AVALANCHE SKILLS TRAINING, LEVEL 2

Summit Mountain Guides

COPYRIGHTS NOTICE

COURSE GOALS

- Demonstrate how to use the decision-making skills of a group to manage avalanche risk.
- Describe the theoretical framework of avalanche terrain and snowpack using intermediate to advanced concepts.
- Plan and carry out trips using the seven steps of the Daily Process.
- Organize and lead companion rescue.

In addition, the course will:

- Provide the prerequisite knowledge for further avalanche training
- Introduce and promote the CAA Industry training programs (ITP) as accepted standards for advanced avalanche training

BY THE END OF THIS COURSE YOU SHOULD BE MORE PROFICIENT IN…

- Use the Avaluator™ as a filtering tool
- Be familiar with Avalanche Danger Ratings verification techniques.
- Be familiar with the ATES technical model as a means to develop personal, local terrain ratings.
- Use route finding to take advantage of nuances in terrain to manage personal risk.
- Use travel techniques in avalanche terrain appropriate to the avalanche conditions.
- Proficiently carry out a companion rescue.
- Understand the limits of your training.

AST 1 REVIEW

The AST 1 provides the foundation of knowledge required to move to the next level of decision making

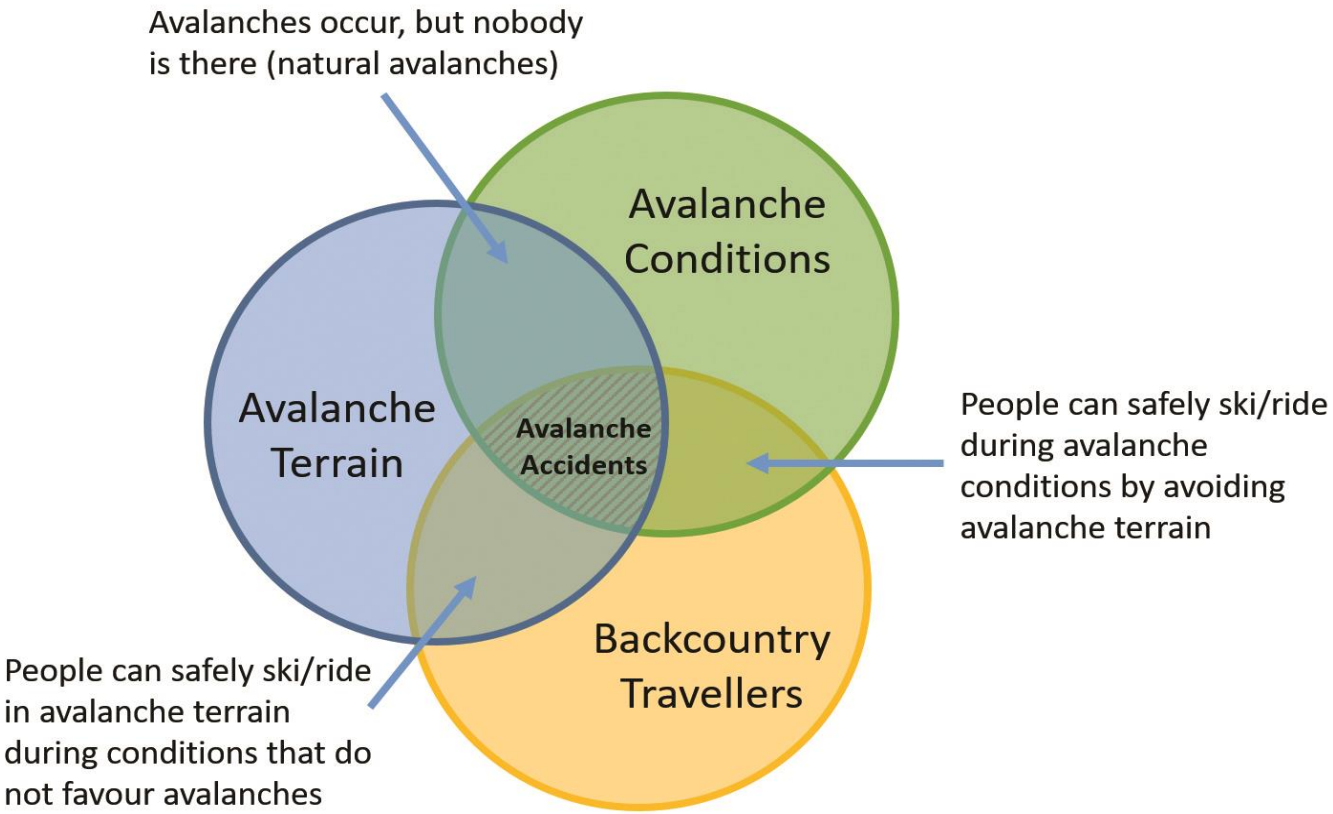
Lets review some basics from AST 1 to ensure that we are all speaking the same language

WHAT 3 ELEMENTS DO WE NEED TO HAVE AN AVALANCHE INVOLVEMENT?

- Avalanche Terrain
- Avalanche Conditions
- Backcountry Travellers

Has anyone been in an Avalanche?

TERRAIN CONDITIONS PEOPLE CIRCLE



Sound avalanche decisions requires us to assess avalanche conditions, make good terrain choices and evaluate risk. This concept is the foundation of the AST program.

DAILY PROCESS OVERVIEW

AST 1 REVIEW

Consider these objectives from the AST 1 course. What do you remember about them?

- Formation of avalanches
- Avalanche Terrain
- The human factors and the FACETS test
- Pre-departure risk assessment

AST 1 REVIEW

Formation of Avalanches

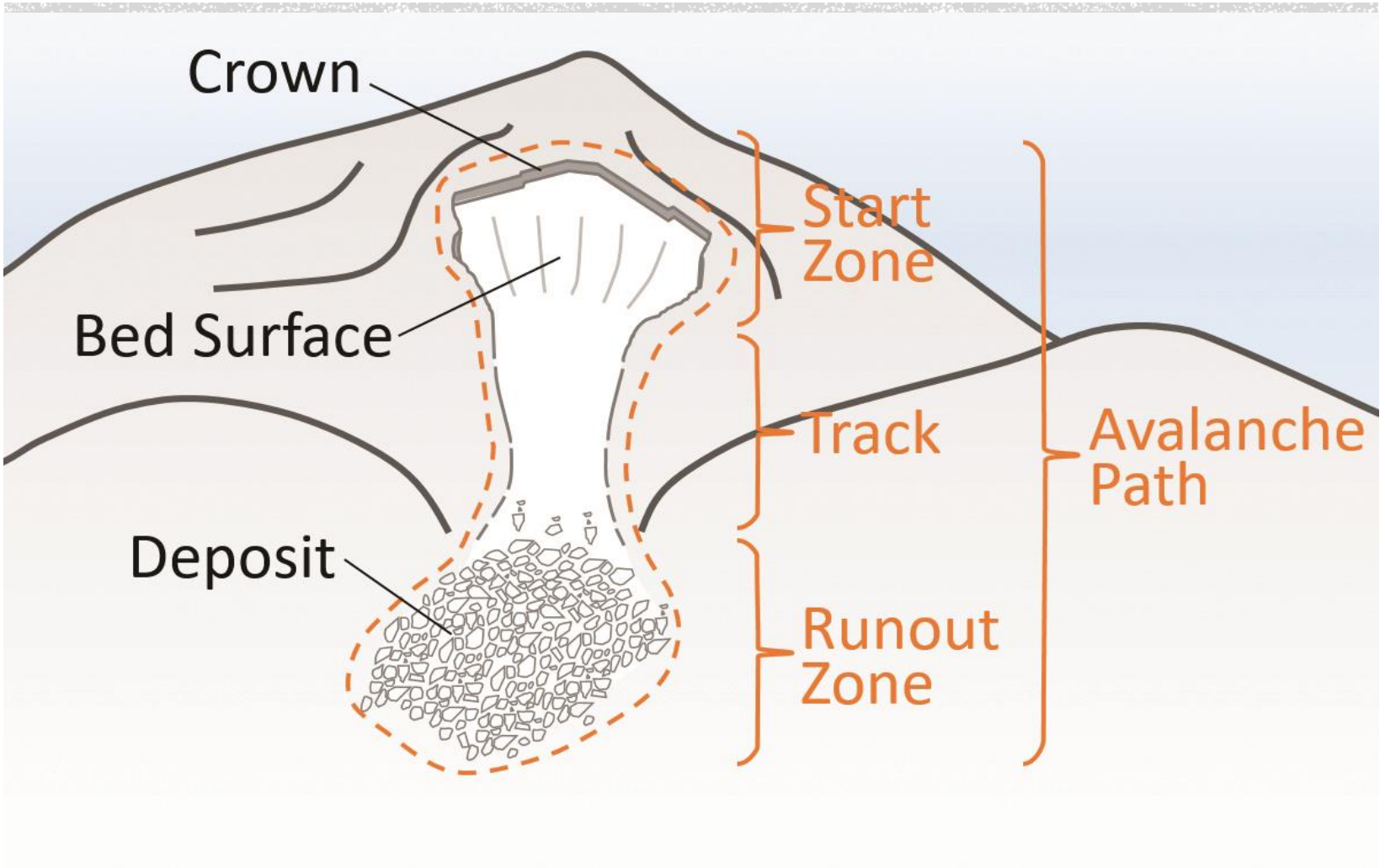
- Snowpack layering
- Common signs of instability
- Stress vs Strength
- Common triggers
- Avalanche types and Characteristics
- Avalanche Sizes

AST 1 REVIEW

Avalanche Terrain

- Avalanche paths and features
- Characteristics of the start zone
- Common trigger points
- Characteristics of the track
- Characteristics of the runout zone
- Poorly defined avalanche paths
- Evidence of past avalanches

ELEMENTS OF A SLAB AVALANCHE



AST 1 REVIEW

The Human Factors:

- In recent analysis of avalanche accidents in the United States, consistent patterns emerged in the decision making of avalanche victims. Here are six of the most common ones:

- Familiarity
- Acceptance
- Consistency
- Experts
- Tracks/Scarcity
- Social Facilitation

AST 1 REVIEW

What can we do about the human factors?

1. Travel with partners you can talk to
2. Identify when the risk level is rising
3. Assess how objective you are about the risk

To read more about the human factors go to:

www.mec.ca/Main/content_text.jsp?FOLDER%3C%3Efolder_id=2534374302887201&CONTENT%3C%3Ecnt_id=10134198674036933

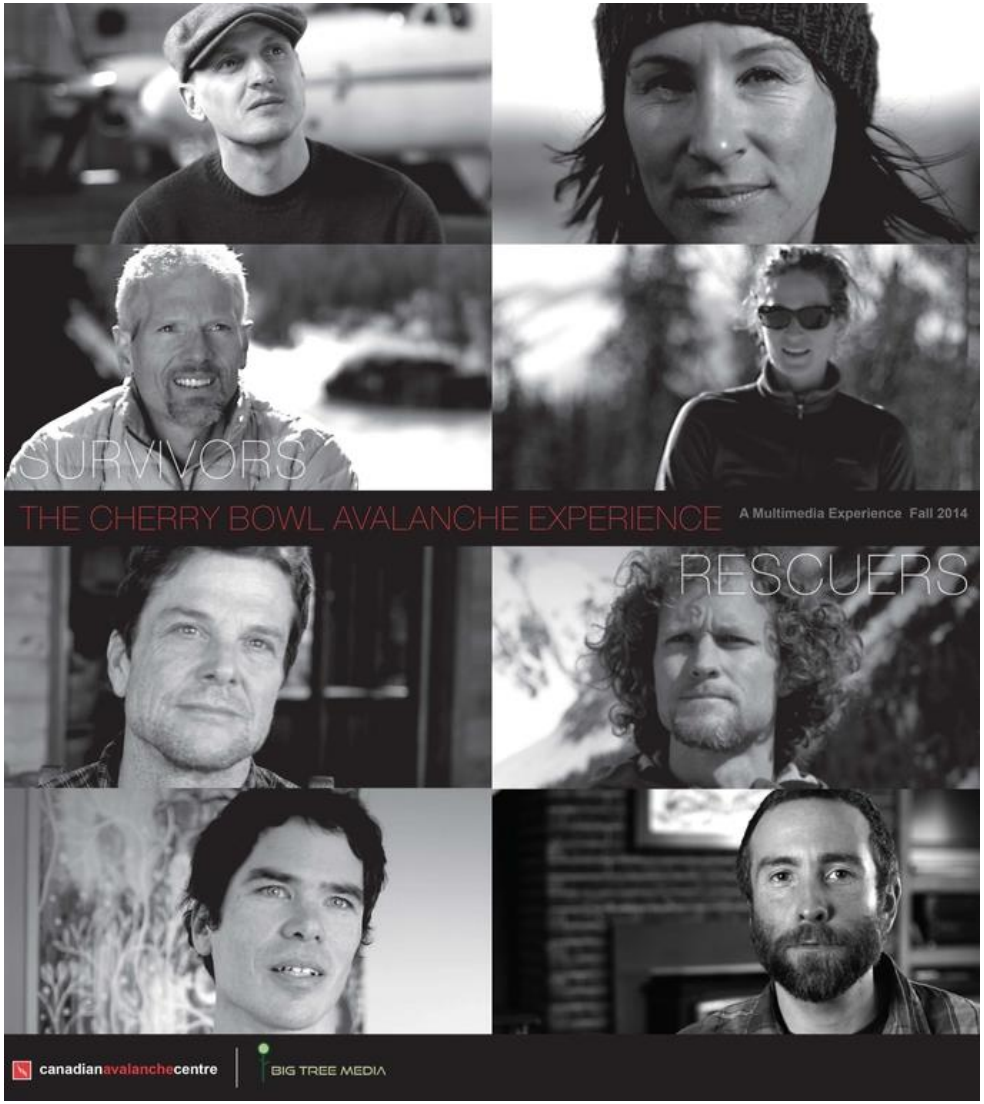
AST 1 REVIEW

Pre-Departure Risk Assessment/Reality Check

One of the most important steps you can take before venturing into the backcountry is to do a reality check;

- Am I comfortable with my trip companions?
- Given the current conditions, am I comfortable with our route?
- Can I use my equipment competently?
- Can my companions use their equipment competently?
- Does everyone in the group have adequate technical skills, experience, and abilities?
- Do I really know what to do if an avalanche hits? Am I willing to acknowledge that my companions' lives are in my hands?
- Do my companions really know what to do if an avalanche hits? Am I comfortable putting my life in their hands?

THE CHERRY BOWL INCIDENT



LEADERSHIP & TRAVEL IN AVALANCHE TERRAIN

The AST level 1 provided basic knowledge to maximize safety while travelling in avalanche terrain

- On the AST 2 we will look at how we can maintain an adequate margin of safety while travelling in more complex terrain or in conditions of more elevated avalanche danger
- The methods to mitigate the hazard are based on terrain type, personal experience, changing conditions and risk levels

LEADERSHIP & TRAVEL IN AVALANCHE TERRAIN

Since backcountry touring usually involves groups together, we need to consider how we will lead others and have an awareness of how to manage a group in avalanche terrain.

Lets look at:

- Leadership, Group Management & Good Travel habits in avalanche terrain

LEADERSHIP

Have you ever been part of group were leadership wasn't very well managed? Effect? Issues?

Photo: Rupert Wedgwood

DEFINING LEADERSHIP

- Is there a clearly defined leader or is the entire group involved in decision making?

In complex situations a group functions generally better with an agreed upon leader.

Leaders can change during the day or over a trip to share planning and decision making with others.

WHO'S THE LEADER?

What does it involve?

LEADERS ROLES INCLUDE ENSURING…

- Equipment check, transceiver check
- Inform everyone of plan (objective, route, options/alternatives/turnaround time/emergency response)
- Stay in contact using travel techniques and regroups and keeps party aware of changing local conditions, human factors as well involved in decision making.
- Do ongoing slope assessments, investigate avalanche danger and ensures its within everyone's personal comfort zone.

GROUP MANAGEMENT TECHNIQUES

- Assign lead and tail person and maintain visual and verbal contact
- Regroup at regular intervals/change of direction and in a safe area
- Avoid travel on slopes directly below/above others
- Only travel one at a time and travel between islands of safety on suspect slopes

GOOD TRAVEL HABITS

When travelling in avalanche terrain:

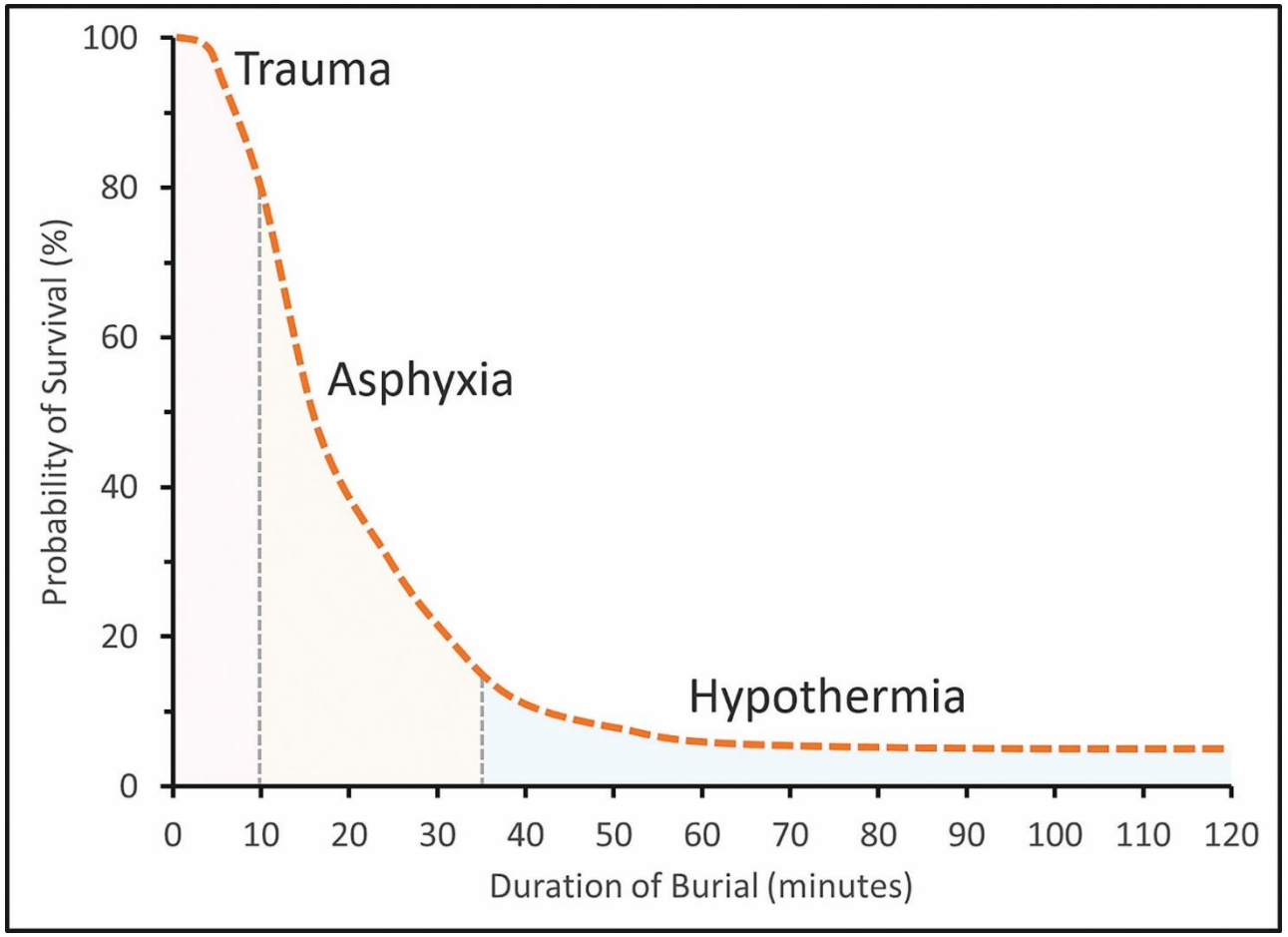
- Remove straps on poles, use releasable bindings
- Follow low angled or treed slopes or ridge crests
- Don't get boxed in, have alternate route
- Avoid travel on cornice or minimize exposure to cornice above.
- Try eliminate exposure to terrain traps
- Travel where snow is deepest, avoid shallow areas, travel in same track when suspect hazard

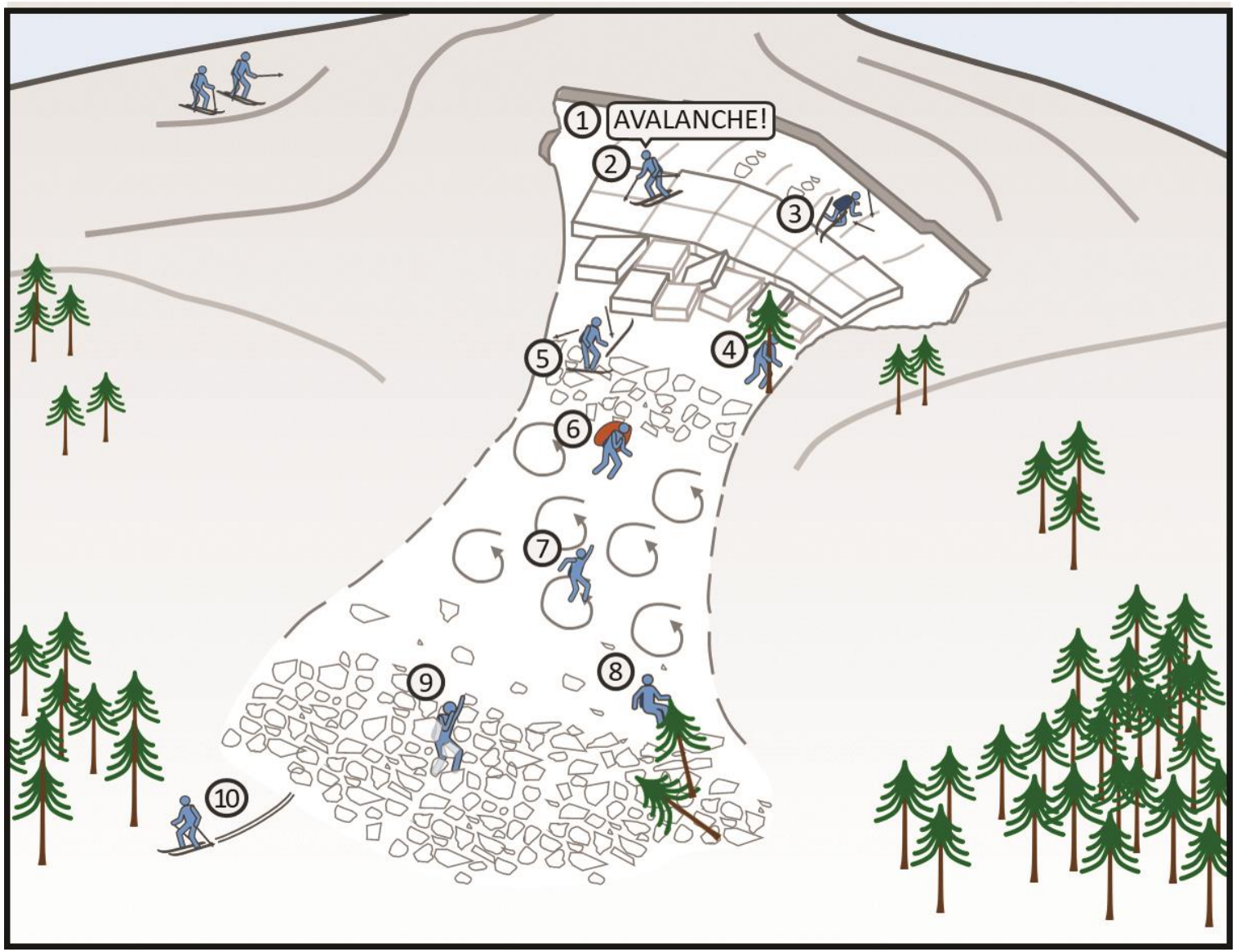
Companion Rescue (video)

