

Smoke Impacts Summary – Northern CA Fires, August 23, 2012

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Key Points

- **Smoke effects occurred yesterday throughout the Sacramento Valley and in areas southeast of the fires.**
- **Smoke at the surface is predicted to travel NE of the fires today, with potential effects along the I-5 corridor between Anderson and Yreka.**
- **Smoke aloft is predicted to travel NE of the fires except for the North Pass fire, where smoke is forecasted to travel north, and the Fort Complex, where smoke at lower levels is forecasted to travel south and west.**

Past and Current Conditions:

Yesterday smoke from the California wildfires was seen throughout the Sacramento Valley. Visibility at the Redding airport was reduced to 3 miles in the mid-morning hours. The Anderson monitor peaked at 199 ug/m³ during the late morning. The Willows monitor peaked at 88 ug/m³ in early afternoon, while the monitor in Auburn peaked at 44 ug/m³ during the mid-afternoon hours. PM_{2.5} concentrations in Grass Valley reached 150 ug/m³.

The highest PM_{2.5} concentrations continue to be observed near the fires or in down drainage areas of the fires. Concentrations over 600 ug/m³ were observed in the Canyondam area and in the Yankee Hill area due to smoke from the Chips fire. The Covelo monitor near the North Pass fire recorded a high concentration of 496 ug/m³ during the midday hours.

Smoke effects were observed in the Lakeview OR area and, to a lesser degree, the Klamath Falls OR area. Areas south of the Fort Complex, notably the Hoopa area and the Yreka area, also saw increases in PM_{2.5} concentrations due to smoke. Areas Southeast of the major fires (Portola, Doyle, and Truckee) were also experiencing increasing PM_{2.5} concentrations throughout the evening hours.

The Reading fire was reported as 100% contained yesterday. The Mill fire is expected to be 100% contained later today.

The visible satellite picture at 7:45 AM PDT this morning (Figure 1) shows widespread smoke throughout much of Northern California.

This morning's model output (Figure 2) continues to predict that the highest smoke concentrations will be close to the fires. The BlueSky model is picking up the Antelope fire in Modoc County near Big Sage Reservoir but is not anticipating any outputs from the Barry Point fire nor the Mill fire.

Model Output (Next 24 hours):

Model outputs for this afternoon (Figure 3) show surface smoke generally heading to the NE away from the fires. The I-5 corridor from Anderson to Yreka may experience smoke effects and perhaps the Burney and Fall River Mills areas as well. Note that The BlueSky model may underestimate PM_{2.5} concentrations; especially close to more active fires because the acreage for rapidly growing fires is underestimated in the model runs. Smoke from burnouts would also not be included in the model output.

Model outputs for tomorrow morning (Figure 4) are predicted to be similar to this morning, with PM_{2.5} concentrations highest near the fires and in down drainage areas.

Figures 5 – 16 show forecast 24-hour trajectories every 6 hours for the next 24 hours from several of the major fires in Northern California. Release heights are 500, 1000, and 1500 meters above ground level (AGL). Trajectories for the next 24 hours general show that smoke aloft is predicted to carry to the NE of the fires, with the exception of the North Pass and Fort Complex fires. Smoke from the North Pass fire is forecasted to carry north beginning this evening and continuing through tomorrow morning, with the lowest level smoke stay relatively near to the fire in the nighttime hours. For the Fort Complex, smoke at the lower levels is expected to carry south and west towards Eureka beginning this evening and heading west by early morning tomorrow. There is the potential for smoke aloft at the lower levels to affect the surface tonight.

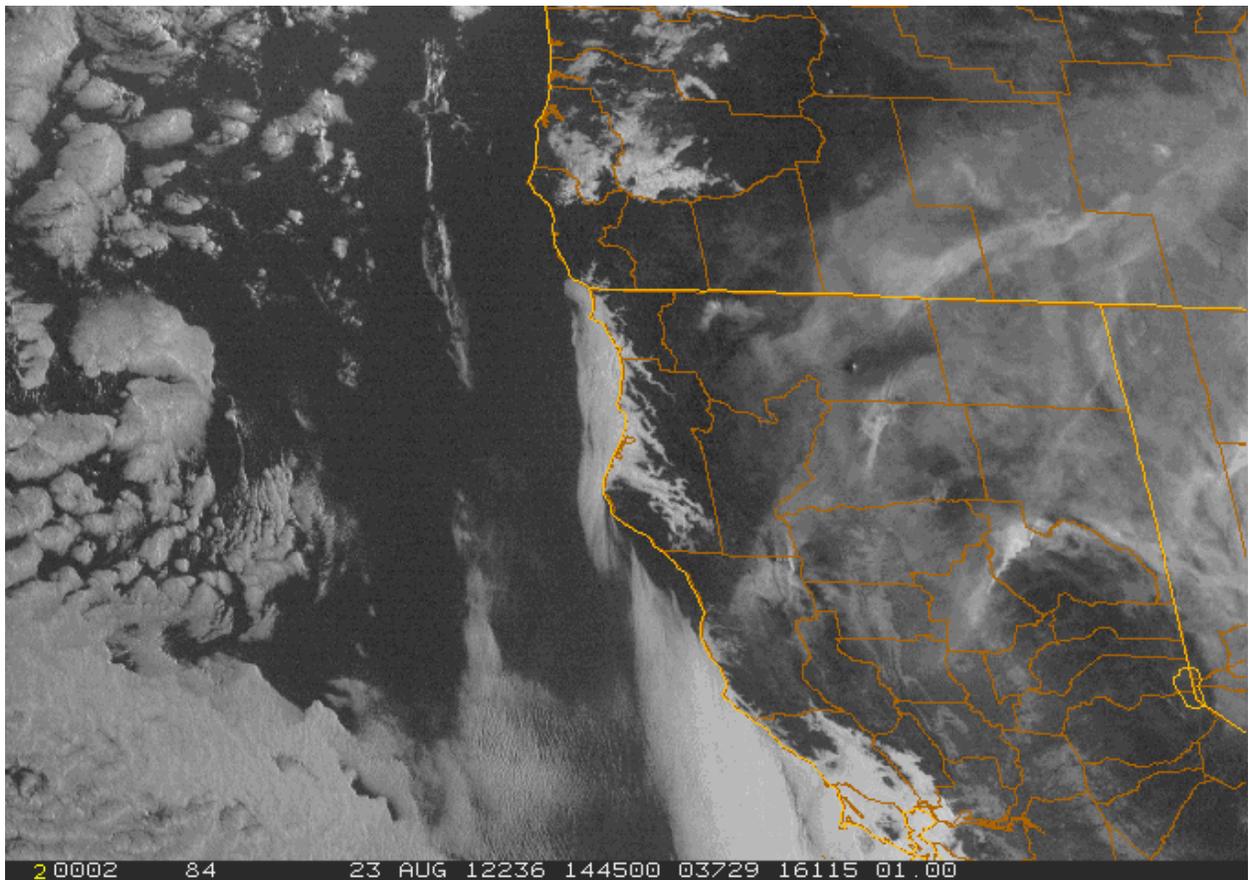


Figure 1. Visible satellite picture for 7:45 AM PDT, August 23.

