

Independence and Buck Springs Fires
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION
PROJECT

Final Accomplishment Report-September 2006

FIRE NUMBER: A548: Independence and A547: Buck Springs

AGENCY/UNIT: US Fish and Wildlife Service/Camas National Wildlife Refuge

LOCATION: Hamer, Idaho in Jefferson County

FIRE CONTROL DATE: August 14, 2003

AGENCY ACRES BURNED: Independence Fire=136 Acres, Buck Springs=105 Acres

START OF ESR PLAN IMPLEMENTATION: August 16, 2003

FINAL ACCOMPLISHMENT REPORT DATE: September 14, 2006

ESR Plan Specifications Completed:



TREATMENT SPECIFICATIONS	WORK COMPLETED FISCAL YEAR 2003
Emergency Stabilization: Cultural Resource survey of Dozer Line	An opportunistic, pedestrian, meander with fire line survey via a single surveyor was conducted on August 20, 2003. No sites were located within the area. Copies of the suppression activities survey were submitted to the State Historic Preservation Office.
Emergency Stabilization: Repair Gravel Road	400 cubic yards of gravel were placed on the damaged roads in September of 2003.
Emergency Stabilization: Repair Dozer Lines	Entire perimeter of both fires in August of 2003.
TREATMENT SPECIFICATIONS	WORK COMPLETED FISCAL YEAR 2004
Line Item 1: Repair Fence	A contract for \$10,692.00 was awarded to Ted Laird Const. to build 1.5 miles of 4 strand wildlife friendly barbed wire fence: \$5,544.00 for labor, \$2,772.00 for removal and disposal of old fence, and \$2,376 for materials. Expedient approval and issuance of contract assured that trespass grazing did not occur. Construction began on October 27, 2004, and completed by November 20, 2004.
Line Item 2: Noxious Weed Control	Total infestation of the southern Independence Fire by Russian knapweed, <u>Centaurea repens</u> , prompted the immediate treatment with herbicide in June of 2004. A fall application of those areas missed in the spring application was conducted in September, 2004. The entire burned area was treated and/or evaluated for treatment.
Line Item 3: Replace Boundary Signs	All destroyed boundary signs within the 1.5 mile boundary fence portion of the wildfires were replace in October of 2004.
Line Item 4: Cultural Resource Survey	Survey is on-going as the \$5,000 identified for this service has been obligated to an existing Regional Contract. Survey to be conducted prior to planting in Spring of 2005.
Line Item 5: Plant Sagebrush Seedlings	On-going, and scheduled for planting in March of 2005. Due to the lack of viable seed collected, only 6,000 of the proposed 45,000 seedlings were grown this year. An

	amendment will be necessary to complete this item. Initial sagebrush seed was collected in December of 2003, more seed will be collected in the fall of 2004. No additional seed will be grown for further plantings.
Line Item 6: Monitoring	Two Daubenmire transects and two Robel pole points were established in July 2004 within the burned areas. The target for monitoring was big sagebrush, <u>Artemesia tridentata</u> and Russian knapweed, <u>Centaurea repens</u> .
TREATMENT SPECIFICATIONS	WORK COMPLETED FISCAL YEAR 2005 from 2004 Amendment to Rehabilitation Plan.
Line Item 1 and 2: Noxious Weed Control	Re-growth of Russian knapweed within the burned areas, especially within the Independence Fire required the spring treatment with Curtail herbicide in June of 2005. A fall application of those areas not showing stress from the spring treatment is being conducted in late September thru mid-October 2005. The entire burned areas were treated and/or evaluated for treatment.
Line Item 3: Planting Sagebrush Seedlings	All 6,000 Artemesia tridentate (sagebrush) seedlings in 6 inch container stock from the U.S. Forest Service, Lucky Peak Nursery were planted via contract with the St. Anthony Work Crew during the first two weeks in March.
Line Item 4: Monitoring	The two Daubenmire transects and Robel point points that were established in July 2004 within the burned areas were run again this year on July 27, 2005. The target for monitoring was big sagebrush, <u>Artemesia tridentata</u> and Russian knapweed, <u>Centaurea repens</u> .
Line Item 5: Cultural Resource Survey-NOT included in the 2004 amendment.	Survey was completed in March by North Wind Environmental Inc. Funding for this service had been obligated to an existing Regional Contract, therefore, no amendment funds were expended.
TREATMENT SPECIFICATIONS	WORK COMPLETED FISCAL YEAR 2006 from 2005 Amendment to Rehabilitation Plan.
Line Item 1 and 2: Noxious Weed Control	Re-growth of Russian knapweed within the burned areas, especially within the entire Independence Fire required the spring treatment with Curtail herbicide in June of 2006. A fall application of those areas not showing stress from the spring treatment is being conducted in mid-October 2006. The entire burned areas were treated and/or evaluated for

	treatment in 2006.
Line Item 4: Monitoring	The two Daubenmire transects and Robel point points that were established in July 2004 within the burned areas were run again this year on July 27, 2006. The target for monitoring was big sagebrush, <u>Artemesia tridentata</u> and Russian knapweed, <u>Centaurea repens</u> . Grass canopy decreased noticeably, compared to 2005, possibly attributing to the increased frequency of knapweed.

