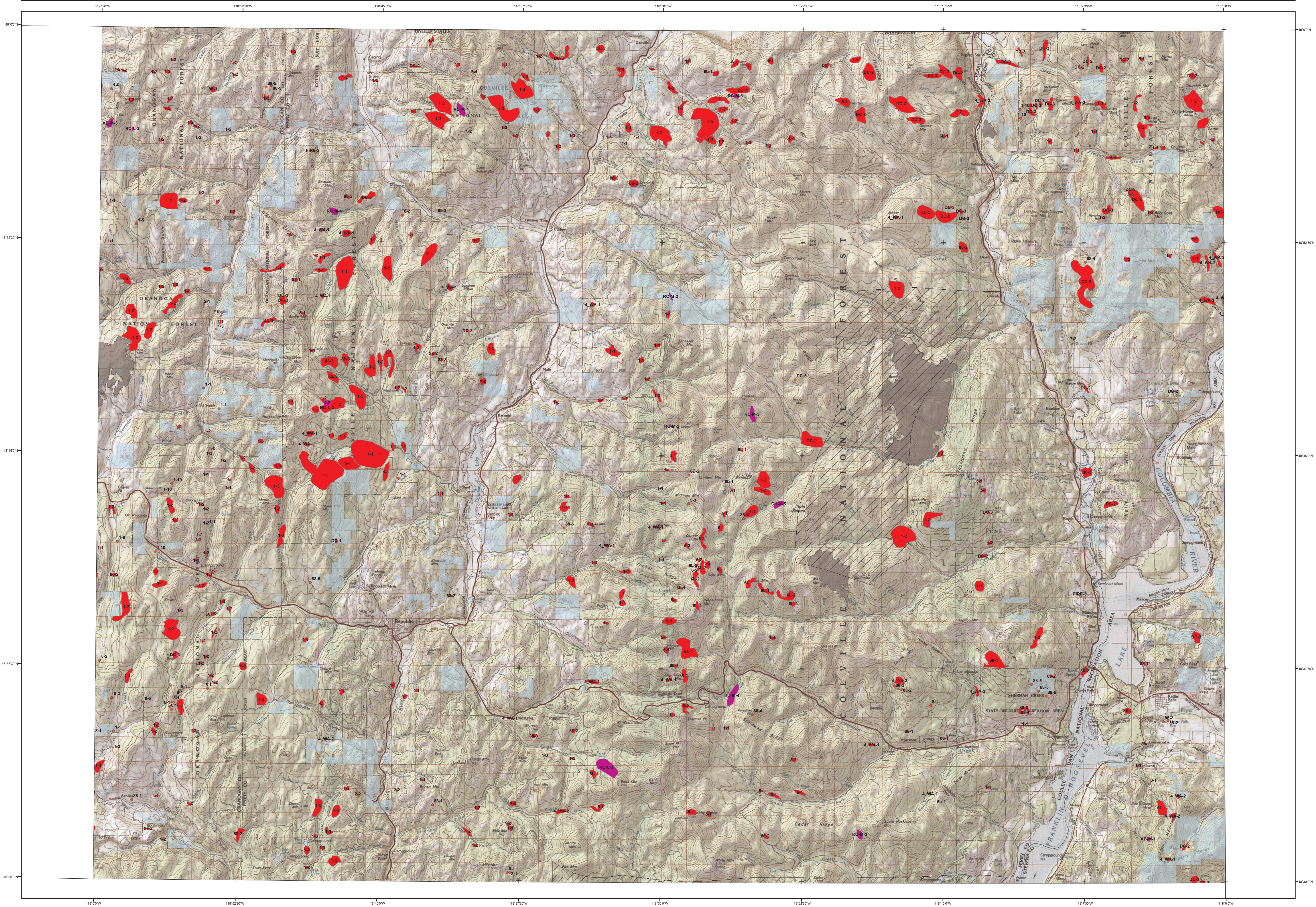


# 2021 Aerial Insect and Disease Survey

## USGS 100K Quad: REPUBLIC - E148118; 7A



Label	Damaging Agent	Primary Host
1	<b>Mortality Agents</b>	
6B	Douglas-fir Beetle	Douglas-fir
6L	Mountain Pine Beetle	whitebark pine
7	Ips Engraver Beetles	lodgepole pine
8	Western Pine Beetle	ponderosa pine
8B	Western Pine Beetle	ponderosa pine
5	Western Balsam Bark Beetle	subalpine fir
DC	Unknown	western redcedar
4_WA	Fir Engraver	Pacific silver, noble & grand fir

Label	Defoliators	Primary Host
RC-L	Larch Needle Cast	western larch

Label	Other Damaging Agents	Primary Host
AB-M	Balsam Woolly Adelgid	Pacific silver, subalpine, grand & white fir
2	Douglas-fir Engraver	Douglas-fir
FIRE	Fire	All tree species
CH-H	Larch Casebearer	western larch
RC-M	Larch Needle Cast	western larch

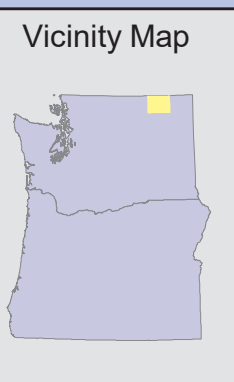
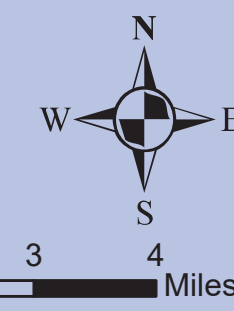
NOTE: Only the damage types present in this quad are listed in this legend. The cause of damage is described by an alpha numeric label, which is followed by the number of trees affected for points, or the percent affected code for polygons (1 - Very Light, 2 - Light, 3 - Moderate, 4 - Severe, 5 - Very Severe).

USGS 100K Quad: REPUBLIC - E148118; 7A  
2021 Aerial Insect and Disease Survey  
Map Scale: 1:100,000  
Date: 22 December 2021

- Damage Points**
- Mortality
  - Defoliation
  - Unknown Damage
- Damage Areas**
- Mortality
  - Defoliation
  - Unknown Damage

- Areas Not Flown During Aerial Survey
- 2021 Wildfires > 100 acres
- WDNR Managed Lands

0 0.5 1 2 3 4 Miles



