

Yukon Flats National Wildlife Refuge 2005 Fires

BURNED AREA EMERGENCY RESPONSE PLAN

2005 Sheenjek River Fire – Yukon Flats National Wildlife Refuge

UNIT: *Yukon Flats National Wildlife Refuge*

LOCATION: *Fairbanks, Alaska*

DATE: *December 5, 2005*

PREPARED BY: *Sam Patten, Fire Management Officer, Yukon Flats National Wildlife Refuge*

Barry Whitehill, Deputy Refuge Manager, Yukon Flats National Wildlife Refuge

Delia Vargas Kretsinger, Wildlife Biologist, Yukon Flats National Wildlife Refuge

Sheila Dufford, Fish and Wildlife Biologist, Yukon Flats National Wildlife Refuge

Submitted By: _____ Date: _____
Sam Patten, Fire Management Officer

EXECUTIVE SUMMARY

Introduction

This Burned Area Emergency Response Stabilization Plan (BAER) has been prepared in accordance with Department of the Interior and U.S. Fish and Wildlife Service (USFWS) policy. This plan provides emergency stabilization recommendations for lands burned within 2005 Yukon Flats National Wildlife Refuge (NWR) fire perimeters and additional impact areas including: public lands administered by the USFWS, and other jurisdictions if necessary. The primary objectives of the Yukon Flats Burned Area Emergency Stabilization Plan are:

- To prescribe cost effective post-fire stabilization measures necessary to protect human life, property, and critical cultural and natural resources.
- To stabilize promptly and prevent further degradation to affected resources on lands within the fire perimeter or downstream impact areas and mitigate damages caused by fire suppression operations in accordance with approved land management plans and policies, and all relevant federal, state, and local laws and regulations.

Emergency Stabilization

This plan addresses emergency stabilization treatments on the Yukon Flats NWR. Eighteen fires burned approximately 597,000 acres on the Yukon Flats NWR in 2005. This is based on preliminary fire perimeter maps developed by the Bureau of Land Management (BLM), Alaska Fire Service (AFS). Most work will be focused on the Sheenjek River Fire; however, suppression actions and known cultural sites require investigation of seven additional 2005 fires. At this time we do not anticipate doing a detailed analysis of the other ten fires due to lack of fire suppression activity or property losses, small acreage within the refuge, and limited availability of clear imagery.

Brief Fire Backgrounds

The Sheenjek River Fire (BT6U), which burned 114,596 acres, was the most significant of these fires in terms of suppression activity, due to its proximity to the village of Fort Yukon. The Sheenjek River Fire started on June 12, 2005, after a lightning strike in tall riparian white spruce, 25 miles northeast of Fort Yukon. The initial lightning strike was located on the northwest bank of the Sheenjek River, near the confluence with the Porcupine River. Within two days, the fire advanced rapidly to the southwest under hot, dry and windy conditions. The fire then burned along the north side of the Porcupine River to within 12 miles of Fort Yukon. The fire movement toward allotments, cabins, and the village of Fort Yukon required concerted and varied suppression actions by Alaska Fire Service in coordination with the USFWS. These actions were implemented by a number of Emergency Firefighter (EFF) crews from across Alaska. The intent was to stop further movement of the fire into the Modified and Full Suppression areas near Fort Yukon. The suppression actions taken by the firefighters included construction of numerous helispots, sequential handlines, additional firelines, backfires, water drops, defense of allotments

and permitted cabins, boat transport of firefighters to and from Fort Yukon, and similar activities.

These actions were successful by June 24, 2005 in stopping the spread of the fire towards Fort Yukon. The Sheenjek River Fire, after a change in the wind direction, was then allowed to burn to the north into a FWS Limited Suppression area. Further management action was reduced to regular monitoring because attention was directed to other fires. The Sheenjek fire was officially declared out on September 26, 2005.

Smokejumpers were also deployed to protect Native allotments and permitted cabins during four other 2005 Yukon Flats action fires in Limited or Modified Suppression areas. Fires in which these suppression actions took place included the Salmon Fork, the Glacier Creek, Squirrel Creek, and the Long Lake Fires. However, these suppression actions were relatively minor by comparison to those taken during the Sheenjek River Fire. There were no suppression actions on the ground at the Nelson Mountain, Hodzana River, and the John Herberts Village Fires. The fires below are discussed in order of decreasing size.

The Nelson Mountain Fire (BT8K) began as a lightning strike into black spruce and hardwoods in a Limited Suppression area on the south slope of Nelson Mountain, 24 miles northwest of the village of Beaver, on June 13, 2005. The fire burned through August, and eventually covered 244,600 acres. Although this was the largest fire on Yukon Flats NWR in 2005, no suppression actions other than monitoring were necessary. One arm of the fire burned over a section of the old Caro Trail, located near the Hadweenzic River, from Beaver to the former Chandalar goldfields. The fire was declared out on September 26, 2005 after receiving significant rain.

