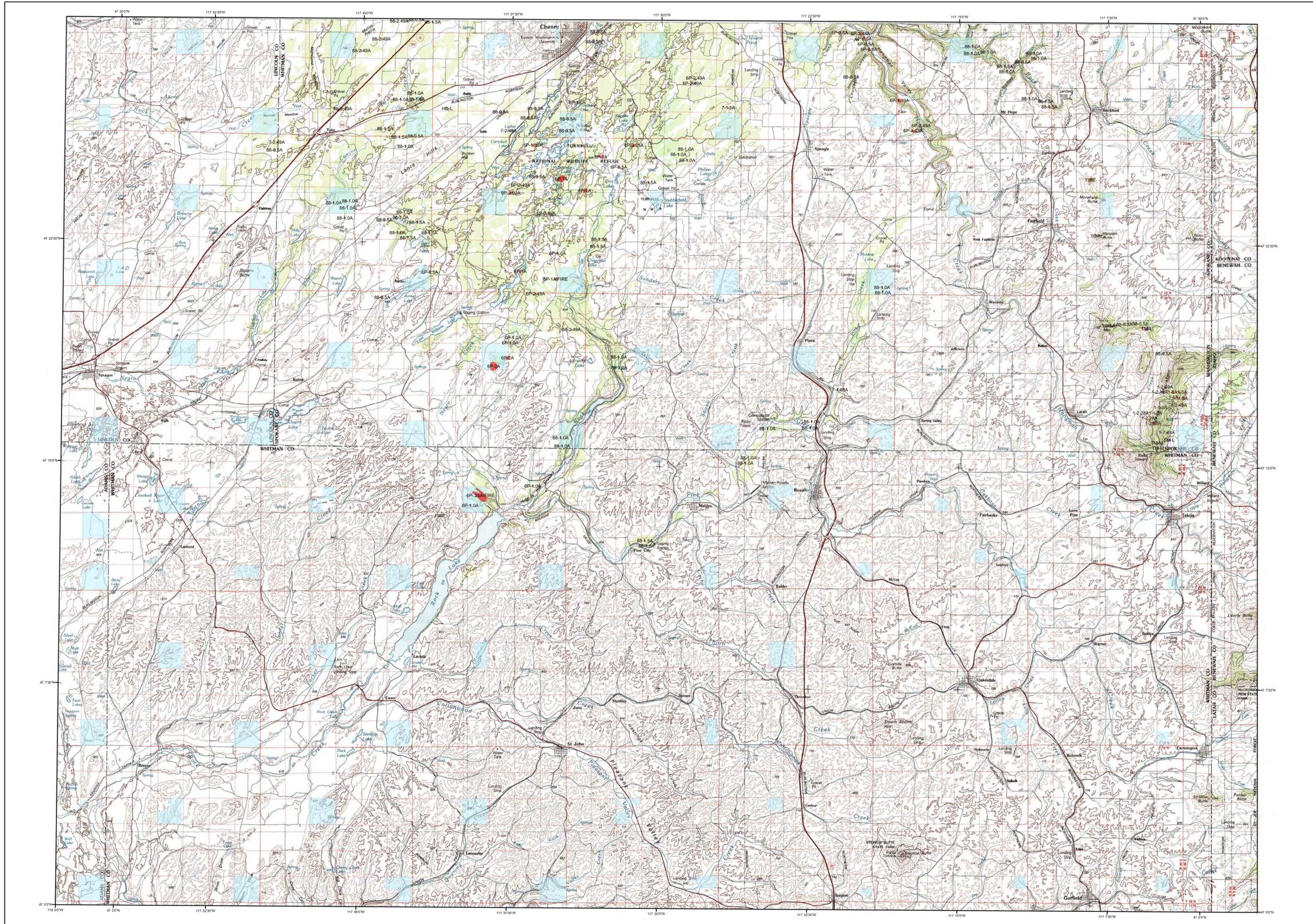


2010 Aerial Insect and Disease Survey

USGS 100K Quad: Rosalia - A147117; 8D



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spine spruce	1	Douglas-fir beetle
BB	Western blackheaded budworm	2	Douglas-fir engraver
BM	Mobius budworm	3	Spine beetle
BP	Sugar pine tortrix	4	Fire engraver
BS	Western spruce budworm	5	Western balsam bark beetle
BY	Bynum's bright lophodermella	6	Mountain pine beetle
CH	Larch casebearer	6J	Mountain pine beetle
HL	Western hemlock looper	6K	Mountain pine beetle
LG	Oregon striped looper	6L	Mountain pine beetle
LL	Larch looper	6M	Mountain pine beetle
LS	Black pine leaf sawfly	6N	Mountain pine beetle
LD	Douglas fir budmoth	6O	Mountain pine beetle
ML	Larch budmoth	6P	Mountain pine beetle
ND	Douglas fir needle midge	6Q	Mountain pine beetle
NB	Spine budmoth	6R	Mountain pine beetle
NJ	Needle miner	6S	Mountain pine beetle
NK	Needle miner	6T	Mountain pine beetle
NL	Needle miner	6U	Mountain pine beetle
NM	Needle miner	6V	Mountain pine beetle
NP	Needle miner	6W	Mountain pine beetle
NS	Needle miner	6X	Mountain pine beetle
NT	Needle miner	6Y	Mountain pine beetle
NW	Needle miner	6Z	Mountain pine beetle
OL	Western oak looper	7	Upr. spruce
OB	Pine butterfly	8	Western pine beetle
PC	Pine needle cast	8A	Ponderosa pine
PH	Pine needle scale	8B	Ponderosa pine
PI	Pine needle scale	8C	Ponderosa pine
PN	Pine needle scale	8D	Ponderosa pine
PS	Pine needle scale	8E	Ponderosa pine
PT	Pine needle scale	8F	Ponderosa pine
PU	Pine needle scale	8G	Ponderosa pine
PV	Pine needle scale	8H	Ponderosa pine
PW	Pine needle scale	8I	Ponderosa pine
PX	Pine needle scale	8J	Ponderosa pine
PY	Pine needle scale	8K	Ponderosa pine
PZ	Pine needle scale	8L	Ponderosa pine
QA	Needle cast	8M	Ponderosa pine
QB	Needle cast	8N	Ponderosa pine
QC	Needle cast	8O	Ponderosa pine
QD	Needle cast	8P	Ponderosa pine
QE	Needle cast	8Q	Ponderosa pine
QF	Needle cast	8R	Ponderosa pine
QG	Needle cast	8S	Ponderosa pine
QH	Needle cast	8T	Ponderosa pine
QI	Needle cast	8U	Ponderosa pine
QJ	Needle cast	8V	Ponderosa pine
QK	Needle cast	8W	Ponderosa pine
QL	Needle cast	8X	Ponderosa pine
QM	Needle cast	8Y	Ponderosa pine
QN	Needle cast	8Z	Ponderosa pine
QO	Needle cast	9	Black stain root disease
QP	Needle cast	9A	Port Orford cedar root disease
QQ	Needle cast	9B	Port Orford cedar root disease
QR	Needle cast	9C	Port Orford cedar root disease
QS	Needle cast	9D	Port Orford cedar root disease
