



Northwest
Avalanche
Center



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West Slopes North - Canadian Border to Skagit River

Issued: 7:15 PM PST Wednesday, December 28, 2016 by Garth Ferber

NWAC avalanche forecasts apply to backcountry avalanche terrain in the Olympics, Washington Cascades and Mt Hood area. These forecasts do not apply to developed ski areas, avalanche terrain affecting highways and higher terrain on the volcanic peaks above the Cascade crest level.

A solo skier was killed in triggered 8-10 inch x 200 yard wide slab avalanche in the back country at White Pass on Tuesday. The accident was near the pass level on a run locally called the Grand Couloir and apparently due to a terrain trap into which the victim was carried and where avalanche debris was deeper. The White Pass Ski Patrol and the NWAC will compile an accident report and make it available on the NWAC web site as soon as the report is completed.

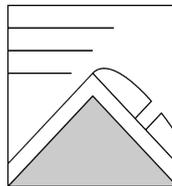
The Bottom Line: Recent or new wind and storm slab is expected on Thursday especially in the northwest zone. Continue to avoid steeper slopes in areas where you still find the 12/17 PWL in snow pits.

Elevation	Thursday		Outlook for Friday
Above Treeline	High	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	Considerable
Near Treeline	High	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	Considerable
Below Treeline	Considerable	Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Considerable

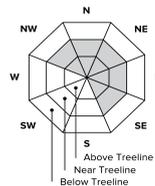
Avalanche Problems for Thursday

Wind Slab

Wind slabs can take up to a week to stabilize. They are confined to lee and cross-loaded terrain features and can be avoided by sticking to sheltered or wind scoured areas.



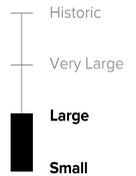
Avalanche Problem



Aspect/Elevation



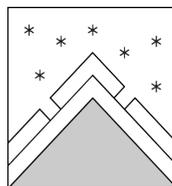
Likelihood



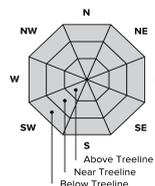
Size

Storm Slabs

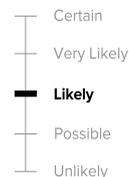
Storm slabs usually stabilize within a few days, and release at or below the trigger point. They exist throughout the terrain, and can be avoided by waiting for the storm snow to stabilize.



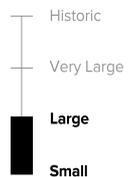
Avalanche Problem



Aspect/Elevation



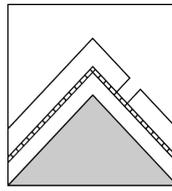
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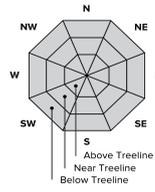
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Persistent Slab

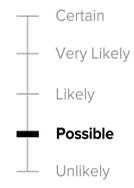
Persistent slabs can be triggered by light loads and weeks after the last storm. You can trigger them remotely and they often propagate across and beyond terrain features that would otherwise confine wind and storm slabs. Give yourself a wide safety buffer to handle the uncertainty.



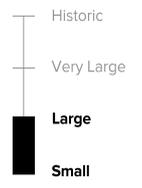
**Avalanche
Problem**



Aspect/Elevation



Likelihood



Size

Snowpack Analysis

Weather and Snowpack

Strong storms around the Solstice deposited generally 1 to 2 inches of water equivalent along the west slopes. A period of rain or freezing rain (Snoqualmie) during this storm cycle allowed crust layers to form in the Baker area from 4000-4500 feet, the Passes up to around 5000 feet (Stevens) to 6000 feet (Snoqualmie) and 6000-7000 feet in the Paradise area. The crust is very thin or non-existent in the Crystal backcountry.

A system Thursday and Friday 12/22-12/23 with low snow levels deposited about 20 inches of snow at Mt. Baker with about 2-8 inches accumulating elsewhere along the west slopes including the Passes.

A strong front and strong west flow aloft was seen over the Olympics and Cascades on Monday and Tuesday. NWAC stations along the west slopes and crest had strong west winds Monday and Tuesday with 1-3 feet of new snow for the 48 hours ending Wednesday morning with a cooling trend.

Recent Observations

The pro-patrol at the Mt Baker ski area Tuesday reported widespread sensitive storm and wind slab releases both in the area during control work and being triggered by the public in the adjacent backcountry. Sounds like there was at least one close call. Initial storm slabs of 8-12 inches became larger as snow loads increased with triggered 2 foot storm slabs reported.

Reports from Alpentel patrol Tuesday also reported sensitive storm slabs with good propagation and widespread distribution in mid and upper elevation start zones. These were storm slabs with numerous slides releasing down to the Solstice crust where a weak bond exists. Sensitive triggered slides ranging up to a foot were reported in the adjacent areas outside the ski area as well. Some of these slides initiated in storm layers about 6 inches down before stepping down to the crust another 6 inches or so.

