East Slopes North - Canadian Border to Lake Chelan

Issued: 6:00 PM PST Tuesday, December 27, 2016

by Kenny Kramer

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.

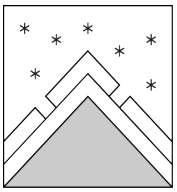
The Bottom Line: Very dangerous avalanche conditions persist in much of the terrain. Storm, wind or persistent slabs will be sensitive Wednesday. The safest plan is to avoid avalanche terrain of consequence until storm, wind and persistent slabs stabilize.

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

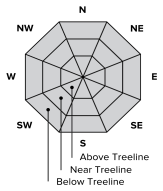
Avalanche Problems for Wednesday

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.

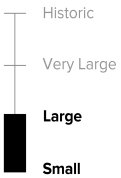


Avalanche Problem



Aspect/Elevation

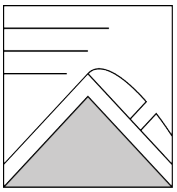
Likelihood



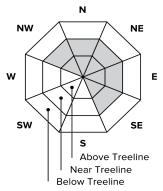
Size

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.

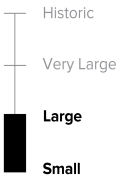


Avalanche Problem



Aspect/Elevation

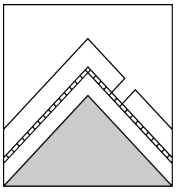
Likelihood



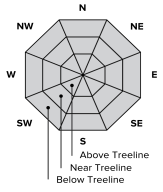
Size

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.

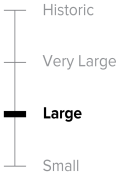


Avalanche Problem



Aspect/Elevation

Likelihood



Size

Snowpack Analysis

Weather and Snowpack

Strong storms a week ago Sunday and Monday deposited generally half to 1 inch of water equivalent along the east slopes through early Tuesday morning. Storm totals generally ranged from 6 - 12 inches along the east slopes during this cycle. Westerly winds were especially strong with the 2nd system late Monday night and into Tuesday with gusty winds mixing down into usually more wind sheltered terrain.

A front Thursday and upper trough on Friday deposited about 1-5 inches of snow along the east slopes.

Scattered snow showers, sunbreaks and generally light winds summed up the weather on Saturday with fair and cold weather seen on Christmas Day and early Monday, before a strong front arrived late Monday.

The strong front moved across the area early Tuesday, followed by snow showers and strong westerly winds through the day Tuesday at low snow levels. The most recent storm totals from Monday morning through Tuesday afternoon have been about 6-12 inches along the east slopes and still snowing in many areas Tuesday evening!

Recent Observations

NWAC pro-observer Jeff Ward was in the Icicle Creek area up to about 6300 feet on Wednesday and saw evidence of a widespread natural wind slab avalanche cycle during the last storm, with one very large crown seen on a north aspect. The December 17th persistent weak layer (PWL) was found at 15-30 cm below the surface on W to N to E slopes. The layer was unreactive both in large column snowpack tests, ski tests and cornice drops.

The NCMG on Friday and Saturday at Washington Pass had some planar hand shears in wind affected snow, but the only instability directly noted was small loose dry avalanches in steep rocky terrain. The 12/17 interface was found to be unreactive in several snowpack tests.

NWAC observer Tom Curtis was on DirtyFace Peak near Lake Wenatchee Saturday and found the 12/17 PWL 15-25 cm down, but not propagating in snowpack tests on N-E-SE aspects between 4000-5500 feet. Tom also found shallow and stubborn wind slab in the near treeline band.

