

Seeding to control weed invasion on the Strawberry Hill fire

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Revegetation of the understory in burned stands may occur rapidly by natural processes, especially when the fire is not severe. In cases of intense fire, revegetation of native plants will occur slowly, leaving the site vulnerable to weed invasion and erosion.

Forest Practices Branch (Range Section) of the Ministry of Forests and the Southern Interior Forest Region (Range) recommend that:

"Broad scale seeding of all burned areas is unnecessary, and inappropriate within the context of managing for a natural landscape. However, some areas may need to be seeded to address weed control, erosion control, and forage replacement concerns and to take advantage of an opportunity to improve livestock distribution and provide forage enhancement."

There is a general concern that seeding non-native plant species into burned areas may ultimately affect the diversity of native understory plant species and inhibit the recovery of native shrubs that are important to wildlife (among other things).

OBJECTIVES

- To test the efficacy of seeding a non-native seed mix in preventing weed invasion within severely burned dry forests.
- To test if seeding a non-native seed mix alters the recovery of native species.
- To test the efficacy of seeding a non-native seed mix in reducing the hydrophobicity of forest soils.
- To determine the efficacy of seeding a native seed mix in preventing the spread of an adjacent population of Dalmation toadflax (*Linaria genistifolia*).



Applying seed (May 2004)



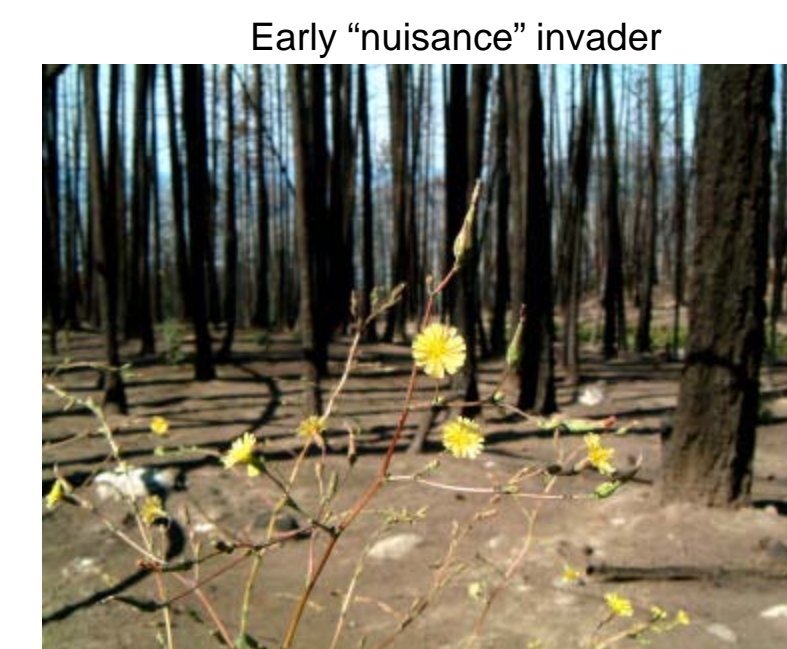
Established seeded species (Fall 2004)



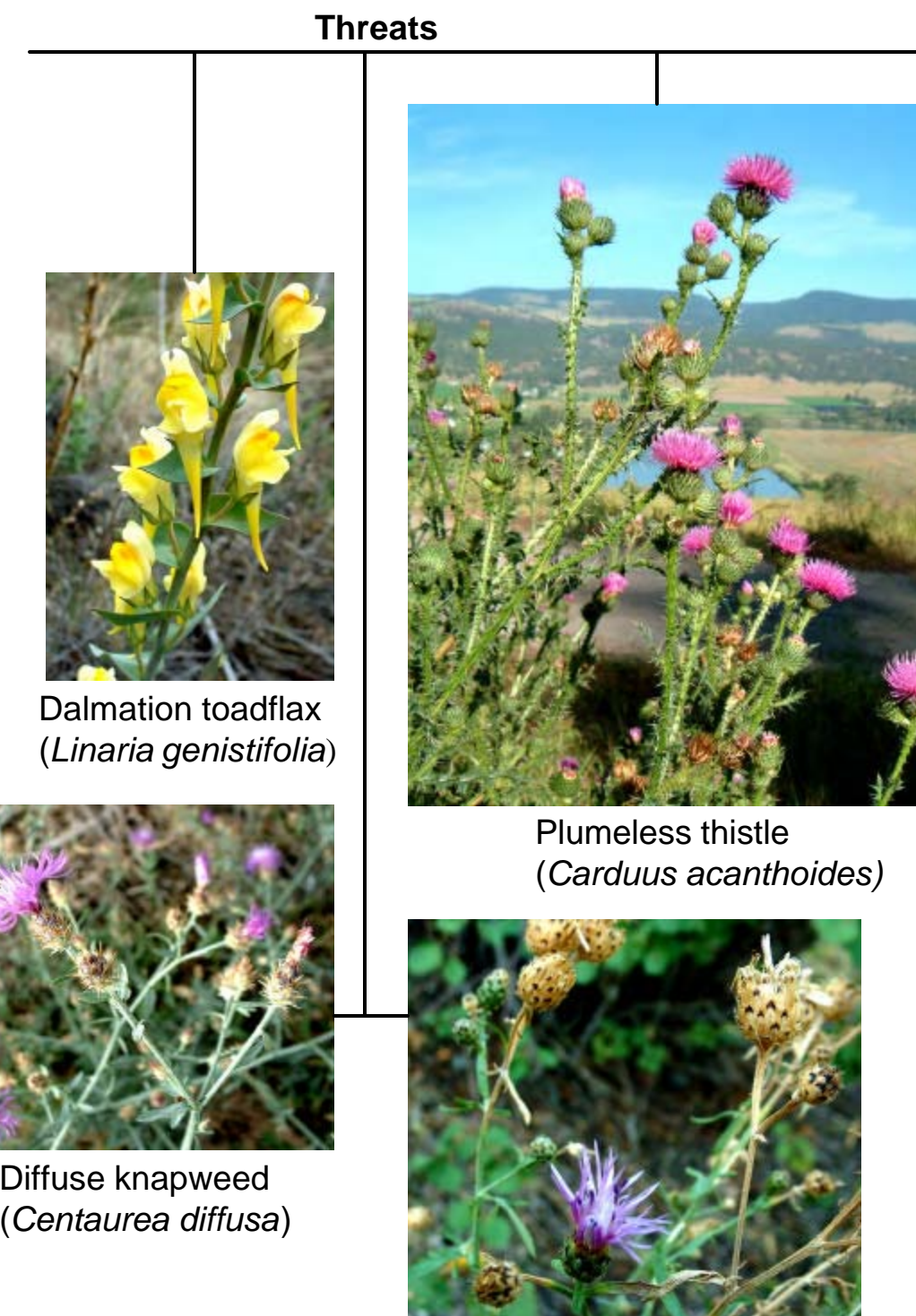
Fireweed (*Epilobium angustifolium*)