The Salmon Fork Fire (BO2M), which began as a lightning strike into extensive black spruce stands along the Salmon Fork River, 37 miles northeast of Chalkyitsik, on July 19, 2005, burned 236,702 acres in Limited. The lightning strike occurred under Red Flag conditions with NE winds and low humidity. The resulting fire became very large but there were few identified values at risk. Suppression actions included only the defense of two permitted main cabins along with three associated secondary trapline cabins. These structures, known as the Greer and Thomas cabins, were defended by smokejumpers who brushed out and then burned out from the various buildings as the fire approached on July 22 – 24, 2005. There was no known ground disturbance at these sites. The fire was then monitored at intervals for the remainder of the summer. The last smoke was observed on September 8, 2005. The fire was declared out on Sept. 26, 2005, after receiving significant rain.

The Glacier Creek Fire (B4BH) burned 33,065 acres in Limited on the north slope of the White Mountains near the confluence of Victoria Creek with Beaver Creek. The fire started as a result of a probable lightning strike into black spruce stands under very smoky conditions on August 15, 2005. Subsequent suppression actions began on August 23, 2005, and included only the defense of two FWS permitted cabins along Beaver Creek. Two fire crews cleared trees and brush around the two cabins, installed sprinkler systems and pre-treated the perimeters with water. The fire never actually approached the cabins. The two crews were demobilized from the cabins on August 25, 2005. The fire, smoldering and creeping, was then monitored through the

rest of August. There were no open flames by September 2, 2005 and the fire was declared out on September 26, 2005.

The Hodzana River Fire (BT7A) also began as a lightning strike into black spruce in a Limited Suppression area on the south side of the Hodzana River, 43 miles northwest of Beaver, on June 12, 2005. The fire burned slowly through June, July, and August, and eventually covered 26,710 acres. Similarly, no suppression actions other than monitoring were necessary. Only a few smokes were reported by August 9, 2005, and the fire was declared out by September 15, 2005.

The Squirrel Creek Fire (B13D) burned 19,345 acres in Modified and Limited 25 miles SE of Fort Yukon. The fire started as a lightning strike on July 26, 2005 into black spruce and tundra. Suppression actions included only the defense of two cabins on allotments using sprinkler systems and saw lines. Cabins and allotments were eventually not threatened by the fire approach. The fire continued to smolder and creep until September 2, 2005 when the last smoke was observed.

The John Herberts Village Fire (B10F) is an example of another fire that was placed only in monitor status. However, there are concerns about the potential effects of this fire on cultural resources. The fire was across the Porcupine River from an old village site. This fire started as a lightning strike into black and white spruce on the south bank of the Porcupine in Limited, 57 miles northeast of Ft. Yukon, on July 25th. The site of the initial ignition was across the river from the old village site. The fire burned 17,093 acres to the SW on the south bank of the river but never actually spotted across the Porcupine. The last smoke was observed on September 2nd and the fire was declared out on September 26th.

The Long Lake Fire (BWE2) burned 481 acres 13 miles northwest of Beaver. The fire began as a lightning strike in Modified Suppression Zone on June 26, 2005. This was before the annual conversion date to Limited Suppression (approximately July 10th) and was thus treated as Full Suppression fire. The fire began under hot and dry conditions with strong gusty winds. Fuel types were aspen with mixed understory, black spruce, white spruce, and deciduous shrublands. Suppression forces were deployed to contain the fire because of the Full Suppression category, the risk of expansion, and the proximity to the village of Beaver, as well as to a nearby USFWS field camp. Up to 112 personnel worked on the fire, including six Type 2 crews, smokejumpers, three helicopters, and two air tankers. Ground crews successfully encircled the fire with a hoselay, extinguished the flames, and gridded and cold-trailed the fire until July 8, 2005. The fire was then monitored and no further smokes were observed by July 26, 2005.

Smoke, an extended fire season, poor weather conditions, and October snowfall have prevented an assessment of the fires to date, and a full assessment will not be possible until spring 2006. Therefore, this plan is based on existing knowledge of the affected areas rather than post-fire assessments conducted by agency personnel. In preparation of this plan, the preparers reviewed existing information about biological and cultural resources within or adjacent to the fire perimeter and reviewed fire reports to assess potential impacts of suppression activities.

