



File Code: 2520

Date: August 29, 2005

Route To:

Subject: Tryon Complex Fire BAER Report

To: Regional Forester, R6

Attached is the Burned Area Emergency Restoration request (FS-2500-8) for the Tryon Complex Fire on the Hell's Canyon National Recreation Area. This request is for funding for survey of the fire area for invasive weeds and for time spent by the BAER team for survey of the fire. If you have any questions about this report, contact Teresa Smergut at 541-426-5547 or tsmergut@fs.fed.us.

/s/ Steve Ellis
STEVE ELLIS
Forest Supervisor

cc:
Steve Howes
Michael McNamara



August 29, 2005

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated WFSU-SULT funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)
- ☐ 2. Interim Report
 - ☐ Updating the initial funding request based on more accurate site data or design analysis
 - ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Tryon Complex

B. Fire Number: _____

C. State: Oregon

D. County: Wallowa

E. Region: 06

F. Forest: 16

G. District: 04

H. Date Fire Started: 8/8/2005

I. Date Fire Controlled: Contained on 8/21/05

J. Suppression Cost: \$4,662,157

K. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline waterbarred (miles): 2 miles on the national forest
- 2. Fireline seeded (miles): ½ miles on the national forest
- 3. Other (identify): Approximately 3 miles of existing road water barred with berms seeded. ½ mile of two track roads will be closed and seeded.

L. Watershed Number: 1706010102, 1706010205, 170601202, 170601301

M. Total Acres Burned:

NFS Acres(42,432) Other Federal () State () Private (644)

N. Vegetation Types: (General) Mixed conifer with Douglas fir and Ponderosa pine in forested stringers and benches, bluebunch wheatgrass and Idaho fescue plant associations which include Sandberg's bluegrass, prairie junegrass grassland species with interspersed cheatgrass, shrublands including Sumac, snowberry, rose, bitterbrush, hackberry, ninebark and riparian areas of rocky mountain maple, poison ivy, elderberry, hackberry etc

O. Dominant Soils: Gravelly loams and silt loams, volcanic ash inclusions.

P. Geologic Types: Columbia layered basalt, limestone.

Q. Miles of Stream Channels by Order or Class: Class One: 14.2mi, Class Three: 17.4mi

R. Transportation System

Trails: 88.5 miles Roads: 10.6 miles of NFS road within fire perimeter.

PART III - WATERSHED CONDITION

A. Burn Severity (NF acres only): 25,459(60%) (low) 12,729 (30%) (mod.) 4,243(10%) (high)

B. Water-Repellent Soil (acres): 0 – Water repellent soils are not an issue on this fire.

C. Soil Erosion Hazard Rating (acres):
2,121 (low) 10,607 (moderate) 4,243 (high)

D. Erosion Potential: N/A tons/acre

E. Sediment Potential: N/A cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

No watershed treatments are recommended

A. Estimated Vegetative Recovery Period, (years): _____

B. Design Chance of Success, (percent): _____

C. Equivalent Design Recurrence Interval, (years): _____

D. Design Storm Duration, (hours): _____

E. Design Storm Magnitude, (inches): _____

F. Design Flow, (cubic feet / second/ square mile): _____

G. Estimated Reduction in Infiltration, (percent): _____

H. Adjusted Design Flow, (cfs per square mile): _____

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

There is no watershed emergency with this fire. The portion of the national forest that was burned is mostly grassland. The topography is steep with soils of high rock content. Most of the burned area on the national forest is in the low burn severity classification and still has litter intact on the ground. Preliminary survey work estimates a very low probability that hydrophobic soils exist in any areas following the fire. In the low burn severity areas, and even in spots that burned moderate to high severity, erosion rates should be the same as before the fire. Soils on the portion of NFS lands that were examined are in the moderate to high burn severities are very rocky and have a low erosion hazard. These areas are very limited in extent, creating a discontinuous mosaic. The amount of rock in the soils and on the soil surface will limit the amount of erosion and sediment yielded by these sites. There is a very low risk of increased sediment and runoff in the first year following this fire. Most of the existing vegetation experienced varying degrees of consumption by fire. The grasses and forbs in the grassland terrain within the fire areas had a majority of their aerial stems consumed. Some seed was consumed and some dropped to the ground as the stems burned. Many pockets/stands of shrubs had much of their leaves and some of their woody stems partially burned. Only in the high intensity areas (mostly small timber stands or dry shrub stands) was there consumption of most of the woody vegetative material. The expected response to the fire from the known noxious weed species is discussed in detail in the attachment at the end of this report.