Pinegrass (*Calamagrostis rubescens*)



Prickly lettuce (*Lactuca serriola*)



Dalmation toadflax (*Linaria genistifolia*)



Plumeless thistle (*Carduus acanthoides*)



Spotted knapweed (*Centaurea biebersteinii*)

The study area was severely burned during a wildfire that occurred in August 2003 (Strawberry Hill Fire). Very few understory plants survived on some areas. The site occurs in the Very Dry hot Interior Douglas Fir (IDFxh) biogeoclimatic subzone. The plant community is characterized by pinegrass (*Calamagrostis rubescens*) with bluebunch wheatgrass (*Pseudoroegneria spicata*) occurring on steep south facing slopes and on open areas. Several invasive alien species of concern occur at or near the site. Dalmation toadflax (*Linaria genistifolia*) occurs throughout the area along roadsides and where the ground is disturbed. Other significant invasive alien species found in the area are plumeless thistle (*Carduus acanthoides*), Canada thistle (*Cirsium arvense*), spotted knapweed (*Centaurea biebersteinii*), and diffuse knapweed (*Centaurea diffusa*). A non-native seed mix (Table 1) was applied aerially in strips of about 250 m x 50 m at a rate of 5 kg/ha. Equal interspersed areas were left unseeded. Seeding occurred on May 26, 2004. Plant cover will be sampled annually for the next 5 years, and thereafter at 5 year intervals.

A separate, small plot trial will examine the efficacy of a native seed mix (Table 2) in preventing the spread of an adjacent population of Dalmation toadflax.

Table 1. "Blue Tag Mix" - Ministry of Forests, Kamloops District - used at McGillivray, McLure, Venables and Vermelin for weed and erosion control.

Common name	Scientific name	Weight (count) ---- % ----
Italian rye grass	<i>Lolium multiflorum</i>	32 (30)
Creeping red fescue	<i>Festuca rubra</i>	5 (15)
Canada blue grass	<i>Poa compressa</i>	4 (15)
Timothy	<i>Phleum pratense</i>	4 (10)
Western wheatgrass	<i>Pascopyrum smithii</i>	35 (15)
Rambler alfalfa	<i>Medicago sativa</i>	20 (15)

Table 2. "Pink Tag Mix" - Ministry of Forests, Kamloops District - used at Fishtrap RMZ for weed control.

Common name	Scientific name	Weight (count) ---- % ----
Italian Rye Grass	<i>Lolium multiflorum</i>	24 (30)
June Grass	<i>Koeleria macrantha</i>	2 (15)
Western Wheatgrass	<i>Pascopyrum smithii</i>	30 (20)
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	20 (15)
Slender Wheatgrass	<i>Elymus trachycaulus</i>	24 (20)

Legumes colonizing from deeply buried, long-lived seedbanks



Hillside milk-vetch (*Astragalus collinus*)



Timber milk-vetch (*Astragalus miser*)

Survivors from deeply buried bulbs/corms



Nodding onion (*Allium cernuum*)



Mariposa lily (*Calochortus macrocarpus*)

Seeding treatments were made possible by Kamloops Forest District. Support was also provided by Craig Yungmeyer of the 7-O Ranch and Western Diversification Canada, Community Futures Thompson Country.