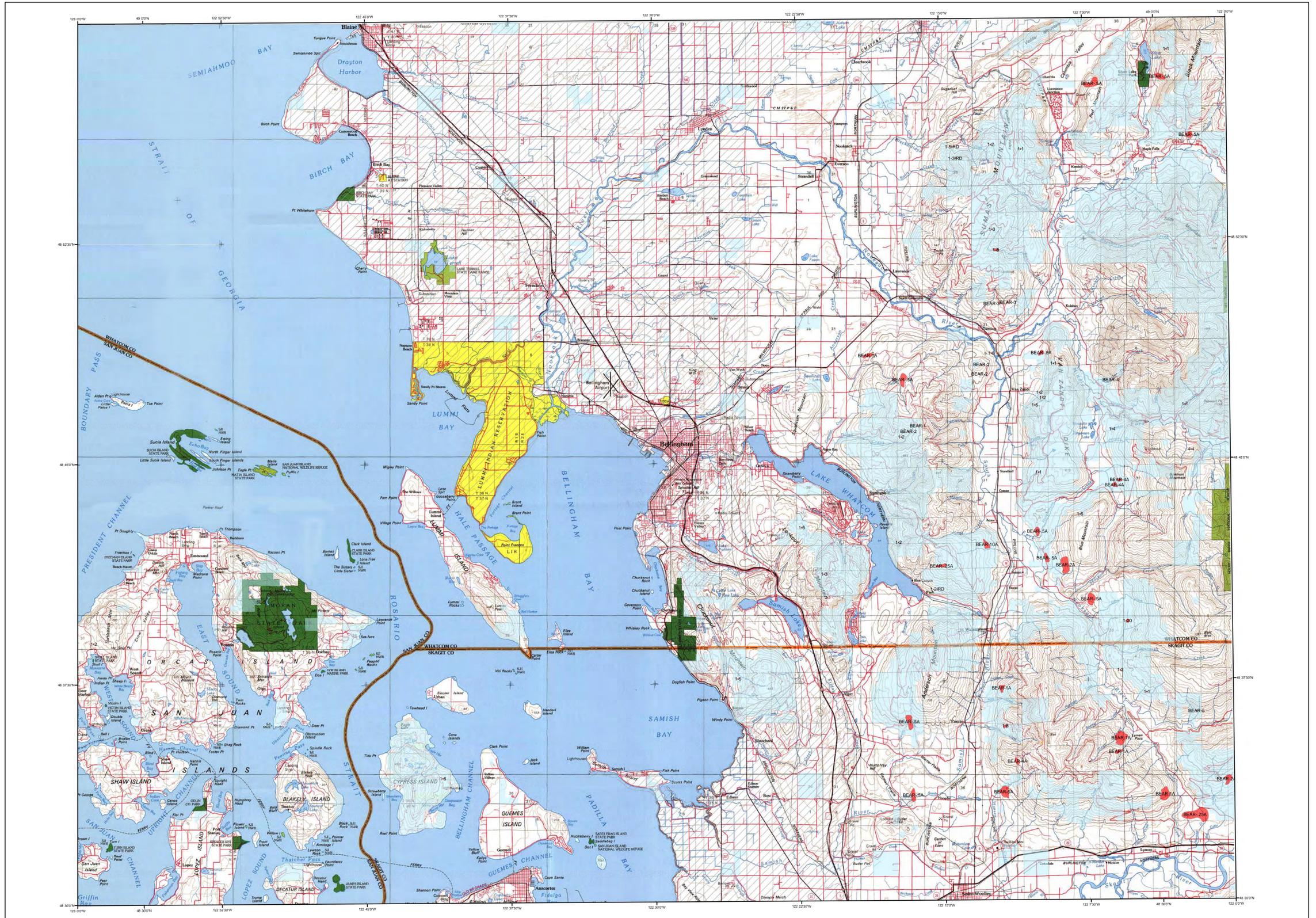


2010 Aerial Insect and Disease Survey

USGS 100K Quad: Bellingham - E148122; 3A



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spruce aphid	1	Douglas fir beetle
BB	Western blackheaded budworm	2	Douglas fir engraver
BM	Mobius budworm	3	Spruce beetle
BP	Sugar pine tortrix	4	Fire engraver
BS	Western spruce budworm	5	Western balsam bark beetle
BY	Burnham's blight/Lophodermium	6J	Mountain pine beetle
CH	Larch casebearer	6K	Mountain pine beetle
HL	Western hemlock looper	6L	Mountain pine beetle
LG	Green tipped forest looper	6M	Mountain pine beetle
LL	Larch looper	6N	Mountain pine beetle
LS	Black pine leaf scale	6O	Mountain pine beetle
MD	Douglas fir budmoth	6P	Mountain pine beetle
ML	Larch budmoth	6Q	Mountain pine beetle
NR	Douglas fir needle midge	6R	Mountain pine beetle
NS	Spruce budmoth	6S	Mountain pine beetle
NJ	Needle miner	6T	Mountain pine beetle
NK	Needle miner	6U	Mountain pine beetle
NL	Needle miner	6V	Mountain pine beetle
NM	Needle miner	6W	Mountain pine beetle
NP	Needle miner	6X	Mountain pine beetle
NS	Needle miner	6Y	Mountain pine beetle
NT	Needle miner	6Z	Mountain pine beetle
NU	Needle miner	7	Ips spp.
OB	Western oak looper	8	Western pine beetle
PH	Pine needle cast	8A	Western pine beetle
PI	Pharos hemlock looper	8B	Western pine beetle
PM	Pine needle scale	8C	Western pine beetle
PN	Pine needle scale	8D	Western pine beetle
PO	Pine needle scale	8E	Western pine beetle
PP	Pine needle scale	8F	Western pine beetle
PS	Pine needle scale	8G	Western pine beetle
PT	Pine needle scale	8H	Western pine beetle
PU	Pine needle scale	8I	Western pine beetle
PV	Pine needle scale	8J	Western pine beetle
PW	Pine needle scale	8K	Western pine beetle
PX	Pine needle scale	8L	Western pine beetle
PY	Pine needle scale	8M	Western pine beetle
PZ	Pine needle scale	8N	Western pine beetle
QA	Spider mite	8O	Western pine beetle
QB	Needle miner	8P	Western pine beetle
QC	Needle miner	8Q	Western pine beetle
QD	Needle miner	8R	Western pine beetle
QE	Needle miner	8S	Western pine beetle
QF	Needle miner	8T	Western pine beetle
