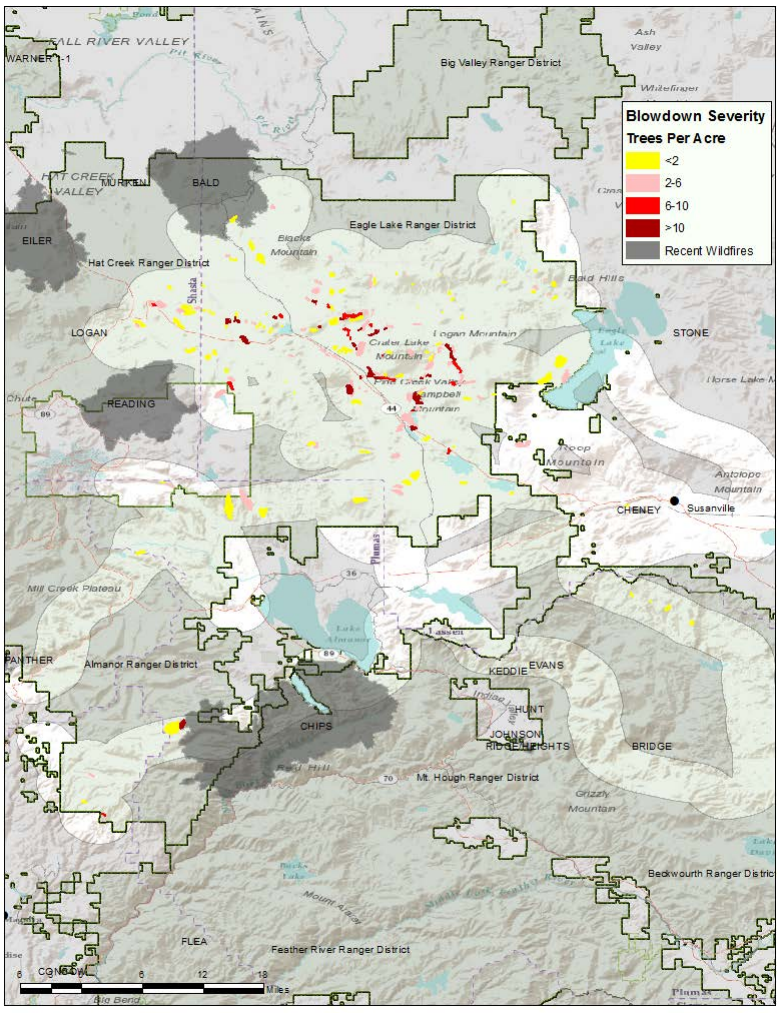
Lassen National Forest / Forest Health Protection Survey

Blowdown Event Aerial Detection Survey – February 24th-25th, 2015

Background: On February 6, 2015, a severe wind event caused significant windthrow and breakage on the Lassen NF and surrounding lands
Objective: Detect and map extent and severity of windthrow and associated damage
Surveyors: J. Moore, R. Crowther, R. Perry, D. Cluck
Dates: February 24th-25th, 2015
Methodology: Recently downed or injured (top snapped off) trees were mapped visually by a surveyor using a digital aerial sketch-mapping system flying in a light fixed-wing aircraft approximately 1,000 feet above ground level. The surveyor recorded the number and species of affected trees and type of damage (mortality, blow-down, stem breakage, etc.) at each mapped location. Damage recorded on the Right side of the plane was generally more accurate since the surveyor often had to guess at extent and location of damage relayed from the Left side observer. Only one sketch-mapping system was utilized.
Details:

- Almost 1.2 million acres were surveyed; primarily on the Eagle Lake District but also substantial portions of the Hat Creek and Almanor Ranger Districts LNF, Beckwourth Ranger District PNF, Lassen Volcanic National Park and neighboring private lands. See Figure 1.
- Conditions were ideal for survey with virtually no clouds or wind. The color of freshly broken wood and disturbed soil around large root wads highlighted impacted areas. See Figures 2 and 3.
- Over 16,300 acres containing fresh blowdown was detected, mostly at low severity levels. However, several areas of more severe damage were detected on the Eagle Lake Ranger District particularly around the bases of Crater Lake Mountain, Campbell Mountain and around Ebey lake .
- Blowdown of large ponderosa pine and other conifers was generally more severe around the edges of meadows and within several recently thinned stands . Extensive blowdown also occurred within recent fire perimeters, but was not mapped since the trees were already dead and may have fallen prior to this event.
- Ponderosa pine accounted for the bulk of trees affected with lesser amounts of lodgepole and other pine, white fir, Douglas-fir and even a few juniper.
- Areas were only mapped if they contained approximately one tree per acre or higher. There were thousands of acres with blowdown concentrations not meeting this threshold.

Figure 1. Flown area and mapped tree mortality and damage.



Summary:
Area surveyed: 1,190,000 acres
Areas with blowdown or stem breakage: 16,311 acres
Estimated number of blown down or broken trees: 71,156

Figure 2. Near Coyote Springs on Hat Creek RD

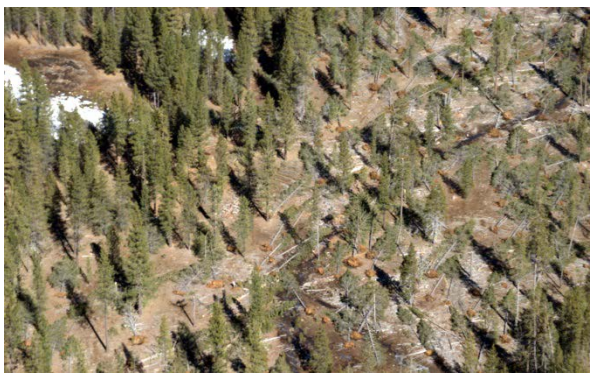


Figure 3. Near Long Lake on the Eagle Lake RD.

Direct questions pertaining to this report to Jeffrey Moore (email: jwmoore02@fs.fed.us phone: 530-759-1753). Report Date Feb 4, 2015.