Even though the land resource base condition due to the fire does not warrant a watershed emergency with recommended land treatments, the area is at an increased risk to noxious weed invasion and spread after fire disturbance. This is due to the fact that fire has burned directly adjacent to and through weed infestations creating opportune conditions for establishment and spread risking the viability and diversity of native grassland species. Even areas of low severity fire that has burned through yellow starthistle infestations may stimulate germination while also reducing competition, exposing soil, and recycling nutrients from burned vegetation. Therefore, yellow starthistle plants that germinate following fire may grow larger and have more flowerheads the following season. Areas such as in the Tryon Ranch and other homesteads need to be inventoried, monitored, and treated to decrease the risk to native grassland species.

B. Values and type of risk:

1. Threat to Life: None

2. Threat to Private Property, State, City, County: There is private land immediately below the burned area on the national forest on the Cherry Creek fire and on the Haas Ridge fire, however no watershed impact in these areas is expected as a result of the fire. Forest lands are at risk due to weed infestations on private lands as a result of the Tryon Complex fires. This is due to the fact that strategically located spike camps are traditionally located in the same areas which are private inholdings infested with species such as Scotch thistle, knapweed and whitetop. Activities

within and in/out of these areas to suppress fire create an effective venue for establishment and spread of these species into the HCNRA. There is the risk of these noxious weed species spreading both to and from adjoining private land to Forest Service land. Extensive surveys are needed to determine the magnitude of this risk.

3. Loss of Resources (productivity, sediment transfer into T&E habitat, soil stability above cultural sites, recreational values, noxious weed risks, livestock grazing to promote natural recovery after fire):

Vegetation

According to Charlie Johnson's "Vegetation Response to Wildfires in National Forests of Northeastern Oregon, 1998), Ponderosa pine series respond positively to light burns, but can be eliminated from the sites as a result of severe burn within the first five years following fire. Shrubland responses are variable by species and site but in general respond negatively to severe burns (with the exception of a few species, such as ninebark in cool sites) in the first year after fire. Light and moderate burns enhanced bluebunch and cheatgrass while severe burns affected these species negatively. Idaho fescue was found to have the greatest vulnerability to moderate and severe burns. While severe and moderate burns diminish litter and cryptograms, dead layers did provide protection to the soil from erosive agents. According to the land sat it is estimated that 60% of the fire burned at low severity (or included unburned areas), 30% moderate intensity, and >10 % at high intensity. Therefore, loss of vegetative productivity overall within the Tryon Complex due directly to the fire are low. Regardless, direction from the CMP states the Forest Service will manage grassland communities to attain their potential natural community recognizing their HRV.

Over 10 years (+/- 5000hrs) of Integrated Noxious weed treatment, monitoring and restoration efforts have gone into managing unwanted vegetating within the HCNRA. This work is not at risk of being overcome by post fire weed expansions. The value of the existing forage to big game, and non-game species, and livestock is nearly incalculable.

T & E Plants and Fish

There is a low probability that negative effects to sensitive, and listed plants will occur as a direct result of the fire, as the majority of the burned area is low to moderate severity. However, the fire burned through two occurrences of UDFWS listed (threatened) Macfarlane's four-O-Clock which are directly adjacent to noxious weed infestations. Seven endemic plant species are known to exist within the fire perimeter and also at least 13 Region 6 sensitive plant species within the HCNRA as a whole.

The HCNRA contains one of the largest contiguous areas of bunchgrass grasslands in the Western United States. Much of the fire area includes critical spring and winter range for Rocky mountain Big Horn Sheep, mule and whitetail deer, Rocky Mountain Elk as well as uplandbirds and non-game animal species

Cherry Creek and Deep Creek and other streams within the fire area have resident resident redband trout. The little disturbance from the fire itself to national forest land will not adversely affect water quality in these streams.

Cultural Sites

There are no expected additional risks to cultural sites due to the Tryon Complex fire.

Recreation

There are approximately 88 miles of system recreational trails within the fire area. These are used extensively by hunters, backpackers and horse groups.