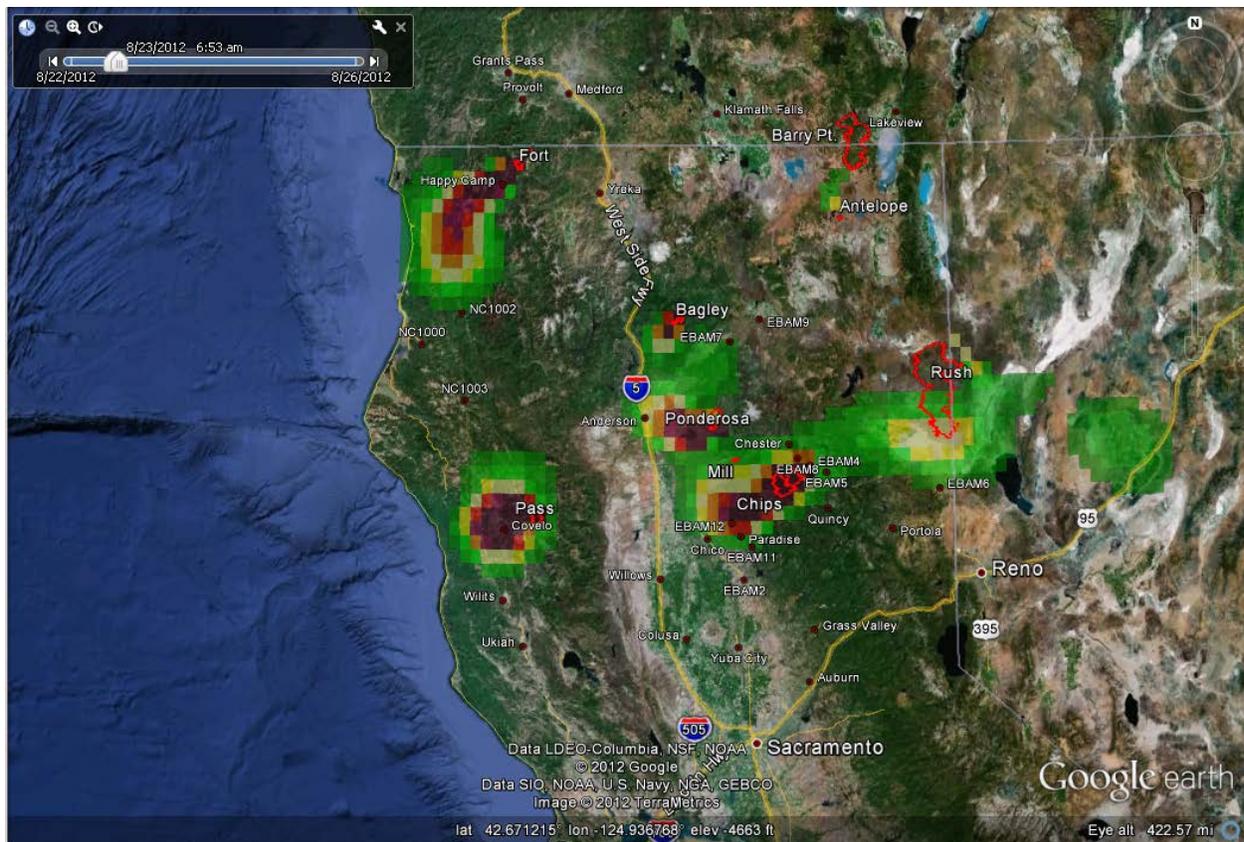


Figure 2. Predicted smoke effects from the northern CA fires at 7AM PDT, August 23. Greens indicate low concentrations, yellow and orange are moderate concentrations, and red and purple are high concentrations.

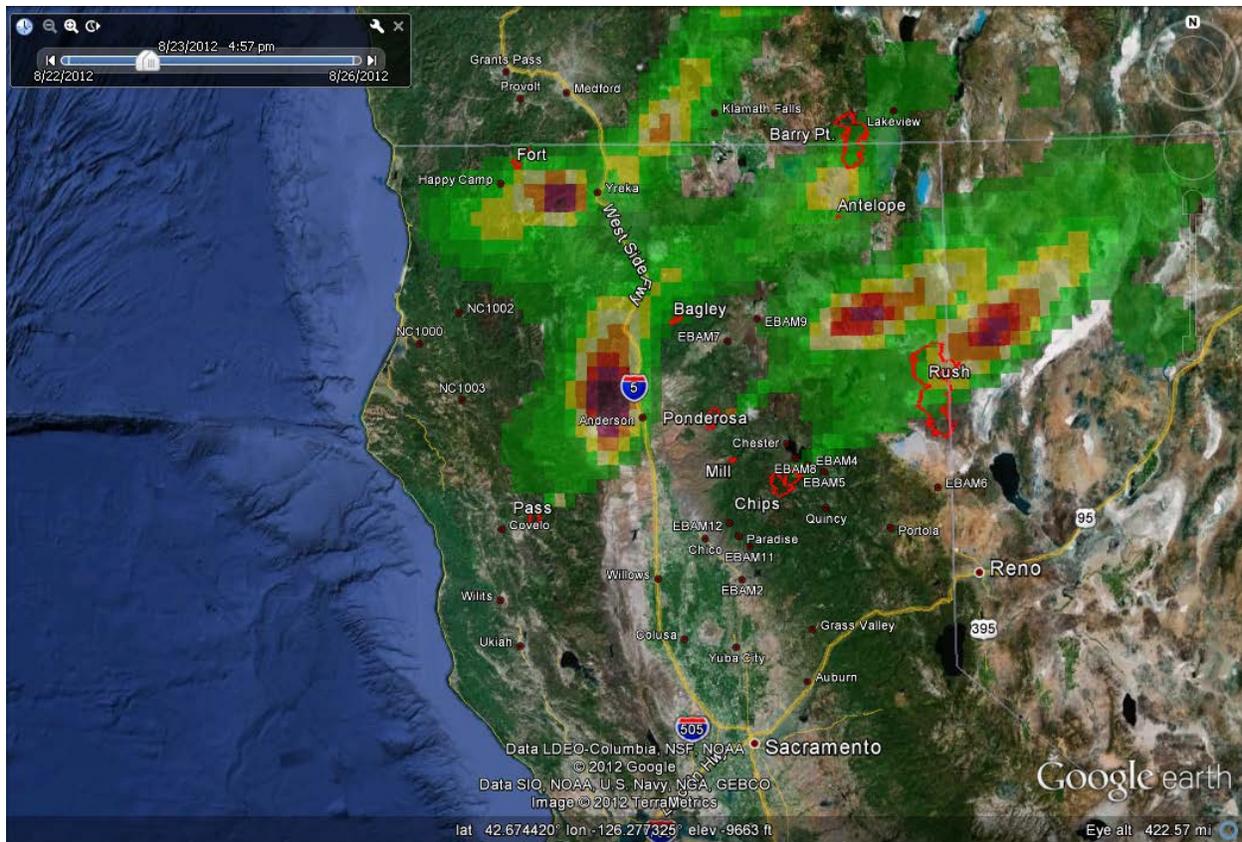


Figure 3. Predicted smoke effects from the northern CA fires at 5PM PDT, August 24. Greens indicate low concentrations, yellow and orange are moderate concentrations, and red and purple are high concentrations.

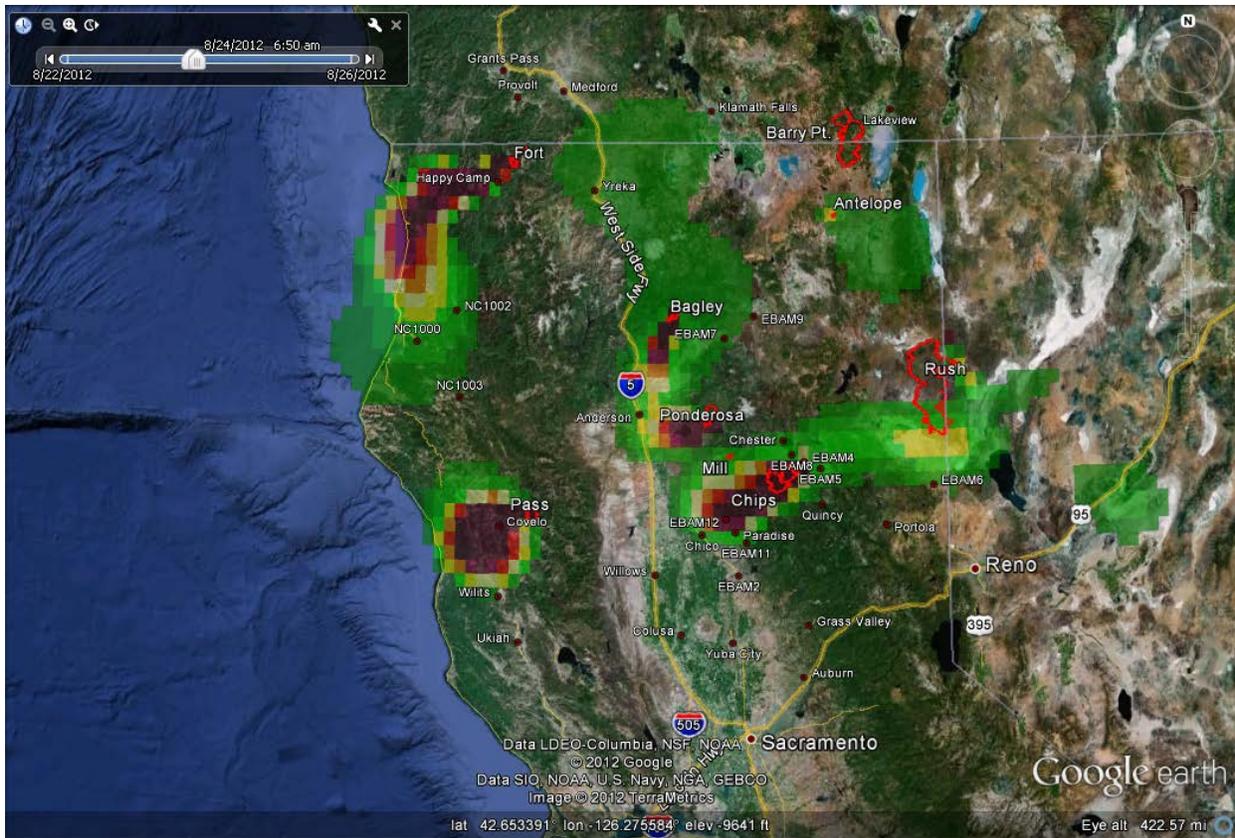


Figure 4. Predicted smoke effects from the northern CA fires at 7AM PDT, August 24. Greens indicate low concentrations, yellow and orange are moderate concentrations, and red and purple are high concentrations.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 1900 UTC 23 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

