

## 2019 Annual Fire Science Retreat: Carr and Delta Fires

Background: The intent of the annual fire science retreat is to foster discussions about how larger landscapes might be managed with fire and how to identify and measure a "desired" condition for largescale resilience. They are also an excuse to catch up, brainstorm, and explore different landscapes with researchers, managers and, occasionally, policymakers. Each year the retreat is held in a different location and typically focuses on visiting a recent fire or re-visiting a fire that was the focus of a previous year's retreat in order to discuss the landscape's recovery.

## Brief overview of the 2019 itinerary:

Monday, July 15th:

- Overlook near Shasta Dam Discussed how the severe effects of mining changed vegetation over much of the landscape from largely mixed-evergreen forest to chaparral and knobcone pine. Also discussed climate of the Klamath Mountains, emphasizing both the high temperature and high precipitation compared to the Sierra Nevada in similar forest types.
- Fire tornado site (Keswick Dam Blvd) Discussed the extreme fire behavior event and WUI issues.
- Whiskeytown National Recreation Area Viewed different levels of fuel treatment effectiveness in an area that the Carr Fire burned into.

Tuesday, July 16th:

- Telephone Ridge Discussed the use of prescribed fire in conifer plantations.
- Stop near Clear Creek Campground (east end of plantation burnout) Looked at some good fire effects and comparisons between plantations and natural stands.
- Dog Creek Bridge Discussed challenging terrain for suppression and working with managed fire; Observed and discussed Klamath vegetation.

Wednesday, July 17th:

Mosquito Creek Area (area of two Delta fires, 1985 and 2018) - Discussed repeated high-severity fire and vegetation type conversion.



Site of the fire tornado that occurred during the Carr Fire. Eric Knapp (PSW research ecologist) led a discussion about the extreme fire behavior.



Shasta Dam Overlook - Carl Skinner (PSW research geographer - retired) and Ben Newburn (SHF fire management officer) led a discussion on land-use and fire history in the area.



Whiskeytown NRA - Discussions led by Tom Garcia (fire management officer) and Eamon Engber (fire ecologist)

## Key takeaways:

- Managers should consider taking advantage of opportunities provided by recent wildfires in low- and moderate-severity burn areas where mature forests are still present and may have moved towards a more 'restored' condition after the fire, in addition to management efforts focused on large, high-severity areas, which have been degraded by the fire.
- Several forest types are converting to knobcone pine following high-severity fire, the trajectory of which is difficult to halt or reverse. These areas pose a challenge for managers, especially in the wildland urban interface (WUI) and under a warming climate with longer fire seasons. Once established, knobcone pine alters the fire regime to promote high intensity, severe fires and is difficult to manage.
- Extreme fire weather and fire events such as the fire tornado are difficult to predict and prepare for.
- Communication with the public and policymakers regarding the different issues managers face when managing these complex landscapes is essential in order to have the tools necessary to reduce future damage caused by wildfires.
- Although beyond the scope of managers and researchers, city planning needs to do a better job of restricting new developments in areas prone to high-severity fire and providing more egress routes.



Participants included USFS, BLM, Cal Fire, UC Berkeley, UC Davis, HSU, University of Washington, CA Forest Management Task Force, CA Natural Resources Agency, The Wilderness Society, Sierra Nevada Conservancy, National Park Service.

CONTACT: GABRIELLE BOHLMAN, 530-841-4450; GBOHLMAN@FS.FED.US