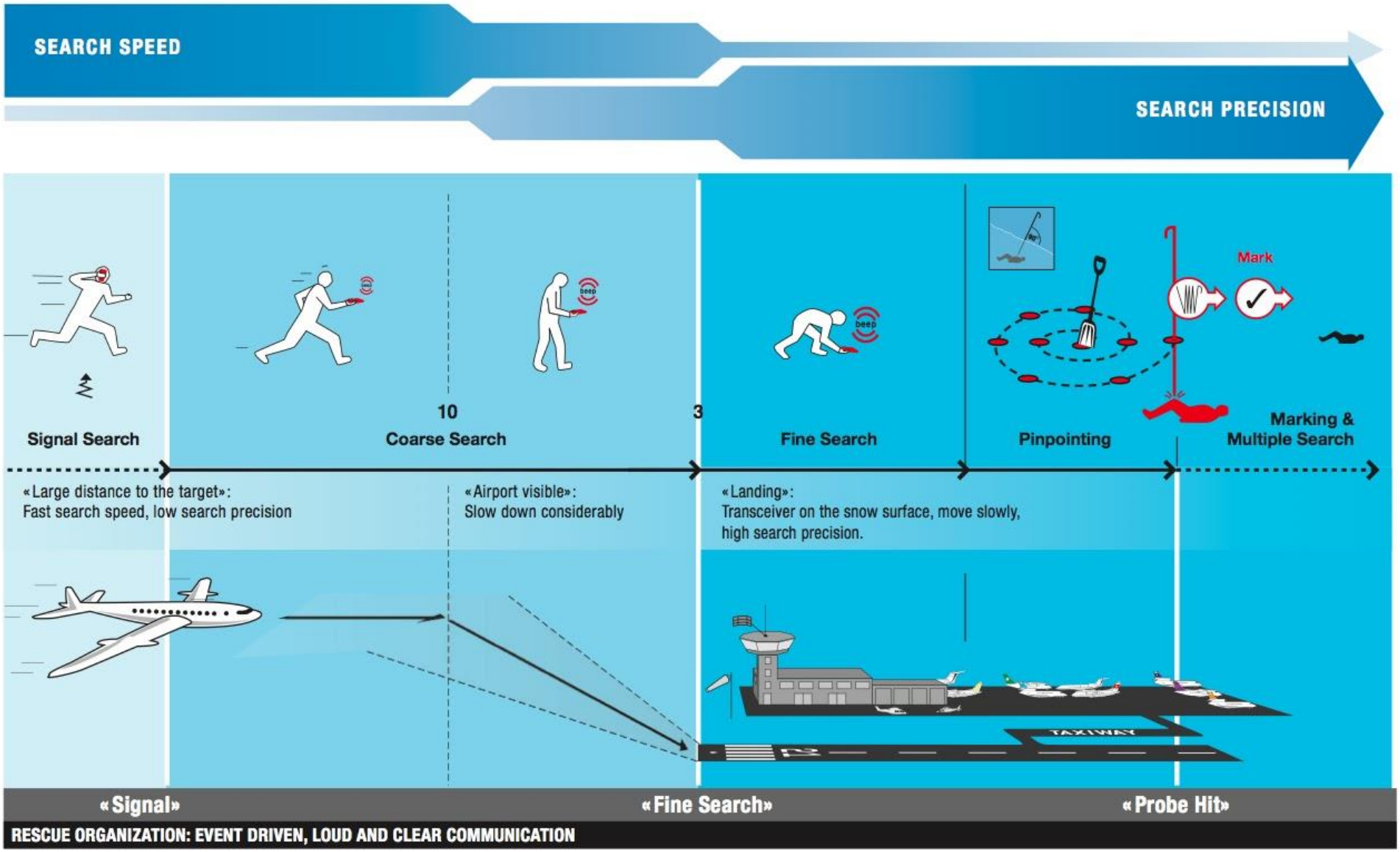
Review of the various stages:

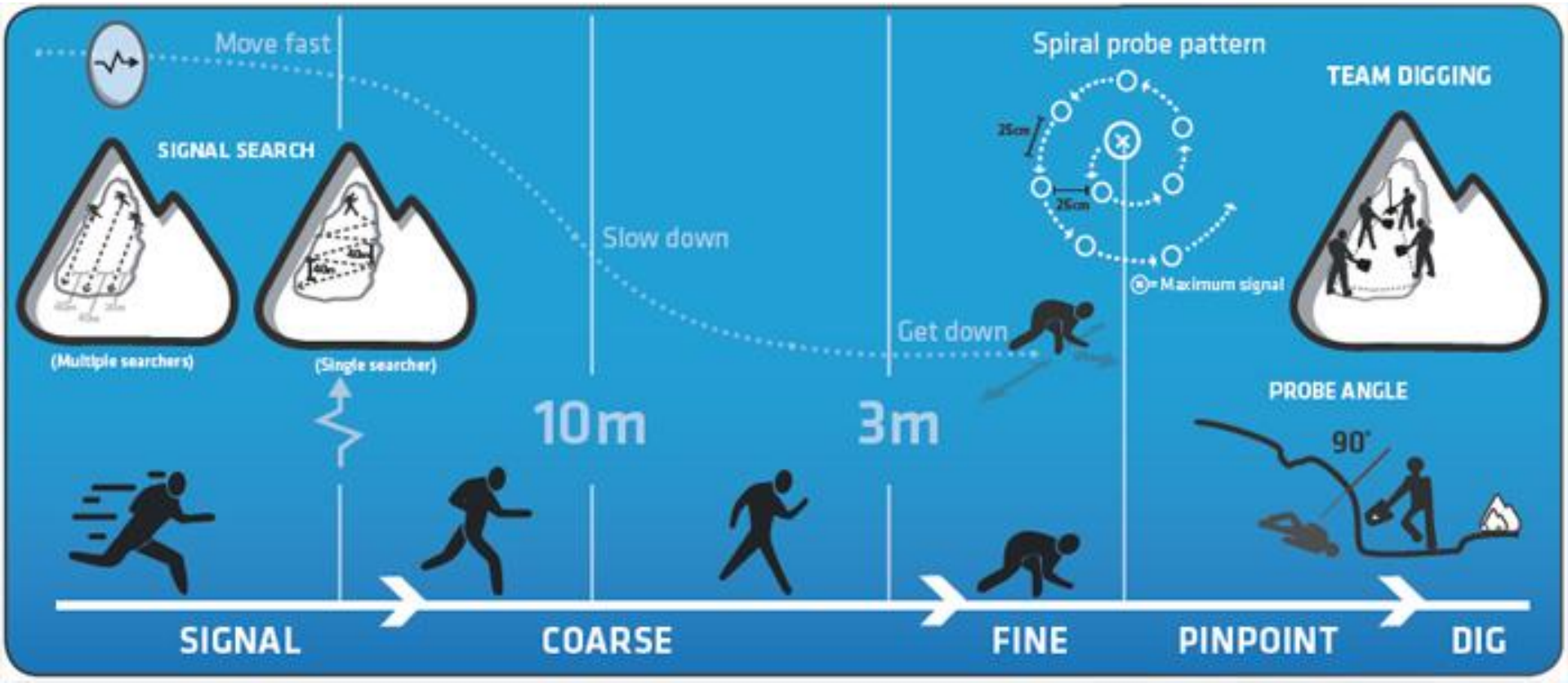
- Avalanche is an urgent emergency
- What to do if caught
- Transceiver search techniques
- Deep burial transceiver technique
- Probing techniques
- Shovelling techniques
- Triage (reverse triage)
- Companion rescue.

Survival Curve

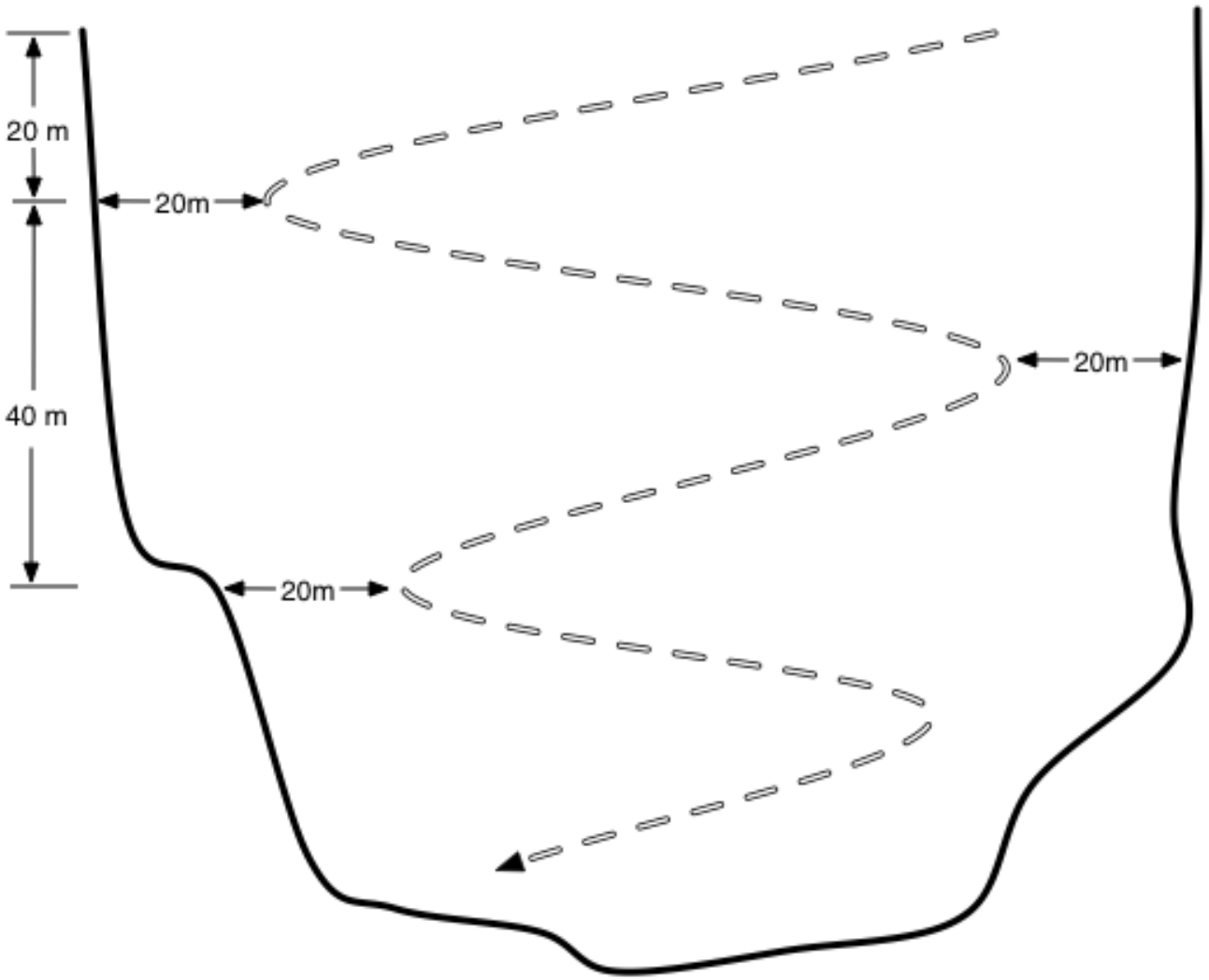



1
AVALANCHE!
2
3
4
5
6
7
8
9
10

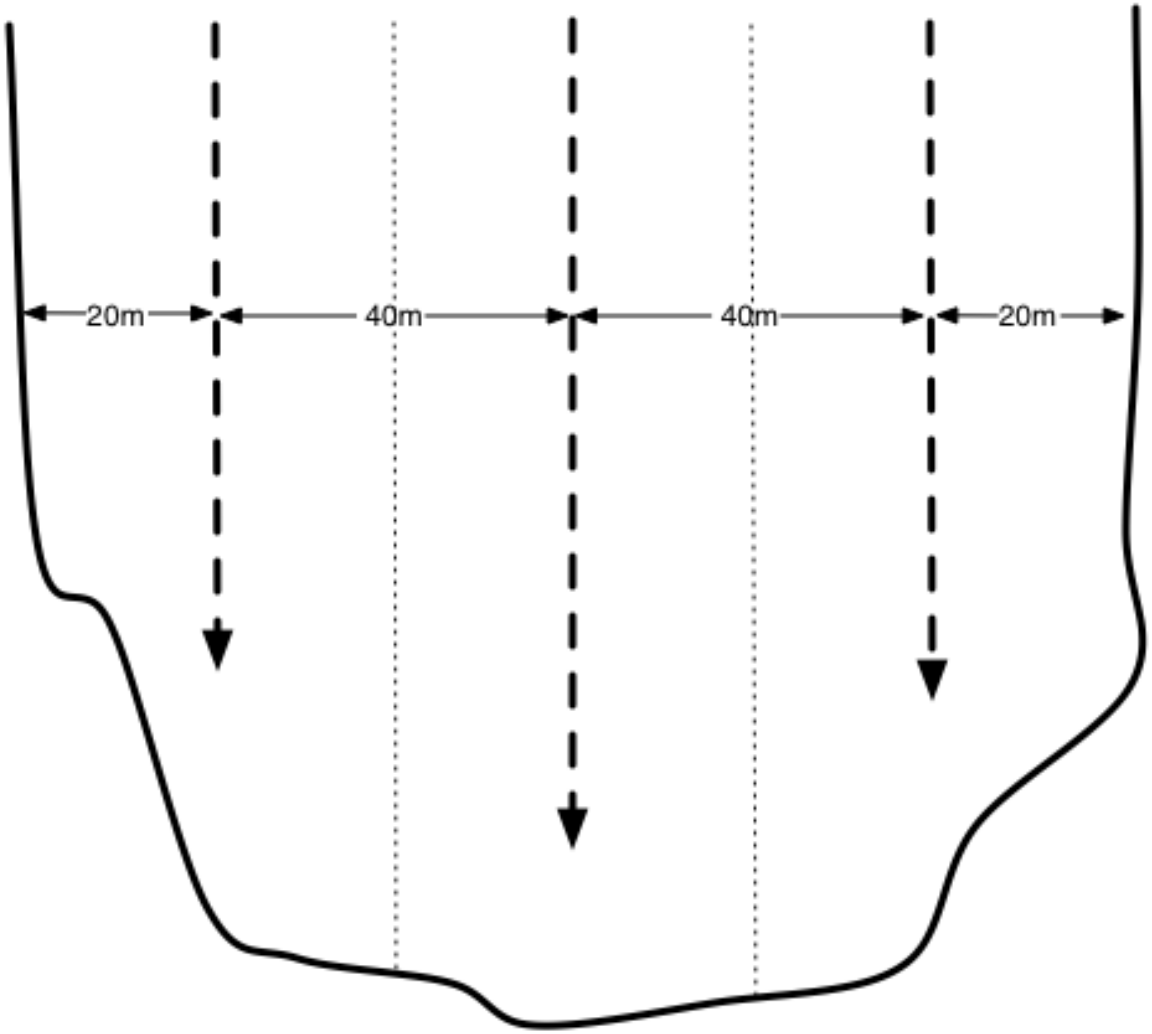

SEARCH SPEED
SEARCH PRECISION
Mark
Signal Search
10
Coarse Search
3
Fine Search
Pinpointing
Marking &
Multiple Search
«Large distance to the target»:
Fast search speed, low search precision
«Airport visible»:
Slow down considerably
«Landing»:
Transceiver on the snow surface, move slowly,
high search precision.
TAXIWAY
«Signal»
«Fine Search»
«Probe Hit»
RESCUE ORGANIZATION: EVENT DRIVEN, LOUD AND CLEAR COMMUNICATION


Move fast
SIGNAL SEARCH
(Multiple searchers)
(Single searcher)
Slow down
10m
3m
Get down
Spiral probe pattern
25cm
25cm
= Maximum signal
TEAM DIGGING
PROBE ANGLE
90°
SIGNAL
COARSE
FINE
PINPOINT
DIG

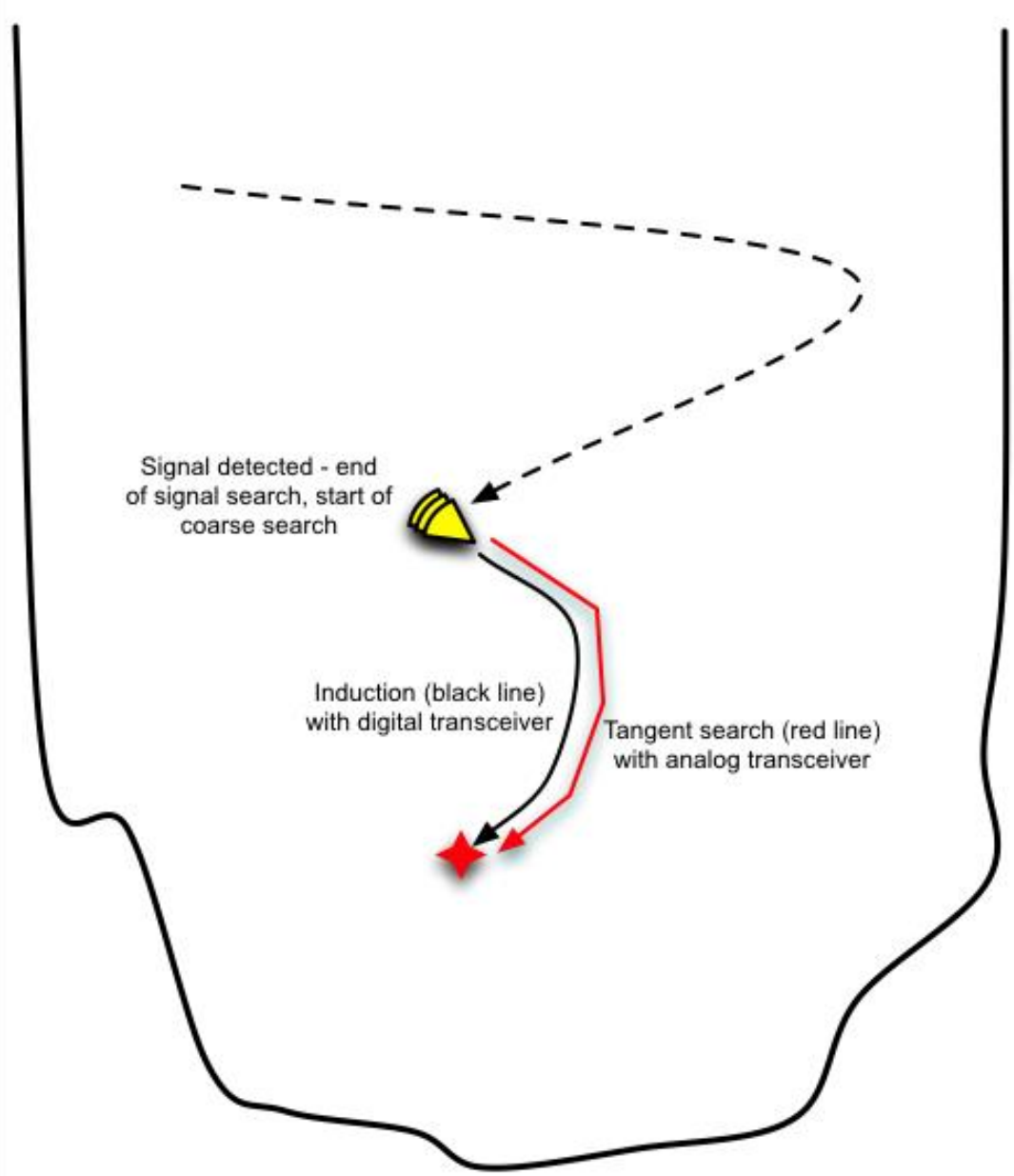
Signal Search: One Rescuer



Signal Search: Multiple Rescuers



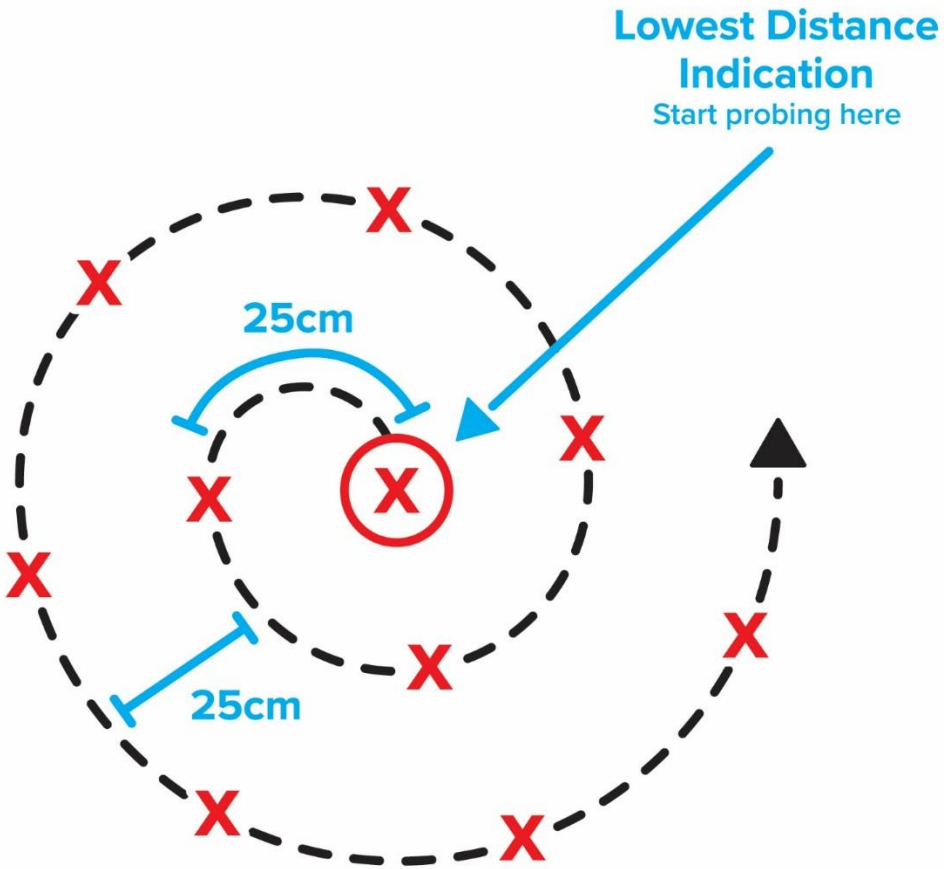
Coarse Search:



