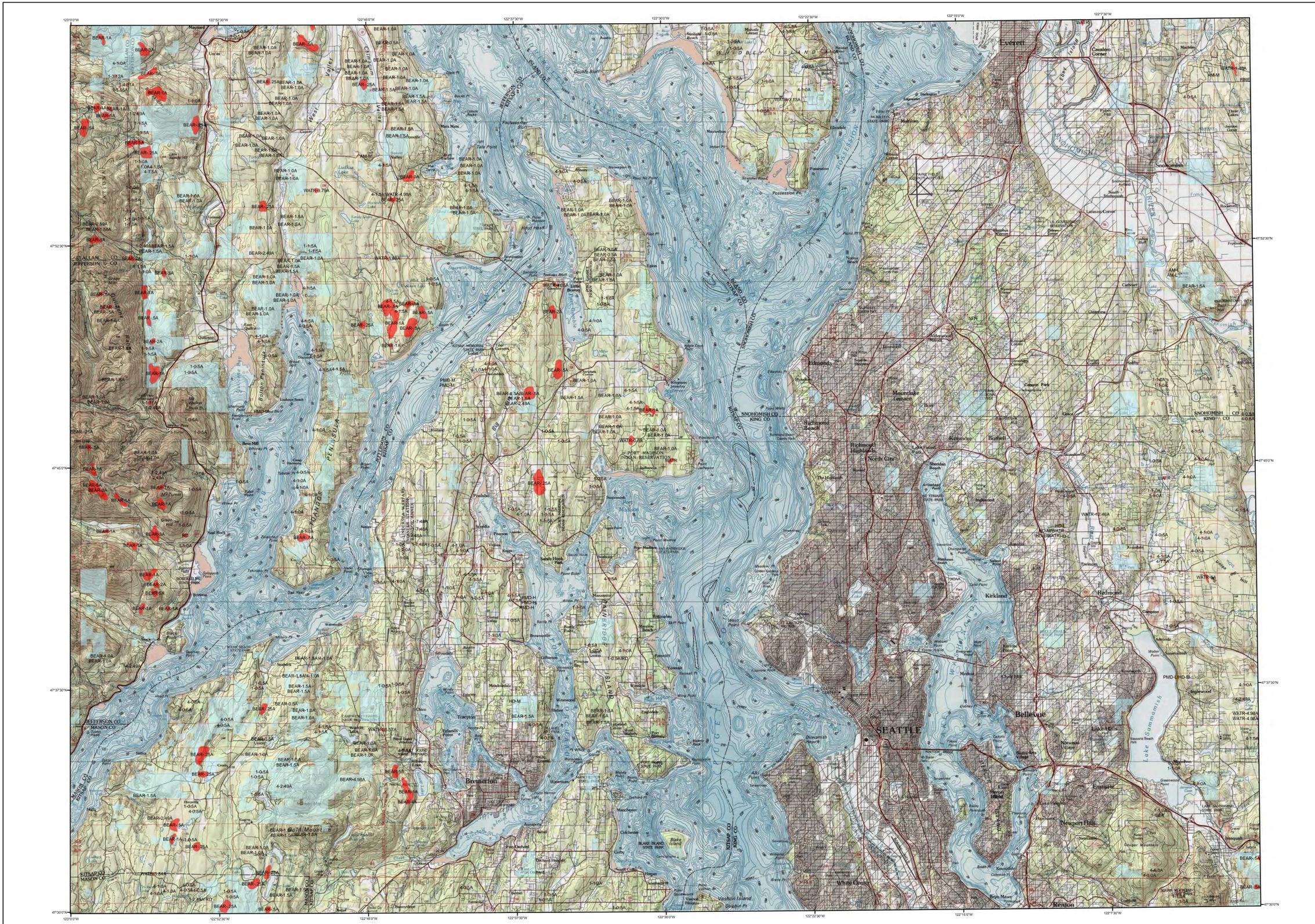


2011 Aerial Insect and Disease Survey

USGS 100K Quad: SEATTLE - E147122; 3C



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	AC	Cooley spruce gall adelgid	Spruce, Douglas fir
3	Spotted bark beetle	Spine	AM	Leaf miner	Maple
4	Pit engraver	True fir	AN	Leaf miner	Maple
5	Western balsam bark beetle	Sub-alpine fir	AR	Brister rust	True fir
6B	Mountain pine beetle	Whitebark pine	BR	Chrysomelid canker	All species
6L	Mountain pine beetle	Lodgepole pine	CC	Dying hemlock	Hemlock
6M	Mountain pine beetle	Lodgepole pine	CD	Fire	All species
6P	Mountain pine beetle	Ponderosa pine	DE	Fire	All species
6W	Mountain pine beetle	Western white pine	HD	Hardwood decline	Hardwoods
7	Fire tip	Ponderosa, lodgepole pines	HDA	Hardwood decline	Hardwoods
8	Western pine beetle	Western white pine	HDC	Hardwood decline	Aspen
9	Bear damage	Pine-needle ponderosa pine	MA	Arava nut flower - non host	Aspen
9B	Fire tip	Western white pine	MAH	Arava nut flower - host	Aspen
9C	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9D	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9E	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9F	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9G	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9H	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9I	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9J	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9K	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9L	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9M	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9N	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9O	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9P	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9Q	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9R	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9S	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9T	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9U	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9V	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9W	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
9X	Fire tip	Western white pine	MAI	Pacific madrone decline	Pacific madrone
9Y	Fire tip	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
9Z	Fire tip	Western white pine	MAK	Pacific madrone decline	Pacific madrone
10	Flameweed woodborer	Douglas fir	MA	Arava nut flower - non host	Aspen
11	Black stain root disease	Douglas fir	MAH	Arava nut flower - host	Aspen
12	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
13	Pine bark beetle	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
14	Pine bark beetle	Western white pine	MAK	Pacific madrone decline	Pacific madrone
15	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
16	Pine bark beetle	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
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18	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
19	Pine bark beetle	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
20	Pine bark beetle	Western white pine	MAK	Pacific madrone decline	Pacific madrone
21	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
22	Pine bark beetle	Western white pine	MAJ	Pacific madrone decline	Pacific madrone
23	Pine bark beetle	Western white pine	MAK	Pacific madrone decline	Pacific madrone
24	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
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27	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
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98	Pine bark beetle	Western white pine	MAK	Pacific madrone decline	Pacific madrone
99	Pine bark beetle	Western white pine	MAI	Pacific madrone decline	Pacific madrone
100	Pine bark beetle	Western white pine	MAJ	Pacific madrone decline	Pacific madrone

USGS 100K Quad: SEATTLE - E147122; 3C
 2011 Aerial Insect and Disease Survey
 Map Scale: 1:100,000
 Date: 13 December 2011

Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- WaDNR Managed Lands
- Areas Not Flown
- 2011 Large Fires

Source: Northwest Interagency Coordination Center

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

The TOPOI 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/r6/rhp/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
 Natural Resources
 Forest Health Protection
 PO Box 3623
 Portland, Oregon 97208

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.usda.gov/gto/r6/rhp/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.