
Range and Noxious Weeds Specialist Report

Purpose & Need

The Pike-San Isabel National Forest Supervisor proposes to implement the National Fire Plan (USFS 2000) with the Trout-West Fuels Reduction Project. The Fire Plan identifies Woodland Park as an urban interface community at risk from catastrophic wildfire. The proposed project is intended to decrease the threat of wildfire to Woodland Park and surrounding communities through reducing hazardous fuels within the urban interface. The potential effects of wildfire need to be moderated within the Trout-West area to provide for public safety and beneficial uses. The risk of adverse effects from wildfire is high (and increasing) within much of the Trout-West project area. The purpose of the Trout-West Fuels Reduction Project is to reduce the potential for damaging wildfires where high hazard, risk, and values overlap. *The project purpose and need is described in detail in Chapter 1 of the Environmental Impact Statement.*

Proposed Action and Alternative Activities

Fuels reduction treatments are proposed on 6,750 to 26,320 acres (acres of treatment vary by alternative) within several treatment areas in the Trout and West Creek watersheds. Fuels reduction can take many forms: thinning and removal of cut vegetation, thinning and on-site slash treatment such as piling and burning, and burning without any thinning at all. The Proposed Action would implement a mix of these treatments, depending on site conditions. The treatments are intended to moderate the potential adverse effects of wildfire, provide for firefighter and public safety, and reflect historic conditions that are thought to be more sustainable than current conditions. *The Proposed Action alternative and other alternatives are described in detail in Chapter 2 of the Final Environmental Impact Statement.*

Range Resources

Introduction-Range

The Range Resources section will discuss management direction, current conditions, and environmental consequences of the proposed alternatives on the range vegetation and livestock grazing resource areas. The analysis area for the range resources discussion will be the entire Trout-West Project watershed.

Management Direction-Range

The management direction for the range resources within the allotments is described in the Pike San Isabel NF Forest Plan (1984), pp III-35-40. The Forest Plan management direction and goals for the range resources are summarized below:

- Provide forage to sustain local dependent livestock industry as well as wildlife populations in Statewide Comprehensive Wildlife Management Plans for National Forest System Lands. (FP, page III-35)
- Manage livestock and wild herbivores forage use by implementing allowable use guides. (FP, page III-35)
- Achieve or maintain satisfactory range conditions on all rangelands. (FP, page III-39)
- Utilize transitory forage where investments in tree regeneration can be protected. (FP, page III-39)
- Protect tree regeneration from livestock damage. (FP, page III-40)
- Structural range improvement should be designed to benefit wildlife and livestock. (FP, page III-40)

Affected Environment-Range

There are portions of seven (7) allotments in the project area. Figure 1 shows a map of the allotments boundaries in relation to the project area. The allotments, acres, and class of livestock are summarized in Table 1.

Table 1: Livestock Allotments in the Trout-West Project Area

Allotment Name	Acres in Project Area	Class of Livestock
Beaver Ranch	1,095	Cattle Cow/Calf
Crystal	3	Cattle Cow/Calf
Limbaugh	745	Cattle Cow/Calf
Manitou	1,230	Cattle Cow/Calf
Montague	580	Cattle Cow/Calf
Phantom	14,345	Cattle Cow/Calf
Ryan	2,610	Cattle Cow/Calf

There has been a range analysis survey completed in the project area and a draft Environmental Assessment for updating the individual allotment management plans is ongoing (Pikes Peak RAMPS EA). That analysis information showed the area to be in a fair to good vegetative condition with a static trend for some allotments and an upward trend for some allotments

The major vegetation types in the allotments are ponderosa pine/bunchgrass, Douglas-fir/bunchgrass, open meadows, and some aspen hardwood areas. The ponderosa pine/bunchgrass is the most widespread vegetation type for all the range allotments in the project area; however, meadows types that are being encroached upon by ponderosa pine are also an important vegetation type in the allotments.

Environmental Consequences-Range

This section will discuss the effects of implementing the No Action alternative and the action alternatives on the range resource area. The analysis area for the environmental consequences section is the entire project area.