Noxious Weeds

The Tryon Complex lies within the Hells Canyon National Recreation Area, which includes wilderness, Wild & Scenic River segments and wilderness study areas. This area was established to assure that the natural beauty, and historical and archeological values of the Hells Canyon area together with portions of certain tributaries and adjacent lands, are preserved for this and future generations, and that the recreational and ecologic values and public enjoyment of the area are thereby enhanced. There are approximately 1313 acres of known "A List" noxious weed sites within the Tryon Complex. These sites have been included in an integrated noxious weed treatment plan but due to weed species biology and seed bank attributes, require years of treatment to control. Known weed species include White-top, Yellow starthistle, Scotch thistle, Dalmatian Toadflax, Knapweeds, Knotweed, and Sulfur Cinquefoil. These species need very little disturbance to spread and are very adapted to the warm and dry Snake River Canyon area. Their seeds can remain viable in the soil for up to ten years. Disturbance caused by the fire and suppression activities create an increased risk for weeds to become established or spread from existing populations. This would set-back years of progress made by the Forest's weed management efforts. Bio control agents previously released on yellow starthistle and Toadflax have likely been consumed by the fire. It is expected that weed populations will increase significantly after fire if not detected and treated, threatening wildlife and fisheries habitat, recreation values and overall ecosystem health. There are many additional uninventoried acres at risk of weed infestation within the Tryon Complex. The CMP states the Forest Service will manage noxious weeds to reduce negative impacts to native plants, wildlife, and other resources. The values that the HCNRA have been set aside for are at an increased risk due to the interaction of wildfire disturbances and noxious weed seed biology.

Livestock Grazing

The Tryon Complex includes portions of four active cattle allotments totaling approximately 2,198 acres of grazing land permitted to two different permittees. The Comprehensive Management Plan for the Hell's Canyon NRA states that after fire, the Ranger with input from an Interdisciplinary Team will determine when grazing activities will be resumed. Livestock grazing must be controlled in a manner after fire to allow natural recovery to occur.

C. Emergency Treatment Objectives:

There are no BAER land watershed treatments proposed. However, due to the populations of "A" list weeds and the risk of further establishment and spread, we are requesting funds for noxious weed surveys (of existing infestations and their expansion).

A subsequent request for treatment funding will be submitted as soon as survey results confirm the anticipated degree of expansion and needs.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land ___ % Channel ___ % Roads ___ % Other ___ %

D. Probability of Treatment Success

| | Years after Treatment | | |
|---------|-----------------------|--|--|
| Land | | | |
| | | | |
| Channel | | | |
| | | | |
| Roads | | | |
| | | | |
| Other | | | |
| | | | |

E. Cost of No-Action (Including Loss):

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

| | | | | |
|---|--|--|---|---|
| <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Soils | <input type="checkbox"/> Geology | <input checked="" type="checkbox"/> Range | <input checked="" type="checkbox"/> Recreation |
| <input type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Wildlife | <input type="checkbox"/> Fire Mgmt. | <input type="checkbox"/> Engineering | <input checked="" type="checkbox"/> Noxious Weeds |
| <input type="checkbox"/> Contracting | <input type="checkbox"/> Ecology | <input checked="" type="checkbox"/> Botany | <input checked="" type="checkbox"/> Archaeology | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Fisheries | <input type="checkbox"/> Research | <input type="checkbox"/> Landscape Arch | <input type="checkbox"/> GIS | |

Team Leader: Teresa Smergut

Email: tsmergut@fs.fed.us

Phone: 541-426-5547 FAX: 541-426- 5522

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

Noxious Weeds:

Priority Areas: The two listed Threatened Macfarlane's 4-O-Clock sites need attention. Each site will be revisited (one had Dalmatian toadflax within it and the other is adjacent to a toadflax patch) as part of an attempt to relocate or re-establish populations of the stem-boring toadflax weevil. These sites will also be evaluated for the feasibility of doing spot herbicide treatment.

Old homestead sites (now under USFS ownership and in use as administration sites and popular backcountry camping areas) are significant sources for noxious weed seeds and are also a priority for treatment. Many of these facilities were burned through, or protected with back-fires. Most of the terrain surrounding these facilities area also burned and is thus very susceptible to weed spread. Several of these sites were used as Coyote camps for the Tryon Complex. High priority areas include Tryon Ranch, Cherry Creek Ranch, Deep Creek Ranch, Eureka Creek Ranch, and numerous campsites within the Snake River corridor. Horse Creek Spike (Private) and Lightning Spike (private) area are also high priorities for survey and treatment.