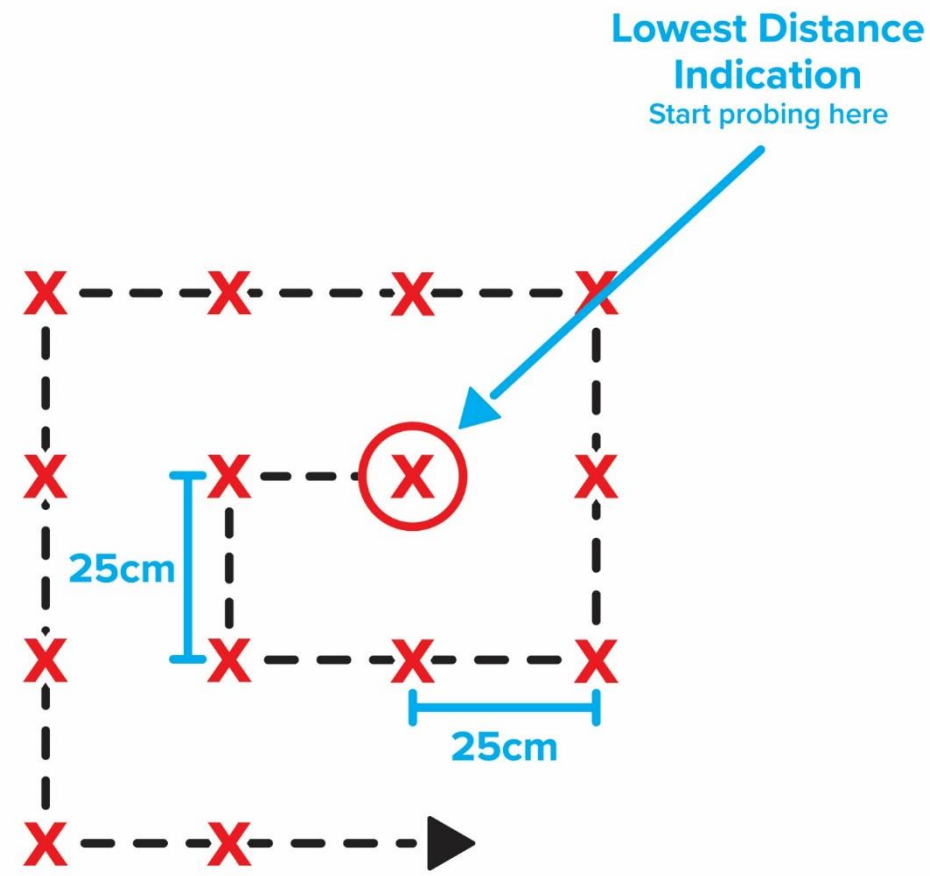
Fine Search: Grid Pattern (Bracketing)

Probe Perpendicular to Slope

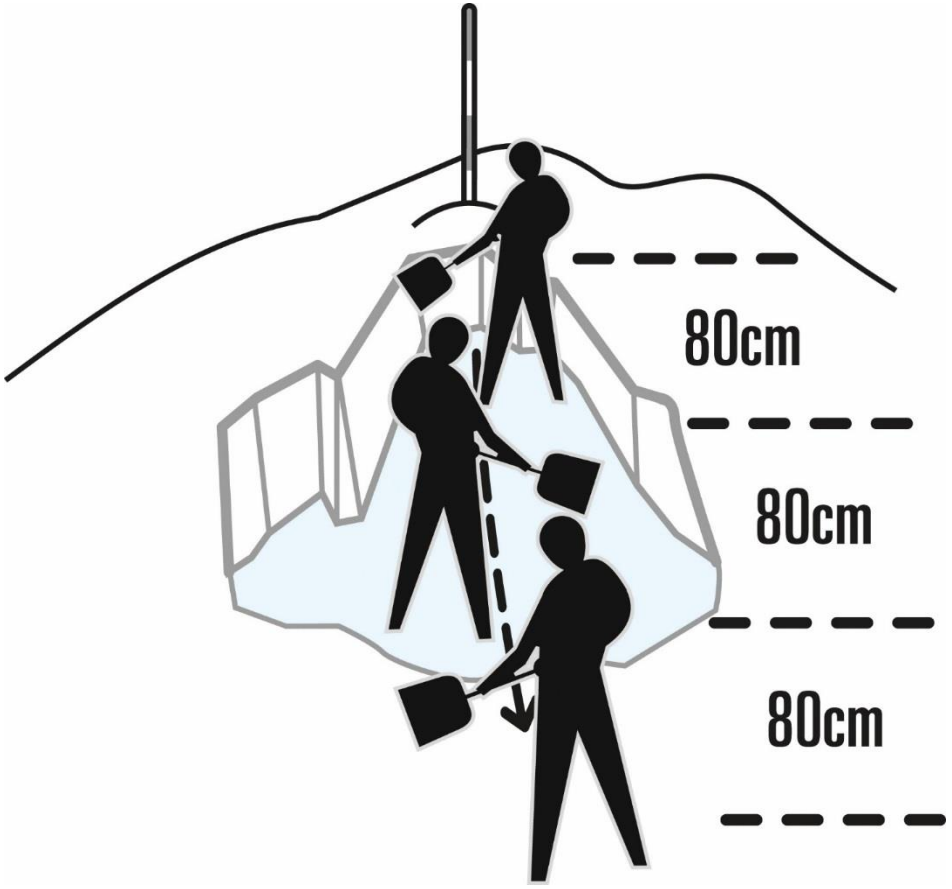
Spiral Probing



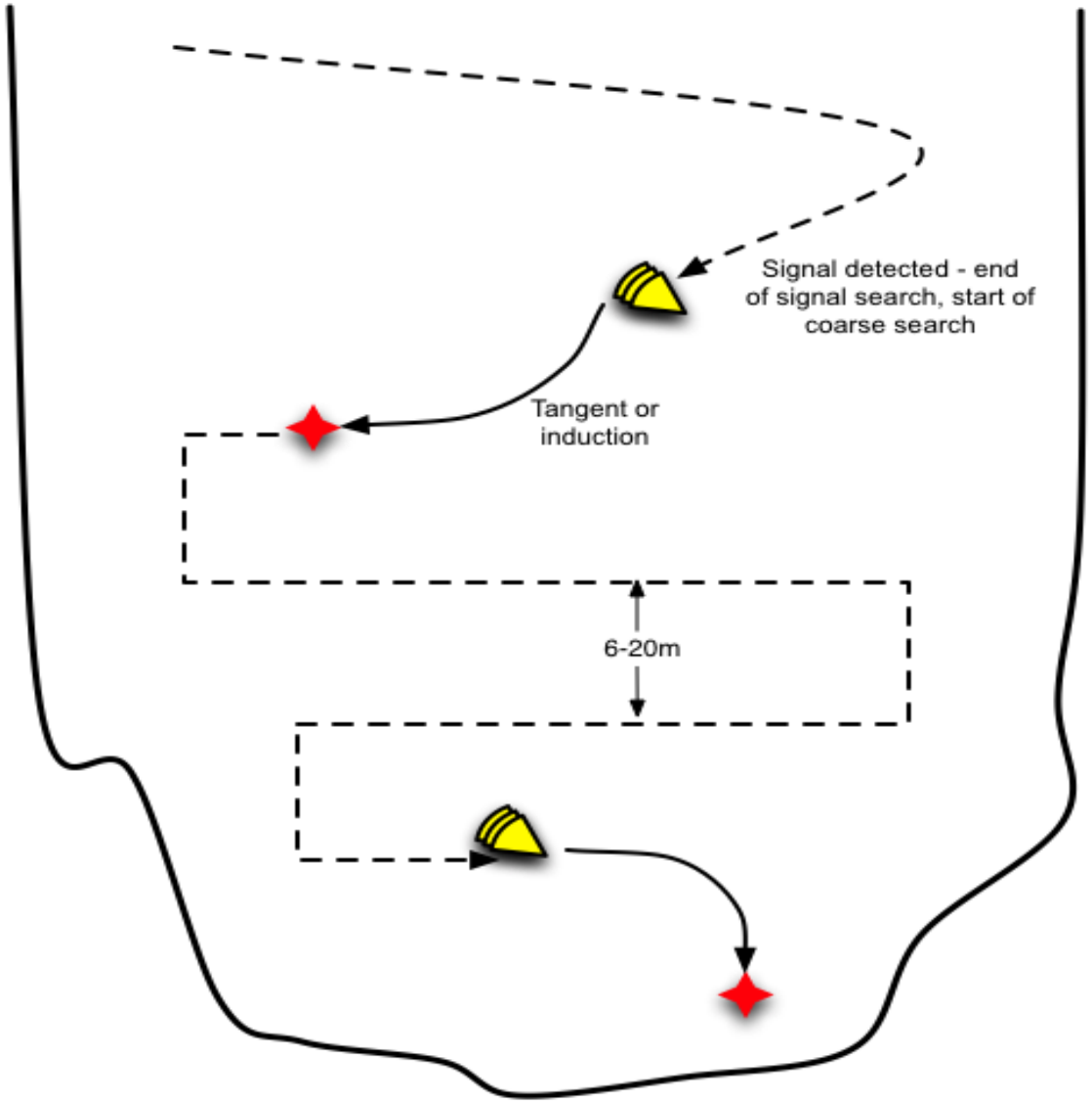
Grid Probing



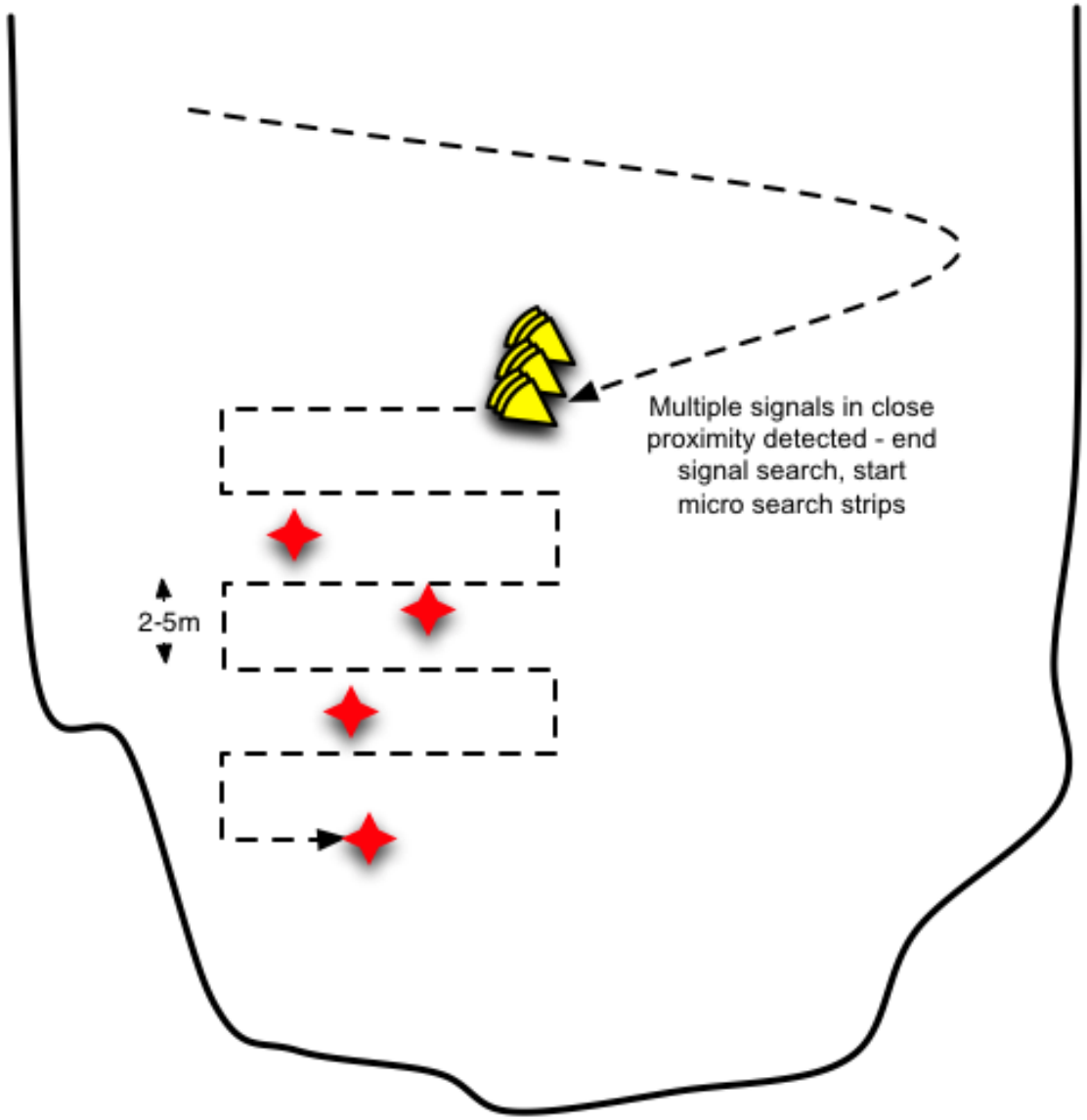
Conveyor Shovelling



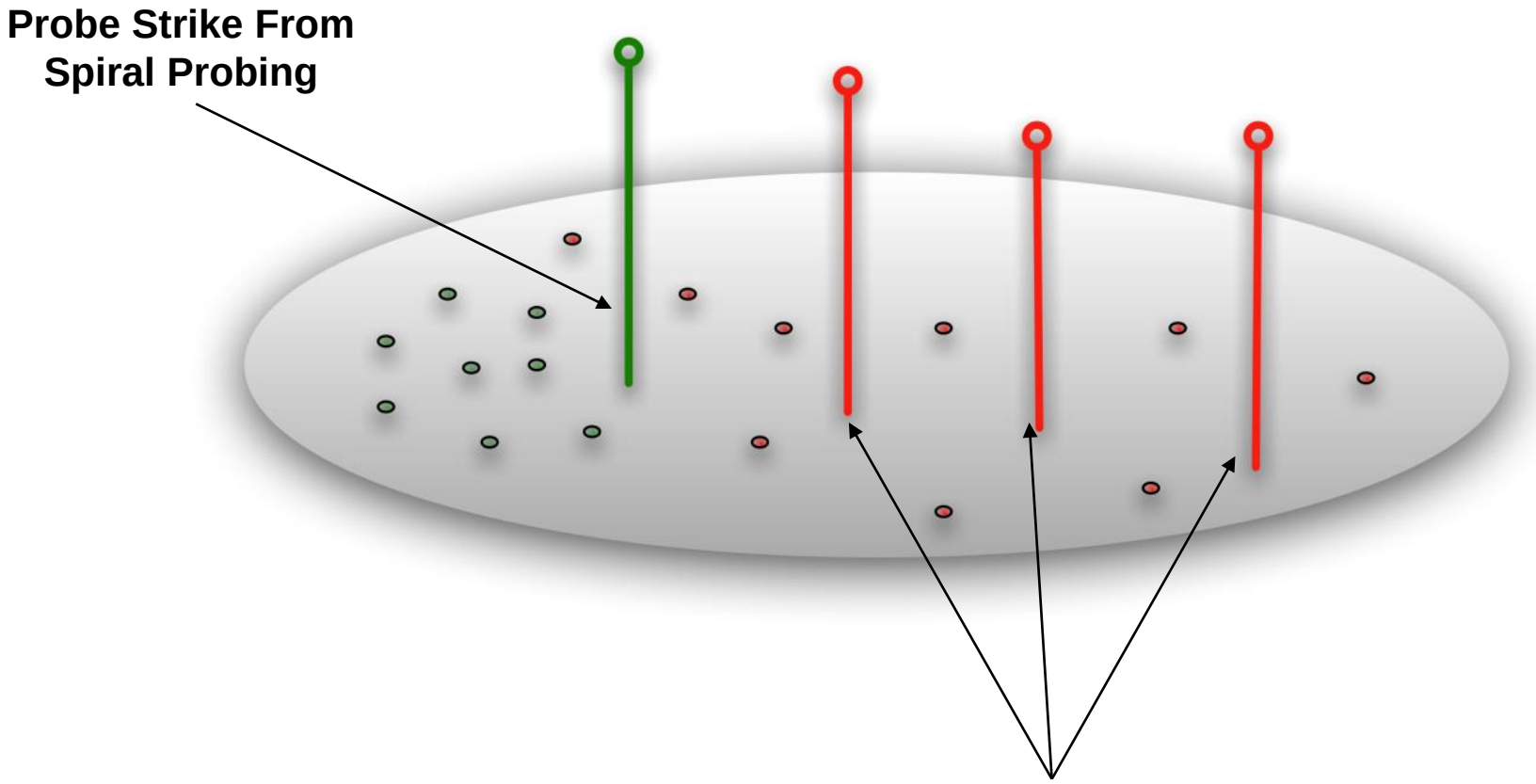
Coarse Search Strip Width 6-20m: Multiple Burial – Far Apart



Coarse Search Strip Width 2-5m: Multiple Burial - Close Together



Position Probing: To prepare for shoveling.



Terrain Exceptions

As we have learned , we can benefit from understanding and using the ATES rating system, however not all terrain is rated nor is complex.

Here we will look at ways to utilize terrain exceptions (AKA micro terrain features and nuances in the terrain) to better manage the risk when travelling in more complex terrain.

As a decision maker you **need** to have a good understanding of terrain and be able to both recognize and utilize it…

Terrain Exceptions

The main objectives in this lesson are to understand:

- The role of terrain in times and places of uncertainty and/or increased risk
- Limitations of ATES public model
- ATES technical model
- Terrain features that promote increased safety margins
- Terrain features that promote decreased safety margins.

Role of Terrain

A few key points:

- Terrain doesn't change over time
- Some terrain features will never produce avalanches while others will regularly
- Some terrain increase the potential for consequences if caught in an avalanche
- Some terrain decrease the potential for consequences if caught in an avalanche

ATES Public model

Avalanche Terrain Exposure Scale – Public Model (Source: Parks Canada)

Description	Class	Terrain Criteria
Simple	1	Exposure to low angle or primarily forested terrain. Some forest openings may involve the runout zones of infrequent avalanches. Many options to reduce or eliminate exposure. No glacier travel.
Challenging	**2**	Exposure to well defined avalanche paths, starting zones or terrain traps; options exist to reduce or eliminate exposure with careful route finding. Glacier travel is straightforward but crevasse hazards may exist.
Complex	**3**	Exposure to multiple overlapping avalanche paths or large expanses of steep, open terrain; multiple avalanche starting zones and terrain traps below; minimal options to reduce exposure. Complicated glacier travel with extensive crevasse bands or icefalls.

ATES Limitations

The public model has some limitations:

- It is a global terrain rating for entry level decision makers
- It is an average of a large piece of terrain
- Variation exists with-in a piece of terrain with a single rating
- More advanced decision make work with terrain on a finer scale and use many other factors to asses when and where to travel given the changing conditions

Avalanche Terrain Exposure Scale Technical Model (P96, SA)(Source: Parks Canada)

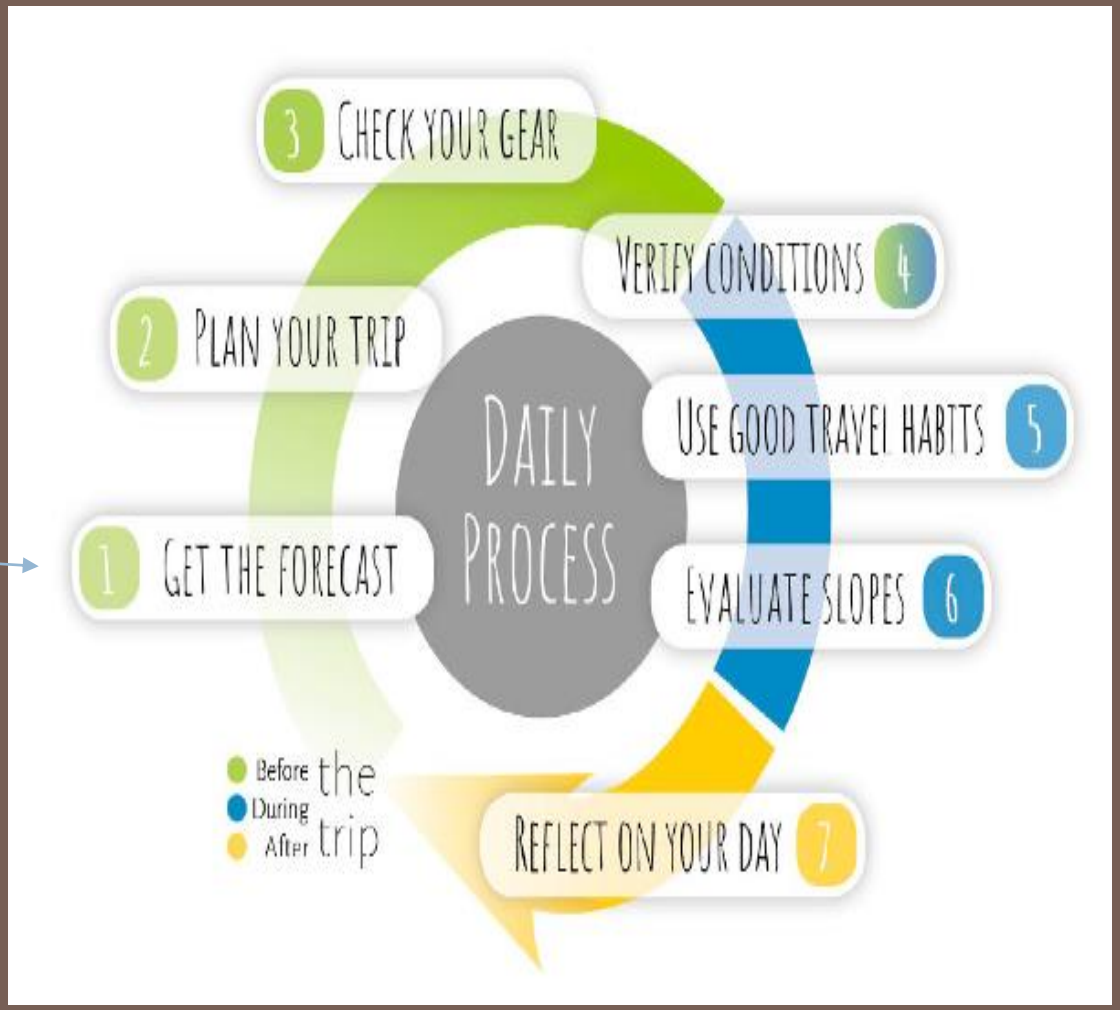
	Simple	Challenging	Complex
Slope angle	Angles generally < 30º	***Mostly low angle, isolated slopes >35º***	***Variable with large % >35º***
Slope shape	Uniform	Some convexities	Convoluted
Forest density	Primarily treed with some forest openings	Mixed trees and open terrain	Large expanses of open terrain. Isolated tree bands
Terrain traps	Minimal, some creek slopes or cutbanks	Some depressions, gullies and/or overhead avalanche terrain	***Many depressions, gullies, cliffs, hidden slopes above gullies, cornices***
Avalanche frequency (events:years)	1:30 ≥ size 2	1:1 for < size 2 ***1:3 for ≥ size 2***	1:1 < size 3 ***1:1 ≥ size 3***
Start zone density	Limited open terrain	Some open terrain. Isolated avalanche paths leading to valley bottom	Large expanses of open terrain. Multiple avalanche paths leading to valley bottom
Runout zone characteristics	Solitary, well defined areas, smooth transitions, spread deposits	Abrupt transitions or depressions with deep deposits	Multiple converging runout zones, confined deposition area, steep tracks overhead
Interaction with avalanche paths	Runout zones only	Single path or paths with separation	***Numerous and overlapping paths***
Route options	Numerous, terrain allows multiple choices	A selection of choices of varying exposure, options to avoid avalanche paths	***Limited chances to reduce exposure, avoidance not possible***
Exposure time	None, or limited exposure crossing runouts only	***Isolated exposure to start zones and tracks***	***Frequent exposure to start zones and tracks***
Glaciation	None	***Generally smooth with isolated bands of crevasses***	***Broken or steep sections of crevasses, icefalls or serac exposure***