Issues to be Addressed in this Emergency Stabilization Plan

The following issues will be addressed in the BAER Stabilization Plan:

1. Non-native, invasive plant species - Sites where the possibility that seeds of invasive weeds were inadvertently introduced on tools and equipment used by firefighters during suppression activities will be evaluated and weeds will be hand pulled if found.
2. Hazard trees near campsites and trails - Standing dead hazard trees within falling distance of annually used campsites and a winter trail will be assessed and removed.
3. Damage to cultural resources - Known cultural sites within the fires will be evaluated and protected through such means as camouflaging if necessary.
4. Damage to cultural resources – Additional cultural sites affected by the fires and discovered as part of Emergency Stabilization efforts will be monitored 1 year following treatment and further protected through such means as camouflaging.

Goals and Objectives Pertinent to BAER Activities

The Yukon Flats Fire Management Plan (FMP) was completed in 2001. Goals within the plan are (Section III.B):

1. Protect life, property, and identified resources from fire.
2. Manage wildland fire and prescribed fire to protect or enhance habitat and ecosystems for the benefit of fish and wildlife.
3. Communicate, coordinate, and cooperate with suppression organization staff, adjacent land owners, and the general public.

Within these broad goals, several objectives are pertinent to BAER activities. Under Goal 1 in the FMP, there is an objective to protect critical refuge resources from undue damage from wildland fire and from fire suppression activities. Effects of these fires on cultural resources are not yet known. Known or incidentally discovered cultural resource sites within or adjacent to 2005 wildfires, primarily within the Sheenjek River, Nelson Mountain, Salmon Fork, and John Herberts Village fire perimeters are being considered under this stabilization plan.

The FWS Cultural Resources Policy (614 FW1, 1992) directs refuges to “protect, maintain, and plan for the use of Service managed cultural resources for the benefit of present and future generations,” and that we “exercise caution that cultural resources are not inadvertently transferred, sold, demolished, or substantially altered as a result of Service sanctioned activities until appropriate identification, evaluation, and planning are accomplished.” Many of the refuge’s cultural resources have not been adequately identified or evaluated, and are thus subject to loss through fire and other activities.

Subsistence camp site safety also needs to be addressed under Goal 1. Danger trees need to be identified and removed from traditional campsites in burned areas as part of emergency stabilization. These camp sites are usually found in riparian areas such as along the Yukon, Porcupine and Sheenjek Rivers.

Activities within this BAER proposal are also supported by national policy. The FWS Biological Integrity, Diversity, and Environmental Health Policy (601 FW3, 2001) directs refuges to “prevent the introduction of invasive species, detect and control populations of invasive species, and provide for restoration of native species and habitat conditions in invaded ecosystems.” Yukon Flats NWR currently has limited populations of invasive/exotic plants, and will take a proactive role in preventing introduction via seeds introduced on fire suppression equipment and/or from adjacent human-use areas such as permitted cabins and allotments.

Detailed fire backgrounds are found in Part A. The individual emergency stabilization treatments specifications, including effectiveness monitoring identified in the assessments, can be found in Part F. A summary of the costs is in Part E. Appendix II contains the National Environmental Policy Act (NEPA) compliance documentation summary. Appendix III contains the Burned Area Emergency Response Stabilization Plan maps.

TABLE OF CONTENTS

EXECUTIVE SUMMARY..... 3

PART A – FIRE LOCATION AND BACKGROUND INFORMATION..... 9

PART B – NATURE OF PLAN..... 18

PART C – EMERGENCY STABILIZATION ASSESSMENT..... 18

PART D – TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS..... 19

PART E – SUMMARY OF ACTIVITIES AND COSTS..... 20

PART F – INDIVIDUAL SPECIFICATIONS..... 21

PART G – CONSULTATIONS..... 37

APPENDIX I – RESOURCE ASSESSMENTS 38

APPENDIX II – ENVIRONMENTAL COMPLIANCE..... 48

APPENDIX III – MAPS..... 53

PART A - FIRE LOCATIONS AND BACKGROUND INFORMATION

Management Requirements

Yukon Flats NWR was created in December 1980 with the passage of the Alaska National Interest Lands conservation Action (ANILCA – Public Law 96-487). The refuge encompasses 11.2 million acres in northeastern Alaska, straddling the Arctic Circle and occupying a basin formed by the Yukon River. Habitats consist of boreal forest and muskeg, numerous wetlands, riparian areas, and upland tundra. The boreal forest of the Yukon Flats NWR is a fire-driven ecosystem, subject to repeated cycles of burning and regeneration, and the source of much habitat diversity. Bureau of Land Management lands, the Venetie Reservation, and the Arctic National Wildlife Refuge lie to the north of the Refuge, and BLM and Alaska State lands abut the southern Boundary of the Yukon Flats Refuge.

