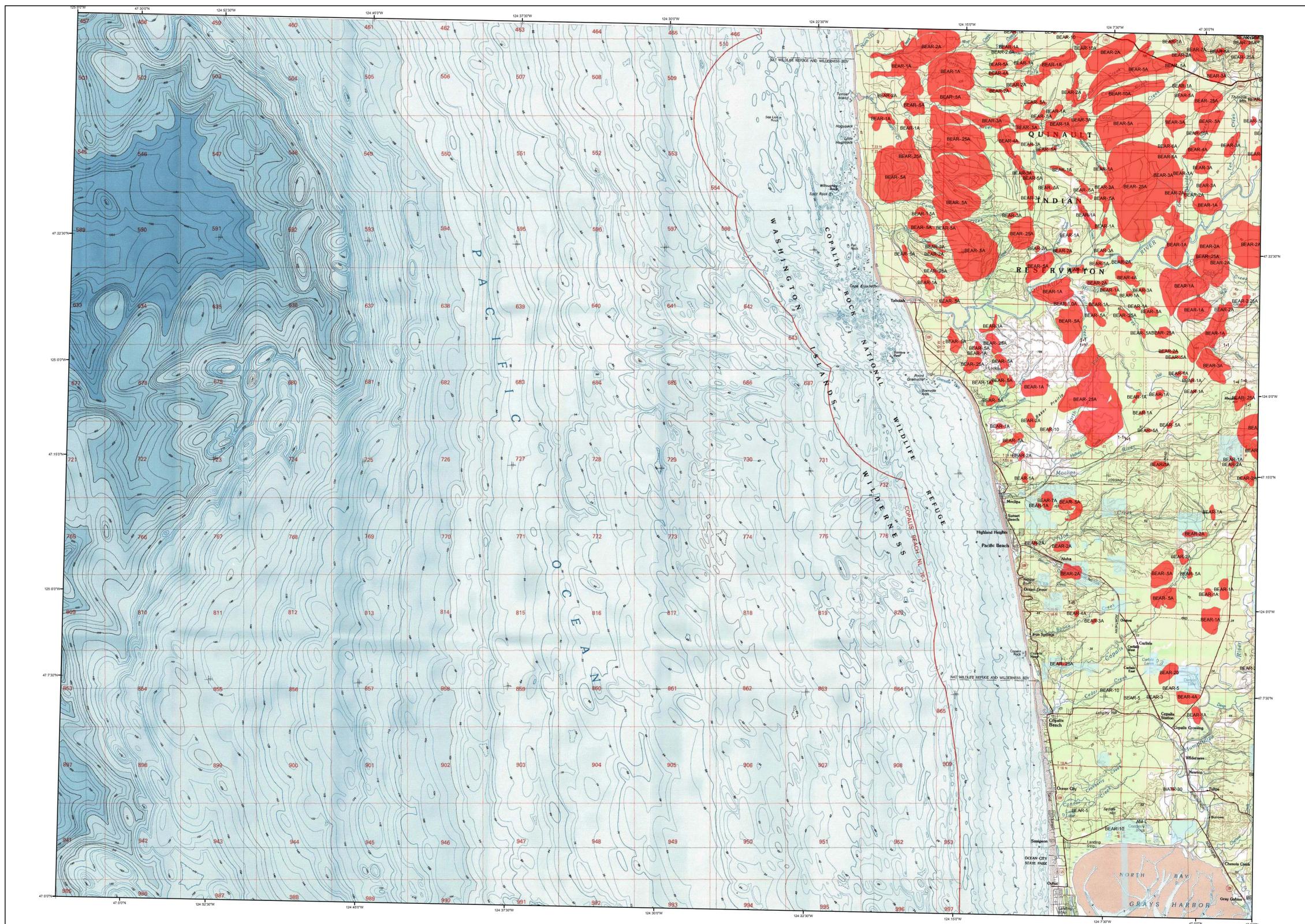


2009 Aerial Insect and Disease Survey

USGS 100K Quad: Copalis Beach - A147124; 1D



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spruce aphid	1	Douglas-fir beetle
BB	Western backheaded budworm	2	Douglas-fir engraver
BM	Modoc budworm	3	Spruce beetle
BP	Sugar pine tortrix	4	True fir
BS	Western spruce budworm	5	Western balsam bark beetle
BY	Bursaria bight/lyophidemia	6	Mountain pine beetle
CH	Larch	6A	Mountain pine beetle
HL	Western hemlock looper	6B	Mountain pine beetle
L.D	Green striped forest looper	6C	Mountain pine beetle
LL	Larch looper	6D	Mountain pine beetle
LD	Douglas-fir budmoth	6E	Mountain pine beetle
ML	Larch budmoth	6F	Mountain pine beetle
MM	Douglas-fir needle midge	6G	Mountain pine beetle
MS	Sitona budmoth	6H	Mountain pine beetle
ND	Needle miner	6I	Mountain pine beetle
NJ	Needle miner	6J	Mountain pine beetle
NK	Needle miner	6K	Mountain pine beetle
NL	Needle miner	6L	Mountain pine beetle
NM	Needle miner	6M	Mountain pine beetle
NP	Needle miner	6N	Mountain pine beetle
NS	Needle miner	6O	Mountain pine beetle
NT	Needle miner	6P	Mountain pine beetle
NW	Needle miner	6Q	Mountain pine beetle
OL	Western oak looper	6R	Mountain pine beetle
PH	Pine butterfly	6S	Mountain pine beetle
PC	Pine needle cast	6T	Mountain pine beetle
PH	Phantom hemlock looper	6U	Mountain pine beetle
PM	Panorama moth	6V	Mountain pine beetle
PN	Pine needle/shash miner	6W	Mountain pine beetle
PS	Pine needle scale	6X	Mountain pine beetle
RC	Needle cast	6Y	Mountain pine beetle
S	Sitona	6Z	Mountain pine beetle
SA	Sawfly	7	Western white pine
SB	Sawfly	8	Western white pine
SC	Sawfly	9	Western white pine
SD	Sawfly	10	Western white pine
SE	Sawfly	11	Western white pine
SH	Sawfly	12	Western white pine
