Definitions for Terrain Inputs

The application uses a three-step terrain rating classification devised by Grant Statham, a Canadian avalanche forecaster and guide.

Terrain is broken into classifications of "Simple, Challenging, or Complex." The classifications reflect both the amount of avalanche terrain and how committing it is. For instance, on a day of high or extreme avalanche danger, the worst place to plan the day's outing is in "complex" terrain, which has large avalanche paths, overlapping runouts, many terrain traps, and few options to avoid danger.

The following tables summarize the classifications and their characteristics. See http://www.pc.gc.ca/eng/pn-np/ab/banff/visit/visit7a7.aspx for more information.

Basic Classifications
Parks Canada uses this model to rate many of the popular tours within its National Parks

Rating	Summary of Characteristics
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 hazards may exist.
Complex	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.

The following table provides a broader model for rating terrain for avalanche safety

Characteristic	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 cut banks	Some depressions, gullies and/or overhead	***Many depressions, gullies, cliffs, hidden***

		avalanche terrain	*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*

Terrain that qualifies under an *italicized* descriptor automatically defaults into that or a higher terrain class. Non-italicized descriptors carry less weight and will not trigger a default, but must be considered in combination with the other factors. Any given piece of mountain terrain may have elements that will fit into multiple classes. Applying a terrain exposure rating involves considering all of the variables described above, with some default priorities.