Treatment Species, include Yellow starthistle, Whitetop, Knapweed, Scotchthistle, Toadflax, Rush Skeletonweed, Knotweed and Cinquefoil. Fresh surveys will first be completed at the known weed sites (all currently approved for integrated weed management treatments) in order to prioritize treatment in relation to risk of spread based on the surrounding burn intensity and affected weed species and its seed biology. Subsequent treatment will vary depending on the weed species, patch distribution and proximity to streams. In general biocontrol agents will be used as available and at large patches, and herbicide spot treatments will target strategic locations of starthistle, knapweed, rush, knotweed, and toadflax patches. Herbicide and mechanical treatment will be used for Scotchthistle and whitetop. Most of the Scotchthistle and whitetop are located at the old homestead sites. Toadflax is mostly concentrated along the Snake River and adjacent upland toe-slopes. In general noxious weeds typically increase 14% annually which leads to an exponential doubling every five years. It is probable that disturbance from fire and suppression activities will exacerbate this situation. As stated earlier, this threat is considered unacceptable when considering all of the values that are at risk in the HCNRA.

A more specific survey strategy (plan), based on the existing weed species and their biology is attached to the back of this document.

The Wallowa Mountain's office local copy of noxious weed location data is more up to date than the Forest one, though the corporate system will be corrected at the end of the field season. Upon request, a map of the Tryon complex fire perimeters, trail and structural resources, burn area intensities, and noxious weed sites is available, but not yet

assembled. Currently NRIS database does not account for treatment and monitoring history and so can not be tied to our GIS layer(s).

Channel Treatments: n/a

Roads and Trail Treatments: n/a

Structures: n/a

H. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

A detailed survey plan is attached to the end of this form. A detailed monitoring plan will be included with a supplemental treatment plan early in the summer of 2006. The treatment and monitoring plan will be fine-tuned with the data collected during the fall, winter, and spring survey work. Monitoring will be two-fold, looking at both weed spread and treatment effectiveness. This site specific monitoring will be conducted annually for at least 3 years after treatment to determine success of the treatments (be it biological, mechanical or herbicide) and to gauge the extent of seed left in the soil seed-bank. Work will be performed through Forest crews and through contracts.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

| Line Items | Units | Unit Cost | # of Units | WFSU SULT \$ | Other \$ | # of units | Fed \$ | # of Units | Non Fed \$ | Total \$ |
|-----------------------------------|-------|-----------|------------|-----------------|----------|------------|------------|------------|------------|-----------------|
| A. Land Treatments | | | | | | | | | | |
| Noxious weed surveys | acres | 25 | 2000 | \$50,000 | | | \$0 | | \$0 | \$50,000 |
| Noxious weed treatment | acres | 0 | 0 | \$0 | | | \$0 | | | |
| Restoration(seeding) | acres | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| <i>Subtotal Land Treatments</i> | | | | \$50,000 | | | \$0 | | \$0 | \$50,000 |
| B. Channel Treatments | | | | | | | | | | |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| <i>Subtotal Channel Treat.</i> | | | | \$0 | | | \$0 | | \$0 | \$0 |
| C. Road and Trails | | | | | | | | | | |
| trail inventory | miles | 0 | | | | | \$0 | | \$0 | \$0 |
| hazard tree removal | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| <i>Subtotal Road & Trails</i> | | | | \$0 | | | \$0 | | \$0 | \$0 |
| D. Survey Plan Overhead | | | | | | | | | | |
| vehicle | | | | \$2,500 | | | \$0 | | \$0 | \$2,500 |
| equipment | | | | \$2,000 | | | \$0 | | \$0 | \$2,000 |
| GIS support | | | | \$2,500 | | | \$0 | | \$0 | \$2,500 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| <i>Subtotal Structures</i> | | | | \$7,000 | | | \$0 | | \$0 | \$7,000 |
| E. BAER Evaluation | | | | | | | | | | |
| BAER Team | 1 | | | \$5,000 | | | \$0 | | \$0 | \$5,000 |
| | | | | \$0 | | | \$0 | | \$0 | \$0 |
| | | | | | | | | | | |
| G. Monitoring Cost | | | | | | | \$0 | | \$0 | \$0 |
| Monitor treatment/spre | acres | | | | | | | | | |
| H. Totals | | | | \$62,000 | | | \$0 | | \$0 | \$62,000 |