No Action Alternative

Current grazing practices would continue on all livestock allotments in the project area. Ongoing range structure and improvement maintenance would continue. The No Action alternative will have no direct impact to the range resource; however existing conditions in the project area are characterized by the long-term loss of meadows through conifer encroachment and the increased acres of dense forest types with little forage available for livestock. This situation would likely continue under the No Action alternative. A large, destructive wildfire in the project area would have adverse effects, in the short-term, on the range resource by damage to soil, watershed resources, and livestock improvements. Livestock grazing operations are usually adversely affected in the short-term (1-3 years post fire) by the management restrictions designed to protect soil and watershed conditions after a large destructive wildfire. Additionally, livestock grazing improvements such as fence lines, water developments, and corrals may be adversely affected by large wildfires. In the long-term, large wildfires can have a positive effect on the livestock grazing resource due to the large acres of transitory range that results from post-fire grass seeding on areas affected by high-intensity wildfires.

Proposed Action Alternative

The project activities of forest stand thinning and prescribed burning would positively affect both the short-term and long-term range conditions by reducing the conifer density in forested stands, increasing transitory range forage, reducing conifer encroachment in meadows, and re-invigorating vegetation by prescribed fire. All these proposed treatments in the Proposed Action would have a positive effect on range conditions and increase available forage for livestock. The threat of large destructive wildfires will be reduced with the potential for loss of short-term grazing access and existing range improvements. This alternative would have a beneficial long-term effect for livestock grazing on an estimated 25,000 acres.

Alternatives A-E

The effects of all the other action alternatives are similar to the Proposed Action. Long-term impacts for the grazing resource will be beneficial due to the more open condition of the forested stands that allow more grass species to thrive and livestock access will be facilitated. Short-term impacts are the restrictions to livestock grazing and movements caused by logging slash and logging equipment safety zones restricting access to permittees. Short-term impacts would be limited to acres treated in each year and would move around the project area from year to year. The different alternatives treat significantly different amounts of acres, and the alternatives with the most treatment acres would benefit the livestock grazing the most in the long-term.

Summary of Effects of the Alternatives

The effects of the alternatives on the livestock grazing resource are summarized in Table 2, with the acres treated as the indicator of long-term beneficial effects. The alternatives are ranked by acres treated.

Table 2: Summary of Effects on Livestock Grazing, by Alternative

Alternative	Acres Treated	Beneficial Ranking (1-7, with 1 rated highest)
Alternative E	26,320	1
Proposed Action	20,170	2
Alternative C	20,170	3
Alternative A	19,220	4
Alternative B	13,570	5
Alternative D	6,750	6
No Action	0	7

Cumulative Effects

The Polhemus Rx Burn, Trout Creek Timber Sale, and the 2002 Hayman Fire would have short-term restrictions on livestock use due to treatments, fire closures, and fire rehabilitation treatments; however, long-term beneficial effects would occur for livestock grazing due to increased transitory range created by opening of forested stands by both the planned management acuties and the Hayman wildfire. The cumulative effects of these activities and the project activities would result in long-term increases in forage for the livestock grazing resource

Noxious Weeds

Introduction-Noxious Weeds

The Noxious Weeds section will discuss management direction, current conditions, and environmental consequences of the proposed alternatives on the noxious weed resource areas. The analysis area for the noxious weed discussion will be the entire Trout-West project area.

Exotic and invasive plants (noxious weeds) are alien species that are deemed detrimental to economic crops, can carry diseases or insects, poisonous to livestock, and may be detrimental to an agricultural or environmentally sound ecosystem (USFS 1998). They are typically introduced to an area, often times from a different continent, and would not occur there in a sound natural habitat. Noxious weeds can be very disruptive and have the potential to take over complete plant communities. The control of these species is very difficult due to their ability to adapt to an ecosystem relatively quickly¹.