ESR Plan Specifications Not Completed: All plan specifications have been addressed

ESR Plan Specifications Ignored: All plan specifications have been addressed.

Facilities Repaired or Replaced: Nothing to report.

Acres Monitored for Non-Native Invasive Species:

The two Daubenmire transects and Robel pole points that were established in July 2004 within the burned areas were run again this year on July 27, 2006, the same date as last year. The target for monitoring was big sagebrush, Artemesia tridentata and Russian knapweed, Centaurea repens. In the case of big sagebrush, there is west wide concern for the decline of the species in light of its importance to many types of wildlife utilizing the sagebrush steppe ecosystem. Consequently, there is a goal to re-establish sagebrush removed by the fires, both through natural regeneration and by planting. The vigorous spread and dominant establishment of Russian knapweed was of major concern, and monitoring of the herbicide treatments was also a priority of this monitoring effort.

The Buck Springs Fire:

Monitoring reflected the positive vegetative response to the spring rain storms, for a second year in a row. Big sagebrush continued to show no establishment on the transect, although seedlings were planted in 2005 on the Buck Springs burned area. No live big sage was found when the transect was established in 2004.

Russian Knapweed appears to be reversing its trend and showed a large increase in frequency, although barely of noteworthy scope. Canopy and composition values are still inconsequential, but increasing. This reversal is alarming because, originally, the knapweed infestation was relatively light within the Buck Springs Fire area and it was not an important species on the transect in 2004. Percent change was not calculated for canopy and composition because the knapweed values were so small; percent change indices for these parameters would have been meaningless, or misleading.

Grass in 2006 continued the large upward canopy response started in 2005 and was again dominant in composition, although decreasing slightly from 2005. This is probably in response to 2006 moisture. Grass frequency, already at 100% in 2004 and 2005, remained at that figure in

2006. Other forbs' frequency remained essentially static with 2005. Although the percent changes appear noteworthy, the actual values are quite small. Other shrubs continued to be absent on this transect, as in 2004 and 2005.

Bare ground's decrease continued in 2006, as would be expected with the increase in some of the vegetative classes. The rock canopy was essentially unchanged from 2005. The slight decrease is probably due to increased vegetative canopy obscuring some of the smaller stones. There continued to be no survival sign of the 2005 sagebrush seedlings.



Vegetation transect monitoring site in Independence Fire. Note great response by native grasses.

The Independence Fire:

Comparable to the previous year's response, Russian knapweed increased significantly in canopy. This increase is discouraging due to the emphasis in herbicide treatments, however, not totally surprising since this plant is extremely vigorous and proves challenging to control. Knapweed may also have benefited from the second consecutive year of high moisture conditions and showed a significant increase in canopy and a slight increase in composition. Of particular interest and discouragement was the substantial increase in frequency. The site appeared to show the effects of herbicide application on knapweed this year. Consequently,

even though knapweed seems to be increasing on the study plot, many of the plants were yellow, dry and not completing seed set. Big sage sagebrush continued to show no establishment on the transect. Unlike Buck Springs, no seedlings were planted in 2005 on the Independent burned area. No live big sage were found when the transect was established in 2004.

Grass production was not as impressive on this site as on Buck Springs Fire and the lower competition may have allowed the other forbs to take advantage of above average growing season moisture and increase over 2005. Grass canopy decreased noticeably, compared to 2005, possibly attributing to the increased frequency of knapweed. Grass frequency remained the same. There was slight decrease in composition, possibly due to losing grass species as between 2004 and 2005.

Other forb's percent canopy decreased markedly between 2005 and 2006, although coverage values are very low. This decrease could have been due to a sharp reduction in the Chenopod species observed in 2005. Since moisture was comparable between the two years, the canopy reduction was probably not related to the amount of precipitation, but the timing of 2006 storms could have been a factor. Competition with knapweed could be another explanation, although knapweed canopy is still low (albeit increasing). Conversely, both frequency and composition increased in other forbs. This might seem to indicate that the canopy decline was due to less vigorous individual plant growth, rather than a decrease in the number of individual plants.

Other shrubs are not a significant component of this study and continued in that vein in 2005. Bare Ground's significant decrease would be expected with the tremendous increase in grass canopy.

An out-year monitoring interval will be identified to track the trend changes in vegetative composition, building upon the previous three years worth of data. Specific details of the monitoring (including the information presented above) are contained in files at the SIRC headquarters, with duplicates at Camas NWR. This is the last year of fire funding to continue monitoring and/or herbicide treatments.

