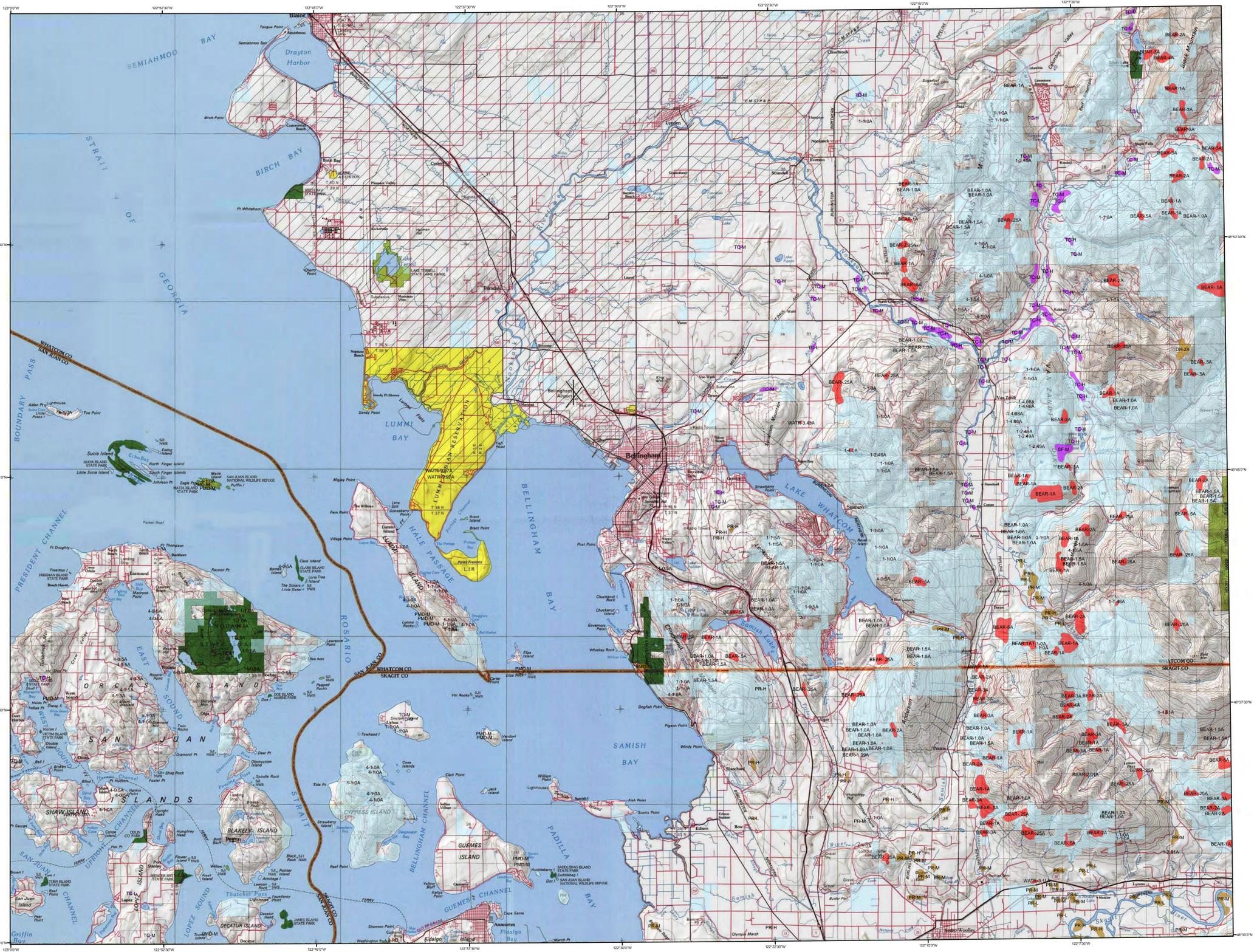


2012 Aerial Insect and Disease Survey

USGS 100K Quad: BELLINGHAM - E148122; 3A



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	BB	Bitter rot	Western pines
4	Fir engraver	True fir	CC	Cytospora canker	True fir
5	Western balsam bark beetle	Subalpine fir	DD	Quiny necrotic	Hardwood
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	HDD	Hardwood decline	Aspen
6S	Mountain pine beetle	Sitka spruce	ND	Arises not flown - non host	Oak
6W	Mountain pine beetle	Western white pine	NFN	Arises not flown - host	
7	Western white pine	Ponderosa, lodgepole pines	NFN	Arises not flown - host	
8	Western pine beetle	Ponderosa pine	PMD	Pacific madrone decline	Pacific madrone
8B	Western pine beetle	Pine-nut ponderosa pine	PRH	Leaf roll in poplars	Poplars
9	Shiver fir beetle	Shiver fir, true fir	RD	Red leaf	All species
BEAR	Bear damage	Douglas fir, ponderosa pine	SAD	Sites	All species
FL	Flameweed woodborer	Pine	WIND	Windthrow	All species
WD	Root collar root disease	Port Orford cedar	WINT	Winter damage	All species
WD	Root disease	Conifer			
WATR	Water damage	All species			

Defoliators	
Code	Primary Host
BS	Western spruce budworm
CH	Larix concolor/ponderosa
HL	Western hemlock looper
LS	Black pine/leaf scale
PL	Pine needle scale
PC	Pine needle cast
PN	Pine needle sheathminer
RC	Needle cast
SA	Sawfly
SK	Sawfly
SM	Satin moth
SNC	Satin needle cast
TA	Tent caterpillar
TC	Tent caterpillar
TM	Douglas fir tussock moth
UNWD	Unknown defoliating agent

USGS 100K Quad: BELLINGHAM - E148122; 3A
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

Source: Washington Dept. of Natural Resources

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

A data dictionary, digital copies of this map and Aerial Insect and Disease data are available at: www.fs.usda.gov/gto/r/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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 Olympia, WA 98504-7037

-- OR --

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 PO Box 3623
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DISCLAIMER
 Forest Health Protection (FHP), Washington Department of Natural Resources (WONR) and Oregon Department of Forestry (ODF) strive to maintain an accurate Aerial Insect and Disease Survey (AIDS) dataset, but due to the conditions under which the data are collected, FHP, WONR and ODF shall not be held responsible for missing or inaccurate data. AIDS 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/assess/>