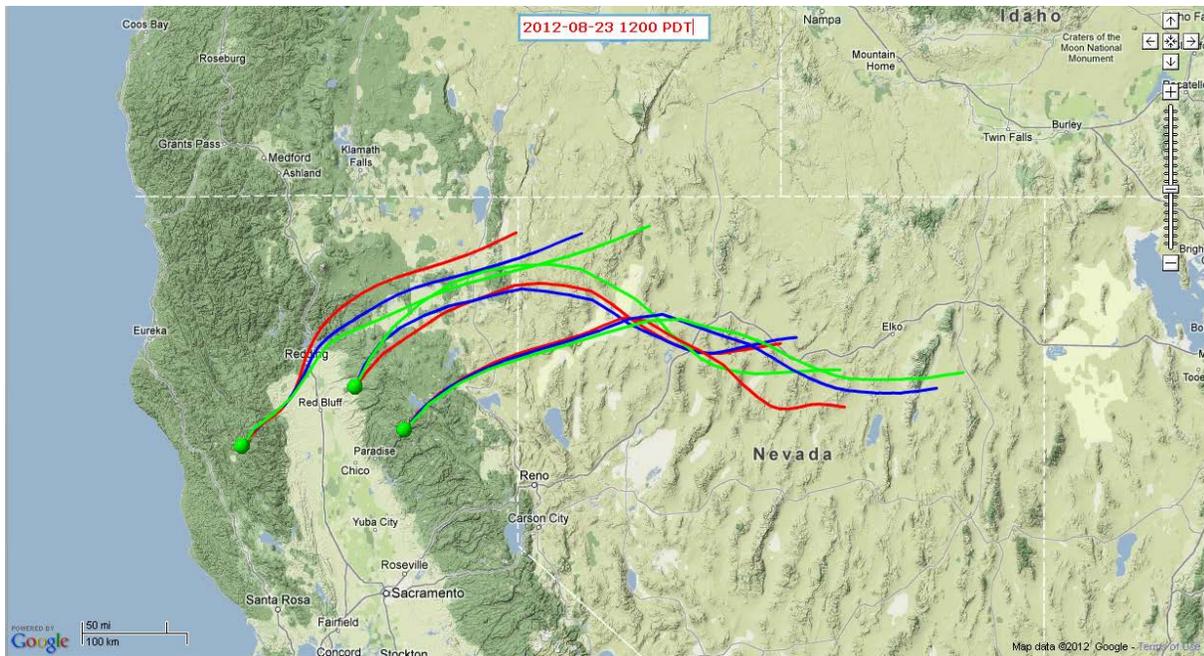
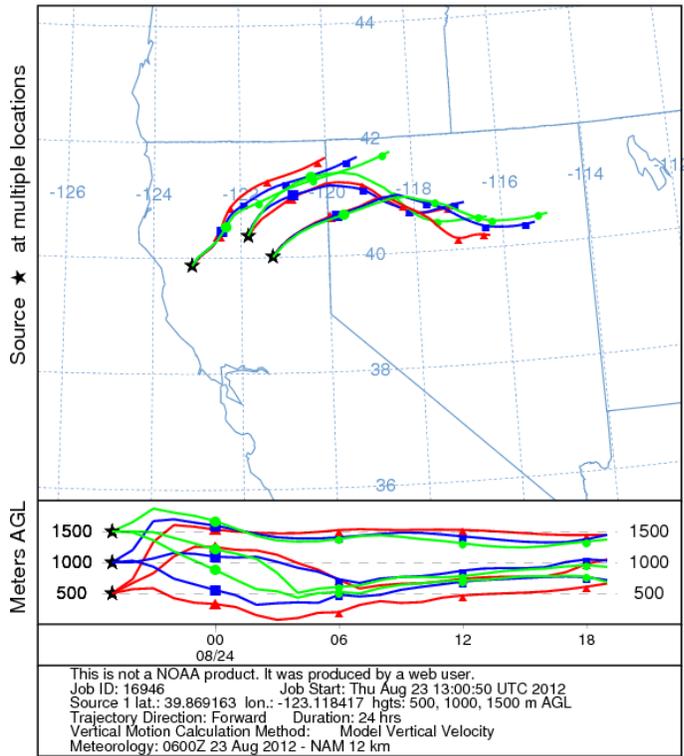


Figure 5. 24-hour forward trajectories for the North Pass, Ponderosa, and Chips fires, starting at 12:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0100 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

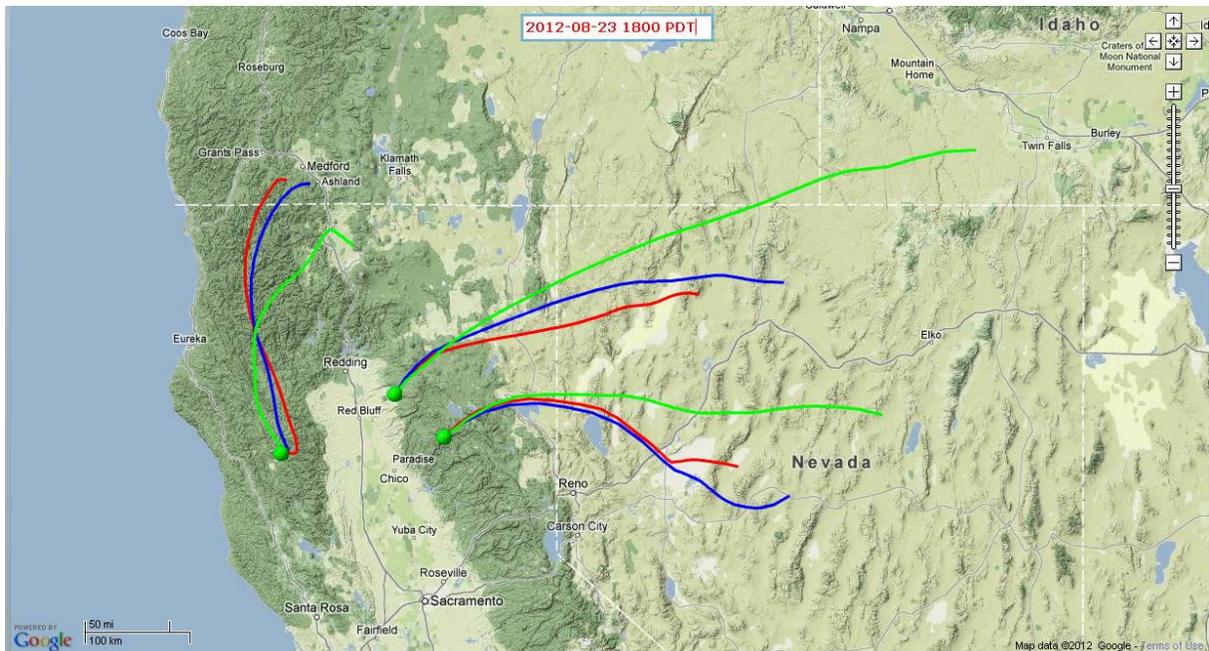
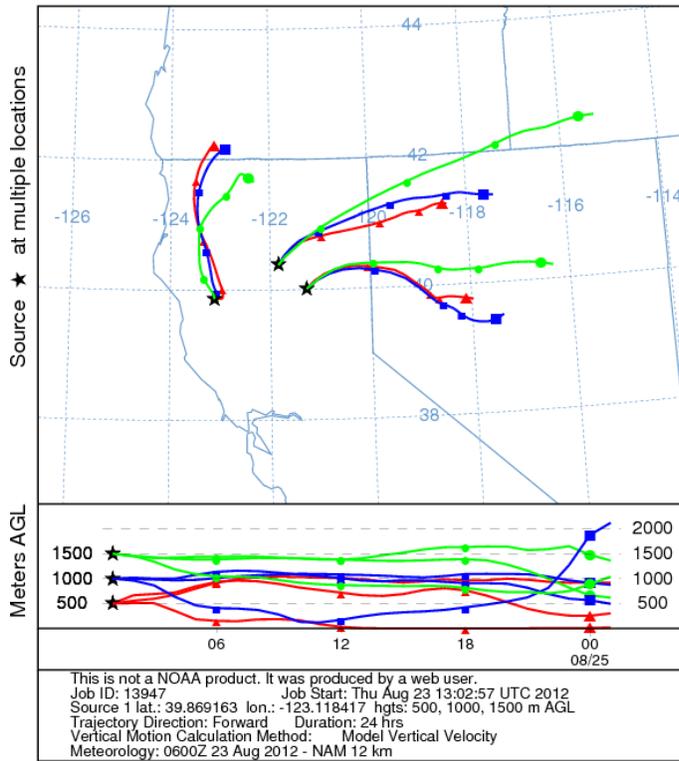


Figure 6. 24-hour forward trajectories for the North Pass, Ponderosa, and Chips fires, starting at 6:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0700 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

