West Slopes North - Canadian Border to Skagit River

Issued: 6:13 PM PST Saturday, December 24, 2016

by Dennis D'Amico

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.

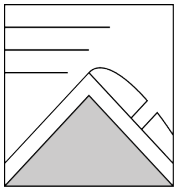
The Bottom Line: Wind slab may be still be sensitive on lee slopes mainly near and above treeline, especially where poorly bonded to an underlying crust. While the 12/17 PWL is gaining strength and appears increasingly unlikely to be human triggered, remember that persistent weak layers are generally involved in larger avalanches and above normal caution is still advised.

Elevation	Sunday		Outlook for Monday
Above Treeline	Moderate	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify problem features.	Considerable
Near Treeline	Moderate	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify problem features.	Moderate
Below Treeline	Moderate	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify problem features.	Moderate

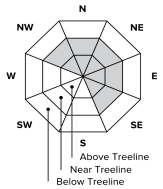
Avalanche Problems for Sunday

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



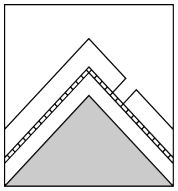
Aspect/Elevation

Likelihood

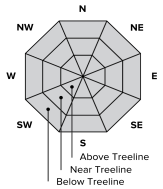
Size

Persistent Slab

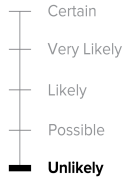
Persistent slabs can be triggered by light loads and weeks after the last storm. You can trigger them remotely and they often propagate across and beyond terrain features that would otherwise confine wind and storm slabs. Give yourself a wide safety buffer to handle the uncertainty.



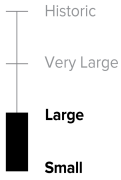
Avalanche Problem



Aspect/Elevation



Likelihood



Size

Snowpack Analysis

Weather and Snowpack

Strong westerly flow directed two Pacific frontal systems across the Northwest last Sunday night and again Monday night (12/18-12/19) with generally 1 to 2 inches of water accumulating along the west slopes through early Tuesday morning. A period of rain 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. In most areas the crust is strong enough to support a skier's weight.

After a fair weather period midweek another front crossed the Northwest on Thursday followed by an upper trough on Friday with low snow levels. About 20 inches of snow accumulated at Mt. Baker over this period with about 2-8 inches accumulating elsewhere along the west slopes including the Passes.

Scattered snow showers, sunbreaks and generally light winds summed up the weather on Saturday.

Recent Observations

Several worthwhile observations are available for the west slopes from Wednesday through Thursday, 12/21-12/22 ,via the NWAC Observations tab. In summary no avalanches or direct signs of deeper instability were reported, however the 12/17 PWL showed some propensity for propagation in snowpack tests.

NWAC pro-observer Lee Lazzara was out in heavy snowfall on south slopes on Mt Herman near Mt Baker on Friday in the 4-5000 foot range and reported widespread reactive 15-30 cm storm slab releasing on a recent storm interface. Lee did not find the December 17th PWL in a pit on a north slope. The 12/17 layer was identified but unreactive in snowpack tests at about 70 cm on a south slope.

The Alpental pro-patrol on Friday and Saturday reported shallow wind slab on wind loaded areas which was poorly bonded to the crust formed last week. Elsewhere new snow was not cohesive and was sluffing on the crust. Sensitive and shallow wind slab was also reported in the Silver Basin area of Crystal Friday.

Pro-observer Ian Nicholson was at Mt. Snoqualmie Saturday morning. Ian identified shallow wind slab as his greatest potential concern on steeper wind loaded slopes where it had bonded poorly to a graupel layer overlying the uppermost crust. The 12/17 PWL was showing signs of propagation in snowpit tests, but was requiring more load and showed signs of rounding versus earlier in the week.

Crusts in the Snoqualmie Pass and Paradise area have been reported as especially stout with ski crampons helpful on steeper slopes.

Detailed Avalanche Forecast for Sunday

Christmas should be cold and mostly sunny with generally light winds across the Cascade range.

Shallow wind slab formed Thursday and Friday has become less likely to trigger. However, wind slab may be locally more sensitive in areas it has poorly bonded to an underlying crust.

The latest tests of the December 17th PWL in the Cascades don't seem to indicate a regionally reactive layer. There is still some uncertainty regarding this layer but we are gaining confidence that it is less of an issue and have moved the likelihood down a notch to Unlikely.

However, since this layer is still showing the ability to propagate in snowpack tests throughout much of the range, we still advise observing the snowpack structure in your local area and skiing or riding on lower angled slopes until there is more certainty that this layer is no longer a problem. While triggering this layer seems unlikely, remember that persistent weak layers are generally involved in larger avalanches.

Storm slabs that were reactive in the Mt. Baker area Friday should have settled out by Sunday and storm slabs will not be listed as an avalanche problem.

The surface crust formed last week is strong and hard enough in some areas of the west slopes to present an out of control fall danger. Avoid steep slopes where the slide for life hazard is present.

Mountain Weather Synopsis for Sunday & Monday

A shortwave ridge moving over the PNW will provide us with some fine weather on Christmas Day. Freezing levels will be low but at least skies will be mostly clear with light winds. The fair weather will not last long as a strong westerly jet once again becomes squarely aimed at Washington Monday night. High clouds should increase overnight and through Monday morning as moisture begins to stream into the region. Cloud ceilings should lower quickly Monday afternoon with light rain and snow spreading south from the Olympics and north Cascades. Alpine winds will also ramp up quickly Monday afternoon, so expect reduced visibility late in the day if above treeline. The bulk of precipitation from the incoming frontal system will move in Monday night. A slight warming trend should take place overnight out ahead of and with the frontal passage for the Olympics and west slopes of the Cascades with snow levels peaking around 3000 feet after midnight through the early morning hours of Tuesday for the central Cascades including Snoqualmie Pass and 3500 feet for the south Washington Cascades including Crystal, Paradise and White Pass. Heavy precipitation will hold off until after midnight for Mt. Hood as the front slowly sags south.

24 Hour Quantitative Precipitation ending at 4 am

Location	Mon	Tue
Hurricane Ridge	0	.50 - .75
Mt Baker Ski Area	0	1.00 - 1.50
Washington Pass	0	.75
Stevens Pass	0	1.00
Snoqualmie Pass	0	1.00 - 1.50
Mission Ridge	0	.25 - .50
Crystal Mt	0	.75
Paradise	0	1.50
White Pass	0	.75
Mt Hood Meadows	0	.50 - .75
Timberline	0	.75

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.

Snow Level/Freezing Level in feet

Day	Olympics	Northwest Cascades	Northeast Cascades	Central Cascades	South Cascades	Easterly Flow in Passes
Sunday - Sunday Night	1000'	500'	500'	500'	1000'	
Monday Morning	2000'	500'	500'	1000'	1500'	*
Monday Afternoon - Monday Evening	3000'	1500'	500'	1500'	2000'	*
Monday Night	4000'	2500'	2000'	3000'	4500'	*

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.

* Note that surface snow levels are common near the passes during easterly pass flow and may result in multiple snow / freezing levels.