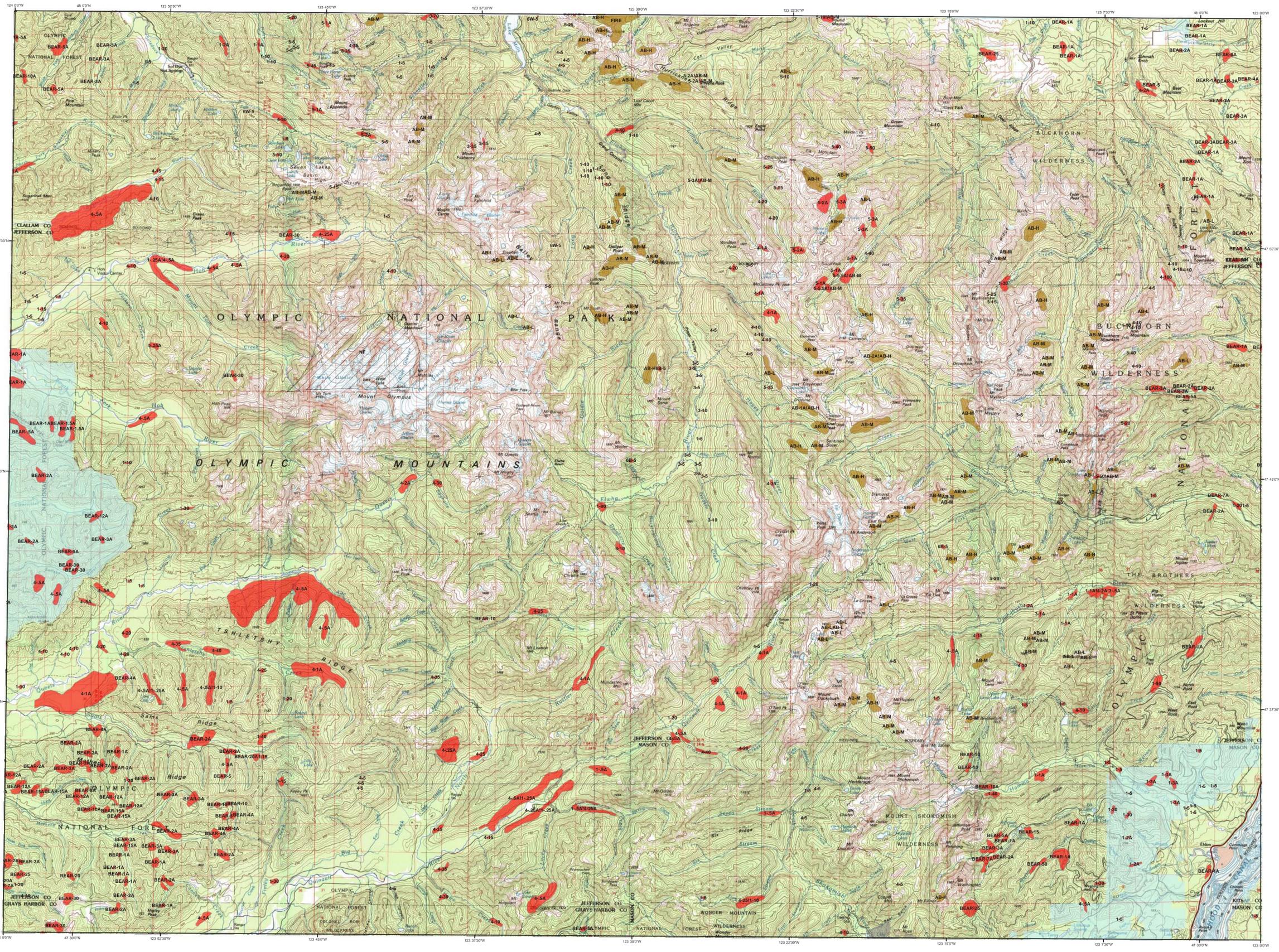


# 2006 Aerial Insect and Disease Survey

## USGS 100K Quad: Mt. Olympus - E147123; 2C



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spruce aphid	1	Douglas-fir beetle
BB	Western blackheaded budworm	2	Douglas-fir engraver
BM	Medic budworm	3	Spruce beetle
BP	Sugar pine tortrix	4	Fir engraver
BS	Western spruce budworm	5A	Western balsam bark beetle
BY	Bynum's light/spot/medulla	6B	Mountain pine beetle
CH	Larch	6C	Mountain pine beetle
HL	Western hemlock looper	6K	Mountain pine beetle
LG	Green striped forest looper	6P	Mountain pine beetle
LL	Larch budmoth	6S	Mountain pine beetle
LS	Black pine needle scale	6V	Mountain pine beetle
MD	Douglas-fir budmoth	7	lvs spp.
ML	Larch budmoth	8	Western pine beetle
MN	Douglas-fir needle midge	8B	Western pine beetle
MS	Spruce budmoth	9	Silver fir beetle
ND	Needle miner	BEAR	Bear damage
NJ	Needle miner	LW	Flatheaded wood borer
NK	Needle miner	PL	Black stain root disease
NL	Needle miner	RD	Root disease
NP	Needle miner	WATR	Water damage
NS	Needle miner		
NW	Needle miner		
NT	Western oak looper		
PB	Pine butterfly		
PC	Pine needle cast		
PH	Phantom hemlock looper		
PI	Pine needle/needle miner		
PN	Pine needle/needle miner		
PS	Pine needle scale		
RC	Sawfly		
SD	Sawfly		
SE	Sawfly		
SH	Sawfly		
SK	Sawfly		
SL	Sawfly		
SM	Satin moth		
SNC	Swiss needle cast		
SP	Sawfly		
SW	Sawfly		
TA	Tent caterpillar, alder		
TM	Douglas-fir bark moth		
TS	Tent caterpillar, aspen		

**USGS 100K Quad: Mt. Olympus - E147123; 2C**  
**2006 Aerial Insect and Disease Detection Survey**  
**Mapscale: 1:100,000**  
**Date: November 27, 2006**

### Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- WaDNR Managed Lands
- 2006 Large Fires
- Areas Not Flown

Source: Washington Dept. of Natural Resources

The map base was created with TOPOI (Copyright 2001, National Geographic); available online at: [www.ngmapstore.com](http://www.ngmapstore.com)

A data dictionary, digital copies of this map and ArcGIS insect and disease data are available at: [www.fs.fed.us/r6/nr/fid/data.shtml](http://www.fs.fed.us/r6/nr/fid/data.shtml)

### 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 and the Washington Department of Natural Resources. 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  
 Forest Health  
 1111 Washington St. SE  
 Olympia, WA 98504

-- OR --

USDA Forest Service, Region 6  
 Natural Resources  
 Forest Health Protection  
 PO Box 3623  
 Portland, Oregon 97208

**DISCLAIMER**  
 The insect and disease data presented should only be used as an indicator of insect and disease activity, and should be ground-checked for precise location, extent, severity and causal agent. Color coded polygons show locations where trees were recently killed or defoliated. Intensity of damage is variable and not all trees within coded polygons are dead or defoliated. The cooperators reserve the right to correct, update, modify or replace GIS products without notice. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.