

Notes – Prescribed Fire Working Group, CalEPPC meeting, October 2, 2003

Questions/discussion from the group:

- 1) Chris _____ looking for information on effects of reintroduction of fire on invasive species in the Plumas NF. Jon Keeley's work in southern Sierra is not totally relevant – cheatgrass is not a big problem on Plumas. Someone replied that she has some results from Lassen NF – mullein and bull thistle have come in where there was high level of canopy mortality.
- 2) Someone else tried to do some Rx burns on serpentine to control annual ryegrass – got shut down 3 times for various reasons. In Marin County, haven't been able to burn in winter because of Tom Parker's research. But summer burns get shut down too often – need to explore other windows for burning.
- 3) Burning in Bishop area – hot burns over moist soil resulted in good regeneration of natives, but hot burns over dry soil killed soil bank. Kind of opposite of chaparral research.
- 4) Maritime chaparral Rx burns – got increase in veldt grass. Burn looked real good at first, but there was a seed source at a seep that wasn't killed by the fire.
- 5) Bill Winans recounted Robin Wills' experience at Santa Rosa Plateau – burned in spring to eliminate nonnative annual grasses, while maintaining perennial grasses. Dawn Lawson reported that in ordinance-burned areas on Camp Pendleton (which burns in spring), native perennial grasses are favored over annuals. Concern over effects on native forbs from spring burning. Dawn reported concern for native animals with every year spring burns.
- 6) Carla D'Antonio – did meta-analysis on fire in grasslands in California (will report on this tomorrow). Found that burning annual grasses is effective for one year – if burning is not continued, annual grasses tend to come back. Also, many exotic forbs increase significantly with fire. So it depends on what your goal is what kind of burning program you want to use. Someone else mentioned that fire tends to increase nonnative perennial grasses also (didn't type fast enough to get list of species). Wind dispersed weeds tend to come in after fire also.
- 7) What about leaving islands for wildlife? Irregular boundaries help; in larger burns, there are usually less-intensely or unburned patches. Dawn L – need to spell out your objectives for a Rx burn, can't recreate natural fire regimes, esp. in So Cal. Some of studies Carla reviewed found that adding grazing after fire helped keep the annual grasses suppressed.
-- Problems with studies she reviewed: no controls in a lot of them; only followed vegetation for 1 or 2 years after fire.
- 8) Agricultural burning – stubble and ditches – is done to help control weeds. But the fire air currents might actually help spread the seed? Dale Schmidt (?) answered: “It depends” (has apparently seen some seed spread this way).

9) With our litigious society, have to do prescriptions and analysis for every Rx burn. There aren't fuel models for perennial pepperweed or for burning tules at 4% humidity, for example. Too easy to get out of prescription using a model from somewhere else. Need researchers to help build these models for us. Bill Winans recommends writing a very broad prescription to make it easier to stay within.

9) Question about air quality and getting AQMD permits to do Rx burns. How do we convince air regulators to let us burn? In Central Valley, there is a LOT of public interest in burn programs – have had lots of smoke affecting people in the area. AQMD has to respond to public health issues as well as general air quality. Compare smoke output from Rx fire to wildfire – but it is hard to compare scheduled event to unpredictable “act of god” – no data on this.

10) Plea – when you do a burn, set up control plots. Take data. Measure attributes of the fire itself – intensity, severity, duration, flame length, etc. Doesn't have to be research-quality study. Collecting data costs money, also. Suggestion: someone produce a simple guide to how to make your burn meaningful in terms of data. Mostly we are looking for large effects from fires – not that complicated to collect data for this level. Suggestion – take advantage of local university personnel, data available from agencies. Most important characteristics: amount of fuel consumed; soil moisture; fuel moisture; seed head conditions; estimate of intensity from duff layer consumption, etc. Noted that DATE of burn is not a good indicator of season – depends on meteorological conditions that year. Phenological stage of key plants is more important. National Park Service Fire Monitoring Handbook (available on the web) has good set of measurements that NPS uses when conducting Rx burns. Linnea Hanson (Plumas NF?) reports that their Rx fire folks are very cooperative about collecting information.

Moving on to another topic....

How to reduce the risks of Rx fires escaping? Foam line in grasslands; blackline; hoselay and wetting down adjoining vegetation thoroughly; lighting pattern has some effect. Question about effects of timid line burn vs larger broadcast burn – aren't going to be ecologically equivalent. Q: What is in the Foam? A: Class A foam (like a soap).

Control of woody species using Rx fire:

Example: Broom control – burn reduced broom, stimulates seed bank; then cut new broom, burned it. Had less than desirable results. Madrone eliminated from system, coast live oak looks bad; annual grass is real sparse; but broom is still there. Didn't end up with the diverse oak woodland that they wanted. Will have to replant some of the native species. Mowing and burning once worked well, but need a different second treatment (wishes she could use herbicide – but can't because it is water district land). Others report similar experience. Some discussions about using flaming torch to kill new seedlings (rather than another Rx fire). Only seems to work on small plants. Mentioned some kind of New Zealand implement (very expensive – only leased the machinery). Coconut-sugar extract mixed with superheated water – basically “blanches” the weeds. Works from truck-mounted unit – limits operating area to roadsides. Foam disappears in about 10 minutes. It cost \$20,000 for the trial use.

What about fire – other method combinations (integrated control):

Biocontrols for yellow star-thistle achieve only about 50% seed kill. Biocontrol agents seem to recover quickly from fire.

Someone mentioned an area of star-thistle that recently burned in a wildfire – hesitant to use Rx fire because of public concerns (it is WUI situation). Joe DiTomaso mentioned that fire alone had pretty good impacts on medusahead. Plataea (herbicide) yielded
How large were Rx burns?
A: 100 by 100 feet (1/4 acre) – pretty small plots.

Bruce McArthur – has seen examples of herbicides that wilted stuff down (make it easier to burn). FS used to do “brown and burn” – but less use of herbicide in NF now.

Q: does treating star-thistle increase medusahead? Sometimes (herbicide, not Rx fire). Ripgut brome doesn't like to be burned. *Vulpia* does like it (also nonnative forbs like *Erodium*).