Shortened ATES Classification

	SIMPLE	CHALLENGING	COMPLEX
EXTENT OF AVALANCHE TERRAIN	Mostly non-avalanche terrain	A mix of avalanche and non-avalanche terrain	Mostly avalanche terrain
AVALANCHE SIZE POTENTIAL	Nothing greater than size 1.0	Nothing greater than size 2.0	Size 3.0 or greater
OVERHEAD AVALANCHE EXPOSURE	Limited exposure to runouts of infrequent avalanches	Isolated exposure to single paths	Frequent exposure to numerous and overlapping paths

AST 2 – Lesson Plan 5

Daily Process Step 1 – Get the Forecast


3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the
During
After trip
Reflect on your day 7

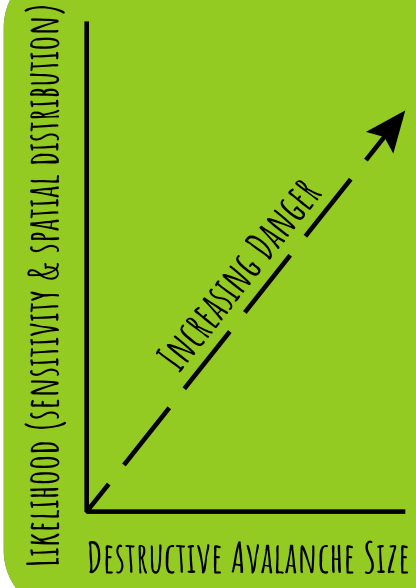
Data From:
- InfoEx
- MIN
- Weather

(past & forecast)

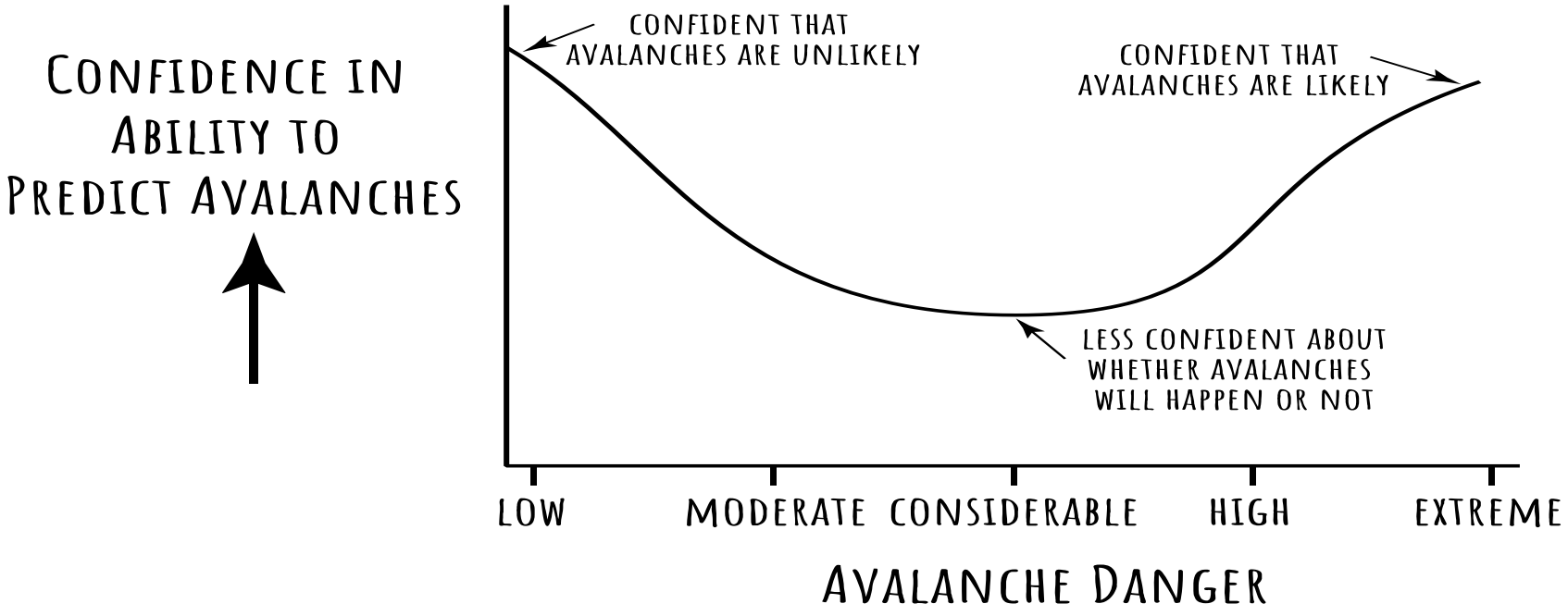
Avalanche Problem #1

Avalanche Problem #2

Avalanche Problem #3



Danger Rating (low, moderate, considerable, high, extreme)


CONFIDENCE IN ABILITY TO PREDICT AVALANCHES
CONFIDENT THAT AVALANCHES ARE UNLIKELY
CONFIDENT THAT AVALANCHES ARE LIKELY
LESS CONFIDENT ABOUT WHETHER AVALANCHES WILL HAPPEN OR NOT
LOW
MODERATE
CONSIDERABLE
HIGH
EXTREME
AVALANCHE DANGER

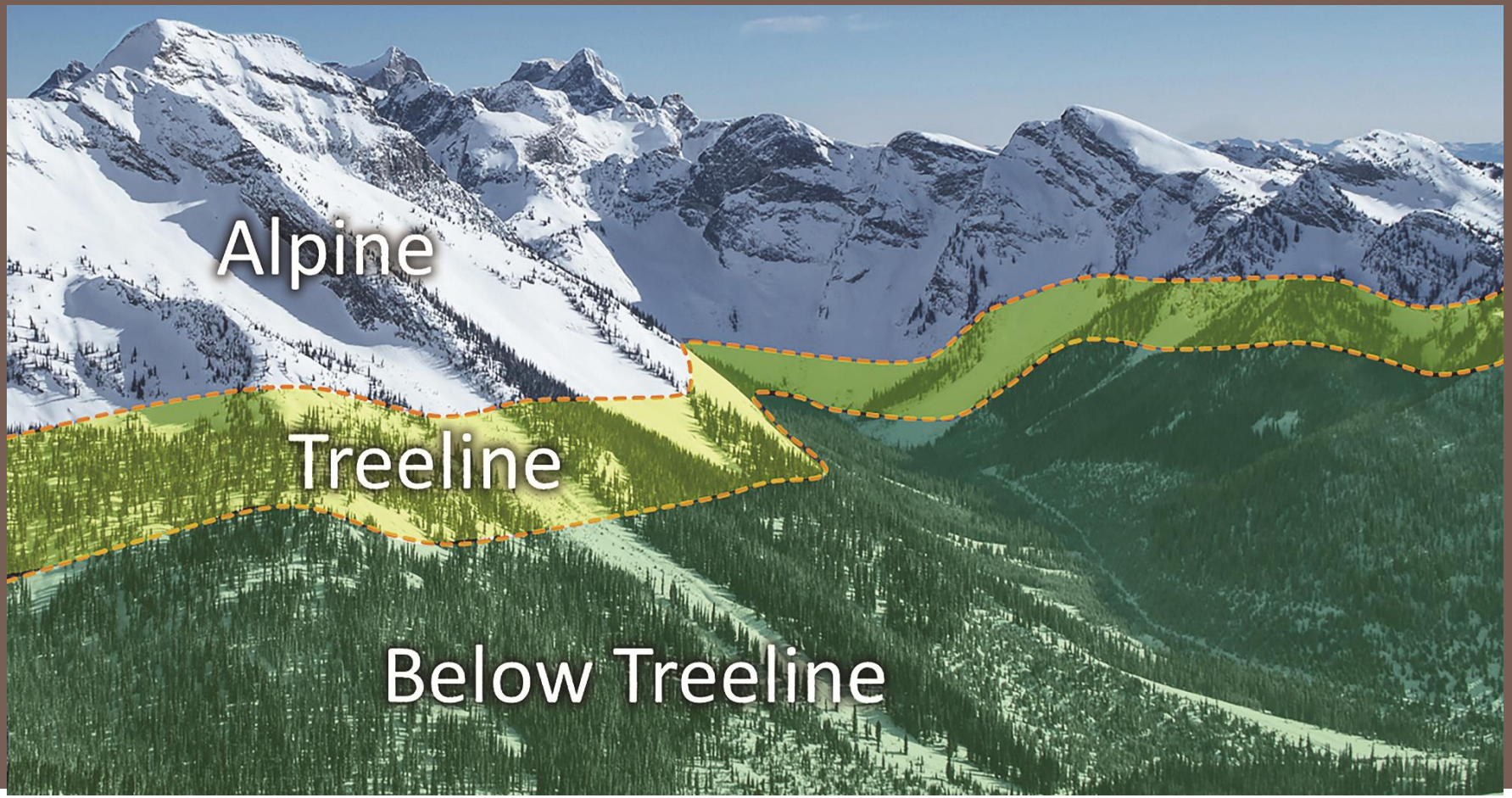
Season Log

Use the following empty pages to record important weather events and snowpack characteristics as the season progresses. Examples include extended dry periods, rain or wind events, significant snow falls, and known persistent weak layers.

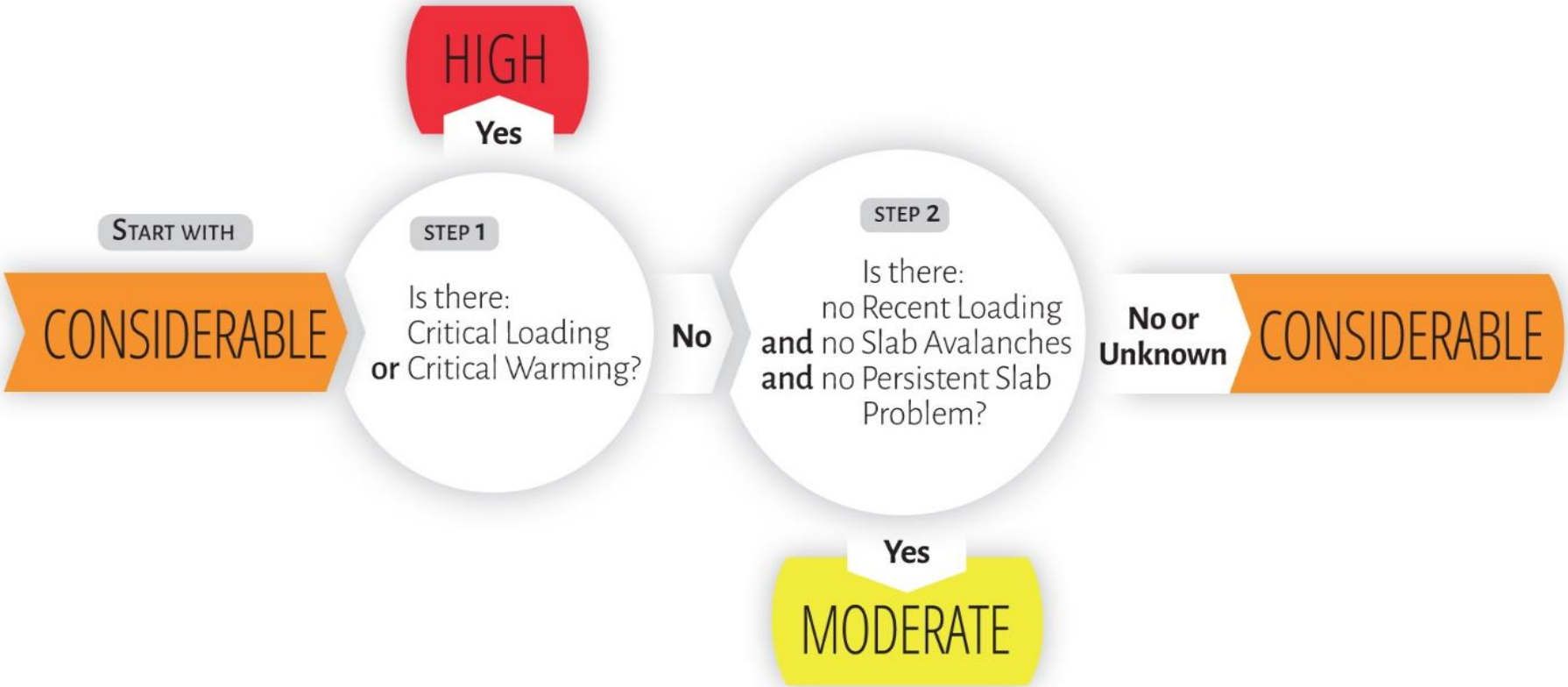
The items below are examples of the kind of entries you may wish to make in this section.

Date	Comment
Feb 14-21	Clear weather all week produced a widespread layer of surface hoar. Avalanche forecasters warning of a potential PWL.
Feb 22	40cm of new snow buried surface hoar crystals up to about 20mm in size.
Feb 25-27	Warming temperatures and wind triggered a widespread avalanche cycle on what is being called the Feb 22 surface hoar PWL.
Feb 28-Mar 4	Natural avalanches stopped but skiers are triggering increasingly large avalanches on the Feb 22 layer.

ELEVATION BANDS

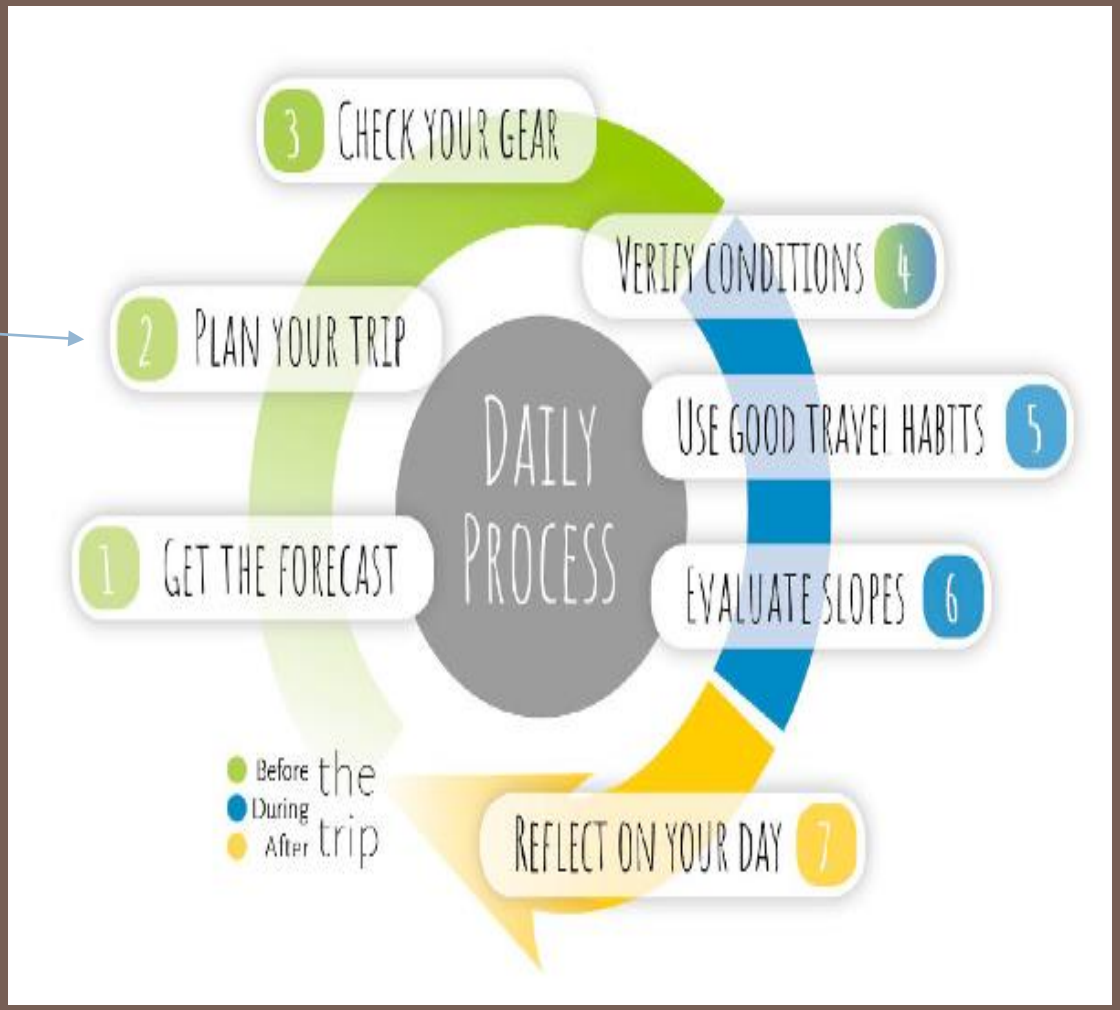


DANGERATOR FLOW CHART (USE IF NO AVALANCHE FORECAST EXIST)



AST 2 – Lesson Plan 6

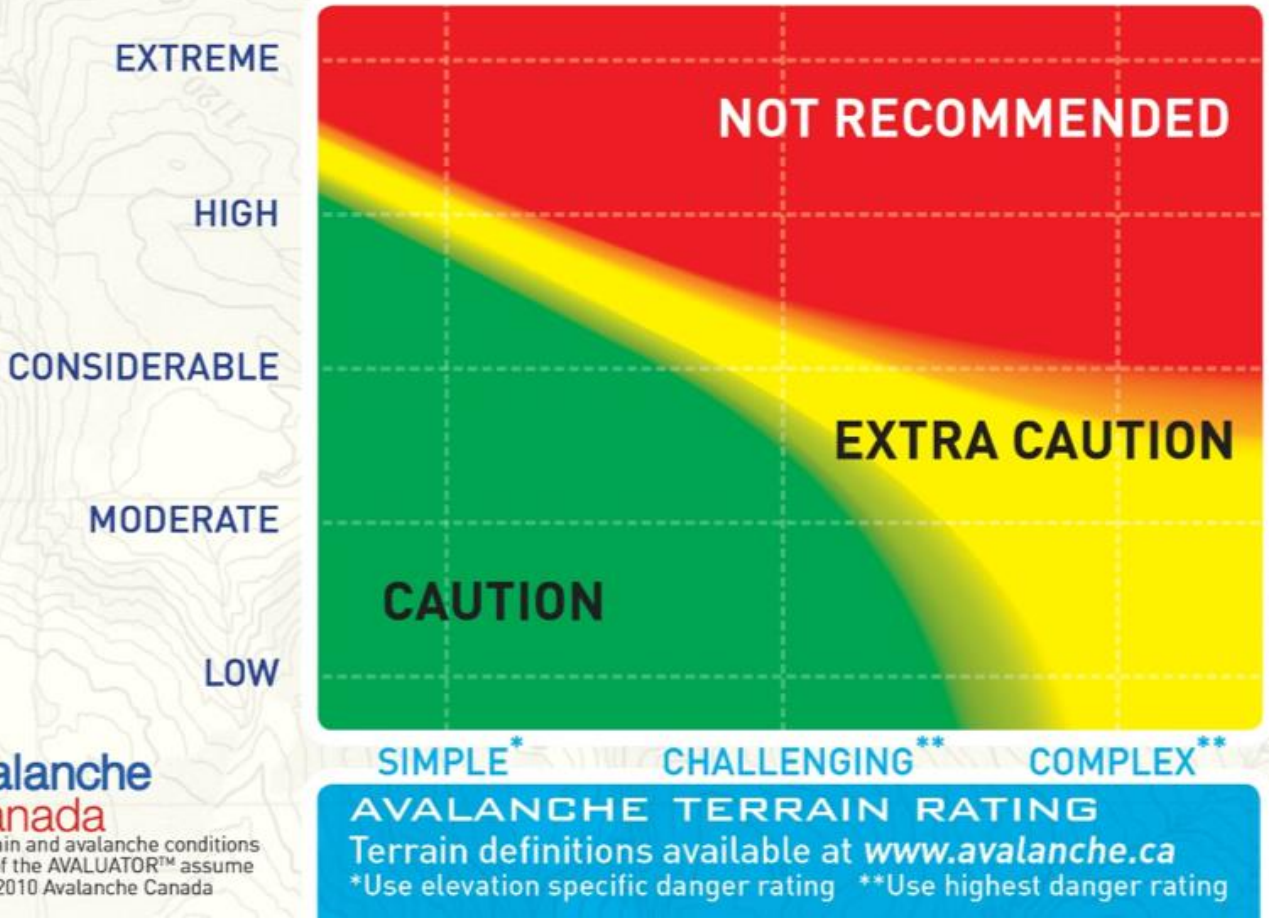
Daily Process Step 2 – Plan Your Trip


3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the trip
During
After
Reflect on your day 7

AVALUATOR™ TRIP PLANNER v2.0

Remember to verify all information used during the trip planning stage at the trail head. Confirm that the trip decision is still within the comfort zone and skill level of your group.