QT	Needle cast	9E	Port Orford cedar root disease
QU	Needle cast	9F	Port Orford cedar root disease
QV	Needle cast	9G	Port Orford cedar root disease
QW	Needle cast	9H	Port Orford cedar root disease
QX	Needle cast	9I	Port Orford cedar root disease
QY	Needle cast	9J	Port Orford cedar root disease
QZ	Needle cast	9K	Port Orford cedar root disease
RA	Needle cast	9L	Port Orford cedar root disease
RB	Needle cast	9M	Port Orford cedar root disease
RC	Needle cast	9N	Port Orford cedar root disease
RD	Needle cast	9O	Port Orford cedar root disease
RE	Needle cast	9P	Port Orford cedar root disease
RF	Needle cast	9Q	Port Orford cedar root disease
RG	Needle cast	9R	Port Orford cedar root disease
RH	Needle cast	9S	Port Orford cedar root disease
RI	Needle cast	9T	Port Orford cedar root disease
RJ	Needle cast	9U	Port Orford cedar root disease
RK	Needle cast	9V	Port Orford cedar root disease
RL	Needle cast	9W	Port Orford cedar root disease
RM	Needle cast	9X	Port Orford cedar root disease
RN	Needle cast	9Y	Port Orford cedar root disease
RO	Needle cast	9Z	Port Orford cedar root disease
RP	Needle cast	10	Water damage
RQ	Needle cast	11	Water damage
RS	Needle cast	12	Water damage
RT	Needle cast	13	Water damage
RU	Needle cast	14	Water damage
RV	Needle cast	15	Water damage
RW	Needle cast	16	Water damage
RX	Needle cast	17	Water damage
RY	Needle cast	18	Water damage
RZ	Needle cast	19	Water damage
SA	Needle cast	20	Water damage
SB	Needle cast	21	Water damage
SC	Needle cast	22	Water damage
SD	Needle cast	23	Water damage
SE	Needle cast	24	Water damage
SF	Needle cast	25	Water damage
SG	Needle cast	26	Water damage
SH	Needle cast	27	Water damage
SI	Needle cast	28	Water damage
SJ	Needle cast	29	Water damage
SK	Needle cast	30	Water damage
SL	Needle cast	31	Water damage
SM	Needle cast	32	Water damage
SN	Needle cast	33	Water damage
SO	Needle cast	34	Water damage
SP	Needle cast	35	Water damage
SQ	Needle cast	36	Water damage
SR	Needle cast	37	Water damage
SS	Needle cast	38	Water damage
ST	Needle cast	39	Water damage
SU	Needle cast	40	Water damage
SV	Needle cast	41	Water damage
SW	Needle cast	42	Water damage
SY	Needle cast	43	Water damage
SZ	Needle cast	44	Water damage
TA	Needle cast	45	Water damage
TB	Needle cast	46	Water damage
TC	Needle cast	47	Water damage
TD	Needle cast	48	Water damage
TE	Needle cast	49	Water damage
TF	Needle cast	50	Water damage
TF	Needle cast	50	Water damage