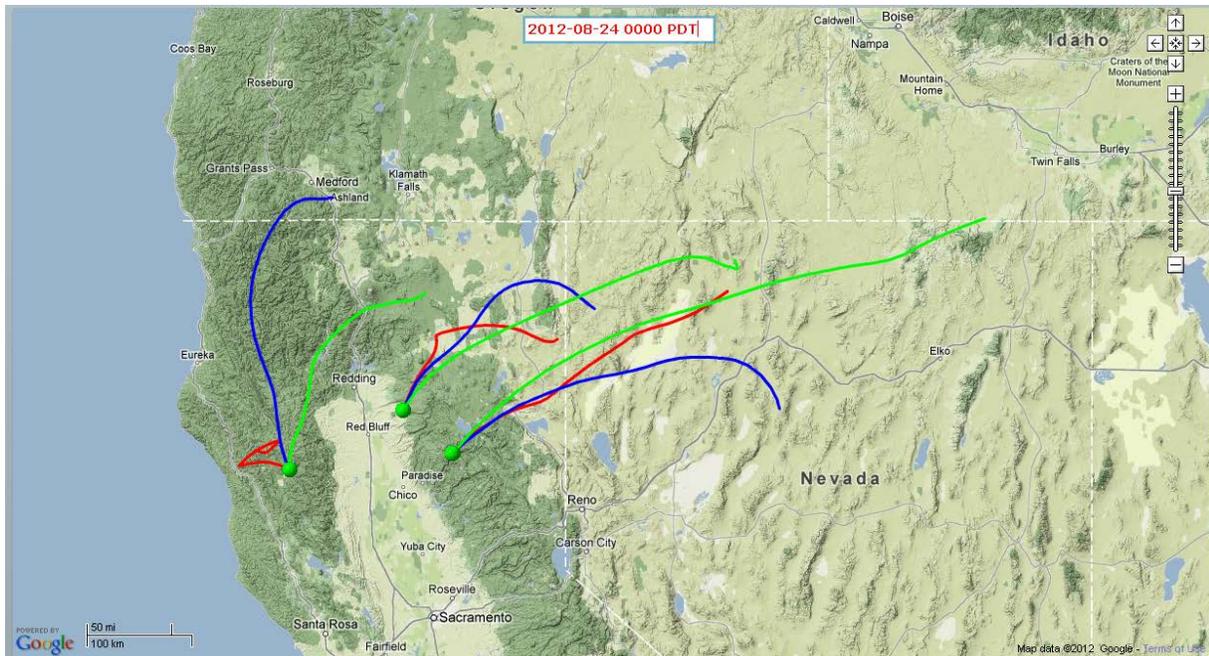
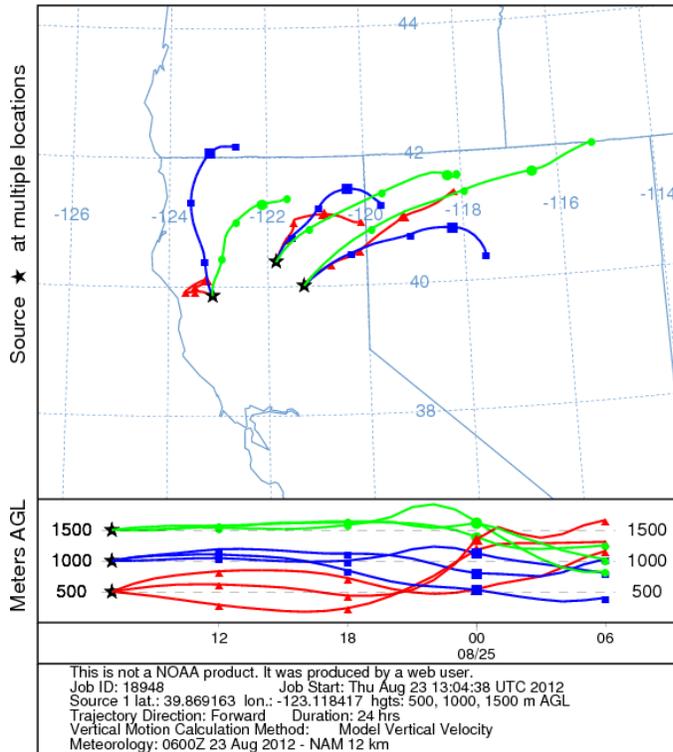


Figure 7. 24-hour forward trajectories for the North Pass, Ponderosa, and Chips fires, starting at 12:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 1300 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

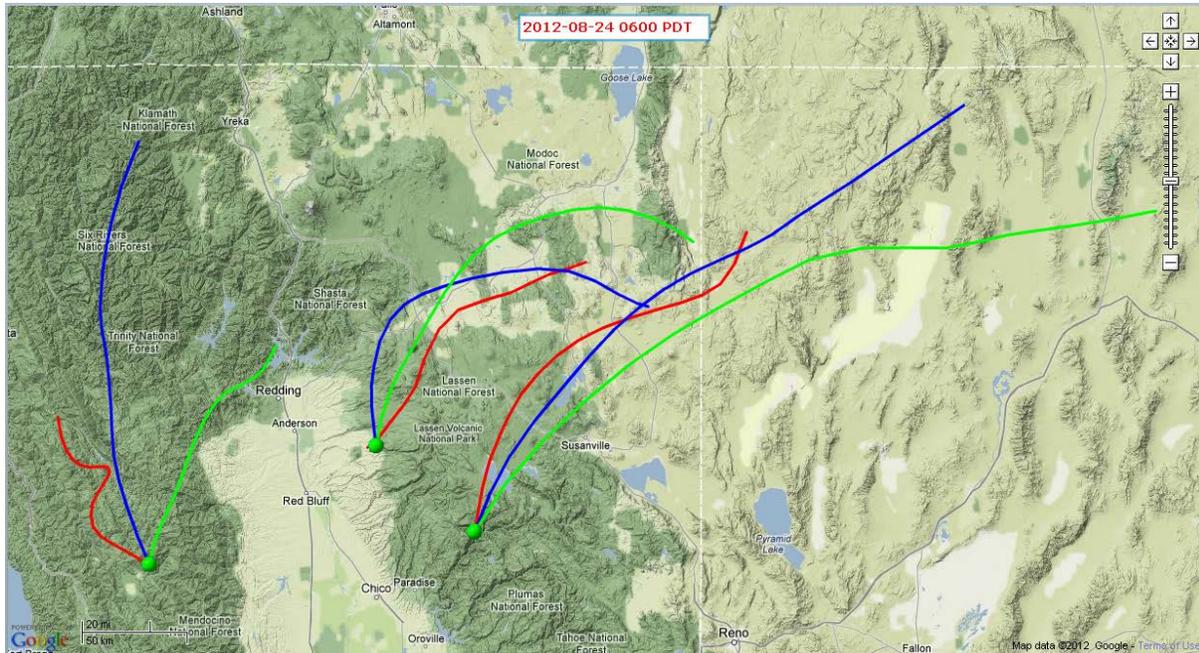
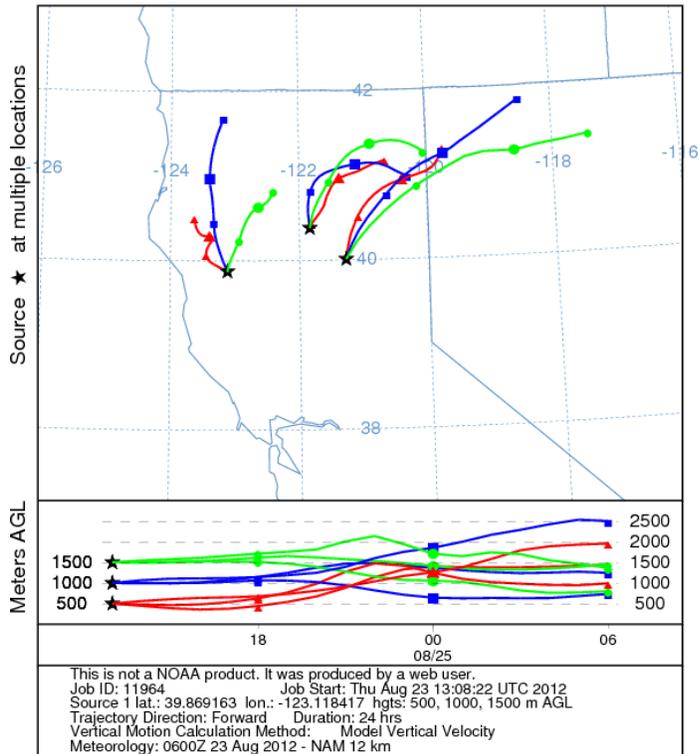


Figure 8. 24-hour forward trajectories for the North Pass, Ponderosa, and Chips fires, starting at 6:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 1900 UTC 23 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

