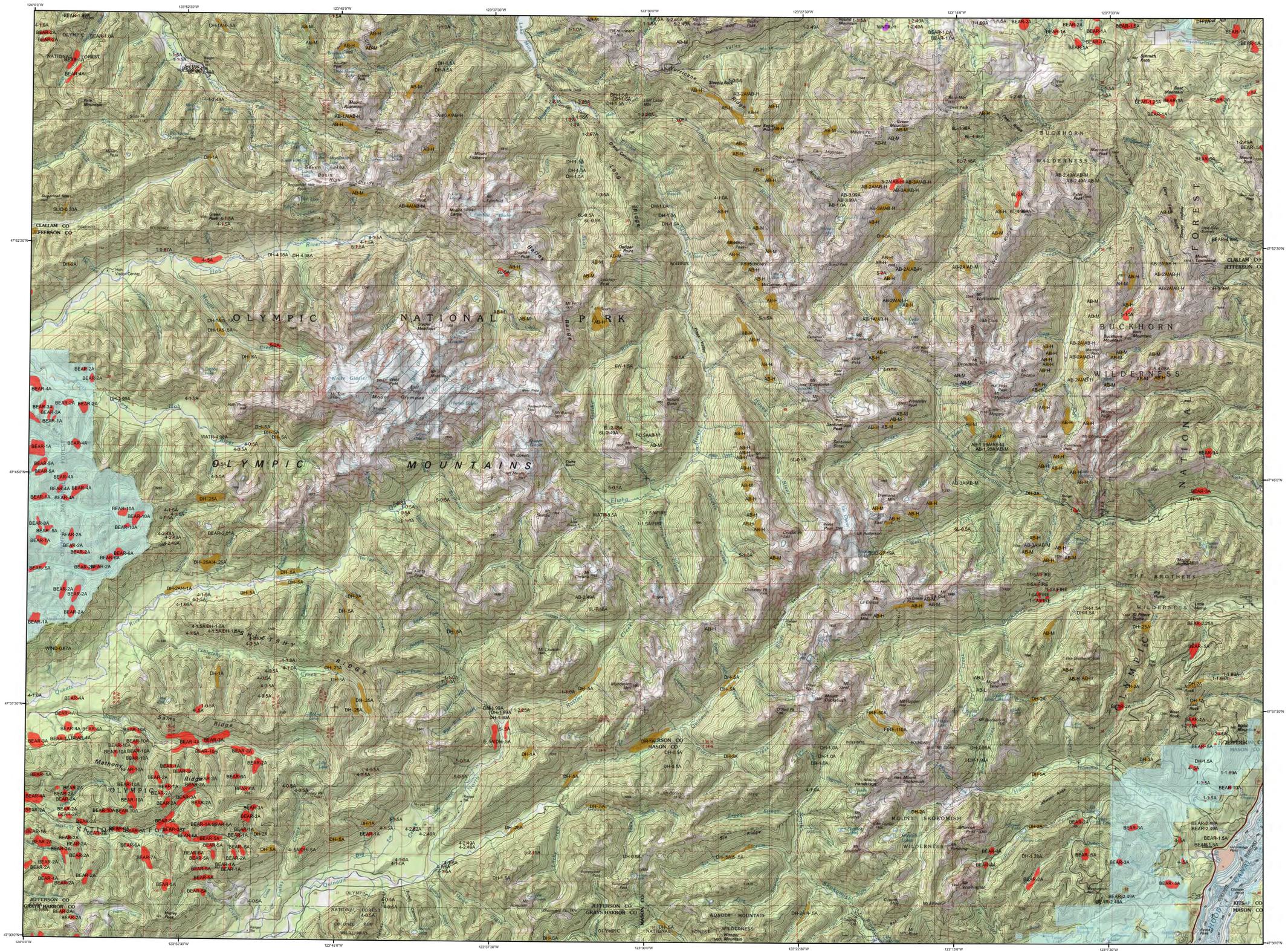


# 2012 Aerial Insect and Disease Survey

## USGS 100K Quad: MOUNT OLYMPUS - E147123; 2C



Mortality Agents		
Code	Damaging Agent	Primary Host
1	Douglas fir beetle	Douglas fir
2	Douglas fir engraver	Douglas fir
3	Spruce beetle	Spruce
4	Fir engraver	True fir
5	Western balsam bark beetle	Subalpine fir
6B	Mountain pine beetle	Ponderosa pine
6L	Mountain pine beetle	Lodgepole pine
6P	Mountain pine beetle	Pseudotsuga pine
6W	Mountain pine beetle	Western white pine
7	Iron pine beetle	Pseudotsuga, lodgepole pines
8	Western pine beetle	Ponderosa pine
9	Western pine beetle	Pine-stemmed ponderosa pine
10	Shiver fir beetle	Shiver fir, true fir
BEAR	Bear damage	Douglas fir, ponderosa pine
FL	Flattened woodborer	Pine, Douglas fir
WD	Root collar root disease	Root collar rot
WD	Root disease	Conifer
WATR	Water damage	All species

Defoliators		
Code	Damaging Agent	Primary Host
BS	Western spruce budworm	True fir, Douglas fir, spruce
CH	Larch casebearer/needleminer	Western larch
LC	Western hemlock looper	Western hemlock
LS	Black pine/needle scale	Ponderosa pine
PE	Pine needle scale	Ponderosa pine
PC	Pine needle cast	Ponderosa pine
PN	Pine needle sheathminer	Ponderosa pine
NC	Needle cast	Western larch
SA	Sawfly	Conifer
SP	Sawfly	True fir
SK	Sawfly	Knobcone pine
SL	Sawfly	Lodgepole pine
SM	Sawfly	Aspen
SNC	Sawfly	Aspen
TA	Tent caterpillar	Aspen
TC	Tent caterpillar	Aspen
TM	Douglas fir tussock moth	True fir, Douglas fir
UNWD	Unknown defoliating agent	All species

**USGS 100K Quad: MOUNT OLYMPUS - E147123; 2C**  
**2012 Aerial Insect and Disease Survey**  
**Map Scale: 1:100,000**  
**Date: 11 December 2012**

### Legend

	<b>Defoliating Agents</b>		<b>Areas Not Flown</b>
	<b>Mortality Agents</b>		
	<b>Other Damage</b>		
	<b>WadNR Managed Lands</b>		

Source: Washington Dept. of Natural Resources

The TOPOI maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps. For more information on this map, visit us online at [http://gto.arcgisonline.com/maps/USA\\_Topo\\_Maps](http://gto.arcgisonline.com/maps/USA_Topo_Maps)

A data dictionary, digital copies of this map and Arctics insect and disease data are available at [www.fs.usda.gov/gto/r/fhp/ads](http://www.fs.usda.gov/gto/r/fhp/ads)