¹ Source: Landscape Assessment Upper South Platte Watershed, Appendix G: Exotic and Invasive Plants

Management Direction-Noxious Weeds

Management direction for noxious weeds is found in the Forest Plan (1984) and the 1998 Environmental Assessment for Management of Noxious Weeds. The Forest Plan management direction (Forest Plan, page III-40) and goals for noxious weeds are summarized below:

- Treat noxious weeds in priority by:
 - Leafy spurge, Russian and spotted knapweed
 - New invasions of noxious weeds
 - New infestations of noxious weeds
 - Expansions of existing sites for Canada and musk thistle
 - Reduce acreage of current infestation

A management plan for the Pike and San Isabel National Forests and the Cimarron and Comanche National Grasslands is currently in place for the control of noxious weeds. This plan identifies an Integrated Weed Management approach to control these species. Integrated weed management would use herbicide, manual, mechanical, and biological treatment methods. Management direction in the 1998 Noxious Weed EA and the 1998 DN/FONSI includes the following:

- Prevent the introduction and establishment of noxious weeds
- Contain and suppress existing noxious weed infestations
- Cooperate with other Federal, State and local agencies/organizations to control noxious weeds
- Use of education and public awareness to control noxious weeds

Affected Environment-Noxious Weeds

Current noxious weeds known to occur in the project area include Canada thistle, musk thistle, yellow toadflax, and leafy spurge. A field survey for noxious weeds was planned by contract for the 2002 season and the results of that survey will be available in October 2002. That information will be used for noxious weed control activities in the project area. [Table 3](#) shows the known species of noxious weed in the project area. There are no recent estimates of the acres of each species; however an intensive survey is planned for 2002 field season. [Figures 2a and 2b](#) display the known locations of noxious weeds in the project area.

Table 3: Noxious Weed Species Known From Project Area

Common Name	Scientific Name
Canada thistle	<i>Cirsium arvense</i>
Musk thistle	<i>Carduus nutans</i>
Yellow toadflax	<i>Linaria vulgaris</i>
Leafy spruce	<i>Euphorbia esula</i>

Discussion-Noxious Weeds

Canada Thistle² (*Cirsium arvense*)



Canada thistle is a member of the Aster or Sunflower family. Canada thistle was introduced from Europe. It is a creeping perennial that reproduces by seeds and fleshy, horizontal roots. The erect stem is hollow, smooth, and slightly hairy, one to five feet tall, simple, and branched at the top. The leaves are set close on the stem, slightly clasping, and are dark green. Leaf shape varies widely from oblong to lance-shaped. Sharp spines are numerous on the outer edges of the leaves and on the branches and main stem of the plant. The flowers are small and compact, about 3/4-inch or less in diameter, and light pink to rose-purple in color, occasionally white. The seeds are oblong, flattened, dark brown, and approximately 1/8-inch long.

Canada thistle emerges in April or May in most parts of Colorado. It is one of the most widespread and economically damaging noxious weeds in Colorado. Infestations are found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns and gardens, roadsides, and in waste areas. Because of its seeding habits, vigorous growth, and extensive underground root system, control or eradication is difficult. It is distributed across Colorado from 4,000 to 9,500 feet. In the Trout-West project area there are several known sites; however, the estimated acres of infestation are unknown.

Musk Thistle³ (*Carduus nutans*)



Musk thistle is a member of the Aster family, Thistle tribe. It is an introduced biennial, winter annual, or rarely annual that reproduces by seed. The first year's growth is a large, compact rosette from a large, fleshy, corky taproot. The second year stem is erect, spiny, two to six feet tall and branched at the top. The leaves are alternate, deeply cut or lobed with five points per lobe, very spiny, three to six inches long and extend (clasp) down the stem. The waxy leaves are dark green with a light green midrib and mostly white margins. The large and showy flowers are terminal, flat, nodding, 1.5 to 2.5 inches broad, purple, rarely white, and surrounded by numerous, lance-shaped, spine-tipped bracts. Blooms appear in late May and June and set seed in June or July. Seeds are straw-colored and oblong.

² Source: Colorado Weed Management Association <http://www.cwma.org/>

³ *ibid*

Musk thistle is commonly found in pastures, roadsides, and waste places. It prefers moist, bottom land soil, but can be found on drier uplands, also. It is becoming an increasing problem throughout Colorado, particularly along the Front Range.

In the Trout-West project area there are several known sites; however, the estimated acres of infestation are unknown.

Yellow Toadflax⁴ (*Linaria vulgaris*)



Yellow toadflax, sometimes called common toadflax and butter and eggs, resembles the snapdragon in appearance and is a member of the Figwort family. It was introduced from Europe as an ornamental and has now become a serious problem to rangeland and mountain meadows. It is a perennial reproducing from seed, as well as from underground root stalk. The stems of yellow toadflax are from eight inches to two feet tall and leafy. Leaves are pale green, alternate, narrow, and pointed at both ends. The flowers are bright yellow with deep orange centers. These flowers are about an inch long and blossom in dense clusters along the stem as it lengthens and grows. The fruit is round, about 1/4 inch in diameter, brown, and contains many seeds.

