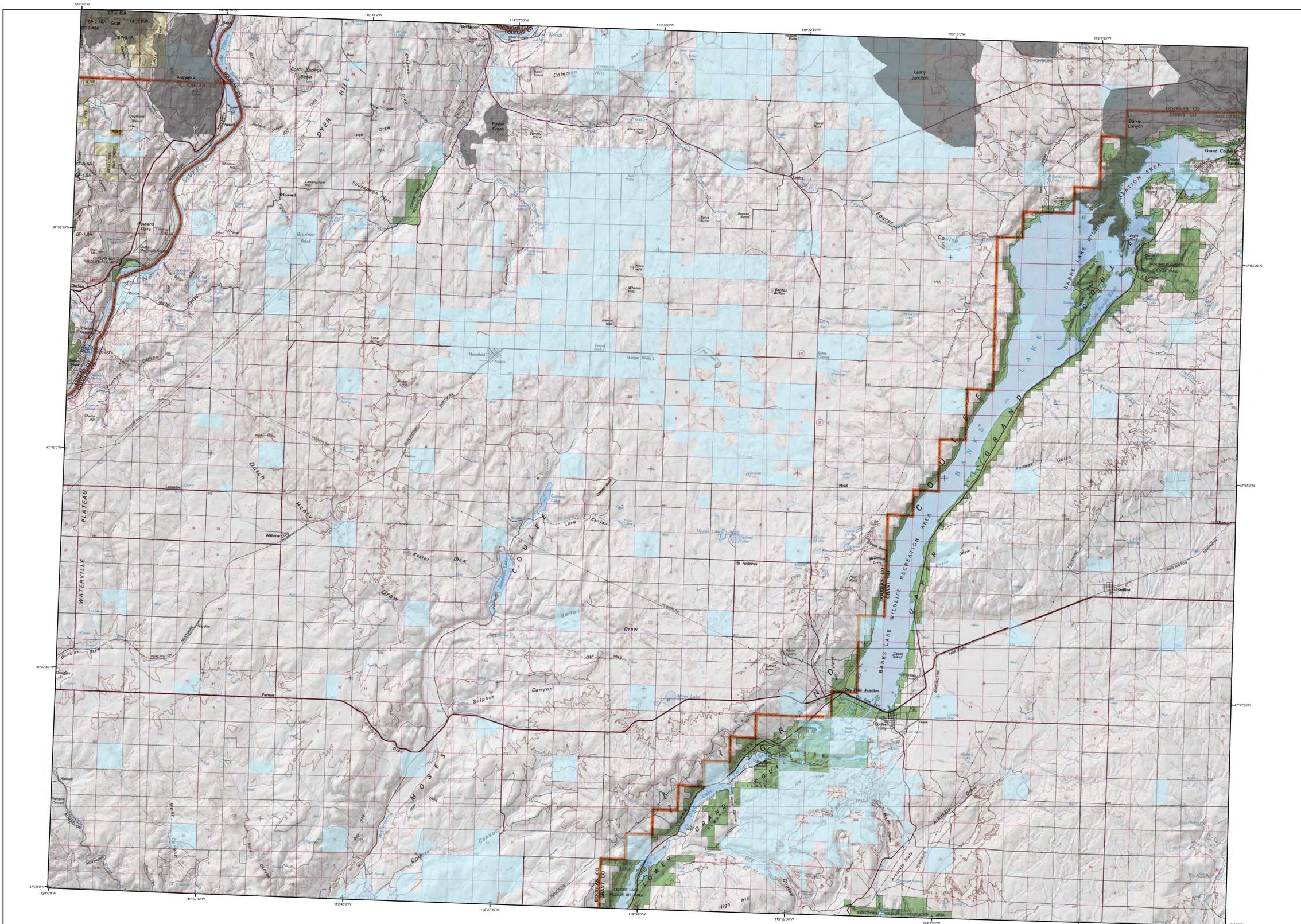


2012 Aerial Insect and Disease Survey

USGS 100K Quad: BANKS LAKE - E147119; 6C



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	Tree fir
5	Western balsam bark beetle	Subalpine fir
6B	Mountain pine beetle	Whitebark pine
6L	Mountain pine beetle	Lodgepole pine
6P	Mountain pine beetle	Ponderosa pine
6S	Mountain pine beetle	Sugar pine
6W	Mountain pine beetle	Western white pine
7	Loose bark	Ponderosa, lodgepole pines
8	Western pine beetle	Ponderosa pine
8B	Western pine beetle	Blue-stemmed ponderosa pine
9	Shiver fir beetle	Silver fir, true fir
BEAR	Bear damage	Douglas fir, ponderosa pine
FL	Flattened woodworker	Pine, Douglas fir
RD	Root collar rot disease	Pine, Douglas fir
WD	Water damage	Conifer
WATR	Water damage	All species

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

Other Damaging Agents		
Code	Damaging Agent	Primary Host
AB	Balsam woolly adelgid	True fir
AM	Leaf discoloration	Maple
BR	Blister rust	Pine/needle pines
CC	Cystipora canker	Tree fir
DH	Dying hemlock	Hemlock
FIRE	Fire	All species
HDD	Heartwood decline	Hemlock
HDA	Heartwood decline	Aspen
HDD	Heartwood decline	Oak
NFN	Areas not flown - non host	
NFH	Areas not flown - host	
PMD	Pacific madrone decline	Pacific madrone
PR	Pine resin canker	Aspen
RD	Rust leaf	All species
SLD	Slope	All species
WIND	Windthrow	All species
WATR	Water damage	All species

USGS 100K Quad: BANKS LAKE - E147119; 6C
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
- Areas Not Flown
- 2012 Large Fires

Source: Washington Dept. of Natural Resources

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://goto.arcgisonline.com/maps/USA_Topo_Maps

A data dictionary, digital copies of this map and ArcGIS insect and disease data are available at: www.fs.usda.gov/goto/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
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 (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/> quality assurance sheet. 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.