The basemap is an ESRI map service of TOPOI data (Copyright 2013 National Geographic) which is comprised of seamless, scanned images of USGS paper topographic maps. For more info on this map see [http://go.to.arcgisonline.com/maps/USA\\_Topoi\\_Maps](http://go.to.arcgisonline.com/maps/USA_Topoi_Maps).

A data dictionary, digital copies of this map and geospatial insect and disease data are available at: <http://www.fs.usda.gov/detail/forest-grasslandhealth/insects-diseases/>

### 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, the Washington Department of Natural Resources 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:



Washington State Department of Natural Resources  
Wildfire Division  
Forest Health  
1111 Washington St. SE  
Olympia, WA 98504

-- OR --



USDA Forest Service, Region 6  
State and Private Forestry  
Forest Health Protection  
PO Box 3623  
Portland, Oregon 97208

**DISCLAIMER**  
Forest Health Protection (FHP), Washington Department of Natural Resources (WDNR) and Oregon Department of Forestry (ODF) strive to maintain an accurate Aerial Detection Survey (ADS) Dataset, but due to the conditions under which the data are collected, FHP, WDNR and ODF 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/aviation/quality/assurance.shtml>. Maps and data may be updated without notice. Please cite: "USA Forest Service, Forest Health Protection, Washington Department of Natural Resources, Wildlife Division, Forest Health, and Oregon Department of Forestry, Forest Health Management" as the source of this data.