DANGER RATING
Refer to public bulletins for danger ratings at *www.avalanche.ca*



AVALANCHE TERRAIN RATING
Terrain definitions available at *www.avalanche.ca*
*Use elevation specific danger rating **Use highest danger rating

Avalanche Canada

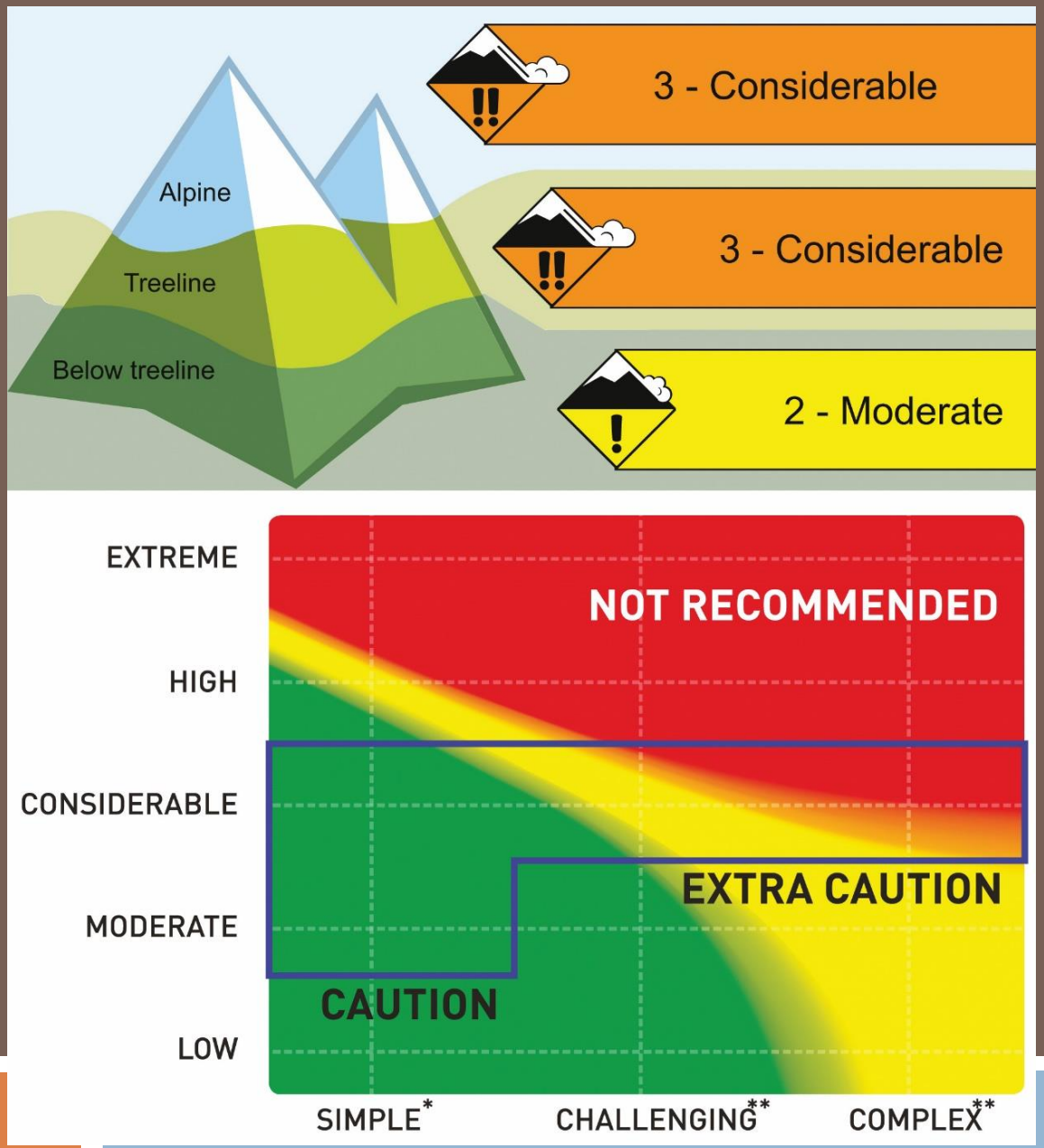
Green or Yellow?

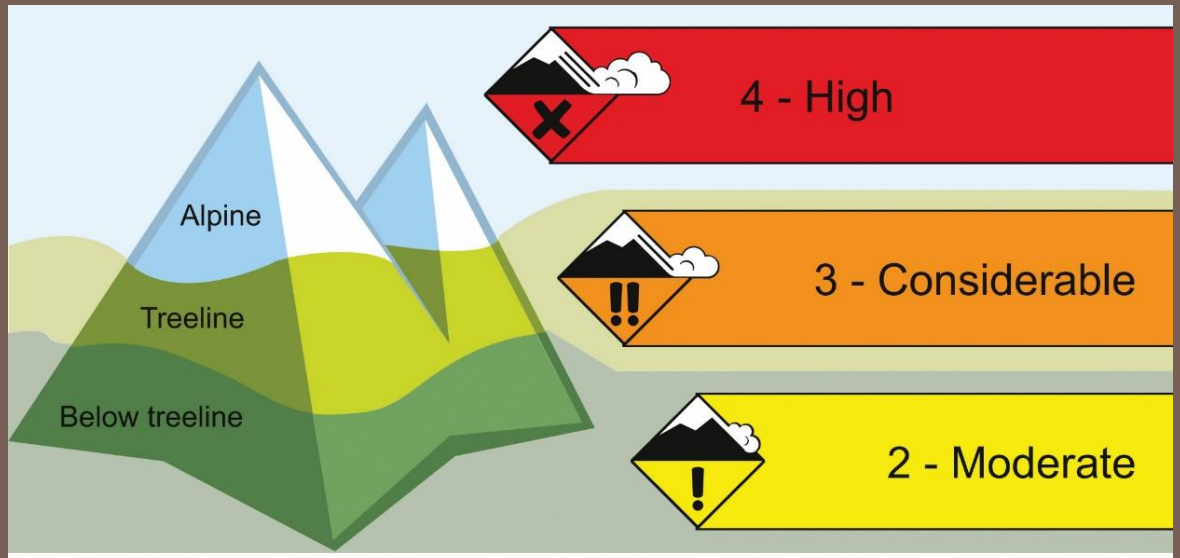
Green:

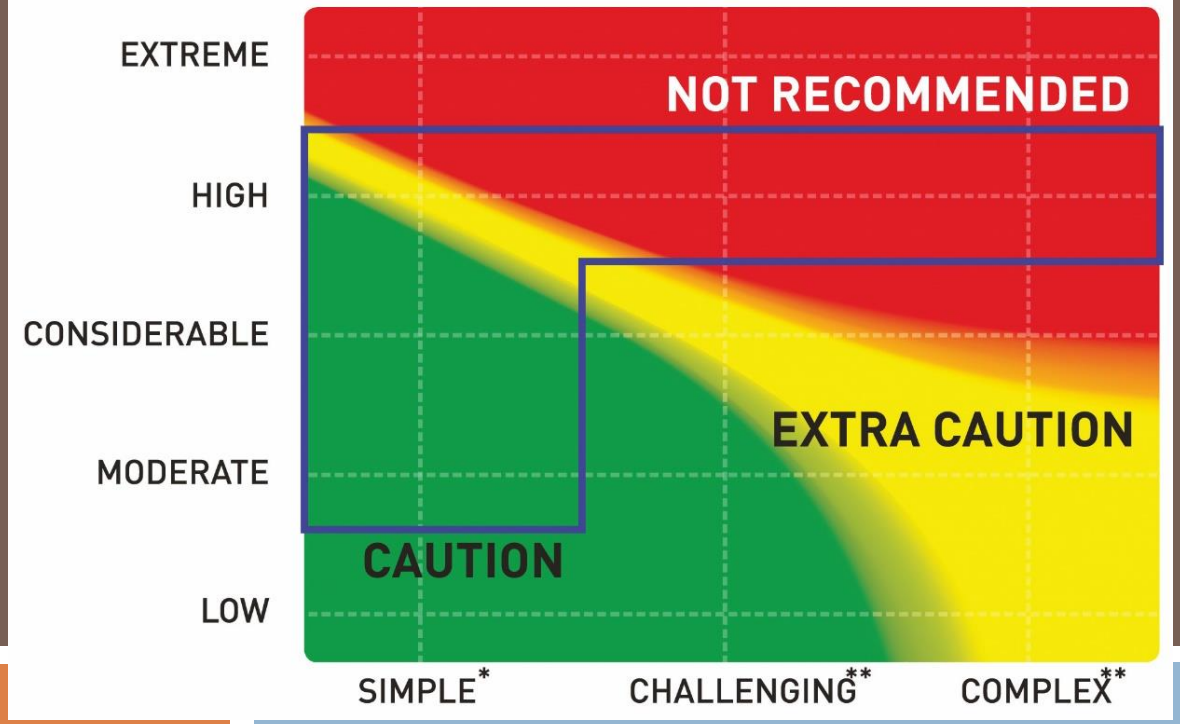
- Basic avalanche skills.

Yellow:

- Intermediate to advanced avalanche knowledge/experience.
- Strong companion rescue skills.
- A trip plan A and a plan B.
- Thorough knowledge of the avalanche forecast.
- The ability to verify conditions.
- Good slope evaluation skills.
- Weather conditions that allow them to follow a specific route (e.g., good visibility).


Alpine
Treeline
Below treeline
3 - Considerable
3 - Considerable
2 - Moderate
EXTREME
HIGH
CONSIDERABLE
MODERATE
LOW
NOT RECOMMENDED
EXTRA CAUTION
CAUTION
SIMPLE*
CHALLENGING**
COMPLEX**


Alpine
Treeline
Below treeline
4 - High
3 - Considerable
2 - Moderate

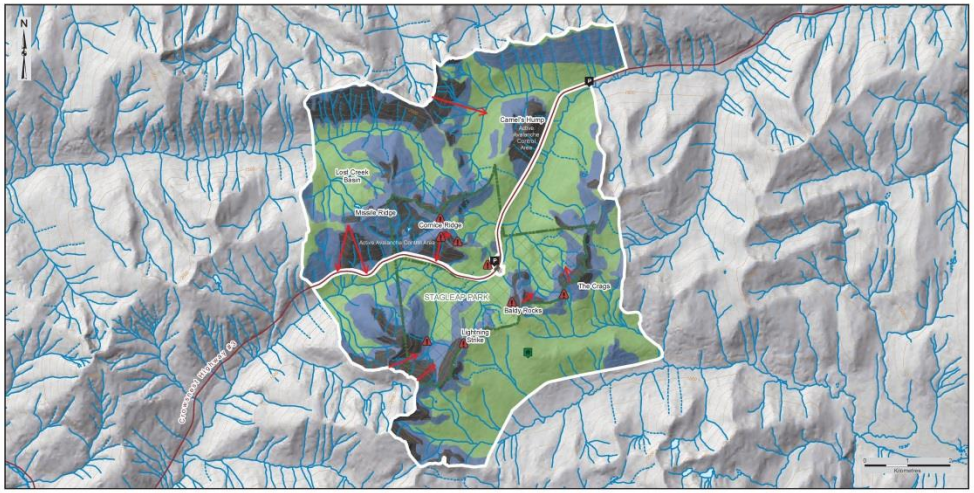

EXTREME
HIGH
CONSIDERABLE
MODERATE
LOW
NOT RECOMMENDED
EXTRA CAUTION
CAUTION
SIMPLE*
CHALLENGING**
COMPLEX**

Considerations when planning a group:

- Effective pre-trip communication to manage expectations.
- Disparate levels of risk tolerance may lead to disagreement.
- Rider skill
- Each member’s companion rescue skills.
- Individual fitness levels.
- Size of the group. Large groups are challenging to manage in avalanche terrain.

YOU ARE HEADING INTO
AVALANCHE
TERRAIN

1. What type of terrain are you heading into?



AVALANCHE TERRAIN RATINGS

SIMPLE
Exposure to low angle or primarily forested terrain. Some forest openings may involve the runout zones of infrequent avalanches. Many options to reduce or eliminate exposure.

CHALLENGING
Exposure to well defined avalanche paths, starting zones or terrain traps; options exist to reduce or eliminate exposure with careful route finding. Glacier travel is straightforward but crevasse hazard may exist.

COMPLEX
Exposure to multiple overlapping avalanche paths or large expanses of steep, open terrain; multiple avalanche starting zones or terrain traps below; minimal options to reduce exposure. Complicated glacier travel with extensive crevasse bands or icefalls.

CABIN
DECISION POINT
PARKING
AVALANCHE PATH
ROAD/TRAIL

Note: Because of scale some of the areas classified have been generalized. For high resolution interactive digital maps check out the Online Trip Planner at www.avalanche.ca/cac

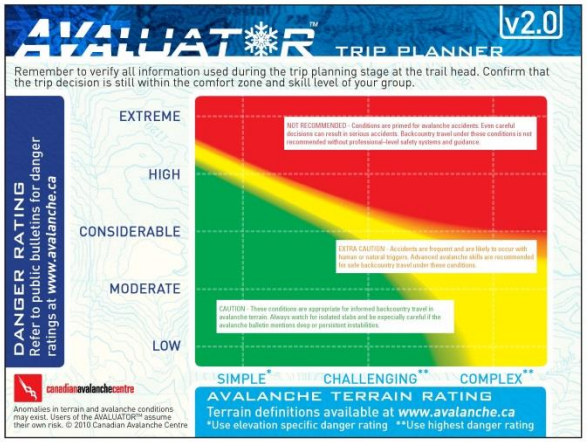
2. What is the Avalanche Danger Rating today?

Where can I access today's forecast? 1-800-667-1105, select number for Kootenay Boundary region.

Danger Level	Travel Advice
5 Extreme	Avoid all avalanche terrain.
4 High	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.
3 Considerable	Dangerous avalanche conditions. Careful snowpack evaluation, cautious rout-finding and conservative decision-making essential.
2 Moderate	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.
1 Low	Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.

3. What does the Avaluator recommend?

Combine the danger and terrain ratings on the Avaluator chart to manage risk.



- Have you told a responsible person your trip plans?
- Is everyone in your group properly dressed and equipped with a transceiver, probe and shovel?
- Do you have any backcountry knowledge or avalanche awareness training?
- For more information go to: www.avalanche.ca

canadianavalanchecentre
www.avalanche.ca

BRITISH COLUMBIA BC Parks

Warning: Mountain travel is dangerous –hazards exist. Spotting hazards and assessing their risk is your responsibility. Decision guides like the Avaluator cannot eliminate these hazards, but will help you understand and manage them. The Avaluator is no substitute for training, experience, and choosing skilled and responsible travel partners. Use the Avaluator and the information on this sign at your own risk. Travel the back country at your own risk.

Terrain Assessment Maps Warning:
This map is illustrative only and should not be used to determine precise routes or location of features. The terrain ratings shown are an approximation and may assist with trip planning. Use the information provided on this map at your own risk.

YOU ARE HEADING INTO AVALANCHE TERRAIN

1. What type of terrain are you heading into?

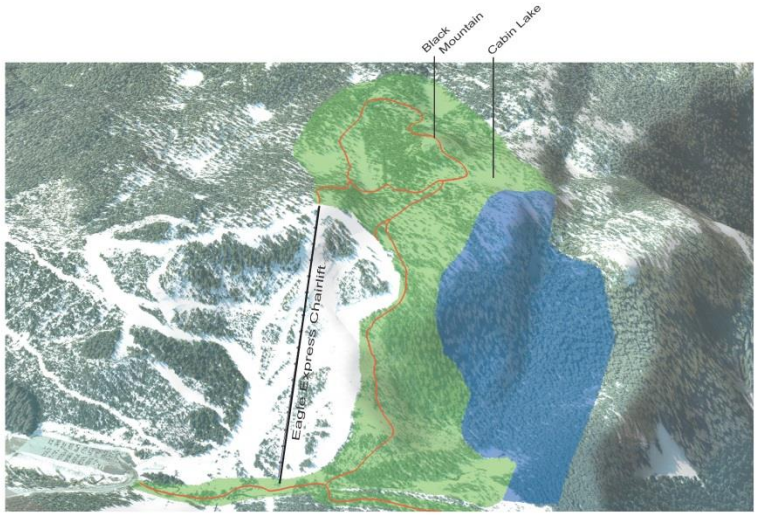
AVALANCHE TERRAIN RATINGS

SIMPLE
Exposure to low angle or primarily forested terrain. Some forest openings may involve the runout zones of infrequent avalanches. Many options to reduce or eliminate exposure. No glacier travel.

CHALLENGING
Exposure to well defined avalanche paths, starting zones or terrain traps; options exist to reduce or eliminate exposure with careful route finding. Glacier travel is straightforward but crevasse hazard may exist.

COMPLEX
Exposure to multiple overlapping avalanche paths or large expanses of steep, open terrain; multiple avalanche starting zones or terrain traps below; minimal options to reduce exposure. Complicated glacier travel with extensive crevasse bands or icefalls.

MARKED WINTER ROUTE



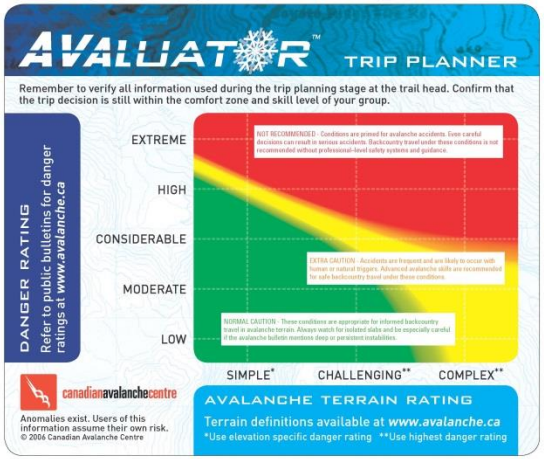
2. What is the Avalanche Danger Rating today?

Where can I access today's forecast?
1-800-667-1105

Danger level (& Colour) -WHAT-	Avalanche probability and avalanche trigger -WHY-	Recommended action in the backcountry -WHAT TO DO-
EXTREME (red with black border)	Widespread natural or human triggered avalanches certain.	Travel in avalanche terrain should be avoided and travel confined to low angle terrain well away from avalanche path runouts.
HIGH (red)	Natural and human triggered avalanches likely.	Travel in avalanche terrain is not recommended.
CONSIDERABLE (orange)	Natural avalanches possible. Human triggered avalanches probable	Be increasingly cautious in steeper terrain.
MODERATE (yellow)	Natural slab avalanches unlikely. Human triggered avalanches possible	Use caution in steeper terrain on certain aspects.
LOW (green)	Natural slab avalanches highly unlikely. Human triggered avalanches unlikely	Travel is generally safe. Normal caution advised.

3. What does the Avaluator recommend?

Combine the danger and terrain ratings on the Avaluator chart to manage risk.



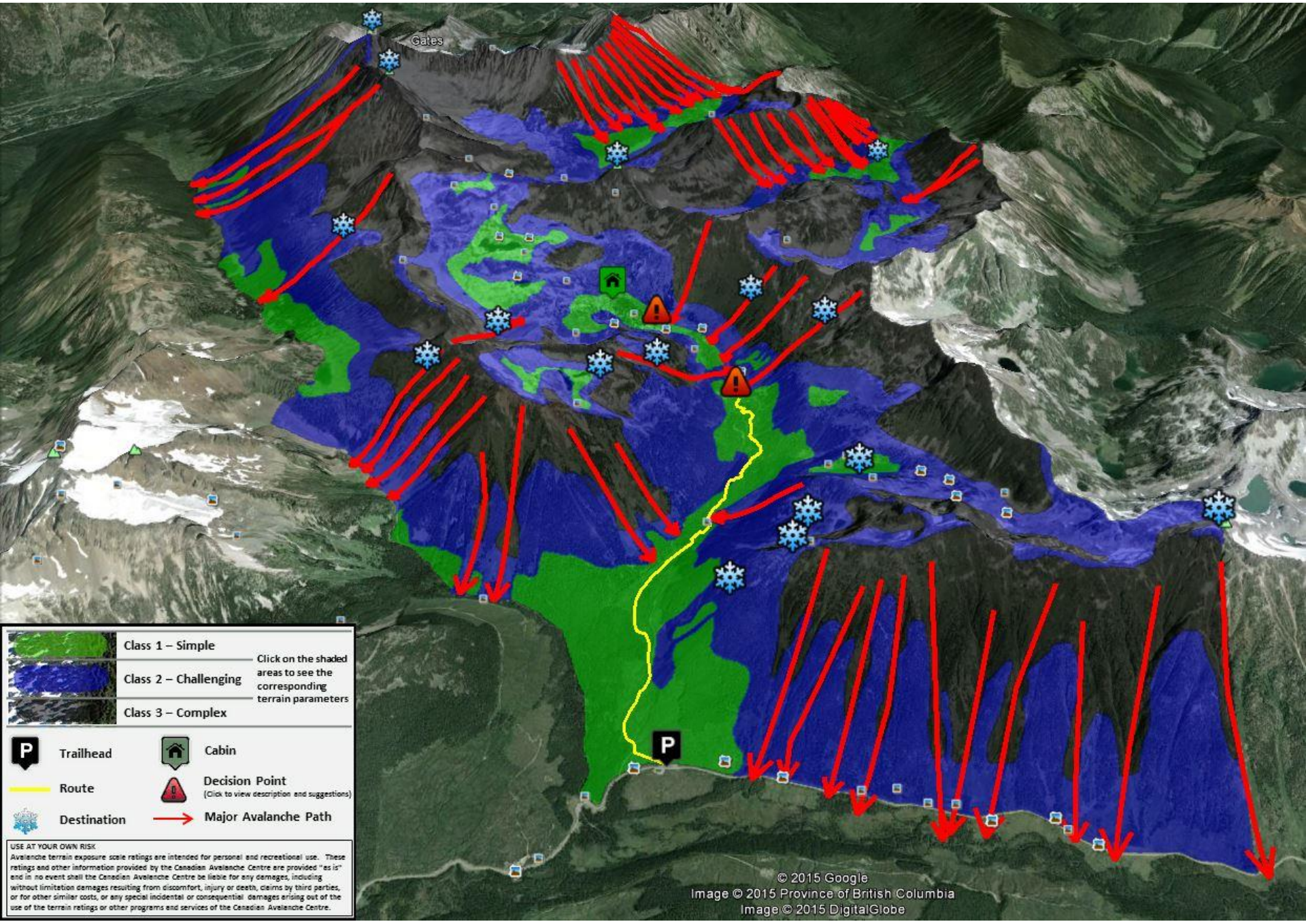
- Have you told a responsible person your trip plans?
- Is everyone in your group properly dressed and equipped with a transceiver, probe and shovel?
- Do you have any backcountry knowledge or avalanche awareness training?
- For more information on how to purchase an Avaluator go to: www.avalanche.ca

canadianavalanchecentre
www.avalanche.ca

BRITISH COLUMBIA

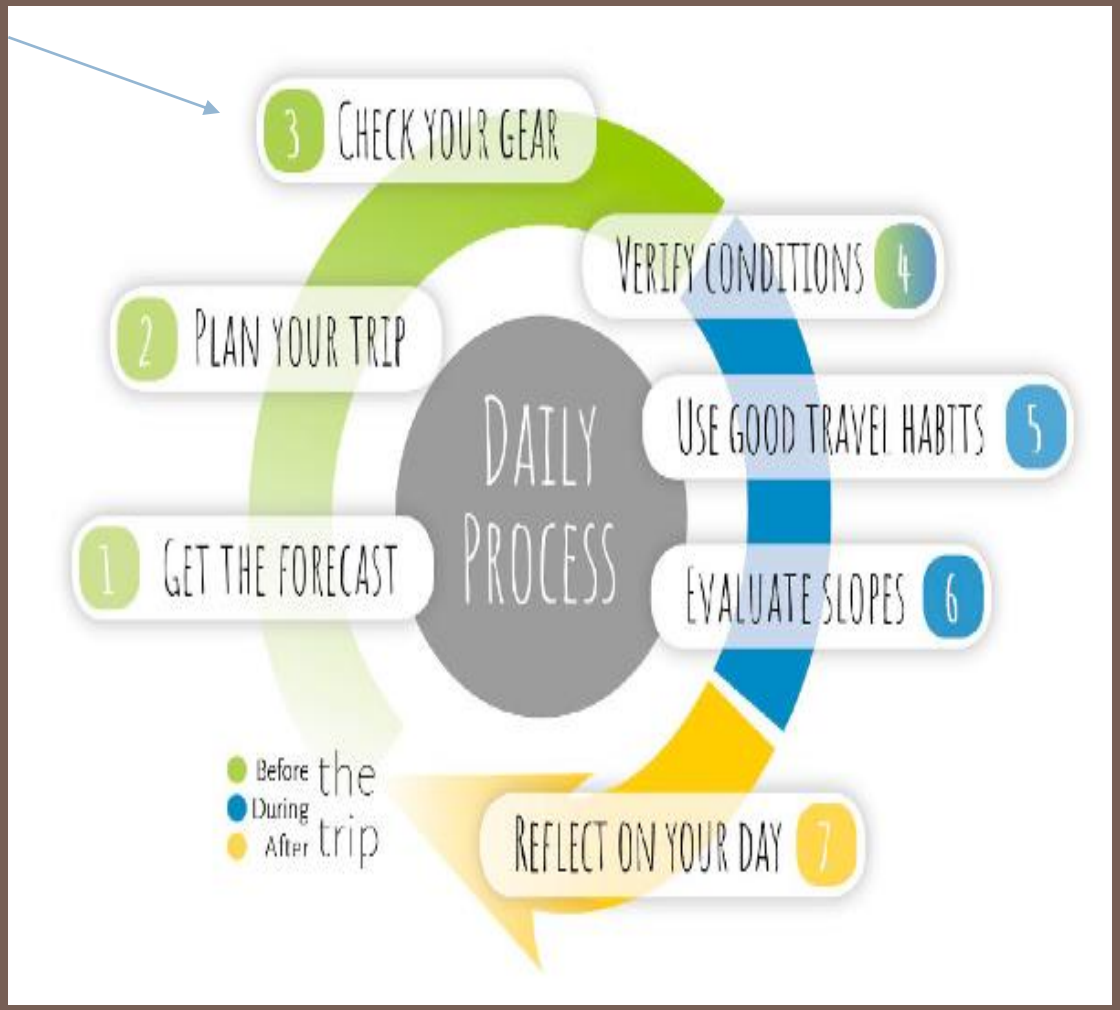
We would like to acknowledge the financial support of the Government of British Columbia Ministry of Tourism, Sports and the Arts.

