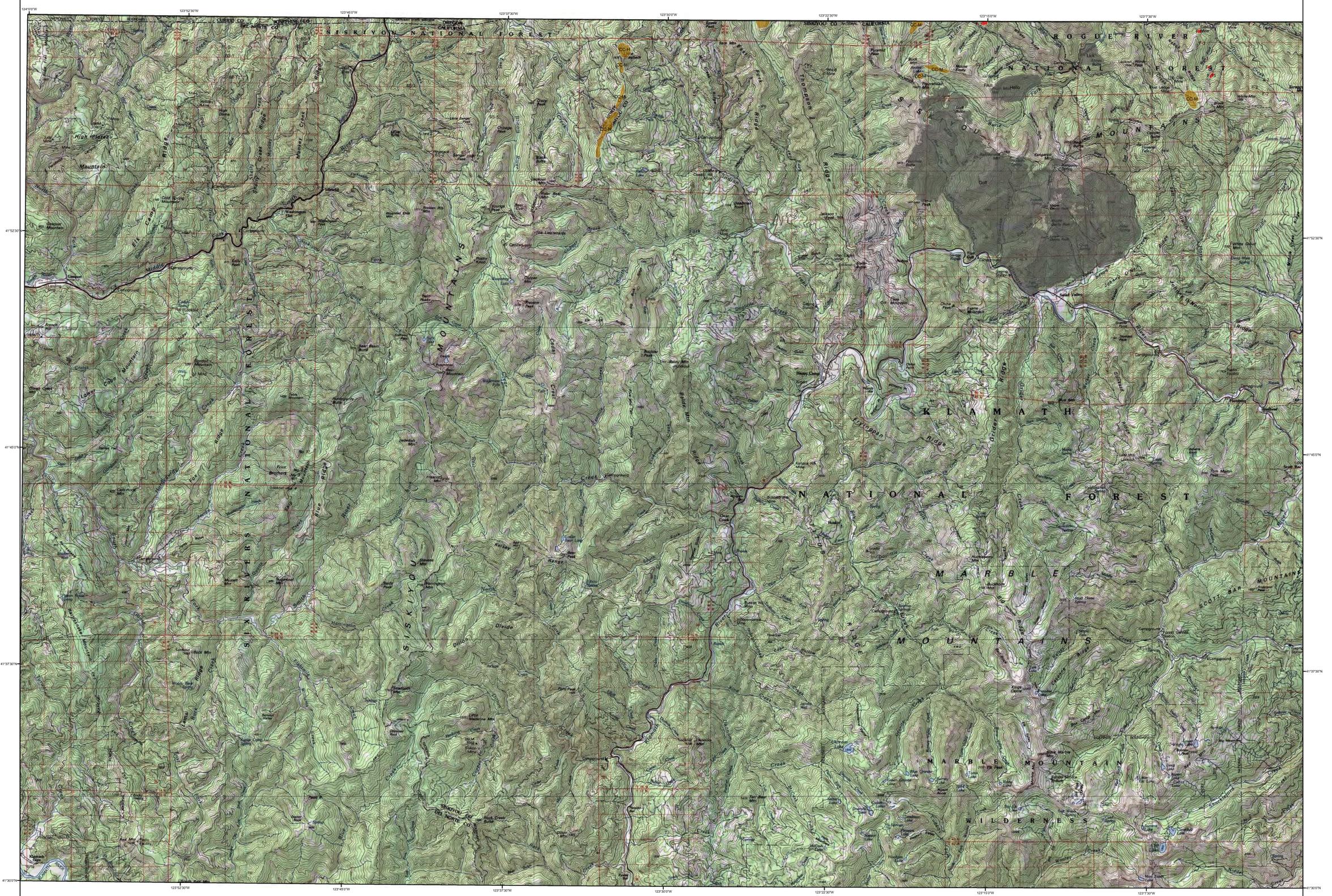


2012 Aerial Insect and Disease Survey

USGS 100K Quad: HAPPY CAMP - A141123; 20



Mortality Agents			Other Damaging Agents		
Code	Damaging Agent	Primary Host	Code	Damaging Agent	Primary Host
1	Douglas fir beetle	Douglas fir	AB	Balsam woolly adelgid	True fir
2	Douglas fir engraver	Douglas fir	AM	Leaf discoloration	Maple
3	Spruce beetle	Spruce	BR	Blister rust	Franklin spruce
4	Fir engraver	True fir	CC	Cystipora canker	True fir
5	Western balsam hawk beetle	Sub-alpine fir	DH	Downy hemlock	Hemlock
6B	Mountain pine beetle	Viburnum pine	FIRE	Fire	All species
6L	Mountain pine beetle	Lodgepole pine	HDA	Hardwood decline	Hardwoods
6P	Mountain pine beetle	Ponderosa pine	HDD	Hardwood decline	Aspen
6W	Mountain pine beetle	Western white pine	NFN	Arms not flown - non host	Oak
7	True spruce	Ponderosa, lodgepole pines	NFN	Arms not flown - host	Pacific madrone
8	Western pine beetle	Ponderosa pine	PMD	Pacific madrone decline	Rhodod.
9B	Western pine beetle	Pink-barked ponderosa pine	PR	Leaf roll in poplars	All species
9L	Silver fir beetle	Silver fir, true fir	RD	Red belt	All species
BEAR	Bear damage	Douglas fir	SLD	Slide	All species
FL	Flatheaded woodborer	Pink-Oak/cedar root disease	WIND	Windthrow	All species
WD	Root disease	Pink-Oak/cedar	WNTD	Winter damage	All species
WATR	Water Damage	Cedar			

Defoliators	
Code	Damaging Agent / Primary Host
BS	Western spruce budworm / True fir, Douglas-fir, spruce
CH	Larch casebearer/typhlocyba / Western larch
LC	Western hemlock looper / Western hemlock
LS	Black pine/leaf scale / Lodgepole pine
PS	Pine budscale / Ponderosa pine
PC	Pine needle cast / Ponderosa pine
PN	Pine needle sheathminer / Ponderosa pine
NC	Needle cast / Western larch
SA	Sawfly / Cedar
SH	Sawfly / True fir
SK	Sawfly / Kootenai pine
SL	Sawfly / Lodgepole pine
SM	Sawfly / Douglas-fir
SNC	Swain moth / Swain
SN	Swain moth / Swain
TC	Tree caterpillar / Hardwoods
TR	Tree louse / True fir, Douglas-fir
UNKD	Unknown defoliating agent / All species

USGS 100K Quad: HAPPY CAMP - A141123; 20
2012 Aerial Insect and Disease Survey
Map Scale: 1:100,000
Date: 08 January 2013

Legend

	Defoliating Agents		Areas Not Flown
	Mortality Agents		2012 Large Fires
	Other Damage		Source: Northwest Interagency Coordination Center

The cause of damage is described by a symbol above and is followed by: number of trees affected; number of trees (example: SA) or intensity of damage (L- Light, M- Moderate, H- Heavy).

The TOPOI maps used as background maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps. For more information on this map, visit them online at: http://gto.arcgisonline.com/maps/USA_Topo_Maps

A data dictionary, digital copies of this map and ArGIS insect and disease data are available at: www.fs.usda.gov/gto/r6/fhp/ads

Vicinity Map

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:

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 Forest Health Management
 2600 State Street
 Salem, OR 97310

-- 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) Database, 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/ads/>
 quality assurance.shtml. Maps and data may be updated without notice. Please cite: "USDA Forest Service, Forest Health Protection, Washington Department of Natural Resources, Resource Protection Division, and Oregon Department of Forestry, Forest Health Management" as the source of this data.