SI	Sawfly	13	Western white pine
SM	Sawfly	14	Western white pine
SN	Sawfly	15	Western white pine
SO	Sawfly	16	Western white pine
SP	Sawfly	17	Western white pine
SW	Sawfly	18	Western white pine
TA	Tent caterpillar, alder	19	Western white pine
TC	Tent caterpillar, other	20	Western white pine
TD	Douglas-fir tussock moth	21	Western white pine
TS	Tent caterpillar, aspen	22	Western white pine

USGS 100K Quad: Copalis Beach - A147124; 1D
2009 Aerial Insect and Disease Detection Survey
Mapscale: 1:100,000
Date: December 31, 2009

Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- WaDNR Managed Lands

The map base was created with TOPOI (Copyright 2001, National Geographic); available online at: www.ngmapstore.com

A data dictionary, digital copies of this map and ArcGIS insect and disease data are available at: www.fs.fed.us/rnr/1d/data.shtml

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 and the Washington Department of Natural Resources. 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
Olympia, WA 98504

-- OR --

USDA Forest Service, Region 6
Natural Resources
Forest Health Protection
PO Box 3623
Portland, Oregon 97208

DISCLAIMER
Forest Health Protection (FHP) and Washington Department of Natural Resources (WDNR) strive to maintain an accurate Aerial Detection Survey (ADS) Dataset, but due to the conditions under which the data are collected, FHP and WDNR 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/operations/ads/accuracy.shtml>
Maps and data may be updated without notice. Please cite: USDA Forest Service, Forest Health Protection and Washington Department of Natural Resources, Resource Protection Division, Forest Health, as the source of this data in maps and publications.