QG	Needle miner	8U	Western pine beetle
QH	Needle miner	8V	Western pine beetle
QI	Needle miner	8W	Western pine beetle
QJ	Needle miner	8X	Western pine beetle
QK	Needle miner	8Y	Western pine beetle
QL	Needle miner	8Z	Western pine beetle
QM	Needle miner	9	Black stain root disease
QN	Needle miner	10	Port Orford cedar
QO	Needle miner	11	Port Orford cedar
QP	Needle miner	12	Port Orford cedar
QQ	Needle miner	13	Port Orford cedar
QR	Needle miner	14	Port Orford cedar
QS	Needle miner	15	Port Orford cedar
QT	Needle miner	16	Port Orford cedar
QU	Needle miner	17	Port Orford cedar
QV	Needle miner	18	Port Orford cedar
QW	Needle miner	19	Port Orford cedar
QX	Needle miner	20	Port Orford cedar
QY	Needle miner	21	Port Orford cedar
QZ	Needle miner	22	Port Orford cedar
RA	Needle miner	23	Port Orford cedar
RB	Needle miner	24	Port Orford cedar
RC	Needle miner	25	Port Orford cedar
RD	Needle miner	26	Port Orford cedar
RE	Needle miner	27	Port Orford cedar
RF	Needle miner	28	Port Orford cedar
RG	Needle miner	29	Port Orford cedar
RH	Needle miner	30	Port Orford cedar
RI	Needle miner	31	Port Orford cedar
RJ	Needle miner	32	Port Orford cedar
RK	Needle miner	33	Port Orford cedar
RL	Needle miner	34	Port Orford cedar
RM	Needle miner	35	Port Orford cedar
RN	Needle miner	36	Port Orford cedar
RO	Needle miner	37	Port Orford cedar
RP	Needle miner	38	Port Orford cedar
RQ	Needle miner	39	Port Orford cedar
RR	Needle miner	40	Port Orford cedar
RS	Needle miner	41	Port Orford cedar
RT	Needle miner	42	Port Orford cedar
RU	Needle miner	43	Port Orford cedar
RV	Needle miner	44	Port Orford cedar
RW	Needle miner	45	Port Orford cedar
RX	Needle miner	46	Port Orford cedar
RY	Needle miner	47	Port Orford cedar
RZ	Needle miner	48	Port Orford cedar
SA	Needle miner	49	Port Orford cedar
SB	Needle miner	50	Port Orford cedar
SC	Needle miner	51	Port Orford cedar
SD	Needle miner	52	Port Orford cedar
SE	Needle miner	53	Port Orford cedar
SF	Needle miner	54	Port Orford cedar
SG	Needle miner	55	Port Orford cedar
SH	Needle miner	56	Port Orford cedar
SI	Needle miner	57	Port Orford cedar