Yellow toadflax emerges in April and May in most parts of Colorado. It is adapted to a variety of site conditions, from moist to dry and does well in all types of soils. Its displacement of desirable grasses not only reduces ecological diversity, it also reduces rangeland value and can lead to erosion problems. Because of its early vigorous growth, extensive underground root system, and effective seed dispersal methods, yellow toadflax is difficult to control. In the Trout-West project area there are several known sites; however, the estimated acres of infestation are unknown.

Leafy Spurge⁵ (*Euphorbia esula*)

Leafy spurge, a member of the Spurge family, was introduced from Europe. It is a creeping perennial that reproduces by seed and extensive creeping roots. The roots can extend as deep as 30 feet and are extremely wide spreading. The shoots grow erect, one to three feet high, are pale green and unbranched except for flower clusters. Leaves are alternate, narrowly linear with smooth margins, about 1/4 inch wide, and one to four inches long. The small yellow-green flowers are enclosed by a pair of yellowish-green, heart-shaped bracts. The bracts have the appearance of flowers. The pods are three-seeded. The plant, including the root, has milky latex that is damaging to eyes and sensitive skin.

⁴ ibid

⁵ ibid



Leafy spurge is an extremely difficult plant to control because of its extensive sprouting root system and is probably the most serious noxious weed threat in Colorado. It is one of the four weeds that must be managed statewide in accordance with the Colorado Weed Management Act. It is adapted to a wide variety of habitats in the state and is very competitive with other plant species. If it becomes established in rangeland, pasture, and riparian sites, it may exclude all other vegetation due to its competitive nature. Although it is unpalatable to cattle, sheep and goats eat spurge, do well on it, and are useful bio-control tools. In the Trout-West project area there are several known sites; however, the estimated acres of infestation are unknown.

Environmental Consequences-Noxious Weeds

This section will discuss the affects of implementation of the No Action alternative and the action alternatives on noxious weeds. The analysis area for the effects section is the entire project area.

Issue: Noxious Weeds

This issue of noxious weeds in the project area was noted during the Interdisciplinary Team (IDT) process and is carried forward as an issue. The issue statement and the issue indicator (for comparison among alternatives) is described below:

Issue Statement- Noxious weeds are currently known in the project area, and the proposed actions for Alternative 2 may result in ground disturbance treatments and could result in an increase in noxious weeds.

Issue Indicator- Acres of noxious weeds. The acres of ground disturbance from ground-based logging and road building activities, including temporary roads, will be used as an indicator for potential noxious weed infestation. *(See discussion below on the use of a 3% of soil disturbing activities acres as the indicator for estimated acreage increases in noxious weeds.)*

The discussion below will address the noxious weed issue and predict the consequences using the Issue Indicator as a means of comparison.

No Action Alternative

Ongoing activities such as hunting, logging, grazing, firewood cutting, and other uses of the forest may continue to spread all the current species of noxious weeds and possibly introduce new species. Ongoing control of noxious weeds is accomplished by a cooperative approach between the Forest Service and local County weed boards. There is currently an agreement in place between the Pike San Isabel NF and Teller, Douglas, and El Paso counties to use Integrated Pest Management practices to control noxious weeds using chemical, mechanical, and biological control measures. Integrated Pest Management practices are expected to avoid new noxious weed infestations and control existing noxious weed populations.

The No Action alternative should not result in any significant increases in acres of noxious weeds in the project area due to lack of ground disturbing logging and road-building activities. However, without fire hazard reduction management activities, the risk for a large stand replacing wildfire is increased and most fire suppression and post-fire activities result in the introduction and spread of noxious weeds. The analysis for this project uses a model that forecasts the likelihood of a 42,000-acre wildfire occurring within the next 10 years within the project area watershed. Increases in noxious weeds would depend on the amount of ground-disturbing salvage and other fire suppression and post-fire activities that occur.

