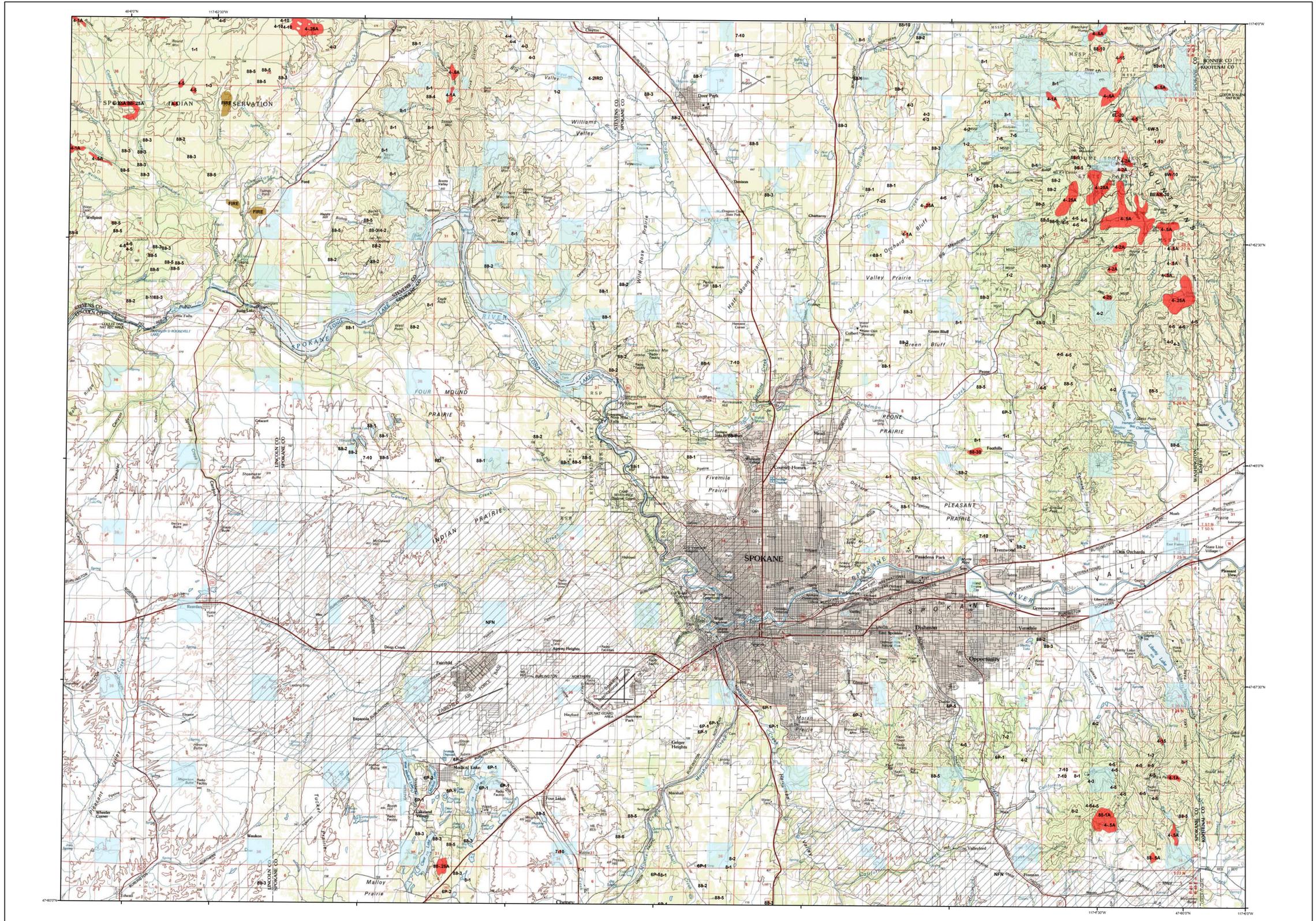


# 2007 Aerial Insect and Disease Survey

## USGS 100K Quad: Spokane - E147117; 8C



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	Modor budworm	3	Spruce beetle
BP	Sugar pine tortrix	4	Fire engraver
BS	Western spruce budworm	5	Western balsam bark beetle
BY	Burns's light lophodermella	6	Mountain pine beetle
CH	Larch	6J	Mountain pine beetle
HL	Western hemlock looper	6L	Mountain pine beetle
LG	Green striped forest looper	6P	Mountain pine beetle
LL	Larch looper	6S	Mountain pine beetle
LD	Douglas-fir budmoth	6W	Mountain pine beetle
ML	Larch budmoth	7	lps spp.
ND	Douglas-fir needle midge	8	Panorama pine beetle
NS	Spruce budmoth	9	Western pine beetle
NJ	Needle miner	BEAR	Bear damage
NK	Needle miner	FW	Fathead wood borer
NL	Needle miner	LW	Black stain root disease
NM	Needle miner	RL	Port Orford cedar root disease
NP	Needle miner	RD	Root disease
NS	Needle miner	WATR	Water damage
NT	Needle miner		
NV	Needle miner		
CL	Western oak looper		
PB	Pine butterfly		
PC	Pine needle cast		
PH	Phantom hemlock looper		
PM	Pine moth		
PN	Pine needle scale		
PS	Pine needle scale		
RC	Needle cast		
S	Spider mite		
SA	Sawfly		
SD	Sawfly		
SF	Sawfly		
SH	Sawfly		
SK	Sawfly		
SL	Sawfly		
SM	Sawfly		
SNC	Swiss needle cast		
SP	Spittlebug		
SW	Sawfly		
TA	Tent caterpillar, alder		
TC	Tent caterpillar, other		
TM	Douglas-fir bark moth		
TS	Tent caterpillar, aspen		

**USGS 100K Quad: Spokane - E147117; 8C**  
**2007 Aerial Insect and Disease Detection Survey**  
**Mapscale: 1:100,000**  
**Date: December 3, 2007**

### 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 TOPOI (Copyright 2001, National Geographic), available online at: [www.ngmapstore.com](http://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/rid/data.shtml](http://www.fs.fed.us/r6/nr/rid/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  
 Forest Health  
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-- OR --

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

**DISCLAIMER**  
 The insect and disease data presented should only be used as an indicator of insect and disease activity, and should be ground-checked for precise location, extent, severity and causal agent. Color coded polygons show locations where trees were recently killed or defoliated. Intensity of damage is variable and not all trees within coded polygons are dead or defoliated. The cooperators reserve the right to correct, update, modify or replace GIS products without notice. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.