

Highway 20 Trees

Facilitated Learning Analysis

Sisters Ranger District, Deschutes National Forest
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Participants:

- Rochelle Desser, USFS Regional Office: rdesser@fs.fed.us
- Shawna Bautista, USFS Regional Office: sbautista@fs.fed.us
- Maret Pajutee, USFS Sisters Ranger District: mpajutee@fs.fed.us
- Kristie Miller, USFS Sisters Ranger District: klmiller@fs.fed.us
- Sarah Callaghan, USFS Deschutes/Ochoco/Crooked River National Grassland: sacallaghan@fs.fed.us
- Ken Kittrel, USFS Deschutes/Ochoco: kkittrell@fs.fed.us
- Brent Oblinger, USFS Central OR Service Area: boblinger@fs.fed.us
- Will Lackey, ODOT-Salem: William.LACKEY@odot.state.or.us
- Andrew Smogor, ODOT Bend: Andrew.SMOGOR@odot.state.or.us
- Patti Caswell, ODOT-Salem: patti.caswell@odot.state.or.us
- Brent Nicolas, Oregon Department of Agriculture- Bend: bnicolas@oda.state.or.us
- Floyd Paye, Payes2spray (former Jefferson County employee): payes2spray@crestview.com
- Steve Davis, retired Jefferson County Public works employee: stevedavis3266@gmail.com
- Kent Pittard, Bayer Agrosience: kent.pittard@bayer.com

What happened?

- **Right of Way Treatment-** On state Hwy 20, the Oregon Department of Transportation (ODOT) is responsible to reduce unwanted vegetation and maintain highway condition. ODOT determines maintenance work needed according to state policies and plans. This work

is defined and coordinated with the US Forest Service through a Memorandum of Understanding (MOU). This work includes the use of herbicides.

- **Size of Right-of Way-** The size is variable but encompasses the area needed to maintain the highway, generally includes an area slightly beyond the road ditch.
- **Change in herbicide active ingredient made by USFS-** The Forest Service works closely with County and State road managers and herbicide applicators to discuss and learn more about treatment options. Floyd Paye noted that in 2012, then Deschutes/Ochoco Forest Service Invasive coordinator Deb Mafera expressed concern about the use of the herbicide *Throttle*® for this Right of Way Treatment and requested and then made a change of chemical to *Perspective*®. County specialists who were performing the application also cautioned the use of this herbicide.
- ***Perspective*® use on Highway 20-** It provides control on a broad spectrum of broad leaf weeds and very strong brush control, and is used at very low application rates, reducing the amount of herbicide applied.
 - **When did applications occur?** There were 3 applications of *Perspective*® on Highway 20. The first in 2013, the second in 2014 and the third in 2015. A surfactant called *Grounded*® that binds *Perspective*® to the soil was also used. The herbicides *Oust*® and *Esplanade*® were also applied.
 - **What distance was sprayed?** In 2013 and 2014, 8 feet was sprayed (1 foot on the Highway pavement and 7 feet beyond). In 2015, the distance was reduced to less than six feet due to the effectiveness of the earlier treatments. In some cases spray distance was limited to 4 feet from the edge of pavement.
 - **Caution about potential damage to non-target trees added to *Perspective*® label.** In 2011, the product label first mentioned potential damage to nearby trees under the Precautions section. In 2012 a briefing/Warning Statement was added to the herbicide *Perspective*®, saying injury or loss of trees may occur where it is applied near trees or their roots. It lists ponderosa pine as sensitive. The label does not say that the product cannot be used near susceptible trees, rather, it says that it should not be used, unless loss can be tolerated. No one finds the loss of mature ponderosa pine tolerable, nor was ponderosa pine the intended target for application. Please note that *Perspective*® was previously a DuPont product, now the product is owned by Bayer Crop Sciences. The label caution is on the Bayer label.
 - The warning statement can be found at:
http://www.dupont.com/content/dam/assets/industries/agriculture/assets/cp_PSD-65_K-25549-1.pdf
- **Tree damage first observed by Oregon Department of Agriculture (ODA) -** No tree damage was evident along Hwy 20 after the first application of *Perspective*® in 2013. In fall, 2014, Brent Nichols, pesticide investigator for ODA, began to notice tree damage. He took eight samples of needles and twigs from shoots of trees and soil from affected and non-affected trees in the area. Lab results were delayed due to workload. Chemical analysis

confirmed the presence of the herbicide active ingredient aminocyclopyrachlor on one roadside vegetation sample west of Black Butte. Active ingredients were not found in other soil and vegetation samples analyzed along the highway.