Acres of Non-Native Invasive Species Treated:

The high recurring infestation of the southern Independence Fire by Russian knapweed, Centaurea repens, prompted the anticipated follow-up herbicide treatments with Curtail in June of 2006. The entire burned area required treatment as it became evident that we had experienced an even greater extent of re-growth than anticipated. The attached GIS map reveals the extent of the knapweed density at 50% or greater concentration. The remaining area, despite the positive response by the native vegetation continues to host sporadic plants, prompting the additional herbicide applications. Compared to the 80%+ density that plagued most of this area in 2004, we have made great progress; however, we must continue to provide follow-up treatments.

As we moved further into late spring/early summer, evidence of a very low efficacy of the fall Plateau treatments (both in and adjacent to the burn area) were noted. Guidance was received by the local Wilber Ellis representative to continue with a higher rate of Curtail for fall herbicide applications, rather than using Plateau. This alteration, will be considered for next year as well

as the minimal areas within the Buck Springs fire that did not receive a spring treatment.

Despite the increased weed detection, native grasses also benefited greatly from the rain and excellent seed production was noted for a second year in the south and western portions of the burn. Additional competition by the native grasses in the long-term is desired to assist in the control of the Russian knapweed. Being persistent with herbicide treatments and changing the type and application period will hopefully offer the greatest stress to these well established plants. With roots over 20 feet deep and many years of seed production, anticipating total control with several treatments is unrealistic. The refuge has been challenged to deal with Russian knapweed since at least the mid-1950's and learning to live with a manageable concentrations is becoming more of a reality. Establishment of the native vegetative cover in the units will ultimately assist with control efforts. Thanks to the EMERGENCY STABILIZATION AND REHABILITATION program, we will made great strides in allowing the native cover to compete with the invasive weeds.



Curtail spring treatment in Independence Fire-Russian knapweed in tall native grass 6/06.

Acres of Burned Area Protected for Natural Regeneration: An insignificant portion of the total acreage is not captured under either: 1) areas that will recover to unacceptable vegetation, e.g. weeds (if left un-treated), or 2) to be re-vegetated acres that were treated in 2005-sagebrush plantings. Estimate is 25% of total acres.

Total Acres Rehabilitated: 241

Estimated Emergency Rehabilitation Funds Expended during Third Year/2005 Amendment:

TREATMENT SPECIFICATION	PROJECTED COST	ACTUAL COST	ACCOUNTING COMMENTS
Line Item 1 & 2: Noxious Weed Control	\$4,866	\$6,766 \$1,900 of total charged to the CWMA.	Increased herbicide costs covered by Cooperative Weed Mgt. Area (CWMA).
Line Item 4: Monitoring	\$2,500	\$2,500	\$2,500 spent to complete the last funded year of monitoring: FY-2006.
TOTAL	\$7,366 for FY 06	\$9,266	

Total Cost (all funding sources) to Date: \$69,747

- \$ 9,800 Emergency Stabilization Funds: (Cultural Resource survey of Dozer Line, Repair Gravel Road, Repair Dozer Lines)
- \$30, 027 ESR Funds for **FY-2004**
- \$1,200 Base Operations Funds (1261): (Maintenance of spray equipment used, diesel fuel for equipment and other staff salaries)-**FY-2004**
- \$19,186 BAR funds for (weed control, plant sagebrush seedlings, monitoring) **FY-2005**
- \$268.00 Base Operations Funds (1262) (Repairs to Spray Equipment) **FY-2005**
- \$7,366 BAR funds for **FY-2006**
- \$1, 900 Non-Refuge, Cooperative Weed Management Area (CWMA) Funds: (Additional Herbicide) **FY-2006**

2005 Amendment Treatments Successful:

The extensive growth by the invasive Russian knapweed received herbicide treatment on 100% of the known sites. Follow-up treatments have been and/or are being conducted in 100% of the burn area again in 2005. Initial observation is that the spring treatments were successful due to the wilting, suppressed growth and lack of flowering. The fall 2004 Plateau treatments initially appeared to be over 90% effective, however, after two years of monitoring, fall application with Plateau is no longer being considered.

Treatments proposed for next month will hopefully account for nearly 100% treatment of known Russian knapweed within the burned areas. The attached GIS map reveals the extent of the knapweed density at 50% or greater concentration. The remaining area, despite the positive response by the native vegetation continues to host sporadic plants, prompting the additional

herbicide applications. Compared to the 80%+ density that plagued most of this area in 2004, we have made great progress; however, we must continue to provide follow-up treatments.

Treatments Unsuccessful:

The spring herbicide treatments implemented in the 2005 ESR appear to have been considerably more successful than the fall Plateau spraying; however, we did see a substantial increase of Russian knapweed. This increase is discouraging due to the emphasis in herbicide treatments; however, vast portions of this burn do appear to have a higher concentration of native grasses than the non-native Russian knapweed, especially compared to the conditions immediately following the initial spring 2004 herbicide treatments.



Volunteer and staff monitoring the spotty effects of the Curtail treatment (tractor and sprayer) from above photo-Independence Fire spring 2004 treatment.