A report via the NWAC Observations tab for Stevens Pass for Tuesday indicated new wind slab forming on most exposed slopes above 5000 feet. The 12/17 PWL was seen in a pit at 60 cm but was unreactive.

NWAC pro-observer Ian Nicholson was at Stevens Pass on Wednesday and reported no signs of instability on east slopes to 5800 feet. There was 2 feet of new snow, with a minor storm layer a Monday/Tuesday interface, over previous snow over the Solstice crust at 65-70 cm. The 12/17 PWL was going away and unlikely to be triggered.

NWAC pro-observer Dallas Glass was in the Bullion Basin and Pickhandle Basin area on Wednesday on most aspect to 6600 feet and reported 25-35 cm of storm snow generally right side up and minor shallow 2-3" storm slab and good skiing. There was visual evidence of wind slab on some cross loaded slopes near treeline.

The rangers at Paradise reported extensive new wind slab near and above treeline. The Solstice crust was seen at 135 cm with good bonds.

Wind effects seen near Paradise on Wednesday. Photo by Seth Waterfall.

Detailed Avalanche Forecast for Thursday

West southwest flow aloft will carry the next front across the Northwest on Thursday afternoon and night. Winds should increase in most areas on Thursday but significant new snow during the daylight hours is expected mainly in the Olympics and northwest Cascades. A warming trend should also be seen with temperature inversions possible Thursday in the central west and southwest Cascades.

Further snow should be seen in the Washington Cascades Thursday night.

Recent and renewed west to southwest winds make wind slab most likely on northwest to southeast aspects on Thursday. This is most likely by the end of the day in the northwest zone. Wind slab may build further anywhere there is still snow available for wind transport in wind exposed areas.

New storm slab is also most likely in the Northwest zone due to new snow and the warming trend on Thursday. Storm slab is less likely in the central west and southwest zone but lingering storm slab is possible there.

The 12/17 PWL persistent slab problem still warrants attention in the Cascades mainly in areas without the Solstice crust layer. Recent and new loading may make this layer more sensitive to triggering where it is still present. Remember that persistent weak layers are generally involved in larger avalanches. Avoid steeper slopes in areas where you still find this layer in snow pits.

Mountain Weather Synopsis for Thursday & Friday

Warm frontal moisture will continue to ride over flat upper level ridging that is centered over the Pacific Northwest today. This will mean continuing light rain and snow for the north Cascades and Olympics with decreasing clouds and precipitation further south. There is a large north to south snow level gradient over our region as well, with much milder temperatures expected down in Oregon. The frontal boundary will quickly sag south this evening, producing a period of moderate to heavy precipitation especially for the west slopes of the central Cascades. There will be a slight warming trend today. A shift from east to west

winds should allow snow levels to bump up to 3500 feet for Snoqualmie Pass area this evening. A brief period of strong westerly winds should accompany the frontal passage late this afternoon and evening. Showers should continue overnight in a period of NW flow, with perhaps a convergence zone forming downwind of Vancouver Island. The trailing longwave trough will swing through the area on Friday, keeping the air mass unstable enough to support scattered showers mainly along the west slopes of the Cascades. Weak ridging will flop over the area Friday night as we get a break between weather systems.

24 Hour Quantitative Precipitation ending at 4 am			Snow Level/Freezing Level in feet						
Location	Fri	Sat						Easterly	
			Day	Northwest Olympics	Northeast Cascades	Central Cascades	South Cascades	Flow in Passes	
Hurricane Ridge	.50 - .75	lt .10	Thursday Morning	3000'	1500'	1000'	2000'	7500'	*
Mt Baker Ski Area	1.00 - 1.50	lt .10	Thursday Mid-day	4500'	2500'	2000'	2500'	7500'	*
Washington Pass	.75	lt .10	Thursday Afternoon	3000'	2500'	2500'	3000'	6000'	*
Stevens Pass	1.00 - 1.50	lt .10	Thursday Evening	2000'	2000'	2000'	3500'	5500'	
Snoqualmie Pass	1.00 - 1.50	lt .10	Thursday Night - Friday	1500'	1500'	500'	1500'	2000'	
Mission Ridge	lt .25	0	Friday Night	1500'	500'	0'	500'	1500'	
Crystal Mt	lt .25	lt .10	Cascade Snow / Freezing Levels noted above refer to the north (approximately Mt Baker and Washington Pass), central (approximately Stevens to White Pass) and south (near Mt Hood). Freezing Level is when no precipitation is forecast.						
Paradise	.50	lt .10	* Note that surface snow levels are common near the passes during easterly pass flow and may result in multiple snow / freezing levels.						
White Pass	.25 - .50	lt .10							
Mt Hood Meadows	lt .25	lt .10							
Timberline	lt .25	lt .10							

LT = less than; WE or Water equivalent is the liquid water equivalent of melted snow in hundredths of inches. As a rough approximation 1 inch of snow = about .10 inches WE, or 10 inches of snow = about 1 inch WE.