalanche atlas, control measures and routes, rescue plan, ski patrol manual, staffing requirements, etc.); (2) a trained and qualified snow safety staff (may include a director, dedicated staff, ski patrol, and guides; and (3) equipment (including over-the-snow vehicles, explosives with storage and delivery systems, rescue gear, and access to emergency medical evacuation services).

Soft Slab: A snow slab having the density of less than $3,000 \text{ kg/m}^3$. Often provides good powder skiing. Breaks up quickly into small lumps in an avalanche.

Snow Stability Assessment: The assessment used to determine to what degree the snowpack is stable and not susceptible to avalanching. Assessment may involve past, current, and forecast weather conditions, records of avalanche control efforts, on-site evaluation of snowpack structure (study plots, snow pits, etc.) and explosive testing. Synonymous with *slope stability evaluation*.

Stability Testing: The use of snow pits, ski cutting, explosives, or other methods to determine snow stability and its suitability for safe skiing. Part of the *snow stability assessment*.

Stabilize: To compact the snow or relieve stress in the snowpack and thereby reduce the chance of avalanche release. Stabilization can occur naturally with time or can be effected with avalanche control.

Stable (Snow): Snow which is well anchored and bonded with sufficient internal strength so as not to be susceptible to avalanching.

Starting Zone: The area where an avalanche releases. Also called “zone of origin.”

Surface Avalanche: An avalanche involving the surface layer or layers of the snowpack.

Terrain Closures: Closure of terrain within a ski area to reduce hazards or protect private property.

Track: The middle part of an avalanche path below the starting zone and above the runout zone. The area where the avalanche attains its maximum velocity.

Trigger: A force or event which initiates an avalanche.

Unguided Skiing: Resort-style skiing, where visitors ski unguided, directed by signage, hazard marking, terrain closures, etc. to safe terrain.

Unstable: (slab or snowpack) Near the point of failure: when stress and strength of the slab are very nearly equal. Additional snow loading, and explosive charge, a skier, or anything that increases stress could cause avalanche release.

Vertical Fall Distance: The drop in elevation of an avalanche from the starting zone to the toe of the debris.

Water Equivalent: The liquid water content of a given amount of snow or mixed snow and rain. Usually determined by weighing.

Windload: Snow deposited by wind on the lee side of a mountain, ridge or other obstacle.