SJ	Needle miner	58	Port Orford cedar
SK	Needle miner	59	Port Orford cedar
SL	Needle miner	60	Port Orford cedar
SM	Needle miner	61	Port Orford cedar
SN	Needle miner	62	Port Orford cedar
SO	Needle miner	63	Port Orford cedar
SP	Needle miner	64	Port Orford cedar
SQ	Needle miner	65	Port Orford cedar
SR	Needle miner	66	Port Orford cedar
SS	Needle miner	67	Port Orford cedar
ST	Needle miner	68	Port Orford cedar
SV	Needle miner	69	Port Orford cedar
SW	Needle miner	70	Port Orford cedar
TX	Needle miner	71	Port Orford cedar
TY	Needle miner	72	Port Orford cedar
TZ	Needle miner	73	Port Orford cedar
UA	Needle miner	74	Port Orford cedar
UB	Needle miner	75	Port Orford cedar
UC	Needle miner	76	Port Orford cedar
UD	Needle miner	77	Port Orford cedar
UE	Needle miner	78	Port Orford cedar
UF	Needle miner	79	Port Orford cedar
UG	Needle miner	80	Port Orford cedar
UH	Needle miner	81	Port Orford cedar
UI	Needle miner	82	Port Orford cedar
UJ	Needle miner	83	Port Orford cedar
UK	Needle miner	84	Port Orford cedar
UL	Needle miner	85	Port Orford cedar
UM	Needle miner	86	Port Orford cedar
UN	Needle miner	87	Port Orford cedar
UO	Needle miner	88	Port Orford cedar
UP	Needle miner	89	Port Orford cedar
UQ	Needle miner	90	Port Orford cedar
UR	Needle miner	91	Port Orford cedar
US	Needle miner	92	Port Orford cedar
UT	Needle miner	93	Port Orford cedar
UU	Needle miner	94	Port Orford cedar
UV	Needle miner	95	Port Orford cedar
UW	Needle miner	96	Port Orford cedar
UX	Needle miner	97	Port Orford cedar
UY	Needle miner	98	Port Orford cedar
UZ	Needle miner	99	Port Orford cedar
VA	Needle miner	100	Port Orford cedar

USGS 100K Quad: Bellingham - E148122; 3A
2010 Aerial Insect and Disease Detection Survey
Mapscale: 1:100,000
Date: January 25, 2011

Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- Areas Not Flown

WadNR Managed Lands
Source: Washington Dept. of Natural Resources

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/mr/rida.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/ads/accuracyassessment.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."