Proposed Action Alternative

Activities proposed in the Proposed Action alternative will likely result in a short-term increase in noxious weeds acres of all known species and may introduce new noxious weed species to the area. Activities such as logging and burning will introduce increased vehicle and equipment use into areas and create more disturbed soils. Contractors bringing in equipment from other areas have the potential to introduce more infestations of existing noxious weeds and also to introduce new noxious weed species.

The actual acres of noxious weed increases that may occur from the Proposed Action is not known; however, the potential for an increase in noxious weeds is highly probable, due to the widespread populations of Canada thistle and yellow toadflax currently present in the project area. A recent monitoring study conducted on another National Forest noted that noxious weeds increased an average of 3% of the ground-disturbing activities such as ground-based logging and road construction⁶. If the figure of 3% is used for this project area, that would result in an estimated⁷ 417 acres of potential new noxious weed infestation in the short-term.

Integrated Pest Management procedures and mitigation measures should manage to control the increase in noxious weeds in the long-term; however, significant increases in noxious weed infestation may occur in the short-term.

Alternatives A-E

The effects of all the other action alternatives vary from the Proposed Action based on the amount of ground-disturbing logging methods and road use/construction activities. Short-term effects will result in increases in noxious weed infestations for all the action alternatives. Long-term impacts will depend on how effective inventory and control measures are for noxious weeds on the Pike San Isabel NF and in Teller County.

⁶ Source: Black Hills Forest Plan EIS, Dec. 1996, pg III-192.

⁷ Based on 3% of 13,380 acres of ground-based logging = 401 acres; and 130 miles of road use/construction at 4 acres per mile (based on 30 ft. width of road surface) = 520 acres x 3% = 16 acres. Total is 401 + 16 = 417 acres of potential noxious weed increases.

Summary of Effects of the Alternatives

The effects of the alternatives on noxious weeds are summarized below in Table 4, with the acres treated as the indicator of short-term effects. The alternatives are ranked by acres treated with ground-based methods and amount of road use/construction impact acres.

Table 4: Summary of Effects of Alternatives on Noxious Weeds

Alternative	Acres Treated With Ground-Based Harvest Methods	Road Use/Construction <i>(estimated using a 30 ft surface width, resulting in 4 ac. per running mile)</i>	Estimated Acres of New Noxious Weed Infestation <i>(based on 3% of acres disturbed)</i>	Ranking <i>(1-7, with 1 rated best due to least amount of new infestation acres for noxious weeds)</i>
No Action	0	0	0 ⁸	1
Alternative D	3,130	49 miles = 196 acres	98 acres	2
Alternative B	9,270	93 miles = 372 acres	289 acres	3
Alternative C	11,220	116 miles = 464 acres	350 acres	4
Proposed Action	13,380	130 miles = 520 acres	417 acres	5
Alternative A	13,380	130 miles = 520 acres	417 acres	6
Alternative E	19,380	130 miles = 520 acres	597 acres	7

Cumulative Effects

The Polhemus Burn and the Trout Creek Timber Sale are previous and ongoing activities that would have short-term increases in noxious weeds. Long-term effects would depend on noxious weed control measures for those projects. The 2002 Hayman Fire affected the Trout-West project area and would also result in increases in noxious weeds due to suppression activities and fire recovery activities. The cumulative effects of these activities and the Trout-West project activities would result in an increase in noxious weeds acres for the watershed area. Integrated control measures would result in long-term control of noxious weeds.

⁸ In the event of a large wildfire noxious weeds would likely increase; however, acreage estimates are not possible.

Mitigation Measures-Project Design Features: Noxious Weeds

Mitigation measures described below should reduce the short-term infestation increases of noxious weeds, and also provide long-term control for noxious weed acres in the project area.

- Require contractor/purchaser to use designated skid trails and travel routes that would avoid spreading weeds from infested areas.
- Require contractor/purchaser to clean all heavy equipment that operates on Forest Service projects before entry on timber sale areas.
- Require contractor/purchaser to reseed disturbed roadbeds with a certified noxious weed-free native seed mix.
- All hay, straw, and mulch used for revegetation or watershed protection measures on National Forest lands will be certified as noxious weed free.
- Field surveys for noxious weeds will be accomplished by a contractor in the 2002 field season and that information will be used to improve the control of noxious weeds.
- Conduct additional field surveys post-project to identify and treat noxious weeds in proposed treatment areas until controlled or eradicated.