Warning: Mountain travel is dangerous and can involve exposure to avalanches and other hazards. Decision guides like the Avaluator card cannot eliminate these hazards, but they can help you understand and manage them. However, the Avaluator is no substitute for training, experience, and choosing skilled and responsible travel partners. Users of the information presented on this sign assume their own risk.


Gates
Class 1 – Simple
Class 2 – Challenging
Class 3 – Complex
Click on the shaded areas to see the corresponding terrain parameters
Trailhead
Cabin
Route
Decision Point
(Click to view description and suggestions)
Destination
Major Avalanche Path
P
P
USE AT YOUR OWN RISK
Avalanche terrain exposure scale ratings are intended for personal and recreational use. These ratings and other information provided by the Canadian Avalanche Centre are provided "as is" and in no event shall the Canadian Avalanche Centre be liable for any damages, including without limitation damages resulting from discomfort, injury or death, claims by third parties, or for other similar costs, or any special incidental or consequential damages arising out of the use of the terrain ratings or other programs and services of the Canadian Avalanche Centre.
© 2015 Google
Image © 2015 Province of British Columbia
Image © 2015 DigitalGlobe

AST 2 – Lesson Plan 7

Daily Process Step 3 – Check Your Gear


3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the trip
During
After
Reflect on your day 7

Equipment List

The following is a recommended equipment list. This list is not necessarily complete or comprehensive but serves as a general reminder that encompasses most of the equipment that might be required:

Equipment for all students on all courses:

- Clothing appropriate for activity and standing in cold/snowy weather.
  - Long underwear.
  - Insulating layers.
  - Outer layer (wind/waterproof).
  - Warm gloves, mitts, and hat/helmet.
- Goggles and sunglasses.
- Small personal first aid kit (sunscreen, lip-balm, moleskin, Band-Aids, medication, etc.).
- DMAT and pencil.
- Transceiver.
- Probe.
- Shovel.
- Food and water.
- Headlamp.
- Pack (large enough for all equipment on day tours).
- Lift pass or discount card for local ski areas (if applicable).
- Personal 2-way radios (optional, but recommended, especially for snowmobilers).

Equipment for students travelling on skis:

- Boots (appropriate for conditions and activity).
- Skis (with touring bindings).
- Skins.
- Poles.

Recommended equipment for students travelling on snowboards:

- Split Board with touring bindings and skins. (Note: it is not advisable to have snowboarders without split boards on AST2 courses)
- Boots.
- Collapsible poles.

Recommended equipment for students travelling on snowmobile:

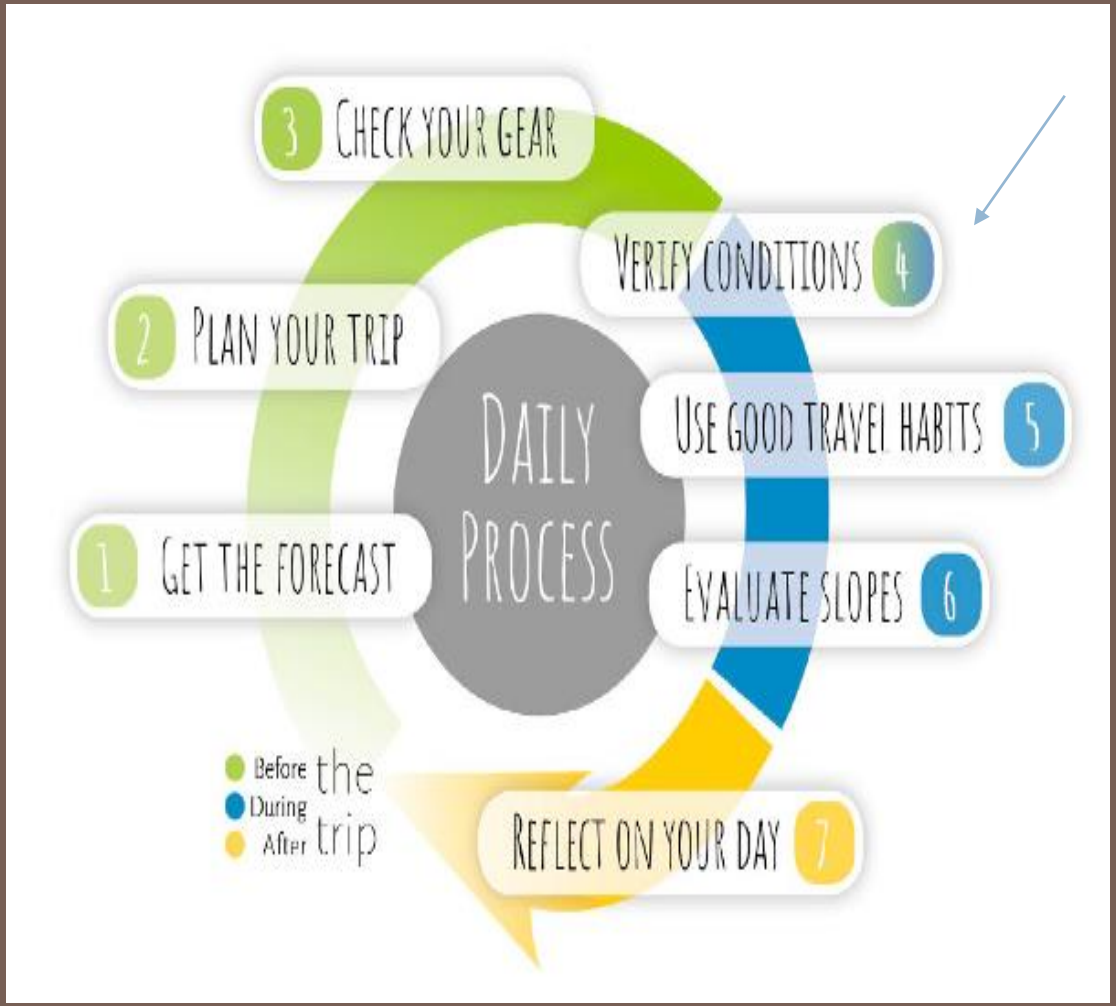
- Snowmobile
- Tool Kit – basic tools required for minor repairs to your machine, duct tape, zip ties
- Tow strap or sling

The following list includes items that can be carried (one or more) within the group:

- Extra Sunglasses/goggles.
- Spare clothing (e.g. light down vest/jacket).
- Spare mitts/gloves and hat.
- Spare hand/toe warmers.
- Repair Kit (suggested contents):
  - Tape.
  - Wire.
  - Pliers/vise-grips.
  - Appropriate screwdriver(s).
  - Nylon repair patches.
  - Applicable binding screws/parts.
  - Ski pole basket.
  - Needle/thread.
- Snow profile kit.
- Snow saw.
- Matches/lighter.
- Bivouac sack, tarp, siltarp
- Cord for ECT.
- First aid kit.
- Mapping app on phone
- Map.
- Compass.
- Altimeter.
- Global Positioning System device and/or VHF Radio.
- Small stove, fuel, pot

AST 2 – Lesson Plan 8

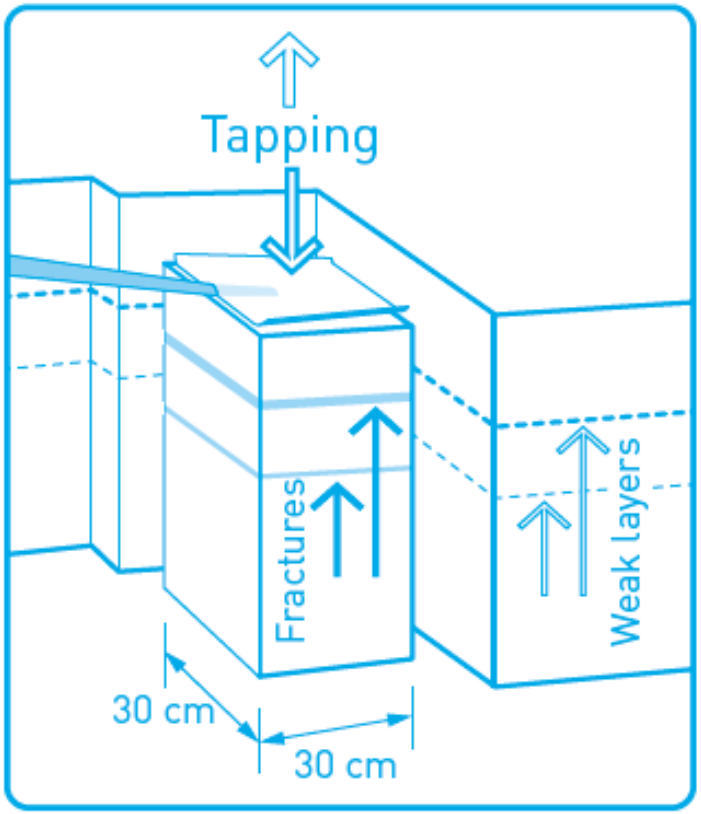
Daily Process Step 4 – Verify Conditions


3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the
During
After trip
Reflect on your day 7

Key Times/Places to Verify

- When changing aspects (especially when the avalanche problem is specific to certain aspects)
- When changing elevation bands
- Throughout the alpine, where spatial variability is often an issue
- When there is significant regional variability within the forecast region
- During changing weather conditions
- Where there is no avalanche forecast (in conjunction with the Dangerator)

In a **Compression Test** (CT), possible fracture character observations include:



- **None:** Compression test produces no failure in snow column
- **Failure:** A failure occurs in the snow column, but it is not a pop or drop
- **Pop:** A thin planar fracture that suddenly crosses the column at one loading step and the block slides easily on the weak layer
- **Drop:** A fracture that crosses the column with a single loading step and is associated with a noticeable collapse in the weak layer

Pops or **Drops** in a compression test are strong indicators of locally elevated avalanche danger. Choosing safer terrain is advisable.

Photo: Mark Grist

In an **Extended Column Test** (ECT), possible propagating fracture character observations include:

- **None:** Test produces no failure in snow column
- **Failure:** A failure occurs in the snow column, but does not propagate across entire block
- **Pop:** A thin planar fracture that suddenly crosses the column at one loading step and the block slides easily on the weak layer
- **Drop:** A fracture that crosses the column with a single loading step and is associated with a noticeable collapse in the weak layer

Pops or **Drops** in a compression test are strong indicators of locally elevated avalanche danger. Choosing safer terrain is advisable.

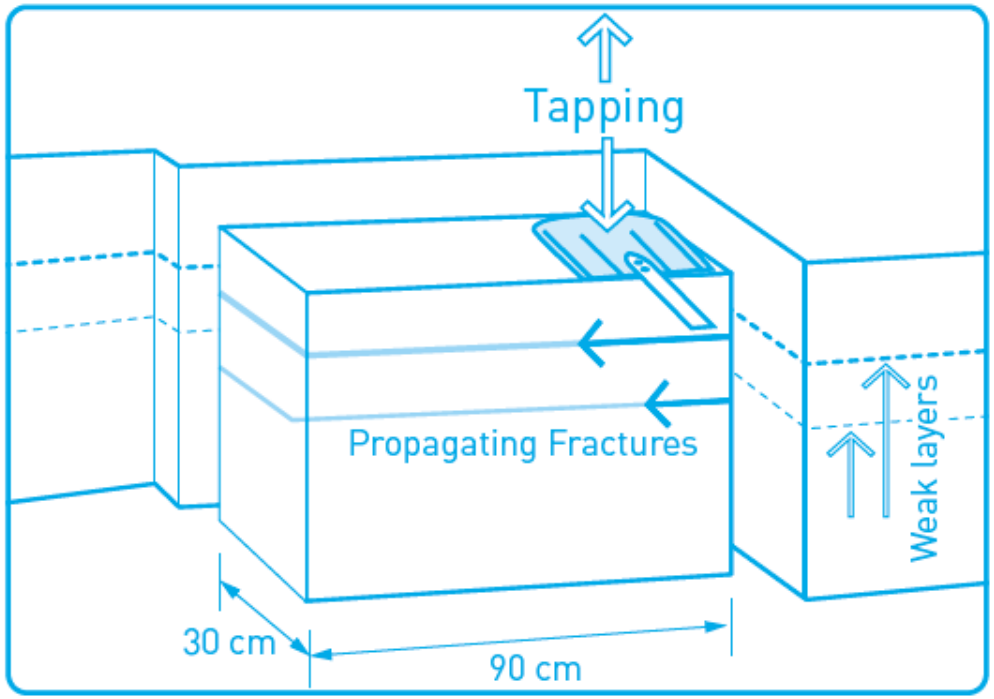
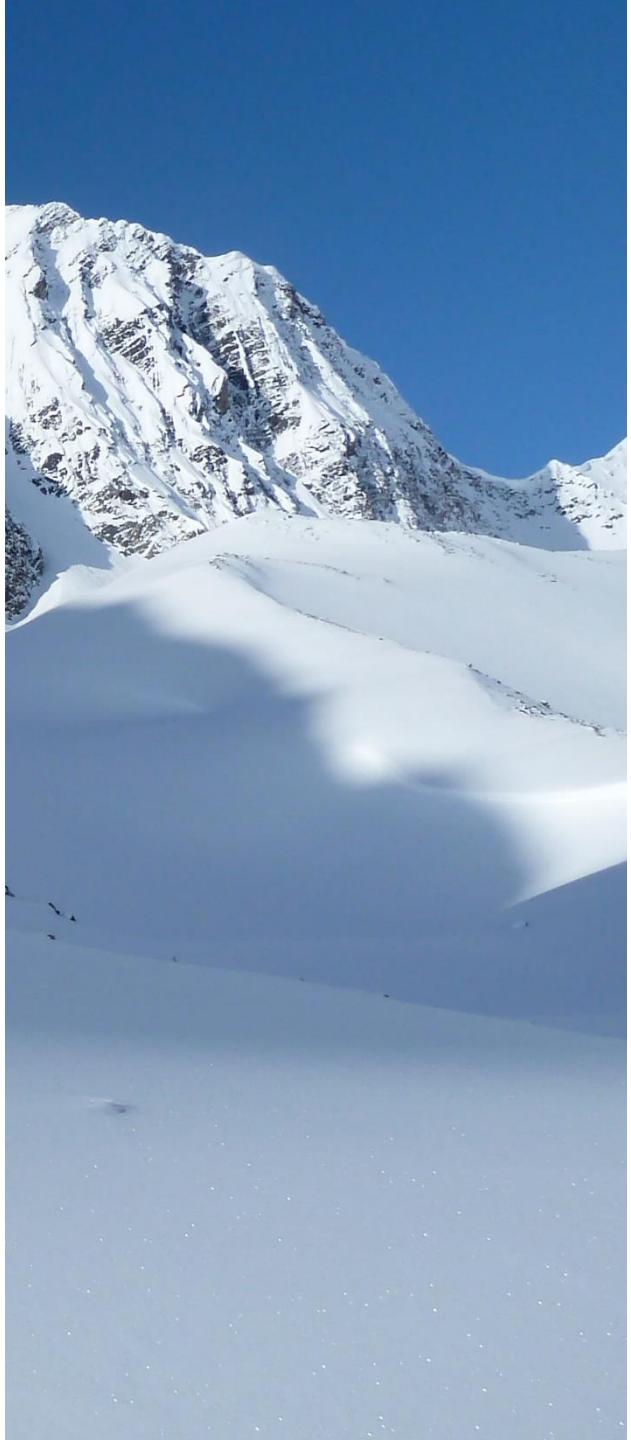


Photo: Martina Halik

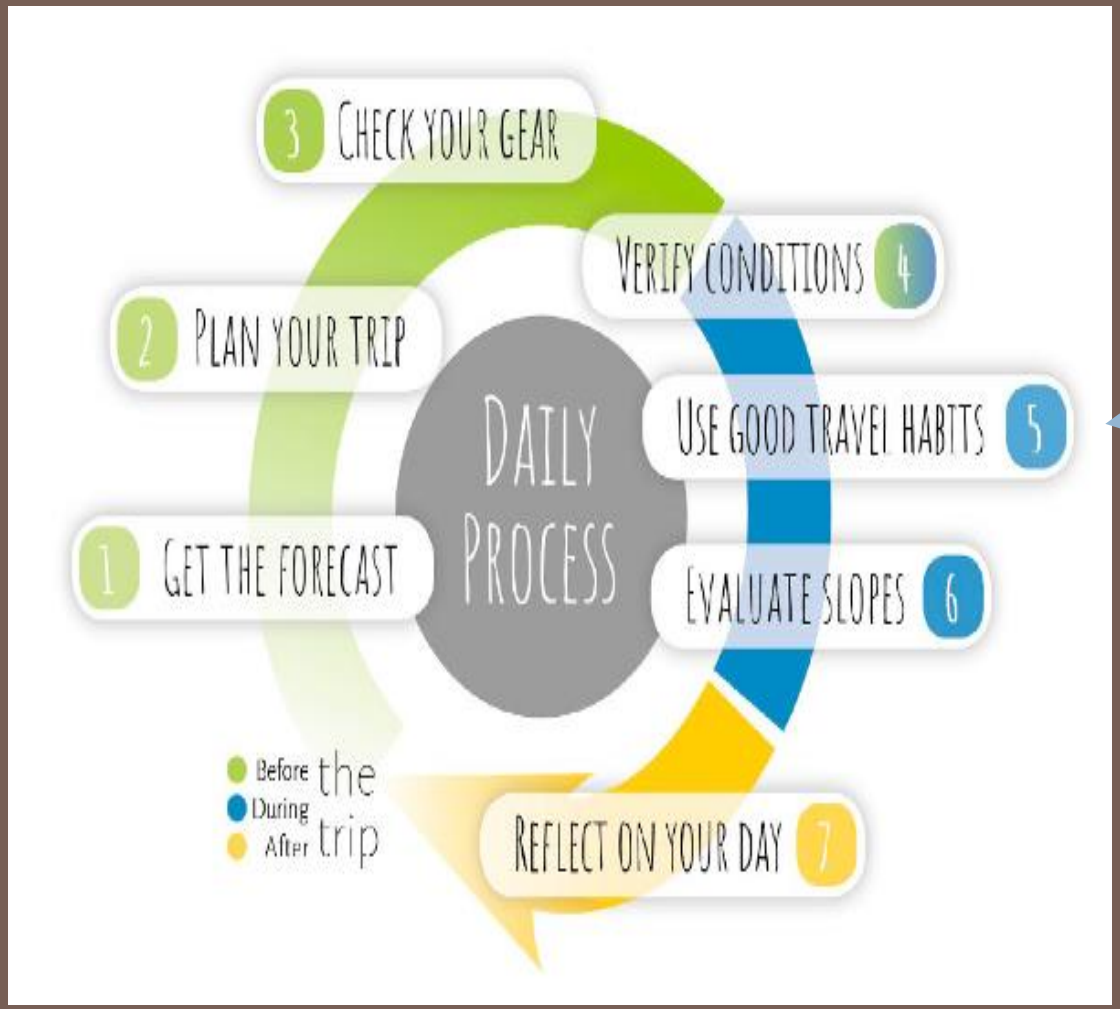


Confirmation bias: place more importance on evidence that confirms one's existing beliefs; contrary information is given less significance.

Recency bias: act on the most recent piece of information at the expense of data gathered earlier.

AST 2 – Lesson Plan 9

Daily Process Step 5 – Good Travel Habits


3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the trip
During
After
Reflect on your day 7

Moving through Avalanche Terrain p. 1

- When travelling uphill, choose lower-angled terrain without overhead exposure, densely forested slopes, and take advantage of high ground.
- When exposure is necessary, try to move through the avalanche terrain one at a time. Under stable conditions, a group may choose to space out to move more efficiently.
- Keep an eye on each other, travelling uphill and down. Stop in strategic locations that provide safety for the spotter and allows the ability to watch their partners as they move through avalanche terrain.
- Look for terrain exceptions to maximize travel through safer terrain. Examples include higher ground, bands of thicker trees, benches, and areas that avoid overhead exposure.
- Regroup at junctions and decision points.
- If you must cross a start zone, stay as high on the slope as possible.
- When travelling downhill, it is best to enter the start zone at the top.
- If possible, make a few turns near the top or sides where you have an easy escape. This is also known as ski/slope cutting.
- When riding down the slope, stop in a position that allows you to respond if needed (i.e., not too far away from your partners). Choose a position that minimizes your exposure (e.g., the side of the path, higher ground).

