

Restoration of pile burned areas to reduce the risk of post-fire weed expansion after fuels treatment

2006 Accomplishments

This is the first report of a three year study (2006-9) on the restoration of pile burns to reduce post-fire weed expansion. During the first year, 45 piles of varying sizes (small, medium, large) were monitored pre- and post-burn for:

- fuel loads,
- bulk density,
- particle size distribution,
- fuel consumption, and
- soil temperatures during pile burning.

After pile burning, samples were taken 3 meters outside the pile, at the edge of pile, and in the pile center for:

- total nitrogen,
- total carbon,
- phosphorus (highest in center),
- ammonium (highest in center, intermediate at edge, lowest in unburned),
- nitrate (too early for nitrate differences),
- microbial biomass to a depth of 10 cm (no difference), and
- mycorrhizal viability to a depth of 10 cm (no difference).

Analyses are on going.

This fall:

- resin capsules were buried in burned piles to determine *in situ* ammonium and nitrate concentrations,
- 12 piles were divided into fifths and received 5 treatments (control, scarified soil, scarified soil+ native soil, scarified soil+ compost), and
- 12 piles were seeded with native grasses (Bitterroot NF restoration mix), divided into fifths, and received 5 treatments (control, scarified soil, scarified soil+ native soil, scarified soil+ compost).

The research is on schedule and we will be getting our first results for restoration efficacy next spring.



Spotted knapweed and tumble mustard on recent pile burn (Bitterroot NF)

Year Awarded: 2006

Project completion: 2009

Report number: 1 of 3

Expenditures:

- FY06 funding \$21,000, expend. \$12,533; \$52,734 remaining for next two years

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