A different story continues to evolve in the Mission Ridge area. On Wednesday avalanche mitigation produced 1.5 -3 ft hard slab avalanches in 3 separate paths! These avalanches were releasing on basal facets about 15 cm from the ground. On Thursday, snowpits on W-N-E slopes at 6500 feet continued to show hard slab layers giving hard compression test results with moderate quality shears on facets about 15 cm from the ground with about 120 cm (4 ft) of total snow. On Saturday, a backcountry ski tourer in the Lake Clara area near Mission Ridge reported a huge whumpfing noise, likely indicating a collapse of the basal facets. While no avalanche occurred, the terrain where the collapse occurred connected to a large avalanche path that was NE facing near treeline. While deep, persistent slabs in this area are unlikely to trigger, the appropriate travel response in consequential avalanche terrain is avoidance!.

There have been no observations Tuesday following the new storm snow load, though given the sensitivity along the west slopes, similar conditions are expected with just somewhat shallower slabs.

Detailed Avalanche Forecast for Wednesday

Stormy conditions Tuesday night should gradually ease by Wednesday as a brief break in storms occurs through the day Wednesday. Light winds and a lack of significant additional snowfall should allow for a gradual decrease in danger. However, cold temperatures will limit the stabilization Wednesday.

Storm slabs will continue to be sensitive to trigger and widespread Wednesday. The current storm slabs have formed over a variety of weak surface snow conditions, including near surface faceted snow, slightly settled powder or possible surface hoar. Natural or triggered storm slabs may also break down to deeper persistent layers, making larger and more dangerous avalanches possible Wednesday. Expect areas with the greatest storm snow totals to be most sensitive to this new load, mainly nearer to the crest.

Where present, the persistent slab problem should remain sensitive to natural or triggered avalanches with the new snow load.

Fresh wind slabs should persist near and above treeline on a variety of lee slopes near ridges and exposed cross loaded features.

The persistent slab problem still warrants attention throughout the Cascade range, especially in the Mission Ridge area where recent full depth avalanches have occurred. Recent significant loading will make this layer more sensitive to trigger where present. Remember that persistent weak layers are generally involved in larger avalanches and cautious route-finding and conservative decision making will be essential for safe travel. Err on the side of caution by avoiding avalanche terrain of consequence, especially if you experience direct observations of this layer, such as whumpfing or shooting cracks.

Mountain Weather Synopsis for Wednesday & Thursday

West flow and moisture will decrease on Wednesday as a upper short wave begins to move across the Northwest. This will cause alpine winds and showers that are mainly along the west slopes to decrease and end on Wednesday morning. A warm front will move over the the flattened ridge over the Northwest on Wednesday night and Thursday morning. This will cause moderately increasing alpine winds and some light snow in the Olympics and north Cascades. A weakening cold front will move over the further flattened ridge over the Northwest Thursday afternoon and night. It is possible this cold front is weaker than earlier indicated. This will cause further moderately increasing alpine winds and snow mainly in the Olympics and Washington Cascades. Snow levels over the west slopes of the central west and southwest Cascades are a bit of tough call by Thursday afternoon with temperature inversions possible. Any temperature inversions should mix out by Thursday night.

24 Hour Quantitative Precipitation ending at 4 am

Location	Thu	Fri
Hurricane Ridge	lt .25	.25 - .50
Mt Baker Ski Area	.25	1.00
Washington Pass	lt .25	.50
Stevens Pass	lt .25	.50 - .75
Snoqualmie Pass	lt .25	.50
Mission Ridge	lt .10	lt .25
Crystal Mt	lt .25	lt .25
Paradise	.25	.25 - .50
White Pass	lt .10	lt .25
Mt Hood Meadows	lt .10	0
Timberline	lt .10	0

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
Wednesday Morning	1500'	500'	0'	1000'	1500'	
Wednesday Afternoon	2000'	1000'	0'	1500'	2000'	
Wednesday Night	3000'	1000'	0'	1500'	4000'	*
Thursday Morning	4000'	2000'	1000'	2500'	5000'	*
Thursday Afternoon	5000'	3000'	2000'	4000'	6000'	
Thursday Night	2000'	1000'	1000'	2000'	4000'	

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.