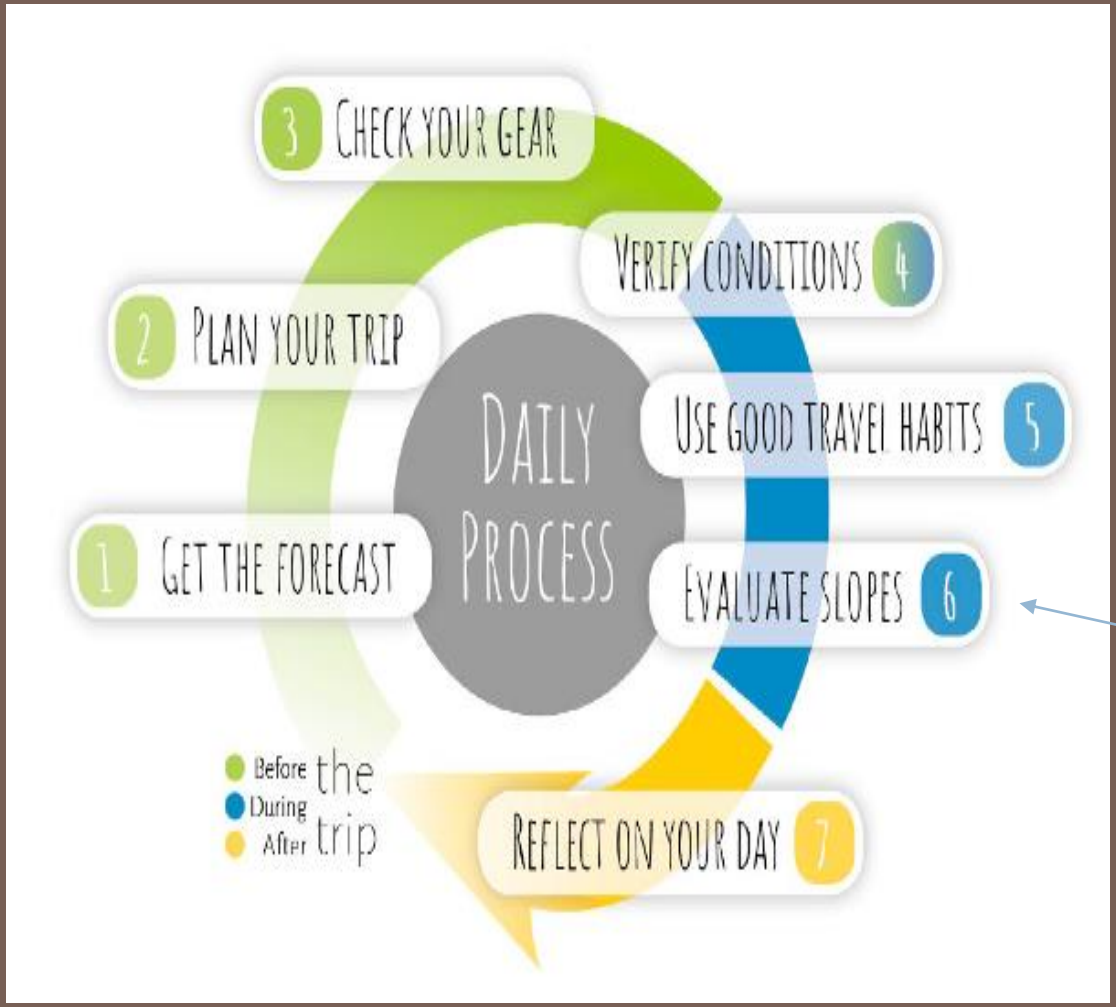
Moving through Avalanche Terrain p. 2

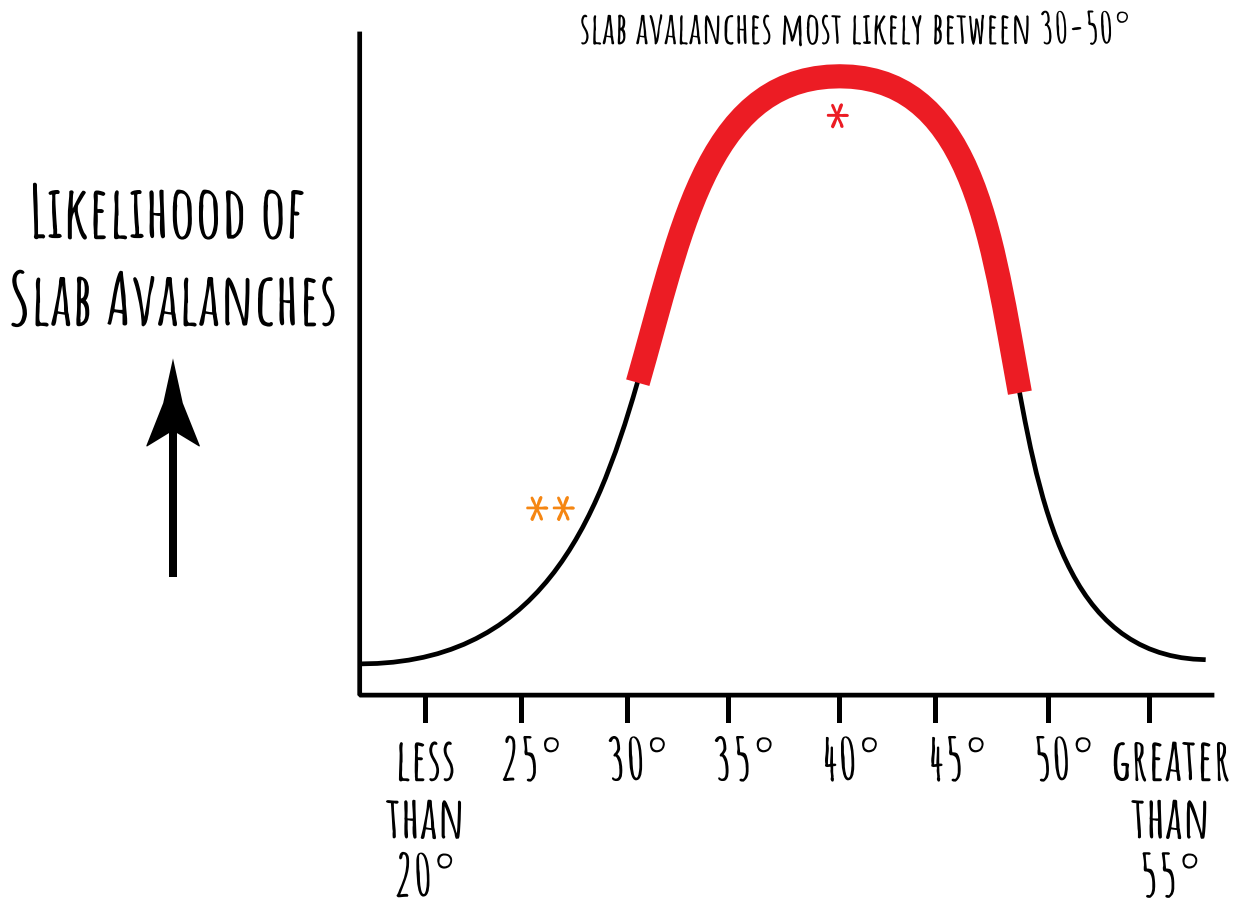
- When riding down an avalanche path, always keep an escape route in mind.
- Reduce risk by avoiding the start zone and travelling along the edge of a well-defined track, being mindful of the overhead hazard.
- When crossing the track, look for benches or lower angle terrain. Try to spread out one at a time. Avoid crossing just below the start zone.
- When crossing the run-out zone, try to spread out one at a time and don’t linger.
- Avoid travel on or below cornices.
- Strive to reduce exposure to terrain traps.
- Travel where the snow is deepest. Avoid shallow areas or places where the snow depth is variable.
- Greater vigilance to optimal travel habits is necessary when managing persistent or deep persistent instabilities, and when travelling in complex terrain.
- Avoid travel on slopes directly above or below other parties.
- Smaller group numbers (3-5) are better suited for more demanding trips.

ABOUT	SLOPE TESTING ESSENTIAL
Avalanche Forecast	Avalanche Problem 1 should be Loose Dry, Loose Wet, Storm Slab, or Wind Slab with maximum size 1-2.
Avalanche Forecast	No persistent slab or deep persistent slab problems listed in the avalanche forecast.
People	Strong riding skills are required.
People	Observers watch from a safe location that gives a clear view of the whole slope.
Terrain	No terrain traps.
Terrain	Short slope with short convexity. Long or gradual convexities make it difficult to hit the 'sweet spot' and, in a worst-case scenario, the slab may release above the rider.
Snowpack	No hard or deep slabs.
Technique	Slope test from low-risk to low-risk locations.
Technique	Learn from someone with experience.

AST 2 – Lesson Plan 10

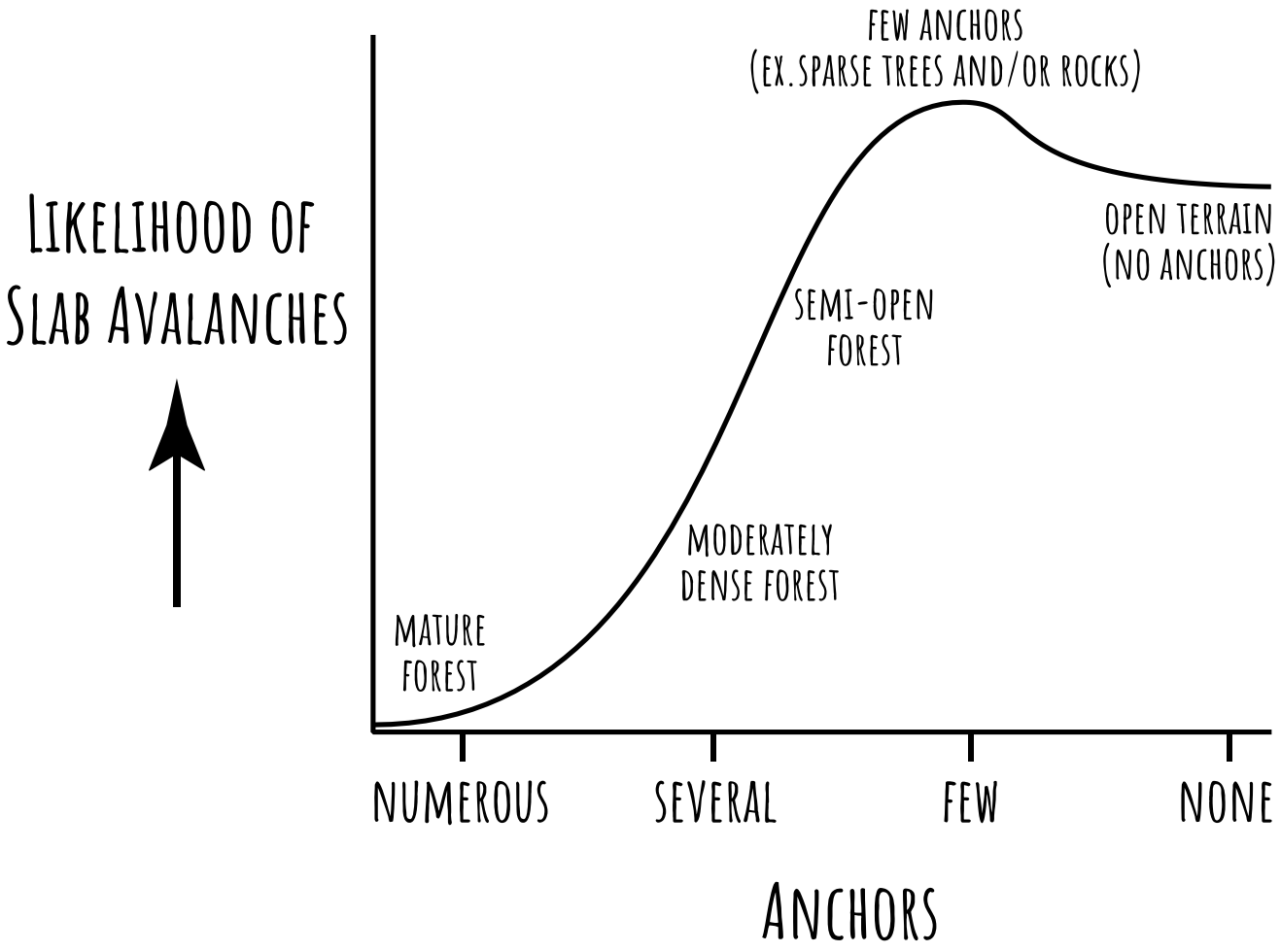
Daily Process Step 6 – Evaluate Slopes

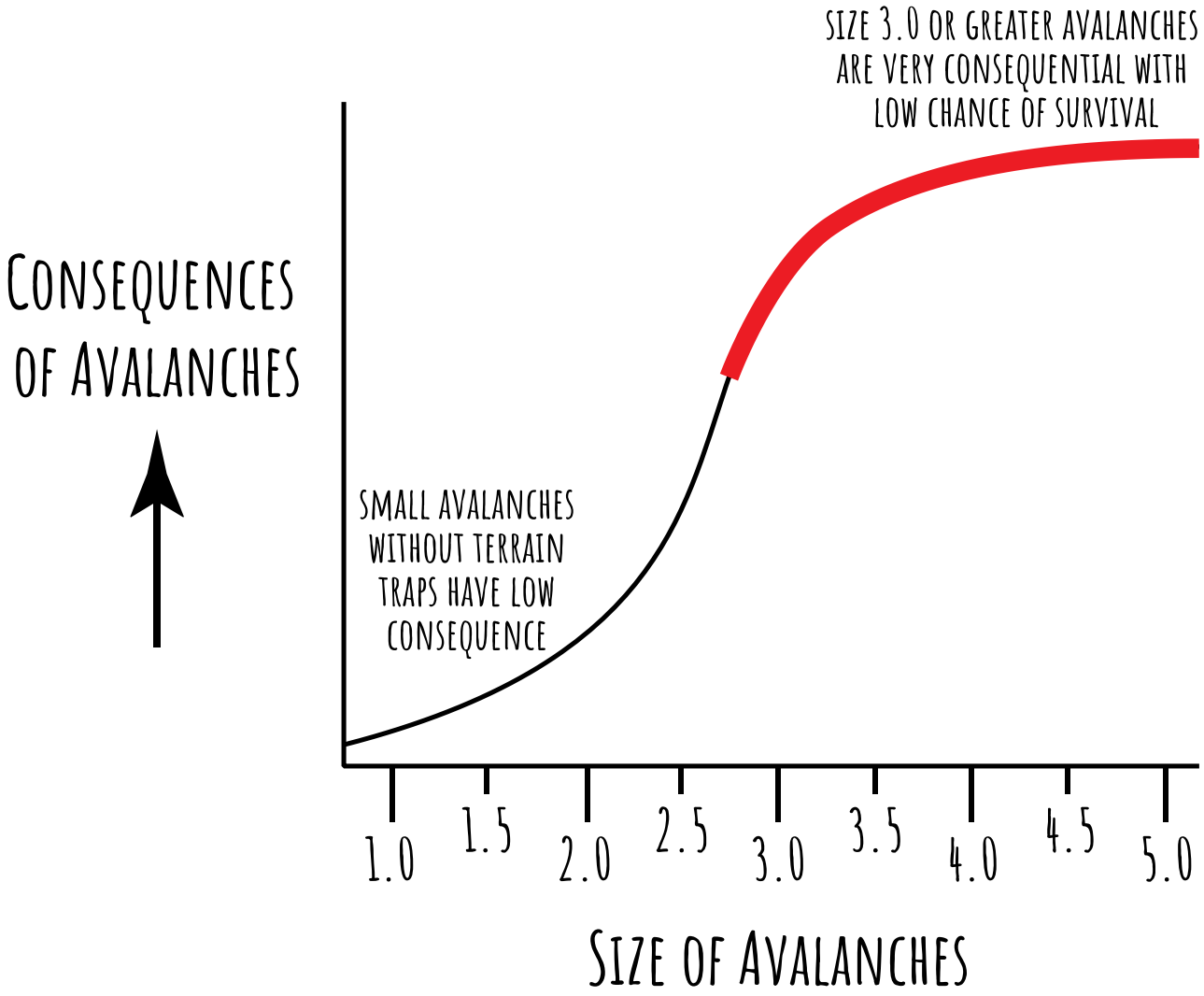

3 Check your gear
Verify conditions 4
2 Plan your trip
Use good travel habits 5
Daily Process
1 Get the forecast
Evaluate slopes 6
Before the
During
After trip
Reflect on your day 7

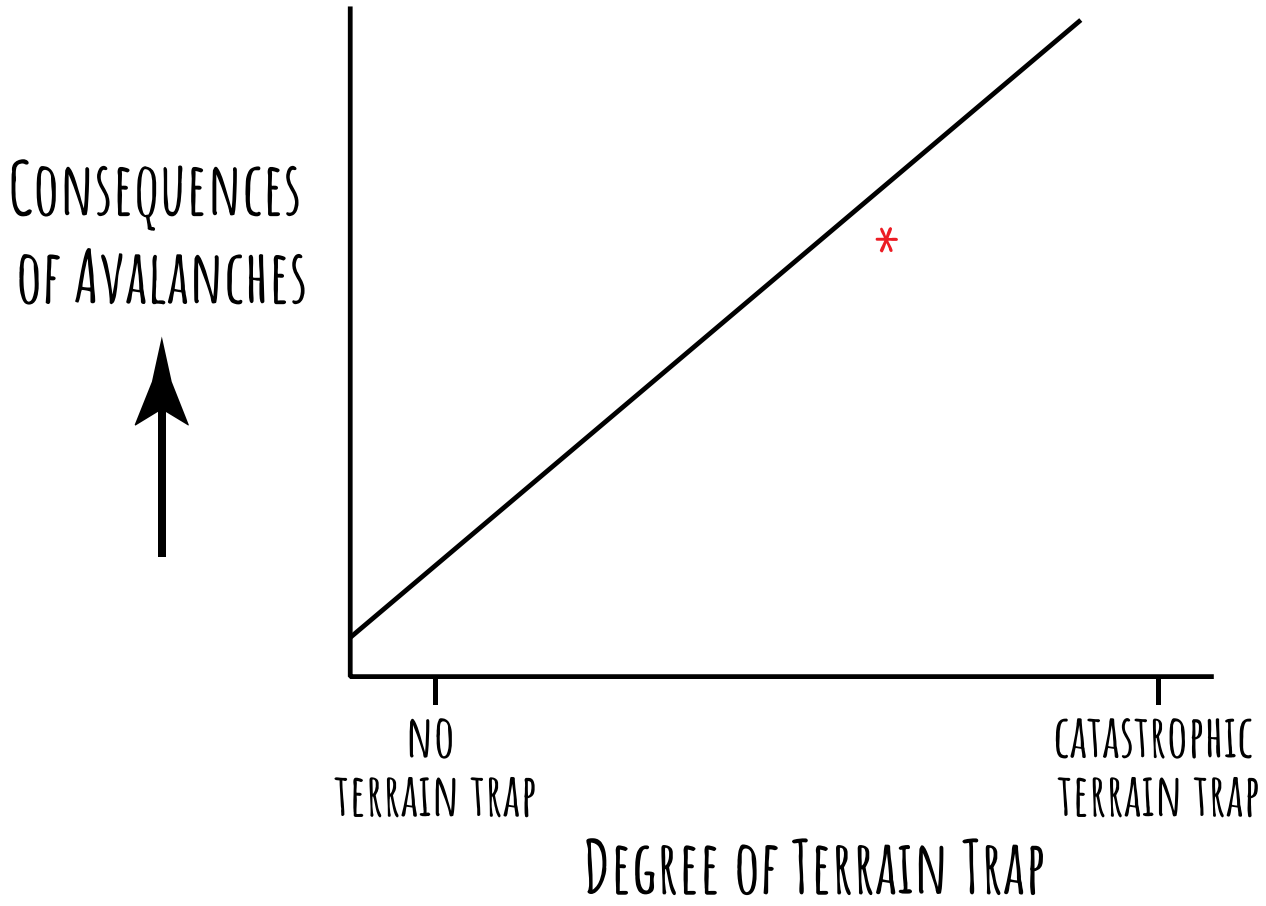


* THE EXACT SHAPE OF THE PEAK OF THE GRAPH DEPENDS ON THE CLIMATE ZONE. FOR MARITIME CLIMATE, THE PEAK IS PUSHED A LITTLE TO THE RIGHT. FOR CONTINENTAL CLIMATE, THE PEAK IS A LITTLE TO THE LEFT.

