**Can mastication and prescribed burning be applied to simultaneously reduce fuels and control invasive plants?

Presenter's Name:** Ryan Tompkins
**Presenter's Company/Employer:** Univ. of Calif. Cooperative Extension
**Presenter's Title:** Forestry & Natural Resources Advisor
**Co-Presenter's Name:** Michelle Coppoletta
**Co-Presenter's Company/Employer:** USDA Forest Service Region 5 Ecology Program
**Co-Presenter's Title:** Ecologist
**Topic:** Invasive species management - new and effective approaches
**Proposal Type:** Individual Presentation
 **Abstract:**Over the past 20 years, managers of public lands in the western United States have witnessed an explosive spread of the highly invasive annual grass medusahead (Elymus caput-medusae). Traditional control methods (e.g. manual removal, herbicide application, prescribed burning) developed for rangeland applications may differ when applied to dry mixed conifer forests where land managers must balance fuel reduction goals with invasive plant control objectives. We implemented a small-scale, replicated field trial to investigate the effect of high intensity prescribed fire and treatment timing on medusahead abundance. We then applied these findings to a larger spatial scale, by designing an experimental fuel reduction treatment that had the dual purpose of lowering fuel loads and reducing medusahead abundance. The specific purpose was to investigate how some of the methods commonly used in landscape-scale fuel management, specifically mastication and prescribed fire, influence the frequency and cover of medusahead over both short (1-year) and long (10-year) time periods. The application of high intensity fire, regardless of timing, reduced the percent cover of medusahead at small scales. At larger scales, mastication and prescribed fire treatments significantly reduced the frequency of medusahead in the first year following treatment. However, in the absence of follow-up treatments medusahead increased over time, and ultimately had higher abundance than prior to treatment. These findings suggest that while some treatments may be effective at small spatial scales and over short timeframes, the variable effects often seen in prescribed fire treatments applied at larger scales can facilitate dispersal of medusahead into newly treated areas over the long term. (Authors include: Ryan Tompkins, UC Cooperative Extension; Michelle Coppoletta, USDA Forest Service Region 5 Ecology Program; Jim Belsher-Howe, USDA Forest Service, Plumas National Forest)