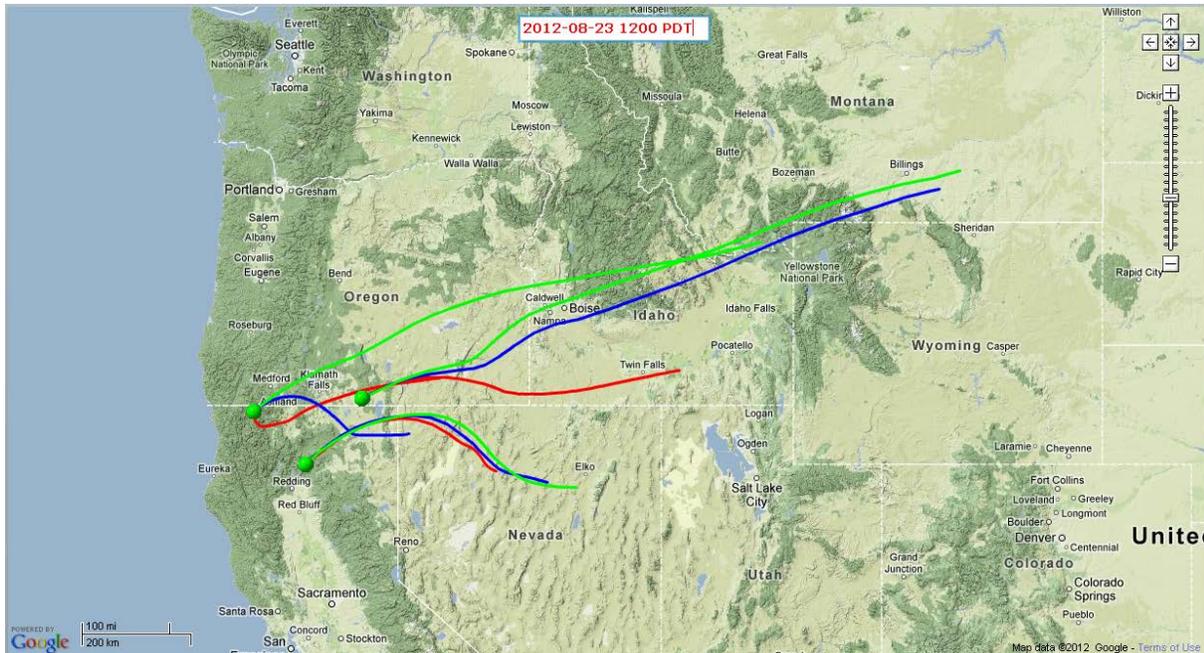
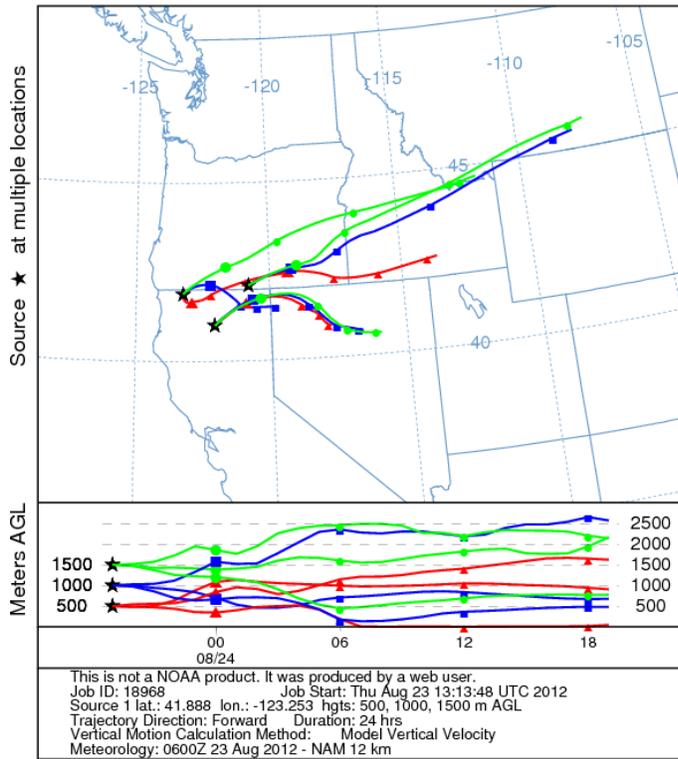


Figure 9. 24-hour forward trajectories for the Fort, Barry Point, and Bagley fires, starting at 12:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0100 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

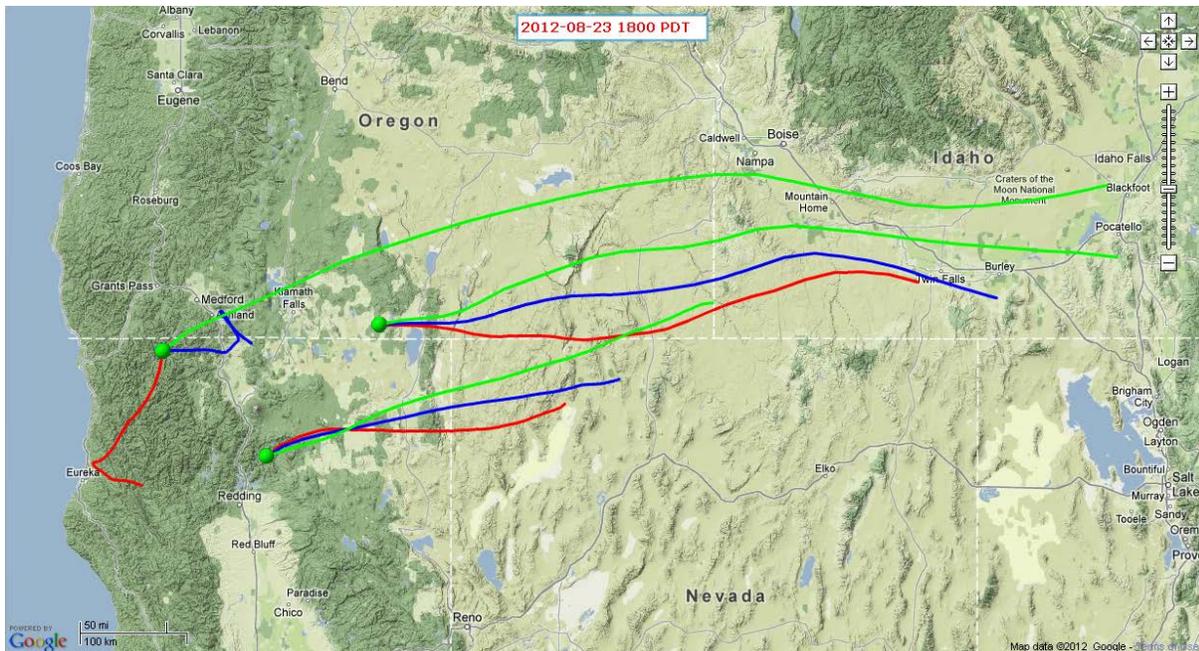
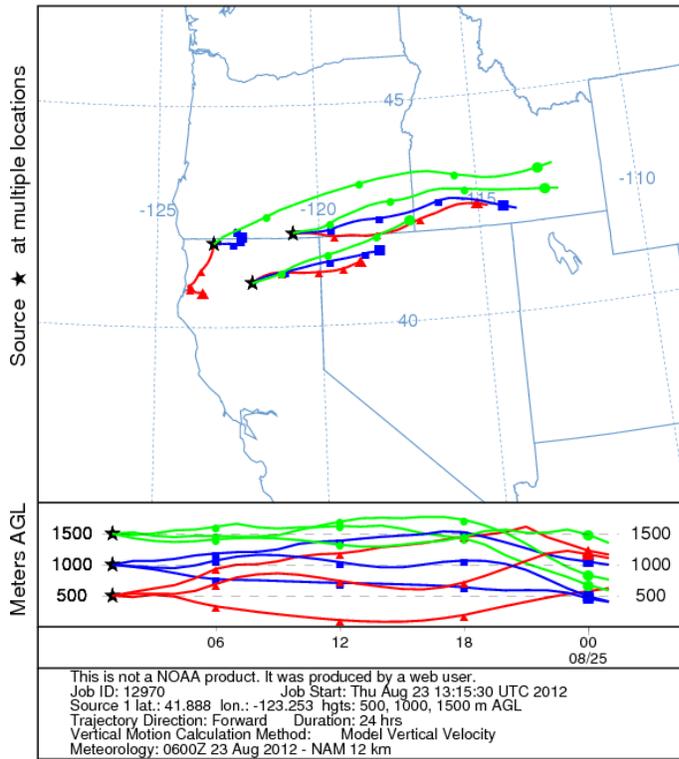


Figure 10. 24-hour forward trajectories for the Fort, Barry Point, and Bagley fires, starting at 6:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0700 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