- **Tree Damage assessed by USFS** - In February of 2015, local Forest Service employees became aware of Ponderosa pine dieback on Highway 20 between Sisters and the intersection with Road 12 to Jack Lake. The Forest Service sought help from Forest Service-Forest Health Protection staff specialists and contacted ODOT. About 150 trees appear to be affected. Dieback and mortality is confined to trees growing immediately adjacent to the road right of way. The affected trees vary in size (not limited to small trees) and location. Some trees are dead and others have topkill and branch dieback, with needles and stems of shoots dying from the tip back, or crown thinning.
- **Forest Service Invasive Plant Treatments in the area-** The Forest Service has been using herbicides along Highway 20 between Sisters and Rd 12 for 17 years (since 1998) to control knapweed and later, (since 2012) medusahead. In 2013 and 2014, the herbicide *Plateau*® was applied by ODA Invasives specialist Mike Crumrine to patches of medusahead. These patches were generally on the east side of Hwy 20. Across from Tollgate Road, where medusahead was treated, along with the roadside application of *Perspective*®, deformed buds on trees and abnormal swellings on the stems of shoots were observed on a small ponderosa pine. This damage is consistent with herbicide injury attributed to *Perspective*®; *Plateau*® does not appear to be contributing to the damage.
- **ODOT's 5 year Cutback in chemical use-** For several years, ODOT has implemented a directive to reduce chemical use. One way to reduce chemical use is to reduce pounds per acre of active ingredient applied. Rotating to products such as *Perspective*® **results in fewer pounds of active ingredient applied per acre as the application rate is in ounces rather than pounds of products applied previously.** This is one factor influencing the selection of this product.
- **"The Label is the Law"**- The use of *Perspective*® was not a violation of the label because label language was cautionary rather than mandatory. The label caution says do not spray where conifers may be affected, unless loss can be tolerated. Because loss tolerance is a judgment call, this language is not considered a mandatory restriction.
- **Root Contact as an Exposure Mechanism:** Great care was taken to apply the products so that they stayed in the immediate road shoulder, however root contact as a mechanism of transfer may not have been fully appreciated.
- **Other Local Environmental Factors and Stressors:** This product may behave differently in this area than in other locations that are drier or are less forested. Many stressors were considered in the dieback of these trees including drought, exhaust and salts. Diagnostic indicators of herbicide damage such swelling on recent growth of shoots or callus tissue and the curling of new shoots (epinasty) are evident.

- **Turnover in Key personnel and communication** – Several key players retired or moved during the 2012-2015 period. This decreased or eliminated coordination and affected communications on the issue.
- **ODOT/USFS Facilitated Learning Analysis meeting-** On December 2, 2015 specialists from ODOT, the Forest Service, Bayer Crop Sciences, Oregon Department of Agriculture and the herbicide applicators for ODOT (former county employees) met to share information about what happened and conduct this Facilitated Learning Analysis.

What are the impacts?

- **Potential loss of scenic elements (especially Old Growth Pine)** - Highway 20 is an important scenic corridor managed by the Forest Service for scenic views. The highway views feature large old growth and open understories maintained by low intensity fire. Loss and damage to trees, especially large old growth pine, can affect forest scenery. Cutting, removing or dropping the trees can damage understory vegetation and leave large stumps in the viewshed.
 - **How many trees will eventually die?** We do not know how many trees will eventually die. The damage may still be developing. Forest Service Plant Pathologist Brent Oblinger predicts there will be more dead trees in the next couple years. This prediction is based on based on monitoring along other roads near Sunriver, OR where *Perspective*® also was associated with dieback and mortality of ponderosa pine.
 - **Do herbicide damaged trees pose a safety hazard?** Yes, when dead, trees within striking distance of the highway pose a hazard/danger. The Forest Service and ODOT will need to conduct danger tree evaluations along Highway 20 and will need to cut dead trees and trees with significant structural defects that pose a danger based on Forest Service guidelines. Trees with “Likely” or “Imminent” failure potential may fall on people using this popular highway.
- **This incident has the potential to become a “big deal”.** It may become entangled with current and past controversies around Highway 20 corridor. These issues may resurface in public discussion and memory. People in this community have been very involved in the management of the Highway 20 forest corridor. Some large, older ponderosa pines have been killed next to the right of way in the affected area (e.g., at the intersection of Highway 20 and the Tollgate Rd). These trees are highly valued and public outcry about their death or removal is likely.
 - A thinning project here in 1998 was an early success in building social support of forest vegetation management after many years of frequent appeals and lawsuits. Highway 20 showcased new approaches to forest thinning that are natural appearing and reduced fuels and fire risk.
 - **Highway Widening-**Approximately 10 years ago ODOT proposed to widen the Highway to 4 lanes west of Sisters. It was a very controversial issue. The project

was modified to 3 lanes. The biggest issue was loss of large pine trees. The highway was called the “Canyon of the Pines”.

