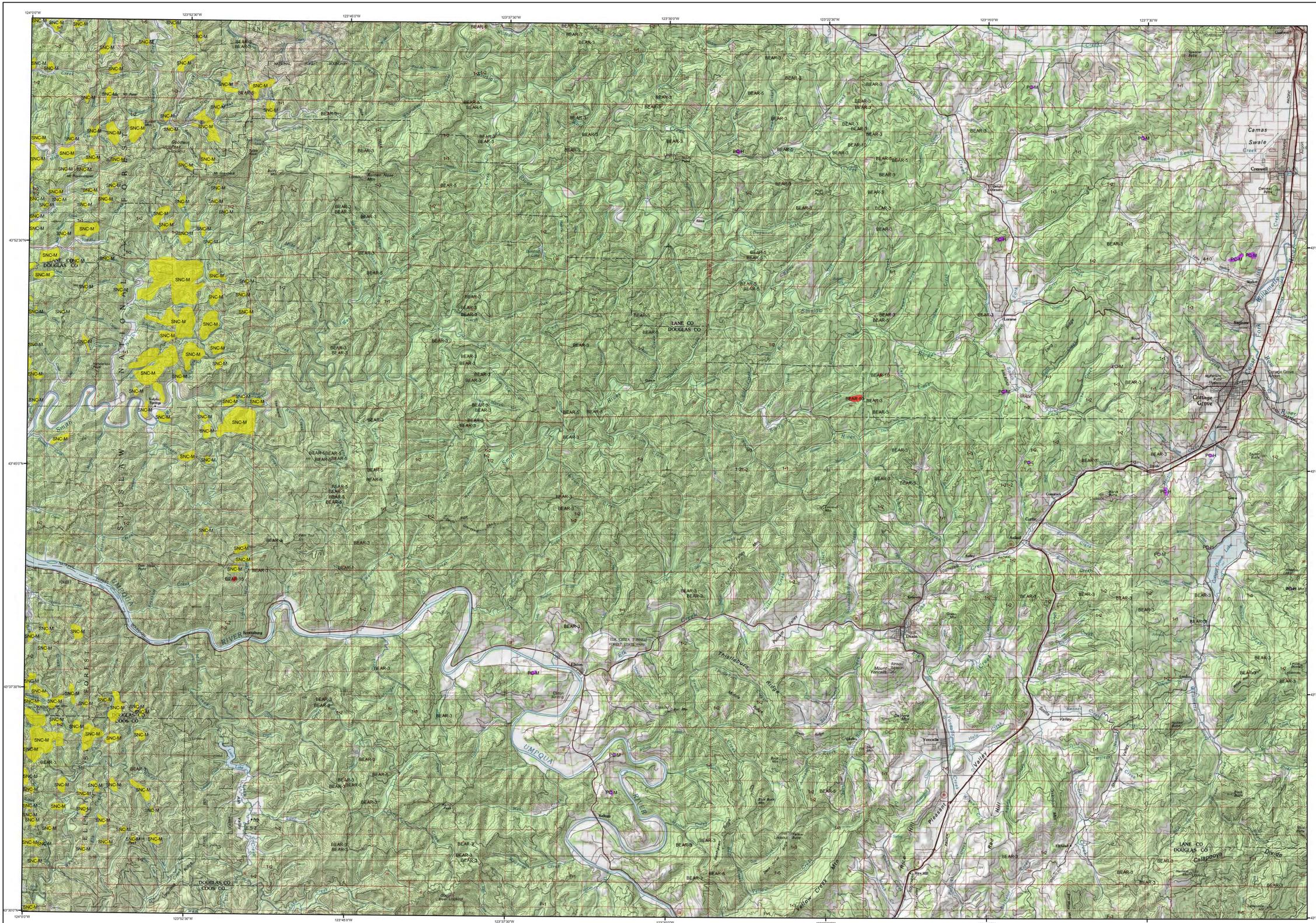


# 2011 Aerial Insect and Disease Survey

## USGS 100K Quad: COTTAGE GROVE - E143123; 2K



Mortality Agents		
Code	Damaging Agent	Primary Host
2	Douglas fir beetle	Douglas fir
2	Douglas fir engraver	Douglas fir
3	Spotted bark beetle	Spotted bark beetle
4	Pine engraver	True fir
5	Western balsam bark beetle	Sub-alpine fir
6B	Mountain pine beetle	Whitebark pine
6L	Mountain pine beetle	Lodgepole pine
6P	Mountain pine beetle	Ponderosa pine
6W	Mountain pine beetle	Western white pine
7	Sit spruce	Ponderosa, longleaf pines
8	Western pine beetle	Ponderosa pine
8B	Western pine beetle	Pine-fir ponderosa pine
9	Fire damage	Silver fir, true fir
BEAR	Fire damage	Douglas fir
FR	Fire damage	Aspen
PL	Pine bark beetle	Pine
RD	Root disease	Port Orford cedar
WATR	Water Damage	Conifer

Defoliators		
Code	Damaging Agent	Primary Host
BS	Western spruce budworm	True fir, Douglas fir, spruce
CH	Larch casebearer/typhlocyba	Western larch
HL	Western hemlock looper	Western hemlock
LC	Needle cast	Lodgepole pine
LS	Black pine leaf scale	Ponderosa pine
ML	Larch tussock	Western larch
PH	Pine butterfly	Ponderosa pine
PC	Pine needle cast	Ponderosa pine
HC	Needle cast	Western larch
SP	Sawfly	True fir
SM	Salt moth	Aspen
SNC	Swiss needle cast	Douglas fir
SP	Sawfly	Ponderosa pine
TA	Tent caterpillar, alder	Alder
TM	Douglas fir tussock moth	Truefir, Douglas fir

Other Damaging Agents		
Code	Damaging Agent	Primary Host
AB	Balsam woolly adelgid	True fir
AC	Cooley spruce gall adelgid	Sitka spruce, Douglas fir
AM	Leaf discoloration	Malva
BR	Bleater rust	True fir
CC	Chrysomya canker	Hemlock
DI	Dying hemlock	All species
FIRE	Fire	All species
HDO	Hardwood decline	Hardwoods
HSD	Hardwood decline	Aspen
HSA	Hardwood decline	Oak
HO	Aravae nut flower - non host	All species
MA	Aravae nut flower - host	All species
PHD	Pacific madrone decline	Pacific madrone
RF	Rust leaf in poplars	Poplars
RS	Rust leaf	All species
SLD	Silene	All species
WATR	Water damage	All species
WIND	Windthrow	All species
WINT	Winter damage	All species

**USGS 100K Quad: COTTAGE GROVE - E143123; 2K**  
**2011 Aerial Insect and Disease Survey**  
**Map Scale: 1:100,000**  
**Date: 13 December 2011**

### Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- Areas Not Flown
- 2011 Large Fires
- 2011 Special Swiss Needle Cast Survey

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: SAL or INTENSITY OF DAMAGE (L - Light, M - Moderate, H - Heavy).

The TOPOL 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/arcgis/rest/services/USGS\\_Topographic](http://gto.arcgis.com/arcgis/rest/services/USGS_Topographic)

A data dictionary, digital copies of this map and ArGIS 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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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) Dataset, 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/>