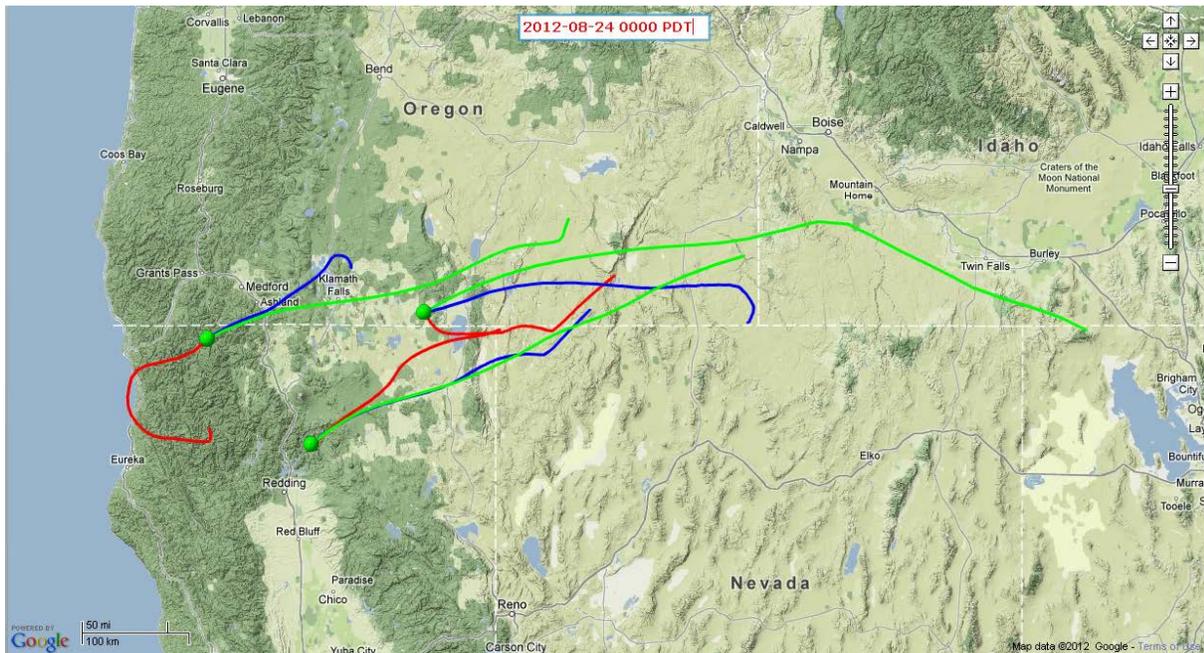
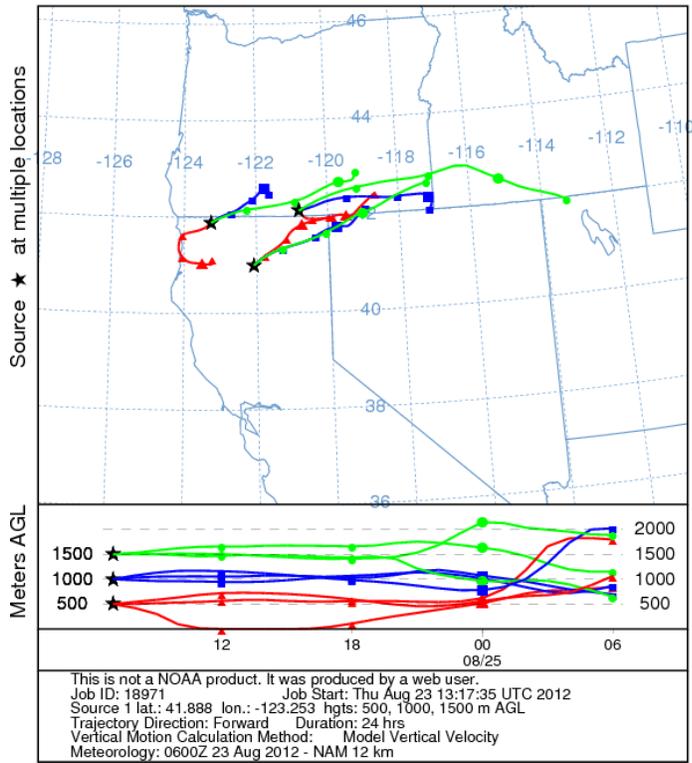


Figure 11. 24-hour forward trajectories for the Fort, Barry Point, and Bagley fires, starting at 12:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

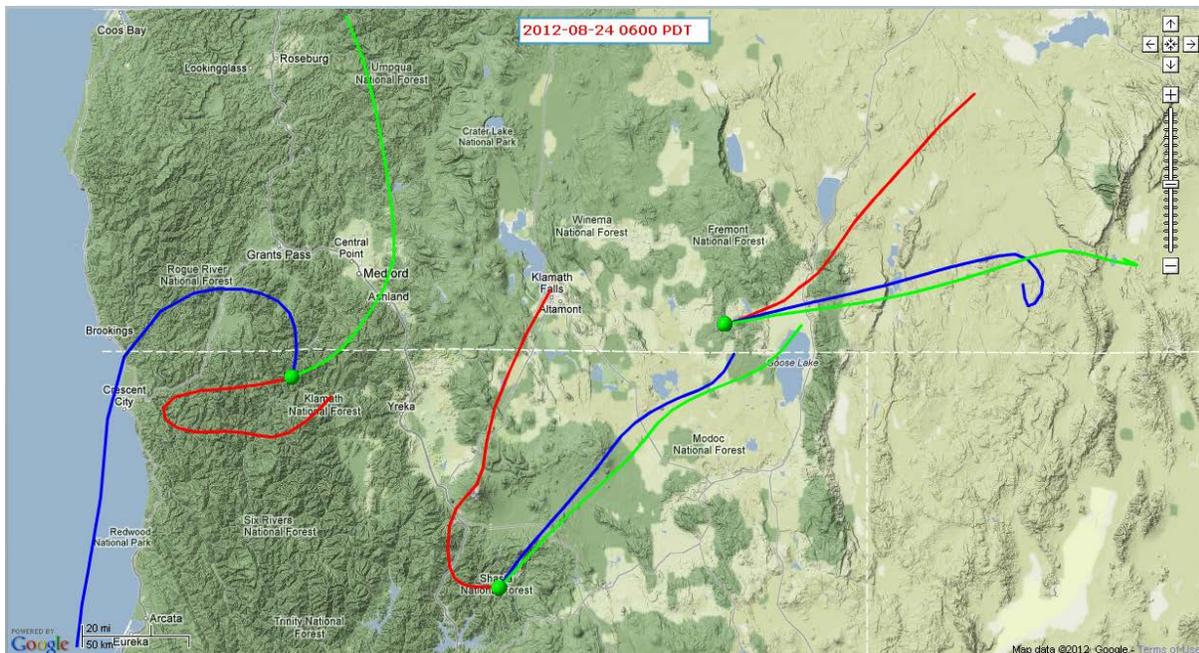
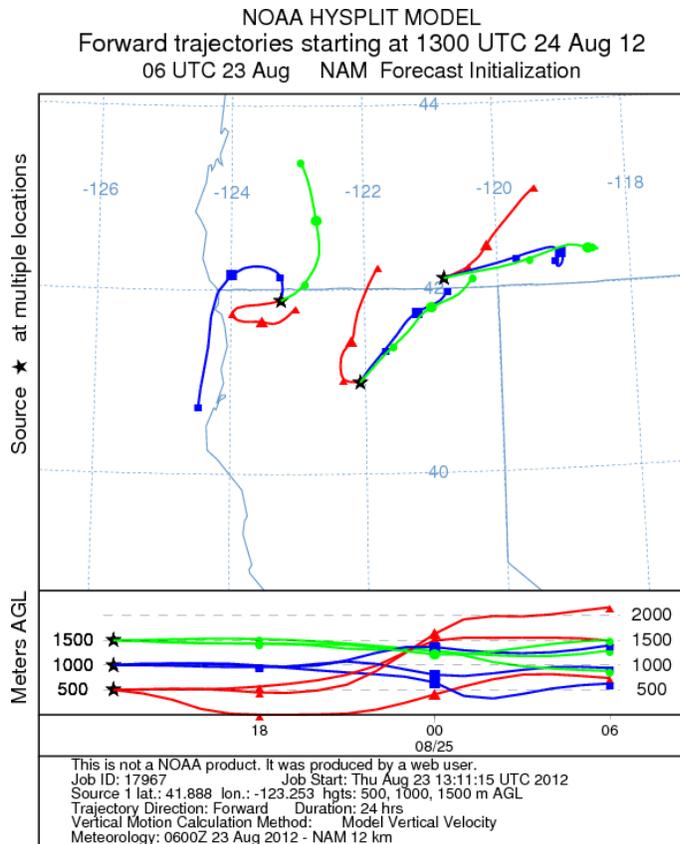


Figure 12. 24-hour forward trajectories for the Fort, Barry Point, and Bagley fires, starting at 6:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