PART VII - APPROVALS

1. /s/Steve Ellis
Forest Supervisor (signature)

8/29/05
Date

2. _____
Regional Forester (signature)

Date

BAER Report 2520-8 Supplement
Noxious Weed Survey Strategy and Implementation Plan
Tryon Fire Complex – Summer 2005
Prepared by Jerold Hustafa and Leigh Dawson

Background and Situation Status

Twelve Noxious weed species are known (via district records, including the GIS system) from within the fire perimeters of the Tryon Fire Complex. Current records show these species occupying at least 1312 acres distributed among 98-recorded sites. The majority of these sites range in elevation from 500 to 3500 feet. Many, but certainly not all, of these sites are found in association with old homesteads, trails, roads, and river corridors. All of these sites are currently managed under an Integrated Noxious Weed Management Strategy. The vast majority of these sites are not easily accessed due to the remote and rugged nature of the Hells Canyon National Recreation Area.

There are two populations of the Federally Listed Threatened plant species, *Mirabilis macfarlanei* (Macfarlane's Four-O-Clock), found within the perimeters of the Tryon Fire Complex. Macfarlane's Four-O-Clock is a deep-rooted early spring blooming perennial that was dormant during the fire, so impacts to this species are expected to be minor. The Pleasant Valley Creek population has the noxious weed Dalmation Toadflax growing within the population boundary. The Tryon Bar population has Dalmation Toadflax growing within 1/4th mile, and Yellow Starthistle growing within 1/2 mile of the population boundary. Resource advisor flights have confirmed that both of these populations were burned.

Burn intensity maps (from flights and satellite imagery) were produced and are being utilized for prioritizing field work.

Proposed Survey Activities General Schedule and Costs

Depending on the weed species in question, initial surveys will target 20 to 100 percent of the known noxious weed site acres. Work will begin as soon as funding permits in FY 2006. Surveys will be conducted at known noxious weed locations in the Forest Service portion of the fire area. Documentation of survey results will include hand mapping/site sketches and GPS data gathering of weed site extents at the known locations. Accompanying field notes and narrative reports will be completed through collection of observations corresponding to NRIS database fields.

Surveys will be conducted through both Forest Service employees and contracts. A few areas are accessible via vehicle, but most will require packstock and or jet boat support in addition to hiking. Cost estimates are based on average contract and Forest Service costs for similar work over the past 3 years.

Most of the weed sites within the Tryon complex are at elevations not covered by snow. Thus some field-work can commence in the fall and winter, depending on the particular weed species' growth strategy and the timing of fall/winter moisture.

Prioritization and scheduling of surveys will be fine-tuned based on funding, the particular weed species, the burn intensity, site accessibility, and logistical efficiency factors.

Treatment strategies and proposals will be developed as an ongoing process as survey results are analyzed and a supplemental treatment plan and request will be submitted sometime during the early summer of 2006.

Macfarlane's Four-O-Clock sites:

Perform a fall (mid November) site visit to each Macfarlane's Four-O-Clock population. Both sites are accessible only from the Snake River so jet boat support will be needed. Determine the extent of the Toadflax plants burned and surviving seed pods. Search for surviving bio-control agents (a stem boring weevil). Estimate the percentage of Toadflax re-sprouting. Repeat the site visit in May.

Estimated cost = \$3,000.

(Additional) Dalmation Toadflax sites:

This deep-rooted perennial reproduces by seed and underground lateral rootstock. The seed is granular and does not move far without the aid of animals, very strong winds, or high water. Only a high intensity fire is hot enough to affect underground seed bank and lateral roots. Both seed and roots are stimulated by fire of low and high intensity as prevalent in the Tryon Complex. Seed germination is primarily in the spring with a small percentage germinating in the fall. Once established, vegetative rosettes develop primarily through the fall and are most susceptible to chemical treatment then and through the winter.

Treatment history includes expansion monitoring, chemical and biological control measures.

