

# 2012 Aerial Insect and Disease Survey

## USGS 100K Quad: BROTHERS - E143120; 5K



Mortality Agents			Other Damaging Agents		
Code	Damaging Agent	Primary Host	Code	Damaging Agent	Primary Host
1	Douglas fir beetle	Douglas fir	AB	Balsam woolly adelgid	True fir
2	Douglas fir engraver	Douglas fir	AM	Leaf discoloration	Maple
3	Spruce beetle	Spruce	BR	Blister rust	Fireweed pine
4	Fir engraver	True fir	CC	Cystipora canker	True fir
5L	Western hemlock bark beetle	Subalpine fir	CH	Cherry hornet	Hemlock
6B	Mountain pine beetle	Whitebark pine	FIRE	Fire	All species
6L	Mountain pine beetle	Lodgepole pine	HDD	Hardwood decline	Hardwoods
6P	Mountain pine beetle	Ponderosa pine	HDO	Hardwood decline	Aspen
6S	Mountain pine beetle	Sage pine	NFN	Areas not flown - non host	
6W	Mountain pine beetle	Western white pine	NFH	Areas not flown - host	
7	Log-skip	Ponderosa, lodgepole pines	PMD	Pacific madrone decline	Pacific madrone
8	Western pine beetle	Pine-barked ponderosa pine	PIE	Leaf fall in poplars	Poplars
8B	Western pine beetle	Silver fir, true fir	RB	Rust belt	All species
9	Bear damage	Douglas fir	SLD	Slide	All species
BEAR	Flat-headed woodborer	Pine/Oak/cedar root disease	WIND	Windthrow	All species
FL	Pine/Oak/cedar root disease	Canifer	WTR	Water damage	All species
RD	Root disease				
WTR	Water Damage				

  

Defoliators		
Code	Damaging Agent	Primary Host
BS	Western spruce budworm	True fir, Douglas-fir, spruce
CH	Larch casebearer/typhlocyba	Western larch
LC	Western hemlock looper	Western hemlock
LS	Needle cast	Lodgepole pine
LS	Black pine/needle scale	Ponderosa pine
PN	Pine needle cast	Ponderosa pine
PN	Pine needle sheathminer	Ponderosa pine
SA	Needle cast	Western larch
SA	Sawfly	Canifer
SH	Sawfly	True fir
SK	Sawfly	Kobresia pine
SL	Sawfly	Lodgepole pine
SNC	Slim scale	Doanville fir
SNC	Pine needle cast	Doanville fir
TC	Terrestrial caterpillar	Hardwoods
TC	Douglas fir bark moth	True fir, Douglas fir
UNKD	Unknown defoliating agent	All species

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**Map Scale: 1:100,000**  
**Date: 08 January 2013**

**Legend**

- Defoliating Agents
- Mortality Agents
- Other Damage
- Areas Not Flown
- 2012 Large Fires

Source: Northwest Interagency Coordination Center

The cause of damage is described by a symbol above and is followed by: number of trees affected; number of trees (example: SA1 or intensity of damage (L- Light, M- Moderate, H- Heavy).

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

A data dictionary, digital copies of this map and Arctis insect and disease data are available at: [www.fs.usda.gov/gto/r6/fhp/ads](http://www.fs.usda.gov/gto/r6/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:**

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 Forest Health Management  
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 Salem, OR 97310

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USDA Forest Service, Region 6  
 State and Private Forestry  
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 Portland, Oregon 97208

**DISCLAIMER**  
 Forest Health Protection (FHP), Washington Department of Natural Resources (WDNR) and Oregon Department of Forestry (ODF) strive to maintain an accurate Aerial Detection Survey (ADS) Database, but due to the conditions under which the data are collected FHP, WDNR 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.fed.us/foresthealth/ads/>