- **Paved Trail-** In 2014, the Forest Service withdrew a decision to build a paved trail between Sisters and Black Butte Ranch to facilitate safe bicycle and foot travel. The project drew objections and opposition, but also has strong supporters. Issues involved concerns for impacts to the adjacent subdivision, as well as loss of big trees and wildlife habitat.
- **Trust between the agencies and with the public may be affected by this incident.** We are not out to blame anyone. We want to learn from this and improve. We want to tell our story to the public first to demonstrate our responsible and coordinated response to this incident.
- **Backlash could occur on the Forest Service Invasives program, ODOT’s Vegetation Management Program, and the MOU between ODOT and the Forest Service.** The Forest Service operates under the 2012 Invasive Plant Treatment EIS. Herbicide use was a major issue with the public in the EIS analysis. Most people are unaware of the herbicides used in the Highway 20 corridor. ODOT operates under the **Integrated Vegetation Management Program**
http://www.oregon.gov/ODOT/HWY/OOM/docs/ivm_program_summary.pdf

What worked well?

- **ODOT and the Forest Service have a Memorandum of Understanding (MOU) for road maintenance on state highways that cross National Forest.** Will Lackey (ODOT) and Shawna Bautista (Forest Service) have worked together well to explain the MOU to employees in both agencies and others.
- **Good coordination and cooperation exists between the Forest Service, ODOT and the County.** Coordination has become more challenging because of staff turnover within the Forest Service, ODOT, and the county. There is commitment to meeting this challenge.
- **The decision to stop using *Perspective*® was prudent.** The Forest Service requested that ODOT not use this product where trees are present on rights of way through National Forests.
- **There is a desire to continue to work with each other as partners and understand what happened along HWY 20, without assigning blame**
- **We gathered to talk and learn in this Facilitated Learning Analysis.**

Suggestions for Improvement

- **Improve coordination and communication between agencies.** Improve interagency coordination, schedule more “ride-alongs.” Share applicator and product information, share agency maps, share contact lists with each other annually. Schedule regular

meetings. Questions for ODOT - call Will Lackey. Questions for the Forest Service- call Shawna Bautista.

- **A process for conflict management needs to be developed between the agencies.**
- **Agency roles and responsibilities need to be clarified.**
- **A longer review period for the Pesticide Use Proposal needs to be provided.** One week is not enough to ensure the appropriate specialist review, especially for new or different products.
- **Precautionary Approach.** The product label contained important precautions regarding susceptibility of ponderosa pine and past problems with the product were well publicized. A more precautionary approach to interpreting the label warning could have prevented the loss of valuable trees on the National Forest. Effects of newer products may need to be monitored to ensure applicators and managers understand impacts prior to widespread use.
- **Manage Herbicide Resistance.** Consider using a variety of active ingredients and products with different modes of action over time to ensure that target plants do not develop resistance to a given product.
- **Product Selection.** Balance treatment effectiveness and risks; less active ingredient per acre does not necessarily equate to less risk to the environment.
- **Provide feedback to Bayer and other chemical companies.** Field experience helps improve label guidance.
- **Communicate more with the chemical reps to better understand their products.**
- **Empower applicators, encourage them to stop and ask questions.**
- **Develop public talking points that are consistent between the agencies.**

Next Steps

- **Finalize Facilitated Learning Analysis Notes.** Participants review and provide edits to these notes.
- **Develop Talking Points from this shared story.** Work with Public Affairs specialists to develop Talking Points we will all use based on this information.
- **Share information with the public using these Talking Points.** Release information to the public soon in a coordinated response from ODOT and the Forest Service.
- **Scheduling of regular meeting of FS and ODOT local staff.** Meeting to meet local contacts, discuss upcoming years application program, share maps, contacts lists and next steps for improvement of coordination and improvement.