Survey 100% of the known Dalmation Toadflax areas, including terrain within ¼ mile of the known sites. Most sites are located along the Snake river corridor and will require jet boat support to access them.

Determine extent of Dalmation Toadflax survival based on rosette development and evidence of seed head consumption (by fire). Assess the density and pattern of plants within the infestation. Field verify the burn intensity recorded for that site.

Target surveys during October and November (moisture permitting) and again in April and May.

Estimated cost = \$6,000

Spotted Knapweed / Diffuse Knapweed sites:

This deep-rooted short-lived perennial reproduces only by seed. The seed has a small plume of pappus on it to aid in its attachment to animals, equipment and strong winds. Only a high intensity fire is hot enough to affect underground seed bank, but only those in the upper part of the soil profile. Seed establishment is stimulated by fire, by creating open space, mineral soil, and nutrient cycling (most noxious weeds are adapted to higher nutrient soil conditions than our natives). Many plants can resprout from the root-crown after fire, given adequate moisture. It produces a large annual seed crop. Seed heads often survive fire even when the stems burn. Seed germination is primarily in the spring with a small percentage germinating in the fall. It may produce just a rosette, or a rosette and flowering stem the first growing season.

Treatment history includes spread monitoring, physical, chemical and biological control measures.

Survey 50% of the known Knapweed areas, including terrain within ¼ mile of the known sites.

During the fall/winter, determine extent of Knapweed survival based on evidence of surviving green stems and rosettes and evidence of seed head consumption (by fire). During the spring, assess the density and pattern of plants within the infestation resulting from seed germination. Field verify the burn intensity recorded for that site.

Target surveys during fall (Oct.-Nov.) and again in spring (April-May)

Estimated Cost = \$5,000

Yellow Starthistle sites:

Yellow Starthistle is in the Centaurea family as is Knapweed therefore there are similar characteristics. Yellow Starthistle is a deep-tap-rooted winter annual that occasionally acts as a biannual. It reproduces only by seed. Only a high intensity fire is hot enough to affect the underground seed bank. Many seeds survive heating. Seed establishment is especially stimulated by fire, primarily through the resulting nutrient flush as well as the created open space. (most noxious weeds are adapted to higher nutrient soil conditions than our natives). It produces a large annual seed crop. Seed heads often survive fire even when the stems burn. Seed germination is primarily in the fall with some percentage waiting till spring. The established rosettes may be detectable in early spring (April), depending on moisture.

Treatment history includes spread monitoring, physical, chemical and biological control measures.

Survey 50% of the known Yellow Starthistle areas, including terrain within ¼ mile of the known sites.

During the winter, determine the extent of Yellow Starthistle establishment based on evidence of old stalks and rosettes. Follow-up this assessment during the early spring to totally assess the density and pattern of plants within the infestation resulting from seed germination. Field verify the burn intensity recorded for that site.

Target surveys during fall (Oct.-Nov.) and again in spring (April).

Estimated Cost =\$12,000

Rush Skeleton sites:

This deep-rooted, long-lived perennial reproduces by seed and sprouting from the underground rootstock (up to 4 feet below ground) and even small disturbed root fragments. Even high intensity fire does not kill enough root to kill the plant. Fire stimulates root and shoot production. New rosettes and flowering stems can be produced within 6 weeks of the fire. It annually produces a large seed crop. The post-fire nutrient flush stimulates increased seed production. Seed germination is primarily in the fall with a small percentage germinating in the spring. Once established, vegetative rosettes develop primarily through the fall and winter.

Treatment history includes spread monitoring, and chemical measures.

Survey 100% of the known Rush Skeleton areas, including terrain within ¼ mile of the known sites. Most sites are located on the Snake River and require jet boat access.

Determine extent of Rush Skeleton survival based on observable old stalks and evidence of seed germination and seedling establishment. Assess the density and pattern of plants within the infestation. Field verify the burn intensity recorded for that site.

Target surveys during fall (Oct.-Nov,) and again in spring (April-May).

Estimated cost = \$6,000

White Top sites:

This vast and deep rooted, long-lived perennial reproduces by seed and sprouting from extensive lateral rhizomes including small, disturbed root fragments. The rhizomes can grow over 12ft per year. The seed is pellet shaped with a small wing on each side to aid in catching strong winds or attaching to animals, or equipment. Very high intensity fire may kill some roots but generally the rhizomes are stimulated by fire. It annually produces a large seed crop. The post-fire nutrient flush stimulates increased seed production. Seed production is often complete by June and the plants can frequently produce a second seed crop in a season. Seed germination is primarily in the fall with a small percentage germinating in the spring.