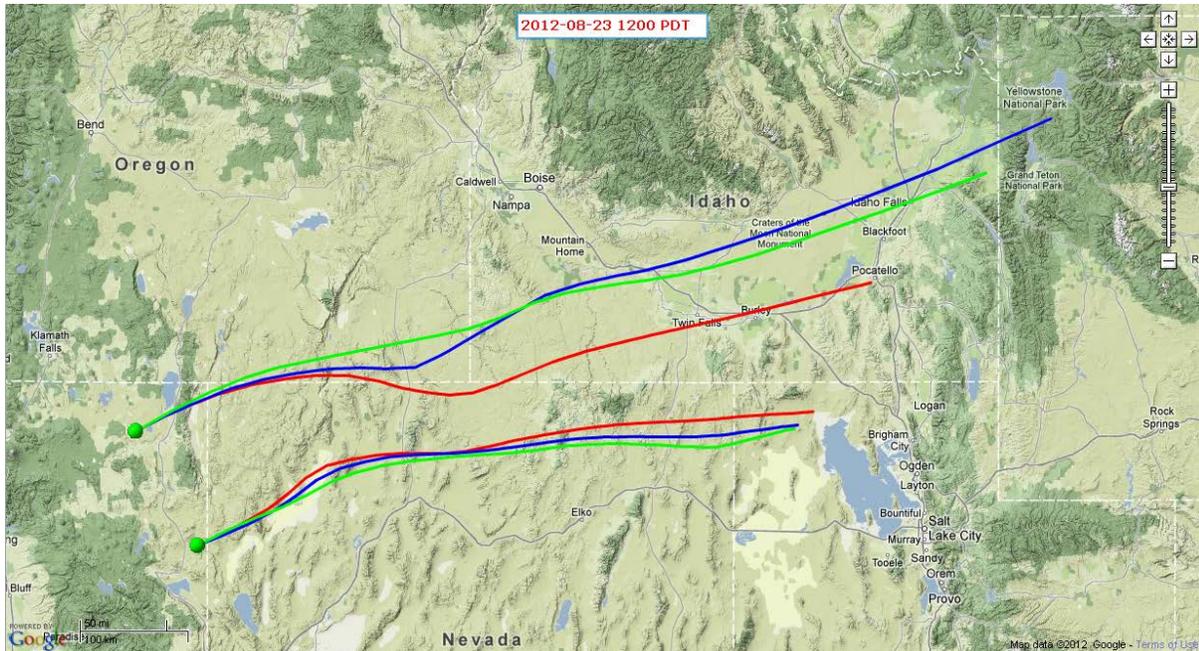
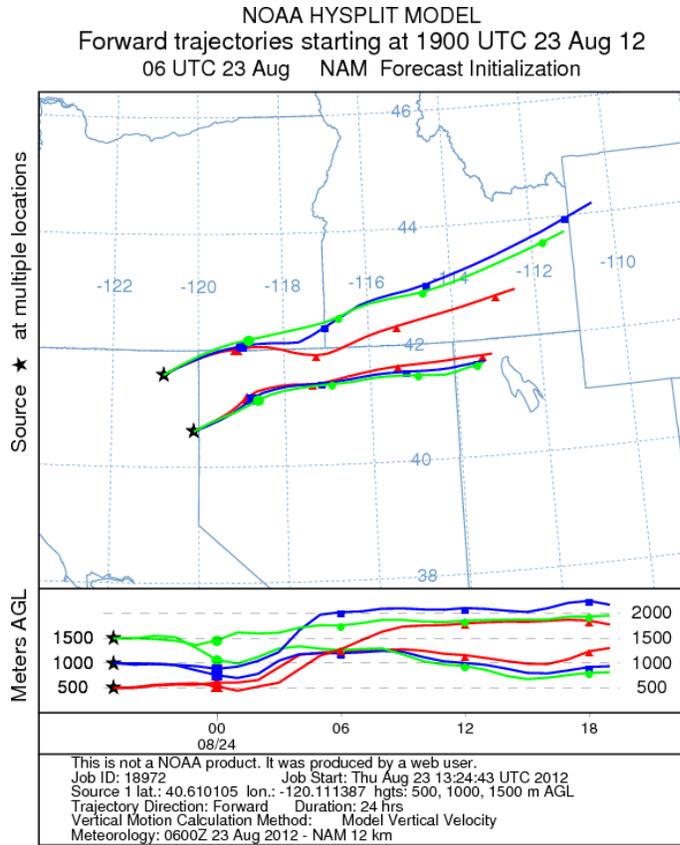


Figure 13. 24-hour forward trajectories for the Antelope fire and the Rush fire, starting at 12:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0100 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

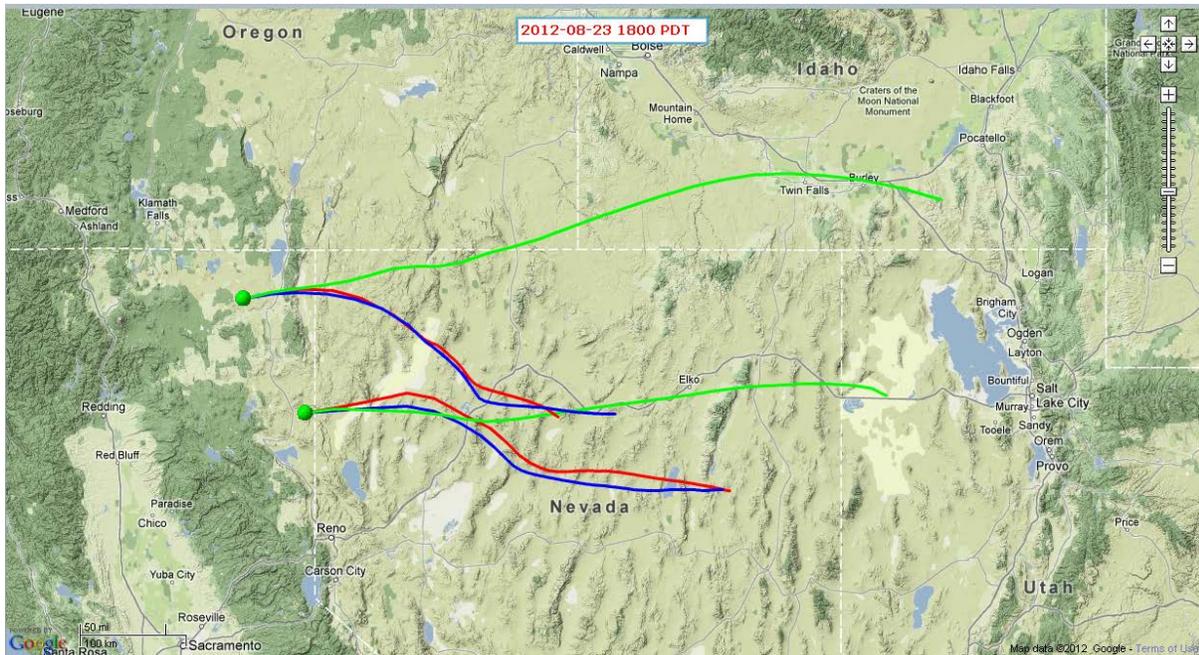
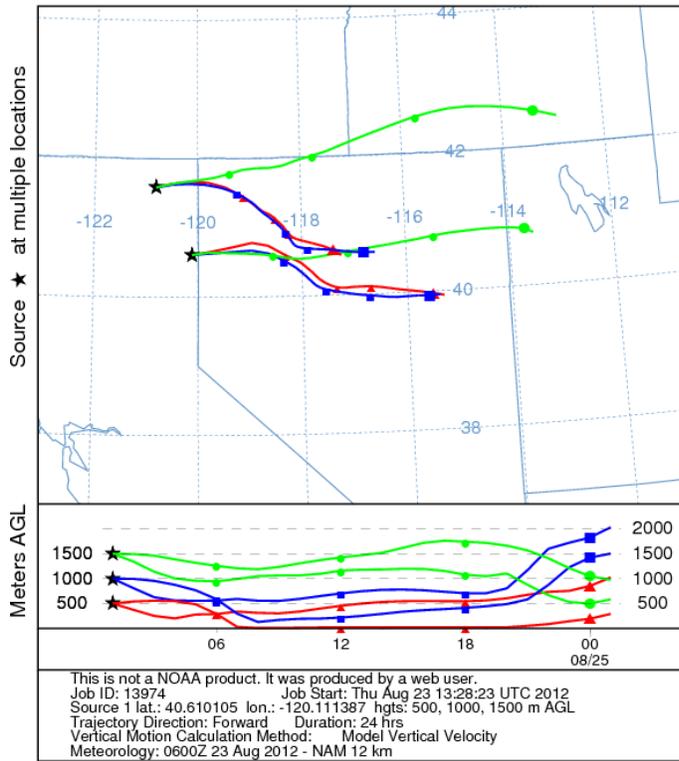


Figure 14. 24-hour forward trajectories for the Antelope fire and the Rush fire, starting at 6:00 PM PDT, Aug 23, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

NOAA HYSPLIT MODEL
 Forward trajectories starting at 0700 UTC 24 Aug 12
 06 UTC 23 Aug NAM Forecast Initialization