** SLAB AVALANCHES UNDER 35° USUALLY INVOLVE PERSISTANT WEAK LAYERS OR WIND SLABS DEEPER THAN ~40 CM

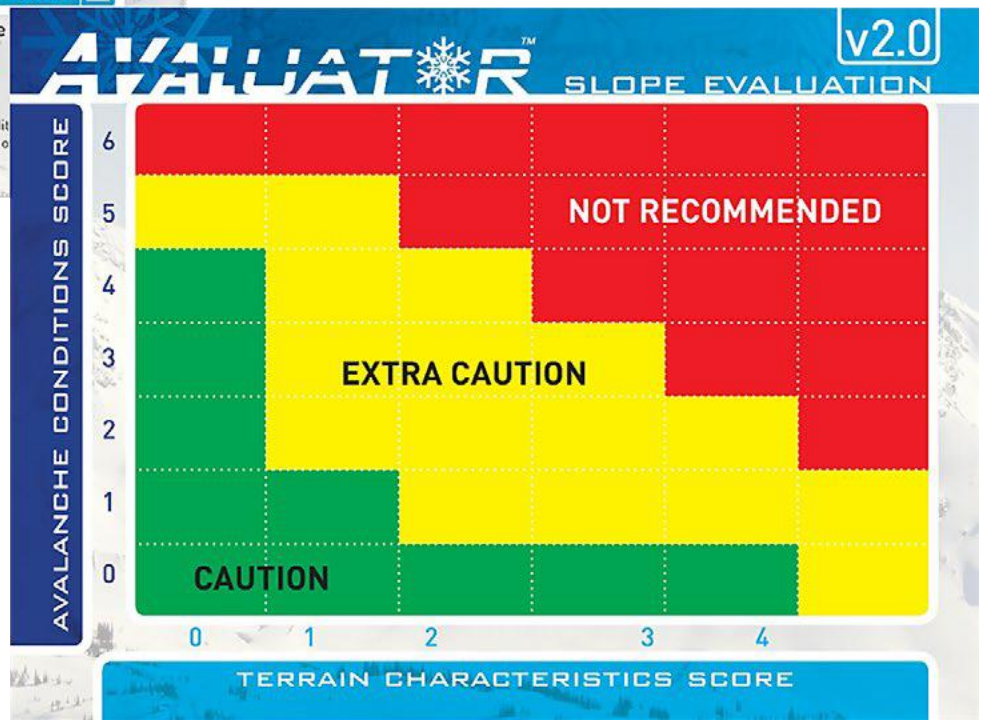

FEW ANCHORS
(EX. SPARSE TREES AND/OR ROCKS)
LIKELIHOOD OF
SLAB AVALANCHES
OPEN TERRAIN
(NO ANCHORS)
SEMI-OPEN
FOREST
MODERATELY
DENSE FOREST
MATURE
FOREST
NUMEROUS
SEVERAL
FEW
NONE
ANCHORS


SIZE 3.0 OR GREATER AVALANCHES ARE VERY CONSEQUENTIAL WITH LOW CHANCE OF SURVIVAL
CONSEQUENCES OF AVALANCHES
SMALL AVALANCHES WITHOUT TERRAIN TRAPS HAVE LOW CONSEQUENCE
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
SIZE OF AVALANCHES

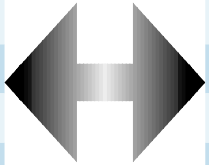


* Consequences increase with the severity of terrain traps due to trauma or deeper burial


AVALUATOR™
v2.0
SLOPE EVALUATION
AVALANCHE CONDITIONS
Regional Danger Rating:
Is the avalanche danger rating "Considerable" or higher?
+1
Persistent Avalanche Problem:
Is there a persistent or deep persistent slab problem in the snowpack?
+1
Slab Avalanches:
Are there signs of slab avalanches in the area from today or yesterday?
+1
Signs of Instability:
Are there signs of snowpack instability including whumpfs, shooting cracks or drum-like sounds?
+1
Recent Loading:
Has there been loading within the past 48 hours including roughly 30 cm of new snow or more, significant wind transport or rain?
+1
Critical Warming:
Has there been a recent rapid rise in temperature to near 0 C, or is the upper snowpack wet due to strong sun, above-freezing air temperatures or rain?
+1
Avalanche Conditions Score:
TERRAIN CHARACTERISTICS
Slope Steepness:
Is the slope steepness between 30 and 35 degrees?
+1
Or
Is the slope steeper than 35 degrees?
+2
Terrain Traps:
Are there gullies, trees or cliffs that increase the consequences of being caught in an avalanche?
+1
Slope Shape:
Is the slope convex or unsupported?
+1
Forest Density:
Is the slope in the alpine, in a sparsely treed area or in open forest (cut-block, burn, wide-spaced glades)?
+1
Terrain Characteristics Score:
Visit www.avalanche.ca for more
Avalanche Canada
Anomalies in terrain and avalanche condit
Users of the AVALUATOR™ assume their o
© 2010 Avalanche Canada


AVALUATOR™
v2.0
SLOPE EVALUATION
AVALANCHE CONDITIONS SCORE
6
5
4
3
2
1
0
NOT RECOMMENDED
EXTRA CAUTION
CAUTION
0
1
2
3
4
TERRAIN CHARACTERISTICS SCORE

TERRAIN OPTIONS & GROUP STRATEGIES THAT DECREASE RISK	TERRAIN OPTIONS & GROUP STRATEGIES THAT INCREASE RISK
Lower slope angles	Steeper slopes
Stands of dense trees	Open terrain with sparse or no anchors
Terrain where the avalanche problem is less likely	Terrain where the avalanche problem is more likely
Smaller slopes	Larger slopes
Less severe or no terrain traps	More severe terrain traps
Simpler terrain	More complex terrain
Fewer start zones	Multiple start zones
Smooth open runouts w/o sharp transitions	Runouts with sharp transitions
Many route options	Few route options
Ribs/ridges and other high ground	Gullies/ravines/depressions
Escape option nearby	Escape option far away
Many islands of safety close together	Few islands of safety far apart
Areas where snow cover is deep and evenly distributed	Areas where snow cover is thin or variably distributed
No glaciation	Glaciated areas
Exposing one at a time	Exposing the whole group at once
Minimal exposure time	Extended exposure time
Group has strong companion rescue skills	Group has weak companion rescue skills
Group is well equipped for the backcountry	Group is poorly equipped
Group has strong riding skills	Group includes members with weak riding skills



AST 2 – Lesson Plan 11

Daily Process Step 7 – Reflect On Your Day

7. Reflect on your day

- What human behaviours did we use to work well as a team? How could we use patience, leadership, communication, and discipline better next time?
- What was the most challenging part of the day, and how did we manage it?
- How accurate was the avalanche forecast? (Step 1 of the daily process)
- Was our trip plan appropriate? What would have been a more conservative trip plan? A more aggressive one? (Step 2 of the daily process)
- How was our gear selection? Did we feel competent in its use? (Step 3 of the daily process)
- What steps did we take to verify conditions, and what did we find? (Step 4 of the daily process)
- How were our group travel habits? What did we do well? What will we do better next time? (Step 5 of the daily process)
- How were our slope evaluation skills? What did we do well? What will we improve upon next time? (Step 6 of the daily process)
- What degree of risk did we take today? Was it in line with our planned risk level?
- What did we learn about the snowpack? Will that impact our decision-making next time out?
- MIN Post

Use this section to reflect upon your experiences from each Daily Trip. Examples of reflective questions:

1. Were terrain choices appropriate for conditions?

2. What was the most hazardous part of the day?

3. How could the hazard have been better managed?

4. Were there any Human Factors experienced today?

5. What would you do differently in hindsight?

- What human behaviours did we use to work well as a team? How could we use patience, leadership, communication, and discipline better next time?
- What was the most challenging part of the day, and how did we manage it?
- How accurate was the avalanche forecast? (Step 1 of the daily process)
- Was our trip plan appropriate? What would have been a more conservative trip plan? A more aggressive one? (Step 2 of the daily process)
- How was our gear selection? Did we feel competent in its use? (Step 3 of the daily process)
- What steps did we take to verify conditions, and what did we find? (Step 4 of the daily process)
- How were our group travel habits? What did we do well? What will we do better next time? (Step 5 of the daily process)
- How were our slope evaluation skills? What did we do well? What will we improve upon next time? (Step 6 of the daily process)
- What degree of risk did we take today? Was it in line with our planned risk level?
- What did we learn about the snowpack? Will that impact our decision-making next time out?

More questions? Check out the full Mountain Information Network FAQ.

For submission guidelines, check out this page Mountain Information Network — Submission Guidelines.

AST 2 – Lesson Plan 12

Trip Planning

How to Use the Daily Trip Form

After you have done some basic background research on the current conditions and selected an appropriate backcountry destination, the **Daily Trip Form** can help you refine the planning and develop a detailed route and risk management plan.

1. Enter the date of the intended trip at the top of the form.
2. Use the **Regional Avalanche Danger** section to record information about the regional avalanche danger including the ratings, trend and forecaster confidence
3. Identify the primary avalanche problems for each elevation band in the **Avalanche Problem** section. See pages 5-7 for more details on the character of different avalanche problems.
4. Shade the expected spatial distribution of the identified avalanche problems in the **compass rose diagram**.
5. Based on the detailed background information included in the avalanche bulletin, use the **Field Observation – Expected** section to circle the conditions you expect to encounter during your backcountry trip. *The greater the number of bold observations you circle towards the right of the column, the more severe the expected conditions.*
6. Use the **Risk Management Plan** section to make notes about how to best manage avalanche risk during your backcountry trip. This includes identifying terrain that should be approached with caution or avoided completely, and highlighting appropriate travel techniques. *During your backcountry trip, the notes in the Route and Risk Management Plan sections will provide a useful quick reminder of what you had planned to do and when.*
7. Use the **Route Plan** section to plan your backcountry trip in more detail. Using the information available in guide books and maps, circle the avalanche terrain rating, identify mandatory decision points and develop alternative route options in case conditions are different from what you expect. See pages 3-4 for more details on avalanche terrain essentials.
8. In the **Emergency #** section, record any emergency numbers, radio frequencies, etc. you will need to call for help if necessary. See pages 64-65 for more details on calling for outside help.
9. Once on your trip, be observant and record any relevant observations in the empty columns of the **Field Observation - Observed** section. Use the Notes section and any open space to write down any additional comments.

See pages 16 & 17 for a filled out example of the Daily Trip Form.

Abbreviations used on Daily Trip Form:

Accum	Storm snow accumulation over previous 48 hours in cm
ALP	Alpine elevation band
Aval	Avalanche
Aval Prob	Avalanche problem
BTL	Below treeline elevation band
CO	Cornices (see page 5)
CT	Compression test (see page 8)
Con	Considerable avalanche danger rating
DP	Deep persistent slab (see page 7)
ECT	Extended Column Test (see page 9)
LD	Loose dry avalanches or sluffs (see page 5)
LW	Loose wet avalanches (see page 5)
Max Temp	Maximum temperature in °C
MF	Diurnal melt-freeze cycle
Mod	Moderate
Precip	Precipitation
PS	Persistent slabs (see page 6)
R	Rain
RL	Light Rain
S-1	Light snowfall (≤ 1 cm/hr)
S2	Moderate snowfall (2 cm/hr)
S3+	Heavy snowfall (≥ 3 cm/hr)
ST	Storm slabs (see page 6)
TL	Treeline elevation band
U	Unknown
Wind Dir	Direction the wind is coming from
Wind Sp	Wind speed
WD	Wind slabs (see page 6)
WT	Wet slabs (see page 5)
X-Loaded	Cross-loaded terrain feature
1 x 1	Traveling one at a time
↘	Decreasing
→	Steady
↗	Increasing
⏲	Observation time

For more information about the exact definition of the items included in the Daily Trip From visit www.avalanche.ca/planning/decision-making

DATE: 8/2/2018 **LOCATION:** Lizard Range

REGIONAL AVALANCHE DANGER

ALP:	Low	Mod	**Con**	High	Extreme	U
TL:	Low	**Mod**	Con	High	Extreme	U
BTL:	**Low**	Mod	Con	High	Extreme	U
Trend:	↘		→	MF	↗	U
Confidence:	**High**		Moderate		Low	U
Comments:						

AVALANCHE PROBLEMS

ALP:	LD	LW	WT	**CO**	**WD**	ST	PS	DP
TL:	LD	LW	WT	CO	**WD**	ST	**PS**	DP
BTL:	LD	LW	WT	CO	WD	ST	**PS**	DP

Comments: Xmas SH only in isolated locations at TL (approx 50 cm down)

FIELD OBSERVATIONS

EXPECTED | ACTUALS OBSERVED

WEATHER:							9:00	10:00	12:00
Precip:	Nil	**S-1**	RL	S2	R	S3+	U	SL	SM	Nil
Accum:	0	<20		**20-40**		>40	U	10	15	15
Wind Sp:	Calm	**Light**	Extreme	Strong		Mod	U	L	M	C
Wind Dir:	N	NE	E	SE	S	**SW**	W	NW	U	SW	SW	–
Max Temp:	<-5	Near 0		>0		Rapid Rise	U	-8.0	-7.0	-6.0
Solar Rad:	None	**Weak**		Mod		Strong	U	none	none	weak

AVALANCHE ACTIVITY:									
Size:	None	≤ 1.0		**1.5-2.0**		≥ 2.5	U			2.0
Trigger:	Heavy	Mod		**Light**		Natural	U			Na
Char:	LD	LW	WT	CO	**WD**	ST	**PS**	DP	U			WD

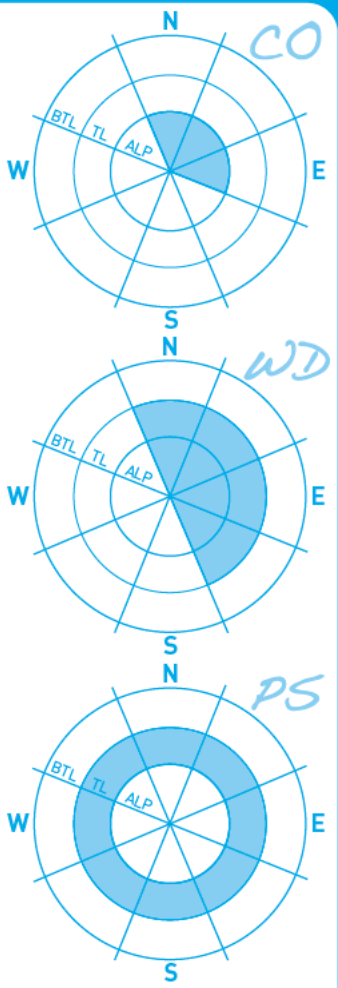
SIGNS OF INSTABILITY: Based on field tests								10:00	12:00
See/Feel:	None	Drum	**Crack**		Whumpf	U		Wmpf	
Comp Test:	None		**Failure**		Pop/Drop	U			Fail
ECT Test:	None		**Failure**		Pop/Drop	U			

NOTES

Whumpf observed in protected opening at TL

WATCH OUT ON THE WAY DOWN!

Several small wind slabs in last 24 hrs just below ridges in alpine



TRIP PLAN LEFT WITH A TRUSTED SOURCE? (Y) / N **ESTIMATED RETURN TIME:** 17:00 **TURN AROUND TIME:** 13:30

RISK MANAGEMENT PLAN

TERRAIN AVOIDANCE: Always watch out for terrain traps and convexities.

AVOID: Start zones / Aval paths / Runout zones / Aval terrain

30-35, >35

Convex / Unsupported

Lee / Loaded

Sunny

Steep, unsupported or convex lee slopes in ALP close to ridgeline

Check for recent wind direction and see whether bowl has been loaded

Slope size/expected aval size: Lrg(Sz3), Med(Sz2), Sm(Sz1)

Overhead Hazard

Don't forget about SH at TL!!

What am I most **UNCERTAIN** about today? What **INFORMATION** do I lack?

Cornices size/sensitivity and SH location

What are the group **DYNAMICS**?

Conservative, flexible goals

CONSIDER: Where to spread out, When to go 1x1,
When to use protective forest, Always regroup in safe spots/islands of safety

Avoid start zones where wind loaded, Regroup far from wind loaded slopes, Spread out in wind loaded areas

TERRAIN TO USE: *Stick to TL/BTL*

Elevation *NW-SW*

Aspect

Slope angle <30, 30-35, >35

Slope size / shape *Sm-Med (sz1-2)*

Stick to planar / avoid convexities

EMERGENCY #s: Before calling, check page 64 to ensure you have crucial information ready.

Entire trip in cell phone range 888-555-1234

ROUTE: *NE Bowl Powder Mountain*

ATES: Simple **Challenging** **Complex** **U**

Summits in the Powder Range (p. 98)
Crux Open bowl below summit

DECISION POINTS:

1. *Treeline*
   More snow or wind than expected?

2. *Entrance to bowl*
   Is it wind loaded?

3. *Sensitivity of PS @ TL*
   check slope angle/asp before ascending

SAFER OPTIONS:

1. *Stay in the trees*

2. *Avoid bowl by climbing ridgeline from treeline and follow to entry point*

3. *Follow ridgeline*

ROUTE PLAN B: *Ridgeline below NE Bowl*

- *Avoid bowl by climbing ridgeline from TL and follow to entry point*
- *Follow ridgeline*

DATE: / / **LOCATION:**

REGIONAL AVALANCHE DANGER

ALP:	Low	Mod	Con	**High**	**Extreme**	**U**
TL:	Low	Mod	Con	**High**	**Extreme**	**U**
BTL:	Low	Mod	Con	**High**	**Extreme**	**U**
Trend:	↘	→		**MF**	↗	**U**
Confidence:	High		Moderate		**Low**	**U**
Comments:						

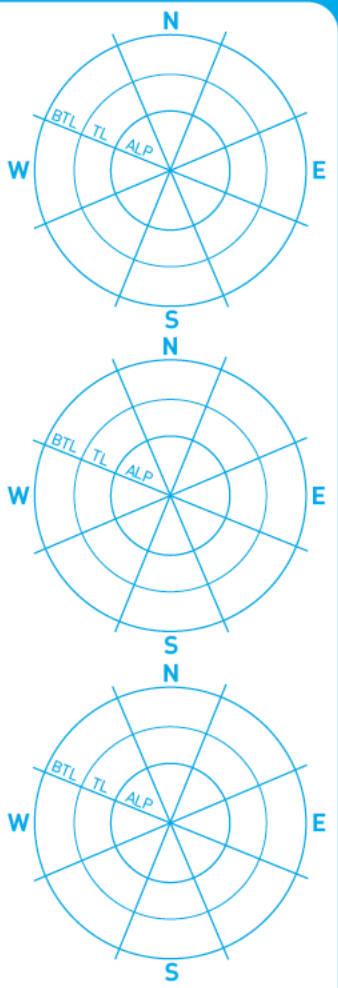
AVALANCHE PROBLEMS

ALP:	LD	LW	WT	CO	WD	ST	**PS**	**DP**
TL:	LD	LW	WT	CO	WD	ST	**PS**	**DP**
BTL:	LD	LW	WT	CO	WD	ST	**PS**	**DP**

Comments:

FIELD OBSERVATIONS

	EXPECTED	ACTUALS	OBSERVED		
WEATHER:					**NOTES**
Precip:	Nil S-1 RL S2 R **S3+** **U**				
Accum:	0 <20 20-40 **>40** **U**				
Wind Sp:	Calm Light Extreme Strong **Mod** **U**				
Wind Dir:	N NE E SE S SW W NW **U**				
Max Temp:	<-5 Near 0 >0 **Rapid Rise** **U**				
Solar Rad:	None Weak Mod **Strong** **U**				
AVALANCHE ACTIVITY:					
Size:	None ≤ 1.0 1.5-2.0 **≥ 2.5** **U**				
Trigger:	Heavy Mod Light **Natural** **U**				
Char:	LD LW WT CO WD ST **PS** **DP** **U**				
SIGNS OF INSTABILITY: Based on field tests					
See/Feel:	None Drum Crack **Whumpf** **U**				
Comp Test:	None Failure **Pop/Drop** **U**				
ECT Test:	None Failure **Pop/Drop** **U**				



TRIP PLAN LEFT WITH A TRUSTED SOURCE? Y / N **ESTIMATED RETURN TIME:** **TURN AROUND TIME:**

RISK MANAGEMENT PLAN

TERRAIN AVOIDANCE: Always watch out for terrain traps and convexities.
AVOID: Start zones / Aval paths / Runout zones / Aval terrain
30-35, >35
Convex / Unsupported
Lee / Loaded
Sunny
Slope size/expected aval size: Lrg(Sz3), Med(Sz2), Sm(Sz1)
Overhead Hazard

What am I most **UNCERTAIN** about today? What **INFORMATION** do I lack?

What are the group **DYNAMICS**?

CONSIDER: Where to spread out, When to go 1x1,
When to use protective forest, Always regroup in safe spots/islands of safety

TERRAIN TO USE:
Elevation
Aspect
Slope angle <30, 30-35, >35
Slope size / shape

EMERGENCY #s: Before calling, check page 64 to ensure you have crucial information ready.

ROUTE:

ATES: Simple Challenging **Complex** **U**

DECISION POINTS:

SAFER OPTIONS:

ROUTE PLAN B:

AST 2 – Lesson Plan 13

Course Close

Appendix items: Understanding Avalanche Forecasts

This lesson will explore in more detail...

- The parts of an avalanche bulletin
- How forecasters produce an avalanche forecast
- How forecasters decide on an avalanche danger rating
- Factors that affect forecast accuracy
- Strengths and limitations of avalanche danger ratings and public avalanche info
- Uncertainty and Confidence

Terminology

Let's ensure we understand general terminology, how do these terms differ?

- Travel & Terrain Advice
- Avalanche Danger Rating
- Backcountry Avalanche Advisory
- Public Avalanche Bulletin
- Public Avalanche Forecast
- Public Avalanche Report

	Friday	Saturday	Sunday
Alpine	Considerable	High	High
Treeline	Moderate	Considerable	High
Below Treeline	Low	Considerable	High

Travel & Terrain Advice: The variable winds and temperatures in the recent storm has created a variable snowpack at upper elevations. A high degree of caution is warranted in the Alpine today, especially on steep, convex terrain features. At treeline, danger will rise over the weekend as loading from snow increases and windslabs form in exposed areas. Below treeline, forecast rising temperatures on Saturday and rain on Sunday will cause a rapid increase in danger as the upper layers of the snowpack thaw. This might not be the best weekend to head into the hills. If you do decide to go out, stay on simple, low angle terrain and avoid terrain traps like gullies, creeks, and depressions.

Common Parts of a bulletin may include:

- Avalanche Danger Ratings
- Backcountry Avalanche Advice
- Terrain & Travel Advice
- Avalanche Activity
- Snowpack
- Weather
- Synopsis
- Outlook
- Discussion
- Travel Conditions

View current local forecast…

How a forecast is produced

Forecasters may go in field to gather data or have it supplied by others, such as:

- Infoex
- Informalex
- Mountain conditions report
- Manual/remote electronic weather stations
- Public Reports
- Online discussion or contact with locals

Then they synthesize data to describe current conditions.

Combining this with , they write an avalanche forecast AND choose a rating from the danger scale that best describes the situation

Variables that can affect the accuracy of a forecast

- Temporal variation (snowpack constant metamorphosis, driven by weather, influences conditions like density, temps etc…so that avalanche danger also varies over time)
- Spatial variation (snowpack changes from one place to another due to differences in ground cover, aspect, elevation, terrain thus avalanche danger varies AS DOES data may vary greatly, be misinterpreted or not enough of a sample)
- Weather Forecasts (often inaccurate for long range, mountain areas or large area)
- Size of Avalanche Forecast Region
- Experience of Forecaster

Avalanche Danger Exceptions

As we've discovered, avalanche forecasts may have more variation & may be less accurate in assessing local conditions but tend to be good at observing trends.

Have you ever noticed the local danger been different (higher / lower) than what was indicated in the regional public avalanche forecast?

Avalanche Danger Exceptions

Let's then consider how to investigate local avalanche danger exceptions…

- Local Danger Exceptions; snowpack variation
- The role of terrain
- Information sources
- Investigating exceptions

Local Danger Exceptions

Have you notice from personal experience or in the past two days any local danger exceptions (differences from forecast)?

- Snowpack varies over time & space; variations affect avalanche danger
- Investigate when & where local exceptions exist (either danger to be lower or higher)
- Assess carefully own level of mastery & motivation (often people look for lower local danger exceptions and predispose you to bias)
- To make good observations & gather credible info you need decent visibility and weather

Local Danger Exceptions

- You will assume greater level of responsibility if exceptions locally exist.
- Use the highest level of local resources and people available
- In general if you can't assess with confidence then it is recommended you use Avaluator Trip Planner as primary decision making support.

Confidence in Decision Making

In this lesson, we'll explore:

- Uncertainty and Confidence
- What do we do when uncertainty is high/confidence is low

Confidence in Decision Making

Uncertainty and Confidence

- Managing risk in avalanche terrain is an evolving process
- Experience plays a principal role
- Good judgement of local conditions and terrain is a result of being able to quickly and effectively compare current conditions and the terrain to what has been seen or experienced in the past
- Decision makers with more experience have seen a wider variety of places; more types of terrain, a wider range of snowpacks and more avalanche conditions

Confidence in Decision Making

Uncertainty and Confidence

- This increases the chance that they have previously been in a particular place and seen first hand the current conditions
- Due to the numerous factors and infinite permutation of all variables involved, it is not possible for any one person to have experienced all possible terrain/snowpack combinations.

Confidence in Decision Making

Adjusting Decisions Based on Uncertainty and Confidence

- Personal first hand experience is more valuable than previous experience in similar terrain
- Previous experience in similar terrain is better than no experience at all
- The less familiarity and personal experience, the greater the uncertainty about the outcome of decisions and course of action

Confidence in Decision Making

Adjusting Decisions Based on Uncertainty and Confidence

- As uncertainty rises, confidence decreases
- Wise decision makers exercise great care and make more conservative choices in snow and avalanche conditions and terrain where their confidence is low

Confidence in Decision Making

Adjusting Decisions Based on Uncertainty and Confidence, in conclusion

- Aggressive choice without considering one's experience and uncertainty not taking into account confidence through a reasoned process is common among the inexperienced
- Self awareness, respect and humility are key to a lifetime of backcountry ski touring