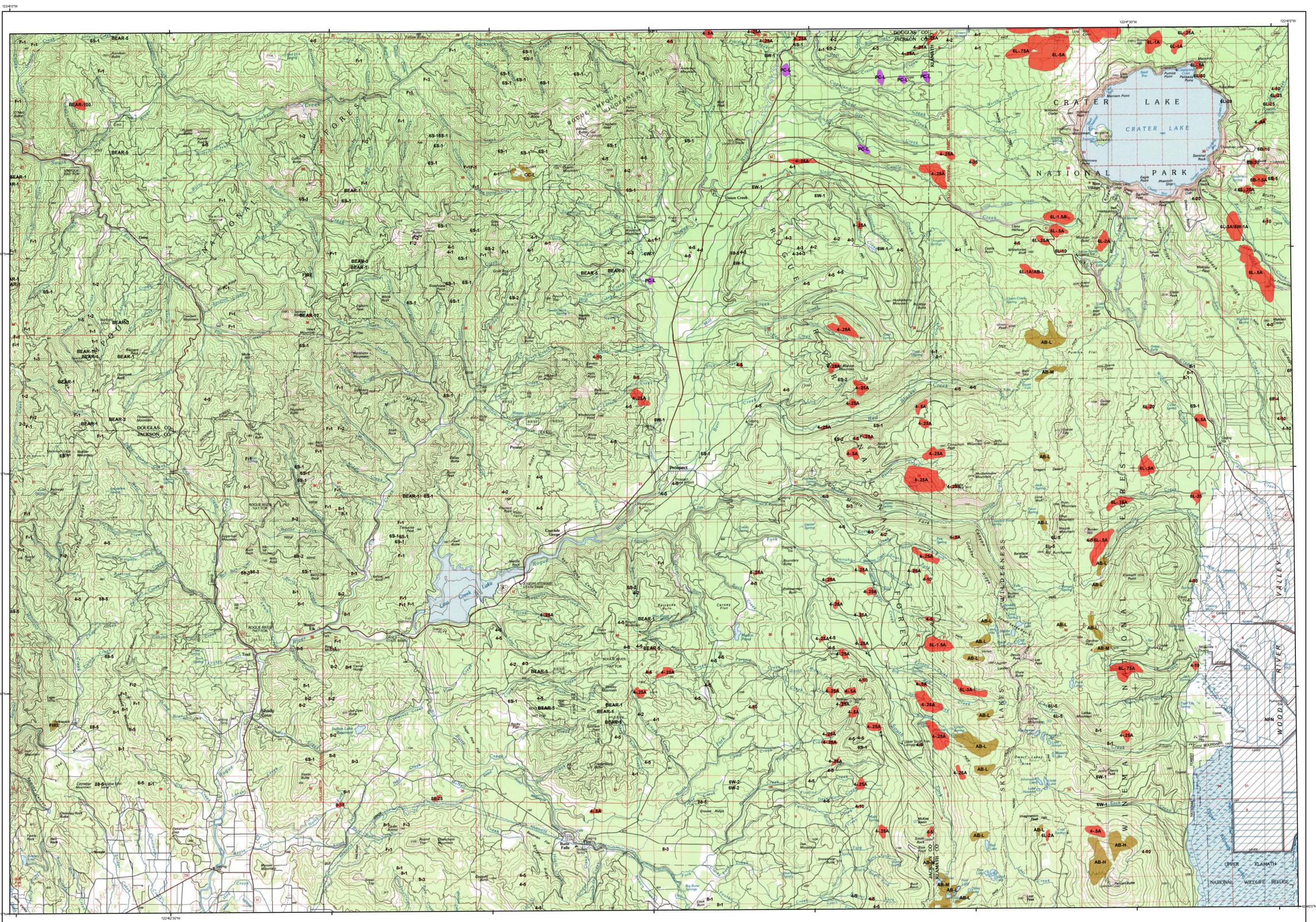


# 2007 Aerial Insect and Disease Survey

## USGS 100K Quad: Crater Lake - E142122; 3M



Defoliators		Mortality Agents	
Code	Damaging Agent	Code	Damaging Agent
AS	Spruce aphid	1	Douglas-fir beetle
BS	Western blackheaded budworm	2	Douglas-fir engraver
BM	Modoc budworm	3	Spruce beetle
BP	Sugar pine tentie	4	Fir engraver
BS	Western spruce budworm	5	Western balsam bark beetle
BY	Burns's signifi/Lophodermella	6S	Mountain pine beetle
CH	Larch	6J	Jeffrey pine
HL	Western hemlock looper	6L	Mountain pine beetle
LD	Green striped forest looper	6K	Mountain pine beetle
LL	Larch looper	6M	Mountain pine beetle
LS	Black pine leaf scale	6P	Mountain pine beetle
MD	Douglas fir budmoth	6S	Mountain pine beetle
ML	Larch budmoth	6W	Mountain pine beetle
MN	Douglas fir needle midge	7	lvs sep.
MS	Spruce budmoth	8	Ponderosa pine
ND	Needle miner	8	Pole-sized ponderosa pine
NU	Needle miner	8	Western pine beetle
NK	Needle miner	8	Silver fir beetle
NL	Needle miner	8	Needle scale
NS	Needle miner	8	Needle scale
NP	Needle miner	8	Needle scale
NT	Needle miner	8	Needle scale
NW	Needle miner	8	Needle scale
OL	Western oak looper	8	Needle scale
PF	Pine Bark beetle	8	Needle scale
PC	Pine needle cast	8	Needle scale
PH	Phantom hemlock looper	8	Needle scale
PM	Panorama moth	8	Needle scale
PN	Pine needleshafter miner	8	Needle scale
PS	Pine needle scale	8	Needle scale
RC	Needle cast	8	Needle scale
S	Spine scale	8	Needle scale
SA	Sawfly	8	Needle scale
SD	Sawfly	8	Needle scale
SK	Sawfly	8	Needle scale
SL	Sawfly	8	Needle scale
SM	Sawfly	8	Needle scale
SNC	Swiss needle cast	8	Needle scale
SW	Sawfly	8	Needle scale
TA	Tent caterpillar, alder	8	Needle scale
TC	Tent caterpillar, other	8	Needle scale
TD	Douglas fir tussock moth	8	Needle scale
TS	Tent caterpillar, aspen	8	Needle scale

**USGS 100K Quad: Crater Lake - E142122; 3M**  
**2007 Aerial Insect and Disease Detection Survey**  
**Mapscale: 1:100,000**  
**Date: November 27, 2007**

### Legend

- Defoliating Agents
- Mortality Agents
- Other Damage
- Areas Not Flown
- 2006 Large Fires  
Source: Northwest Coordination Center

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 ArGIS insect and disease data are available at: [www.fs.fed.us/r6/nrr/d/ds.html](http://www.fs.fed.us/r6/nrr/d/ds.html)

#### 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 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:**

Oregon Department of Forestry  
Forest Health Management  
2600 State Street  
Salem, Oregon 97310

-- 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.