Success

Regions 1 & 4, State and Private Forestry

SEPTEMBER 2011

Forest insect and disease information collected each year through aerial surveys is compiled at the state and national levels—providing yearly updates on current insect and disease conditions.

Statewide maps and reports displaying survey findings are produced each February and posted on the Forest Service's website: www.fs.usda.gov/goto/r14-ads.

The surveys provide forest land owners and managers with important information about forest health. That information is useful in prioritizing actions by Federal agencies, States, and other land owners and managers.

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Aerial Surveys Provide Important Forest Health Information

Aerial surveys conducted each year in Idaho, Montana, North Dakota, Nevada, Utah and Wyoming provide an efficient and economical method of detecting and evaluating insect and disease activity across the roughly 70 million acres of forested lands in those states.

The comprehensive surveys, jointly conducted by the Forest Health Protection program of the Forest Service and its State partners, help ensure early detection of epidemic infestations and provide current and historic data about forest insect and disease activity.

The surveys provide extremely useful information to landowners and land managers regarding how each state's forests are faring, including any significant trends to be aware of in insect and disease conditions.

The results of the aerial surveys are compiled each year and published in state reports and maps in both electronic and hard copy formats. Since aerial surveys have been conducted for many decades, both historic and current information is available to the public, landowners, and land management agencies.

The surveys are sketch mapping surveys, not aerial photography missions. That means an aerial surveyor delineates detected forest change, tree species affected, causal agent, and intensity on an electronic sketch map.

The majority of the surveys are conducted from 500 to 1,500 feet above ground between the end of June and the end of September. This provides for a one-time survey of each area over each summer field season.

The surveys are timed to be able to spot insect and disease 'signatures', which are visible foliage discoloration indicating insect or disease activity.

Aerial detection surveys for the six states are all coordinated through Forest Health Protection's Boise Field Office and overseen by Kathy Matthews, program coordinator.

The surveys are a cooperative effort with affected state agencies, including Idaho Department of Lands, Montana Department of Natural Resources and Conservation, Nevada Department of Conservation and Natural Resources, Utah Department of Natural Resources, and North Dakota Forest Service.

Aerial surveys are rigorous work. Kathy notes it's often the most challenging job the surveyors have ever worked. The surveys take intense concentration. Surveyors make hundreds of decisions a day to determine how to categorize and portray what they are seeing in the forest

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Pine beetle outbreak, from aerial detection survey flight

A fully qualified aerial surveyor is on the road about 90% of the season. A day's work is filled with making decisions on how to interpret and map what they see through the airplane window.

It takes one to two seasons of work before a surveyor is considered fully qualified, which includes some classroom work, as well as hours of flying along with veteran surveyors to learn 'damage signatures' and symptoms, to be able to quickly answer the questions: What am I seeing? What does that indicate?

Almost all of the flight data is recorded on electronic tablets, and it takes almost a week of on-the-job training to get proficient in tablet operation. Aerial surveyors need strong orientation skills in working with maps; it is imperative they place the insect and disease activity they see in the correct location on the electronic map. They need to get air legs for their job, which entails looking through the window of an airplane traveling about 120 miles per hour for 5 to 6 hours a day, capturing the damage on the electronic tablet while simultaneously directing the pilot.

Aerial surveyors typically fly 5 days a week. After the daily flight, they return to their office or hotel to review their data, proofing and correcting the information they recorded that day while it is fresh in their minds. Kathy tries to give aerial surveyors a week away from the aircraft every few weeks if schedules and workload permit, as a respite from the nonstop decisions they have to make while in the air.

The information collected each year through the aerial surveys is compiled at the state and national levels—providing yearly updates on current insect and disease conditions. Staff members in the Forest Health Protection's Boise Field Office are busy in the fall and winter processing the data collected from the aerial surveys. That electronic GIS data is submitted to the Forest Service's center for insect and disease information in Fort Collins, Colorado to contribute to nationwide insect and disease condition reports.

Statewide maps and reports displaying survey findings are produced each February and posted on the Forest Service's public website: **www.fs.usda.gov/goto/r14-ads.**