#### How the Aerial Surveys Are Conducted

Data represented on this map are based on trees visibly affected by forest insects and diseases detected and recorded during aerial survey flights conducted by the USDA Forest Service, the Washington Department of Natural Resources and the Oregon Department of Forestry. Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced, digital map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

The aerial survey provides information on the current status for many causal agents, and is important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a 'snap shot' in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Specially designed surveys with modified flight patterns and timing may be conducted to more accurately delineate the extent and severity of a particular disturbance agent. Special surveys, such as Swiss needle cast surveys, are conducted when resources are available to address situations of sufficient economic, political or environmental importance.

**DIRECT ALL INQUIRIES TO:**

Washington State Department of Natural Resources  
 Resource Protection Division  
 Forest Health  
 1111 Washington St. SE  
 MS 47037  
 Olympia, WA 98504-7037

-- OR --

USDA Forest Service, Region 6  
 State and Private Forestry  
 Forest Health Protection  
 PO Box 3623  
 Portland, Oregon 97208

DISCLAIMER  
 Forest Health Protection (FHP), Washington Department of Natural Resources (WADNR) and Oregon Department of Forestry (ODF) strive to maintain an accurate Aerial Detection Survey (ADS) Dataset, but due to the conditions under which the data are collected FHP, WADNR and ODF shall not be held responsible for missing or inaccurate data. ADS are not intended to replace more specific information. An accuracy assessment has not been done for this dataset; however, ground checks are completed in accordance with local and national guidelines. <http://www.fs.usda.gov/foresthealth/assessment/>  
 Maps and data may be updated without notice. Please cite: "USDA Forest Service, Forest Health Protection, Washington Department of Natural Resources, Resource Protection Division, and Oregon Department of Forestry, Forest Health Management" as the source of this data.