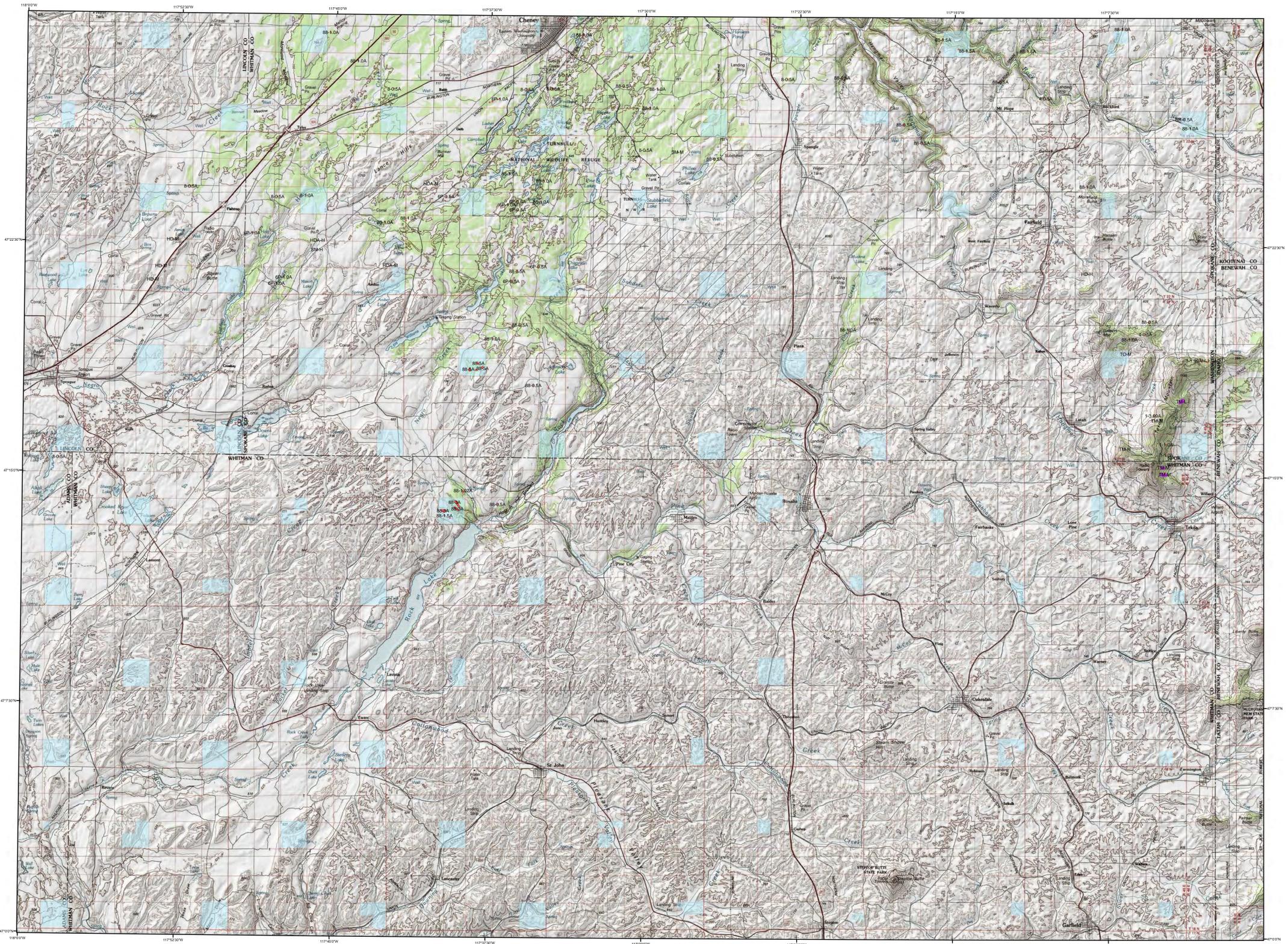


# 2012 Aerial Insect and Disease Survey

## USGS 100K Quad: ROSALIA - A147117; 8D



Mortality Agents			Other Damaging Agents		
Code	Damaging Agent	Primary Host	Code	Damaging Agent	Primary Host
1	Douglas fir beetle	Douglas fir	AB	Sabine woolly adelgid	True fir
2	Douglas fir engraver	Douglas fir	AM	Leaf discoloration	Maple
3	Spruce beetle	Spruce	BR	Bitter rot	Pure needle pines
4	Fir engraver	Subalpine fir	CC	Cystipora canker	True fir
5	Western balsam 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	Hemlock
6P	Mountain pine beetle	Ponderosa pine	HDA	Hardwood decline	Aspen
6W	Mountain pine beetle	Western white pine	NFN	Aravae not flown - non host	Oak
7	Western white pine sawfly	Ponderosa, lodgepole pines	NFN	Aravae not flown - host	Pacific madrone
8	Western pine beetle	Ponderosa pine	PMD	Pacific madrone decline	Maples
8B	Western pine beetle	Pine-stemmed ponderosa pine	RD	Red leaf	All species
BEAR	Bear damage	Silver fir, true fir	SLD	Slake	All species
FL	Flattened woodborer	Douglas fir, ponderosa pine	WNTR	Winter damage	All species
WD	Root disease	Port-Oak cedar			
WATER	Water damage	Cedar			
		All species			

Defoliators	
Code	Damaging Agent / Primary Host
BS	Western spruce budworm / True fir, Douglas fir, spruce
CH	Larch casebearer/needleminer / Western larch
LL	Needle cast / Western hemlock
LS	Black pine/needle scale / Ponderosa pine
PC	Pine needle cast / Ponderosa pine
PN	Pine needle sheathminer / Ponderosa pine
NC	Needle cast / Western larch
SA	Sawfly / Cedar
SA	Sawfly / True fir
SK	Sawfly / Noblefir pine
SK	Sawfly / Lodgepole pine
SM	Satin moth / Aspen
SNC	Snow needle cast / Douglas fir
TA	Tent caterpillar / Alder
TC	Tent caterpillar / Hemlock
TM	Douglas fir tussock moth / True fir, Douglas fir
UNWD	Unknown defoliating agent / All species

**USGS 100K Quad: ROSALIA - A147117; 8D**  
**2012 Aerial Insect and Disease Survey**  
**Map Scale: 1:100,000**  
**Date: 11 December 2012**

### Legend

**Defoliating Agents**

**Mortality Agents**

**Other Damage**

**WadNR Managed Lands**

Source: Washington Dept. of Natural Resources

**Areas Not Flown**

Vicinity Map

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

The TOPO! 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.arcgis.com/maps/USA\\_Topo\\_Maps](http://gto.arcgis.com/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:**

WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

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

-- OR --

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.usda.gov/foresthealth/ads/>

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