USGS 100K Quad: Rosalia - A147117; 8D
2010 Aerial Insect and Disease Detection Survey
Mapscale: 1:100,000
Date: January 27, 2011

Legend

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

Other Damaging Agents

Code	Damaging Agent	Primary Host
AC	Balsam woolly aegerid	Thuja
AD	Cooly spruce gall aegerid	Spine, Douglas-fir
AE	Level dieback	Mistle
AF	Cystospora canker	Five-needle pines
AG	Dying hemlock	Hemlock
AH	Fire	All species
AI	Gouy pitch midge	Ponderosa pine
AJ	Hail	All species
AK	Hardwood decline	Hardwoods
AL	Areas not flown - no host	
AM	Areas not flown - host	
AN	No damage observed	
AO	Partial mortality decline	
AP	Leaf rust in poplars	Poplar
AQ	Leaf rust in pines	All species
AR	Leaf rust in poplars	All species
AS	Leaf rust in pines	All species
AT	Leaf rust in poplars	All species
AV	Leaf rust in pines	All species
AW	Leaf rust in poplars	All species
AX	Leaf rust in pines	All species
AY	Leaf rust in poplars	All species
AZ	Leaf rust in pines	All species
BA	Leaf rust in poplars	All species
BB	Leaf rust in pines	All species
BC	Leaf rust in poplars	All species
BD	Leaf rust in pines	All species
BE	Leaf rust in poplars	All species
BF	Leaf rust in pines	All species
BF	Leaf rust in pines	All species

The map base was created with TOPO! (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/r6/nr/fid/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/education/qualityassurance.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.