



# East Slopes South - South of I-90 to Columbia River

Issued: 6:20 PM PST Thursday, December 29, 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.

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, December 27th. 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.

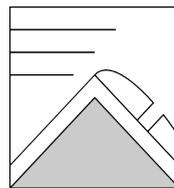
**The Bottom Line:** Wind slab should be the primary avalanche problem due to a period of strong westerly winds Thursday afternoon and/or night that may load leeward aspects further downslope than usual. Treat wind loaded slopes in all elevation bands with caution on Friday. The persistent slab problem still warrants attention in the Cascades especially in the Mission Ridge/Blewett area where full depth avalanches are still possible.

Elevation	Friday		Outlook for Saturday
Above Treeline	Considerable	Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Considerable
Near Treeline	Considerable	Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Moderate
Below Treeline	Moderate	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify problem features.	Moderate

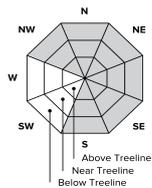
## Avalanche Problems for Friday

### Wind Slab

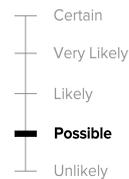
Wind slabs can take up to a week to stabilize. They are confined to lee and cross-loaded terrain features and can be avoided by sticking to sheltered or wind scoured areas.



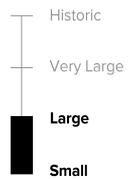
Avalanche Problem



Aspect/Elevation



Likelihood



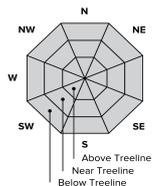
Size

### Storm Slabs

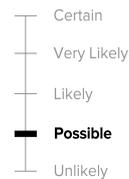
Storm slabs usually stabilize within a few days, and release at or below the trigger point. They exist throughout the terrain, and can be avoided by waiting for the storm snow to stabilize.



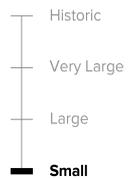
Avalanche Problem



Aspect/Elevation



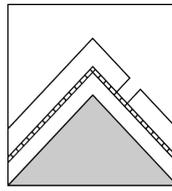
Likelihood



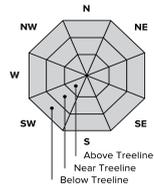
Size

## 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.



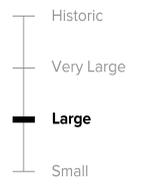
**Avalanche  
Problem**



**Aspect/Elevation**



**Likelihood**



**Size**

# Snowpack Analysis

## Weather and Snowpack

Strong storms around the Solstice deposited generally half to 1 inch of water equivalent along the east slopes. Storm totals generally ranged from 6 to 12 inches.

A strong front and strong west flow aloft was seen over the Cascades on Monday and Tuesday. NWAC and Snotel stations along the east slopes had 4 to 18 inches of new snow through 48 hours ending Wednesday morning along with a cooling trend. The higher amounts were seen closer to the crest while the lower amounts represented the Blewett/Mission area.

## Recent Observations

The NCMG was on Delancey Ridge on Wednesday and reported good conditions with low quality shears in the recent snow which were cleaner on sun crusts on SSW slopes. In same area Thursday, NCMG reported the new snow totaled 15-20 cm (6-8 inches) through the afternoon but was lacking a slab structure near and below treeline. In the Washington Pass zone, the 12/17 PWL has been found to be unreactive.

A different story continues in the Mission Ridge/Blewett area.

Last week Mission Ridge ski patrol produced 1.5 to 3 ft hard slab avalanches during control work. These avalanches were releasing on basal facets about 15 cm from the ground.

On Saturday 12/24, 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 it will be best to avoid avalanche terrain in the Mission Ridge area!

Two reports from the [NWAC observation page](#) tell the continuing story of a much shallower snowpack and deep persistent weak layers in this portion of the zone.

## Detailed Avalanche Forecast for Friday

A strong but quick moving front will bring a period of strong winds along with precipitation Thursday afternoon and night. Winds and shower intensity should quickly taper down on Friday with a clearing trend expected along with cool temperatures.

Wind slab should be the primary avalanche problem due to a period of moderate to strong westerly winds Thursday afternoon and/or Thursday night that may load leeward aspects further downslope than usual. Treat wind loaded slopes in all elevation bands with caution on Friday.

Storm slabs are expected to be the most reactive and likely to trigger Thursday night during peak warming and storm intensity. However, sensitive storm slabs may linger and be found in wind sheltered terrain Friday. More snow is expected from Snoqualmie Pass and north to Washington Pass with this storm and the avalanche danger will be rated higher to account for the additional expected snowfall. Lower snowfall totals are expected further east of the crest and in the southeast zone.

The persistent slab problem still warrants attention in the Cascades especially in the Mission Ridge area where recent full depth avalanches have occurred. 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 or especially if you experience direct observations of this layer such as whumpfing or shooting cracks.

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## Mountain Weather Synopsis for Friday & Saturday

A quick moving frontal system in strong westerly flow produced about 10-12 inches of snow along the north and central Cascades of Washington. Less snow was seen in the Olympics, the south Washington Cascades, Mt. Hood and below about 4000 feet for the central Cascades due to a period of rain Thursday evening. A convergence zone that formed downwind of Vancouver Island in NW flow overnight is beginning to peter out as the flow aloft turns more northerly. A longwave trough axis oriented E-W over Washington Friday morning will slide south later this morning with weak ridging building into British Columbia. The PNW should see a drying trend with a healthy dose of sunshine and steady cold temperatures expected this afternoon. A quick moving system upstream in NW flow will slide toward the area on Saturday, spreading light snowfall over the Olympics and north and central Cascades by early afternoon. A light to moderate shot of snowfall should come Saturday night as the front quickly sweeps south and a cold upper trough begins to dig off the Washington coast.

**24 Hour Quantitative Precipitation ending at 4 am**

Location	Sat	Sun
Hurricane Ridge	lt .10	.25 - .50
Mt Baker Ski Area	lt .10	.25 - .50
Washington Pass	lt .10	.25
Stevens Pass	lt .25	.50
Snoqualmie Pass	lt .25	.50 - .75
Mission Ridge	0	lt .25
Crystal Mt	lt .10	.25
Paradise	lt .10	.25 - .50
White Pass	lt .10	.25
Mt Hood Meadows	lt .10	.50
Timberline	lt .10	.50 - .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	Northwest Northeast Central South					Easterly Flow in Passes
	Olympics	Cascades	Cascades	Cascades	Cascades	
Friday - Saturday Morning	1500'	1500'	500'	1000'	2000'	
Saturday Mid-day	2500'	1000'	500'	1000'	4000'	
Saturday Afternoon	1500'	1000'	500'	1500'	1500'	
Saturday Night	0'	0'	0'	0'	1000'	

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.