

Pre-fire Planning Insured That the Railroad Fire Turned Into An Invasive Species Management Opportunity

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By the time it was contained on July 8, 1999, the Railroad Fire in the Great Basin of Utah had consumed 63,000 acres. Sixty percent of this fire was on BLM land that contained infestations of squarrose knapweed and other invasive, non-native vegetation. However, BLM land managers were ready once the fire was out. Pre-fire planning insured that the Railroad Fire turned into an invasive species management opportunity.

“Your window of opportunity for effective post-fire weed management is the fall and spring following the fire. This window is relatively short, but it is critical. Once cheatgrass, knapweed, or other invasives take over that site, the site’s capability threshold lowers. This renders site rehabilitation almost operationally impossible. Once a site’s natural capability is lost, only a massive infusion of management inputs can bring it back and most of the time we simply don’t have the money or manpower

for those inputs,” Pat Fosse explains. Fosse is BLM’s assistant field manager in the Fillmore Field Office.

“Research shows that invasive species like knapweed really explode after a fire,” Fosse says. However, weeds are also easier to spot for mapping and treatment and easier to kill after a fire. We view fires as an opportunity to get ahead of noxious weeds, but it requires planning and pre-fire prep work.”

After the fire, Fosse spent 15 days mapping the burned area. From Sept. 1 through freeze-out on Nov. 1, 1999, BLM seasonal ATV spray crews already hired for the spring through fall season were spot spraying roads, washes, and draws with Grazon* P+D at a rate of 3 qt./acre in 25 gallons of water per acre. The ATVs were equipped with Boom Buster nozzles capable of 15 to 20-ft. widths and handguns.

Fosse mapped out 5,600 acres that were aerially treated with Grazon P+D at 3 qt./acre in five gallons of water with fixed-wing aircraft on September 28 through October 3, 1999. On April 28, 2000, an additional 3,960 acres were aerially treated. In November 1999, grass seeding with drills and aerial seeding were completed on the burn. In December, the aerially seeded areas were chained to incorporate the seed and break up burned brush, pinyon, and juniper trees.

In the spring of 2000, Fosse, along with the seasonal spray crew, checked all the roads again and in the fall the seasonal ATV crews work back through the burned area to spot-treat any escapes. “We achieved 90% to 100% control of squarrose knapweed with this program. Overall, we had more areas with 100% control in the spring treatments, based only on our visual analysis,” Fosse states.

Fosse says land managers should be confident that they can achieve the same results on other knapweed species. “Based on university research, squarrose knapweed is one of the more difficult species to control, so results should be similar or even better on Russian, spotted, or diffuse knapweed.”

“Re-seeding is critical in our situation,” she says. “Plant competition enhances herbicide effectiveness and herbicides enhance grass competition. The two practices are integral in areas without adequate understory, so I recommend that if you don’t have the budget to re-seed, then don’t waste your money spraying. You must look at the understory with weed work to know a site’s capability and how much competition is enough to keep unwanted weeds from re-invading the site.”

Fosse also says that no one agency can do it alone. Their success is only achieved through the cooperation and assistance of local counties (Juab County and supervisor Bob Garrett in the Railroad Fire), state lands, the Utah Department of Agriculture, the USDA Forest Service Rocky Mountain Research Station, Utah Division of Wildlife Resources, and other agencies.

“Your plan and management tools must be operational to be successful,” Fosse concludes. “Cooperation with private landowners and other agencies is the best way to save time and money so you can get the job accomplished.”

Keys to Emergency Fire Rehabilitation Weed Management

1. Be prepared. In your Normal Year Fire Plan and NEPA make sure you include detection, control and monitoring for noxious weeds.



Then when a fire burns through an area in which weeds occur or are likely to spread, you only need to complete a tier to your existing NEPA document.

2. Make sure that your Pesticide Use Proposal (PUP) covers the entire area under your jurisdiction, not just where you plan to treat for that year. This allows flexibility, not only to treat any new, small infestations of noxious weeds as they are found, but also to treat within any burned areas, as necessary.

3. Have an existing GIS inventory completed! When the fire is controlled, layer the fire perimeter over the weed inventory. It will be very helpful, not only in justifying your request for weed management funding in your EFR plan submission, but also in planning where to start your intensive weed mapping for post-fire weed management. To begin mapping, put the perimeter of the fire(s) over your weed inventory in GIS and print your maps. This will give you a good idea where to start. If you do not have an existing GIS inventory, don't let it prevent you from post-fire weed management. Weeds are easily seen to map and treat following a fire and it may be a good opportunity to start your GPS inventory. One tip in EFR projects is to use different colored flagging to indicate different treatments. Example: drilling is marked by green flagging, chaining by orange flagging, survey corners and areas to avoid within the drill or chain areas are marked with pink, weeds with blue, etc. Once areas are flagged, GPS the different treatments and use your Arc View maps to prepare contracts.

4. Most noxious weeds are easily mapped in the fall following a fire. They are the first, and sometimes the only, species to emerge from the

blackened soil during the first few months following the fire. For example, many plants of squarrose knapweed are 18 inches tall and in full flower during September or October following a fire.

5. Take your spray tank with you when you are mapping. Any very small infestations can be treated immediately without slowing you down in your mapping effort. Bigger infestations should be mapped either for ATV, truck, or aerial treatment depending on the size and density of the infestation.

6. Our ATV crew starts in burned areas in September. Roads and trails that will be used by other agency staff working on the EFR effort should be checked and if necessary, treated as highest priority to stop spreading weed seed into the burned areas.

7. We have been very successful with October and April aerial and ground treatments following a fire. Research completed by Steve Dewey, USU Extension Weed Specialist, shows that if knapweed occurs in an area that is burned and no treatment is completed, the knapweed would increase as much as 120% in one year.

8. Develop an Agreement or MOU with the County Weed Department. The county procurement process is much less time consuming than Federal agencies. Therefore, if you have an Agreement or MOU in place, money can be transferred to the counties and they can hire the aerial contractor or complete work that you do not have the capability to complete. There are two documents that can be used to transfer money to counties – Justification for Noncompetitive Procurement (JNCP) and Assistance Agreement (AA).

9. In areas you plan to aerial spray for weeds, do not include any forbs

or shrubs in the seed mix for that area. If you spray in the fall, spray at least two to three weeks before you fly the seed on, so the herbicide does not affect the grass seed. If you spray in the spring, you must wait until the seeded grasses have their second leaf. In Utah, that is about mid-April.

10. Use an aerial applicator who has planes or copters equipped with GPS, as they are much more accurate in applying the herbicide where it is intended. If areas are mapped and flagged, it is easy to talk to the pilots every time they land and guide them through the areas. It is necessary to have someone very familiar with the area to do this.

11. Aerial treatments should be “cleaned up” by ATV crews about 6 months after the initial treatment to control any obvious survivors and protect your investment.

12. Any treatments should be monitored with at least photo plots. Permanent transects can also add valuable information.

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