Treatment history includes spread monitoring, and chemical measures. Presently, we do not have an effective approved herbicide treatment for this weed. However, the REIS final is expected in FY05 with site specific analysis to follow. This will provide additional treatment options.

Survey 50% of the known White top areas, including terrain within ¼ mile of the known sites. Most sites are associated with old homesteads.

Determine extent of White top survival based on observable resprouting and evidence of seed germination and seedling establishment. Assess the density and pattern of plants within the infestation. Field verify the burn intensity recorded for that site.

Target surveys during spring (April)

Estimated cost = \$2,500

Sulfur Cinquefoil sites:

This tap-rooted long-lived perennial reproduces only by seed. The seed is granular and does not move far without the aid of animals, very strong winds, or high water. Seed production and establishment is stimulated by fire, through the post-fire nutrient flush and by creating open space (most noxious weeds are adapted to higher nutrient soil conditions than our natives). It produces a large annual seed crop. Adults sprout (produce an aerial shoot from the taproot) and seeds germinate primarily in the spring. Available moisture and the timing of seasonal rains often govern seedling establishment.

Treatment history includes spread monitoring and chemical control measures.

Survey 50% of the known Sulfur Cinquefoil areas, including terrain within ¼ mile of the known sites.

During the spring, determine extent of Sulfur Cinquefoil survival based on evidence of shoot production. During the spring, assess the density and pattern of new plants within the infestation resulting from shoot production and seed germination. Field verify the burn intensity recorded for that site.

Target surveys during spring (May-June)

Estimated Cost = \$2,000

Scotch Thistle and Canada Thistle sites:

Both of these species are deep-rooted and Canada thistle also produces lateral roots. Scotch thistle is an annual or occasional biannual and Canada thistle is a long lived perennial. Scotch thistle reproduces only by seed but Canada thistle also produces extensive rhizomes. Fire generally does not kill enough root to kill these plants, though Scotch thistle can be killed if the fire is hot enough to kill the root-crown. The Tryon Complex fire was generally a low to moderate intensity fire. Fire also stimulates seed production through the post fire nutrient flush and reduced competition. Canada thistle rhizomes are also stimulated by fire. They annually produce a large seed crop. Seed germination is primarily in the spring.

Treatment history includes spread monitoring, chemical measures, and physical techniques on Scotch thistle.

Survey 50% of the known thistle areas, including terrain within ¼ mile of the known sites. Most sites are very difficult to access.

Determine extent of thistle survival based on observable resprouting of Canada thistle and evidence of seed germination and seedling establishment for both species. Assess the density and pattern of plants within the infestation. Field verify the burn intensity recorded for that site.

Target surveys during fall (Oct.-Nov) and spring (March- April)

Estimated cost = \$10,000

Bohemian Knotweed:

This site was cleared for treatment (NEPA and Consultation) in a 2003. We have what seems to be a Bohemian x Japanese hybrid that produces fertile seed unlike other species that spread by root (vegetative) fragmentation.

This is a herbaceous (almost woody) perennial with an extensive and deep lateral rhizomatous root system. It propagates by seed and rhizome production (even from small root fragments). Fire stimulates rhizome and seed production. The seed is pellet shaped with a small wing on each side to aid in catching strong winds, floating down stream, or attaching to animals, or equipment. Adults produce shoots in the spring and develop seed during the summer. Seeds germinate in the fall or spring.

Treatment history includes spread monitoring and chemical measures.

Survey 100% of the known area, including terrain within ¼ mile of the known site. Access is by jet boat only. We are especially concerned about this plant entering the Snake River Corridor.

Determine extent of knotweed survival based on observable shoot production and seed germination/seedling establishment. Assess the density and pattern of plants within the infestation. Field verify the burn intensity recorded for that site.

Target surveys during fall (Oct.-Nov.) and spring (April-May)

Estimated Cost: \$3,500

There are small, incidental patches of **Puncturevine**, and **Leafy Spurge** within the Tryon complex that will be assessed during implementation of the above surveys. Costs are included in the above discussion.