The Forest Service will insert noxious weed control provisions in timber sale contracts according to the *Timber Sale Preparation Handbook* (FSH2409.18) and enforce these provisions according to the *Timber Sale Administration Handbook* (FSH2409.15).

Primary references are listed in the Final Environmental Impact Statement.

Figure 1: Range Allotments in the Trout-West Project Area

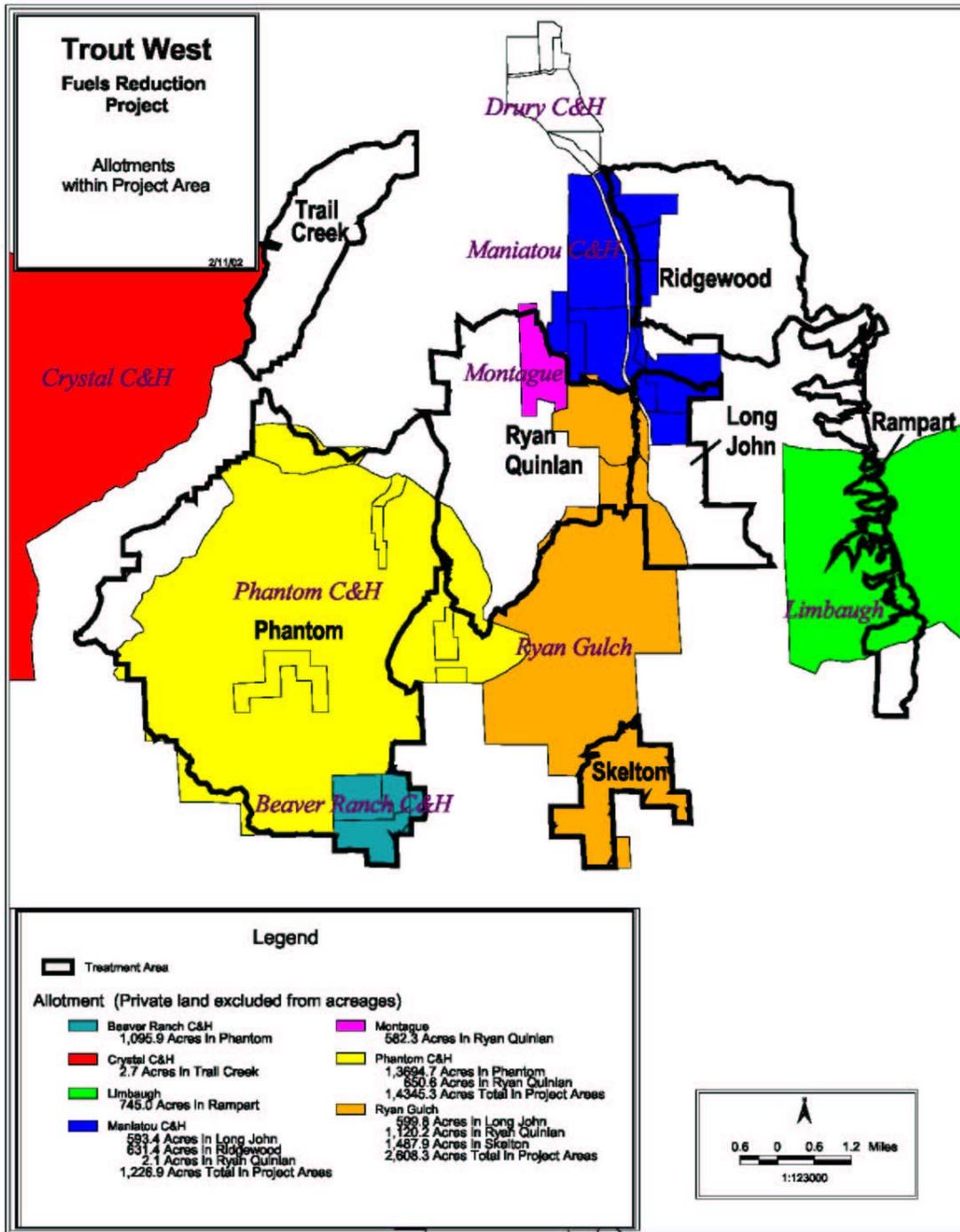
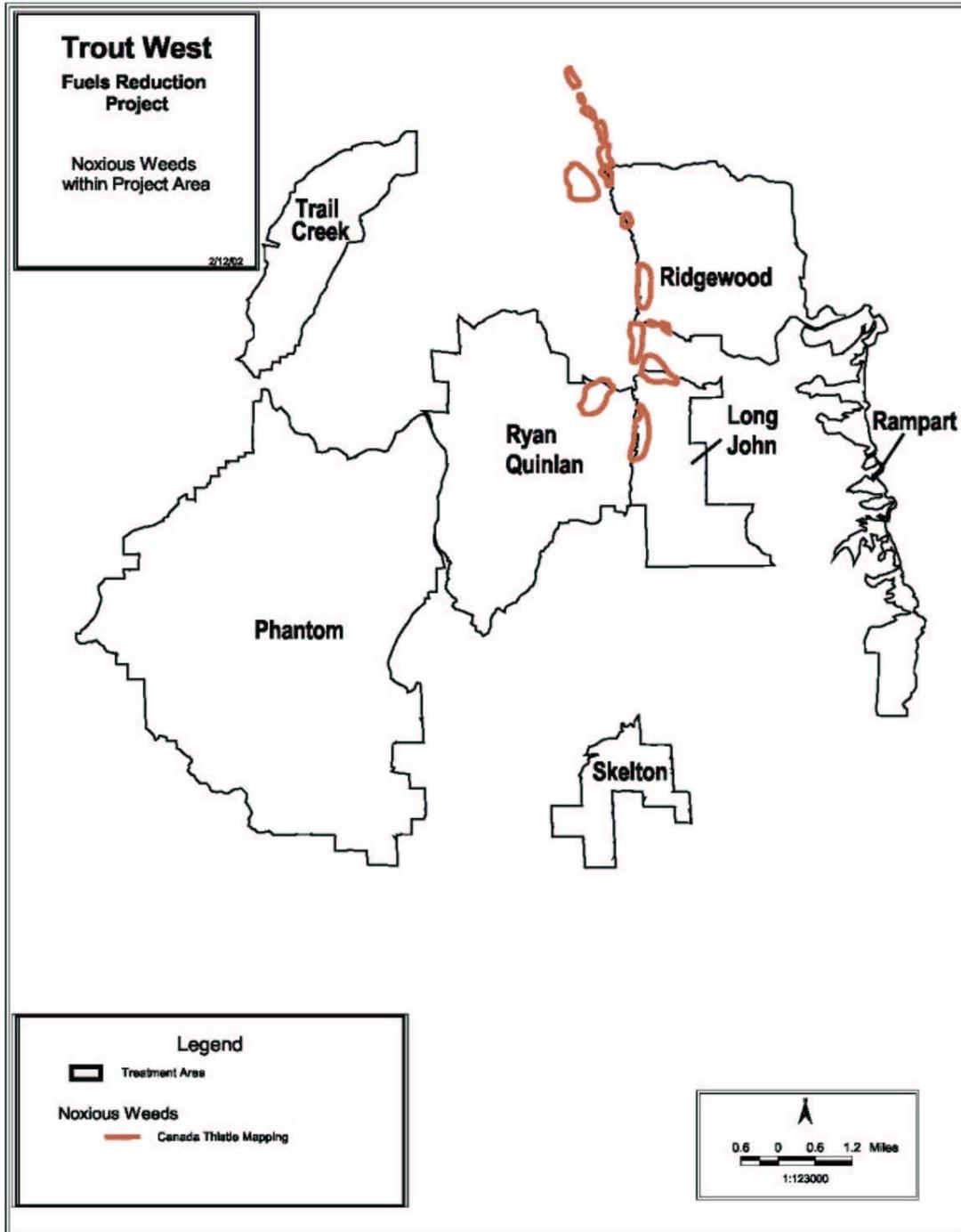


Figure 2a: Noxious Weeds (Canada Thistle) Sites Known in the Trout-West Project Area⁹



⁹ Source: Steve Tapia, PSINF, 2001

Figure 2b: Noxious Weeds Sites Known in the Trout-West Project Area (Source: *Landscape Assessment, Upper Platte Watershed. Foster Wheeler Environmental Corporation. 1999*).

