

2020 Aerial Detection Survey Methods and Data Use

USDA Forest Service, Oregon Department of Forestry Washington Department of Natural Resources

Aerial Detection Surveys (ADS) are conducted each year across most of the forested land in Washington and Oregon to document current forest damage due to insects, pathogens and non-living causes such as drought. Observers travel in a small plane and record the damage they see (location, cause and severity) on a tablet computer with specialized Digital Mobile Sketch-Mapping software that shows the location of the plane against a background image of the land below.

In 2020, COVID-19 restrictions ELIMINATED forest health aerial detection flights in Oregon and Washington. However, approximately 22.3 million acres of high priority forest lands were evaluated using a combination of ground surveys and examining current high-resolution aerial imagery for defoliation or mortality. The priority survey locations were driven by suspected ongoing insect or disease activity or management interests. If additional suitable no-cost imagery was available, we may have used it too. These non-traditional surveys covered almost half the survey footprint that would typically be examined from the air.

Although much of the damage recorded in 2020 had to be classified as “unknown” cause, major disturbance agents included fir engraver beetle, pine bark beetles killing lodgepole and ponderosa pine, Douglas-fir beetle, and dying cedar. Douglas-fir tussock moth, pandora moth, hemlock looper and spruce aphid outbreaks have collapsed.

Caution is advised when working with the 2020 data.



Digital Mobile Sketch-Mapping technology, shown in the photo above, can be used to record observations of newly killed or defoliated trees from an airplane, while on the ground, or while viewing high-resolution digital photo background maps. Locations of damaged areas are marked with points or polygons and are labeled with the damage-causing agent and the damage intensity (number of trees or percent of the treed area that is affected and defoliation severity).

Using 2020 (no-flight) ADS data

- The 2020 survey data are available to forest managers via quadrangle maps and spatially registered electronic data layers.
- Be cautious as you view data collected in the 2020 survey areas. The smaller survey footprint (22.3 million acres, rather than 49 million acres) means some locations were not examined in 2020 and have no data.
- If your area of interest was included in the 2020 survey (see map), then you should be able to view and use the data and multi-year query tools similarly to other years' data.
- The “surveyed area” was calculated by adding the area covered with high-resolution imagery and the ground survey area. The ground survey area was calculated by buffering the driving routes by 1 mile on each side and any damage polygons by ½ mile and points by ¼ mile. Even if a point indicated a single tree, all points were increased to cover ¼ acre. Although this standardization effort serves good purpose, please be aware that there may have been some areas that were not thoroughly examined along these surveyed/not surveyed edges.
- Also be aware that in 2020 the causal agent labels might not be as detailed nor accurate as those named in prior years. Avoid making trend conclusions about specific damage agents through 2020.
- Because the observers had more time to scrutinize imagery or map their damage observations from the ground, the mapped damage locations are likely extremely accurate.

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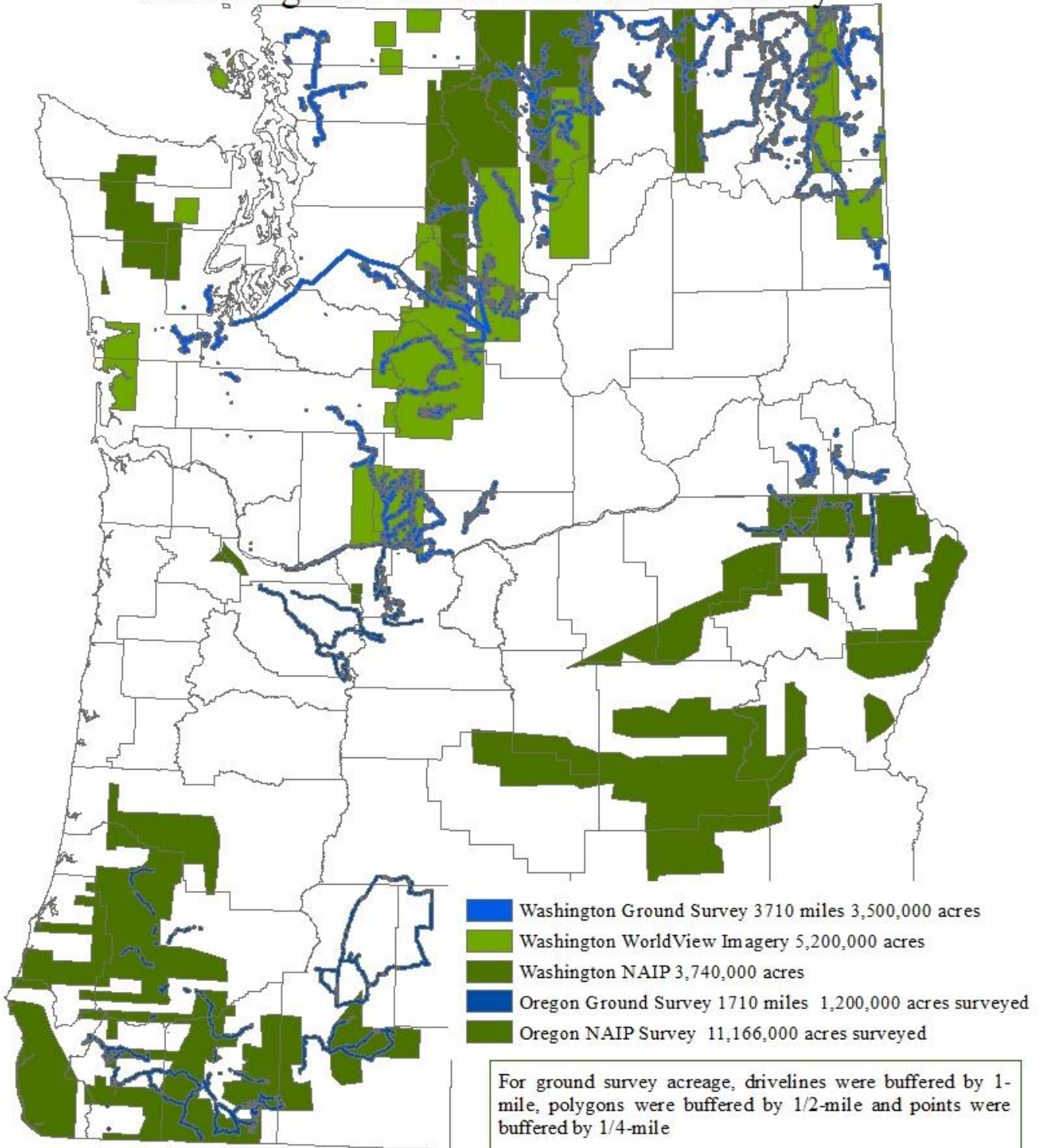
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2020 Region 6 Insect and Disease Survey



100 Miles

Map By: Justin Hof
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Total Acres Surveyed without Overlaps
between Ground Surveys and Imagery

Oregon: 11,832,000
Washington: 10,485,000