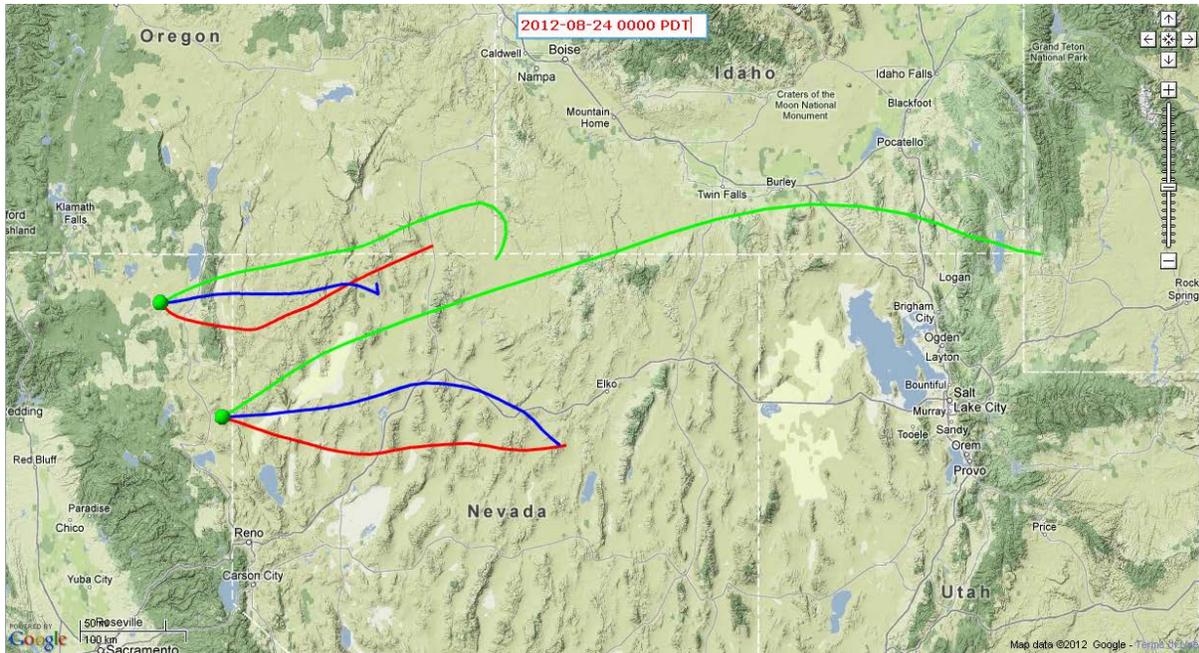
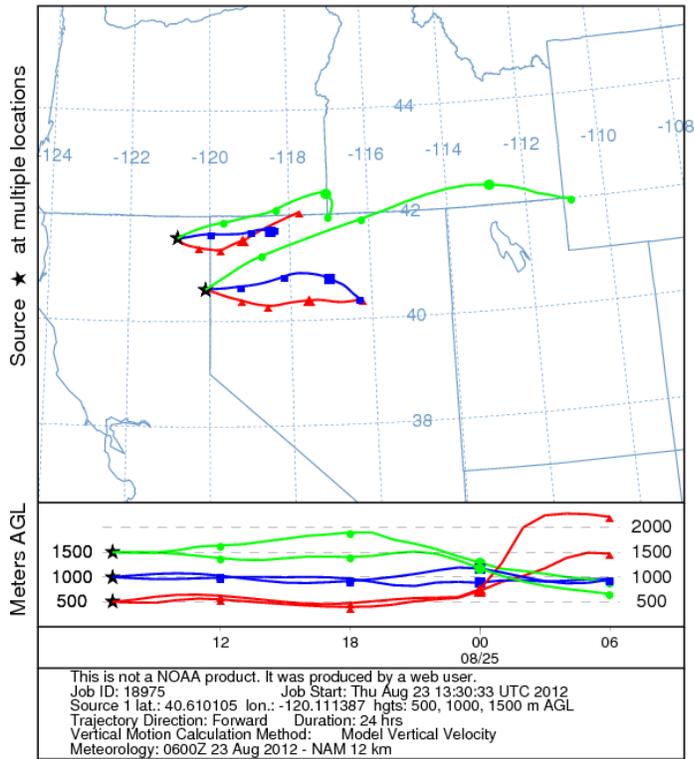


Figure 15. 24-hour forward trajectories for the Antelope fire and the Rush fire, starting at 12:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.

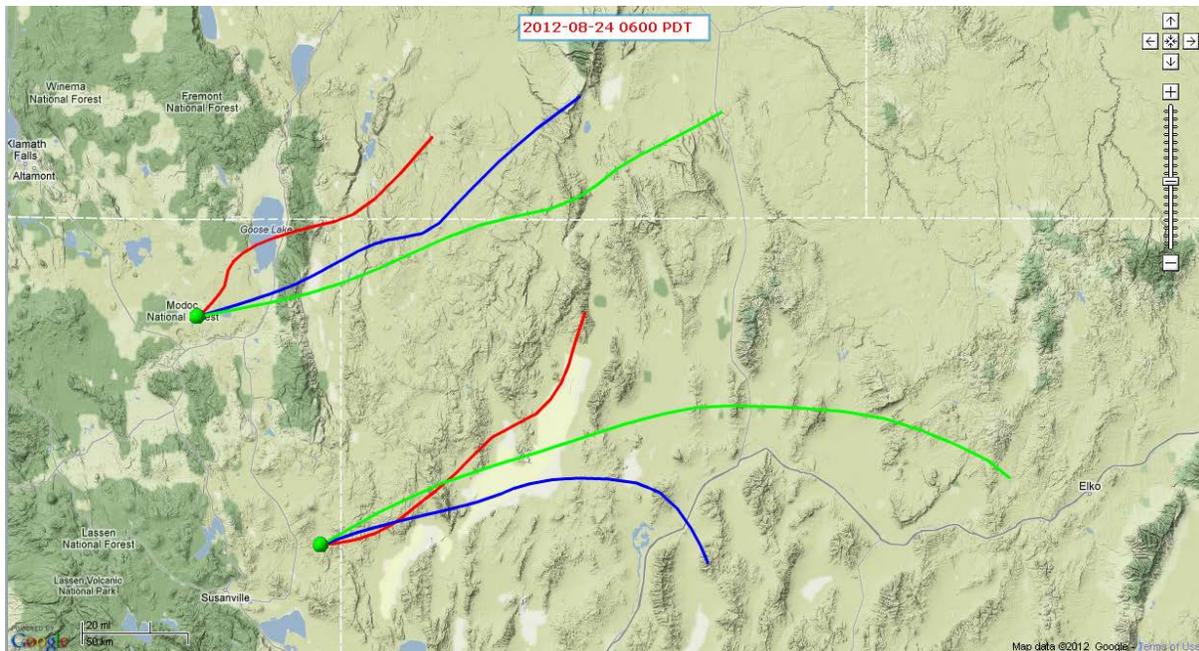
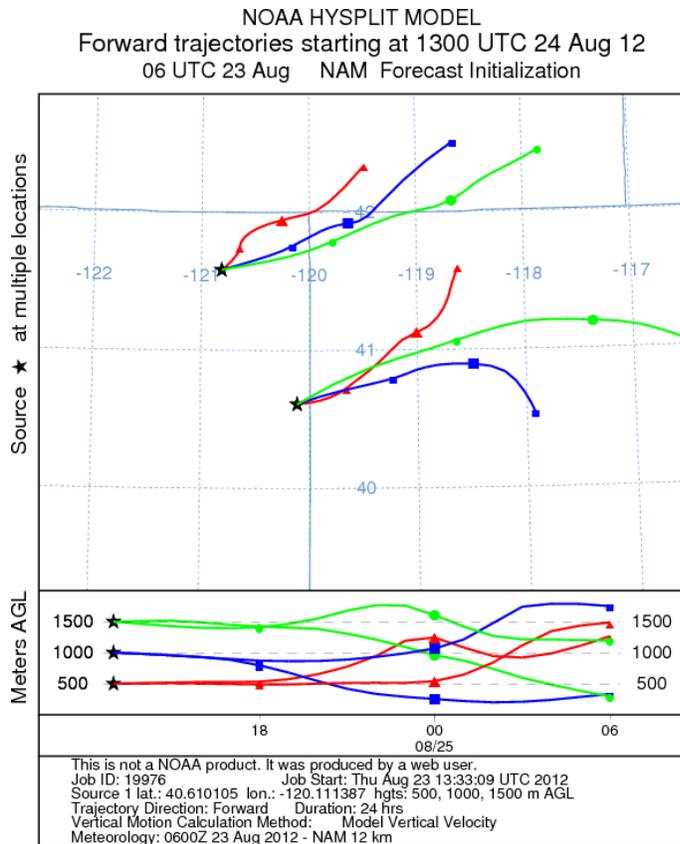


Figure 16. 24-hour forward trajectories for the Antelope fire and the Rush fire, starting at 6:00 AM PDT, Aug 24, with release heights of 500 (red), 1000 (blue), and 1500 (green) meters AGL.