The establishing purposes of the refuge, defined in ANILCA, are: 1) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, canvasbacks and other migratory birds, Dall sheep, bears, moose, wolves, wolverines and other furbearers, caribou (including participation in coordinated ecological studies and management of the Porcupine and Fortymile caribou herds) and salmon; 2) to fulfill international treaty obligations with respect to fish and wildlife and their habitats; 3) to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and 4) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (1), water quality and necessary water quantity within the refuge.

Yukon Flats NWR does not contain designated Wilderness. However, ANILCA also designated a 16-mile section of Beaver Creek in the southern portion of the Refuge as part of the National Wild and Scenic River System. No threatened or endangered species are known to occur on the refuge, although a State ranked S2 plant species (considered imperiled in Alaska), the Yukon wild buckwheat (*Erigonum flavum* var. *aquilinum*, has been found on a bluff above the Porcupine River.

Detailed Fire Background

The Sheenjek Fire, Fire Number BT6U, was first detected within the Yukon Flats National Wildlife Refuge on June 12, 2005, in a Limited Suppression area, but within a half mile of an allotment. The fire began after a lightning strike to several riparian white spruce. The lightning strike occurred during very dry and windy conditions. Initial attack forces were launched immediately because of proximity of the ignition to the allotment and to a Modified Suppression area. The resulting fire, pushed by strong northeast winds, quickly escaped the initial attack. The fire moved rapidly to the southwest, entered the Modified Suppression, and moved towards a Full Suppression area. The fuels in this area consisted of open muskeg habitat, black spruce, aspen stands, and deciduous shrubs. The fire moved actively through all fuel types. The fire secondarily spread into similar flat wooded terrain north and west of the Sheenjek River. Primary movement, however, continued southwest into a Full Suppression area along the Porcupine River, north of the village of Fort Yukon. This area contained approximately twenty-five allotments. The fire also began to burn

westward towards the 2004 Winter Trail Fire area. The 2004 burn scar was unlikely to reburn with any intensity. Fire management officials immediately decided to construct several sequential firelines connecting the riparian corridor of Sheenjek River to the burn scar of the 2004 Winter Trail Fire. This was done in order to inhibit further southwest movement of the 2005 Sheenjek Fire. The intent of this fireline construction was to connect wetlands adjacent to the riparian corridor of the Sheenjek and Porcupine rivers with the 2004 Winter Trail burn scar, burn out along the fireline, and stop further SW movement of the fire. Under strong and prolonged NE winds, the fire jumped the first fireline, but a second fireline, constructed further west, was effective in holding the fire. The fire perimeter also included areas along the Sheenjek River that supported five allotments and several cabins. EFF ground crews also constructed secondary firelines and burned out to protect the Native allotments north and west of the Sheenjek and Porcupine Rivers. The Sheenjek River fire perimeter was last updated on September 26, 2005 when the digitized acreage was 114,596.5 acres and the fire was officially declared out.

The Sheenjek River Fire was monitored on a daily basis, except when smoke and weather precluded monitoring efforts. This fire dominated all other fire suppression activities on the Yukon Flats in summer 2005 because it threatened Fort Yukon. Table 1 summarizes important parameters and characteristics of the Sheenjek River Fire. Table 2 provides a daily summary of suppression actions and acreage involved for the 2005 Sheenjek River Fire. Table 3 briefly summarizes fire numbers, ignition sources, FWS acres, acres per agency jurisdiction, and total acres for all the other Yukon Flats fires under discussion. Other Yukon Flats NWR action fires or fires of interest (Nelson Mountain, Salmon Fork, Glacier Creek, Hodzana River, Squirrel Creek, John Herberts Village, and Long Lake) are portrayed in more detail in Tables 4-10. Information was provided by the BLM Alaska Fire Service.

Table 1. Important Parameters and Characteristics of the 2005 Sheenjek River Fire.

Fire Name	Sheenjek River 2005
Fire Number	BT6U
Agency Unit	Yukon Flats NWR
FWS Region	7
State	Alaska
County(s)	NA
Ignition Date/Cause	June 12, lightning
Zone	Upper Yukon – Tanana (UYT)
Date Fully Contained	September 30, 2005
Jurisdiction	FWS, 81,510 acres
Other jurisdictions	Doyon, 23,040 acres
Other jurisdictions	Approximately 30 Native Allotments
Total Acres	114,596.5
Date Contained	September 26, 2005

Table 2. Summary of the most significant 2005 fires on Yukon Flats NWR; fire names, ignition causes and dates, and burned acreage per agency jurisdiction. Information from preliminary AFS reports.

Fire Name	Sheenjek River	Nelson Mtn	Hodzana River	Long Lake	John Herberts Village	Squirrel Creek	Glacier Creek	Salmon Fork
Fire Number	B13V	B2VK	B10P	B21N	BUK9	BUL2	BS3J	B3HV
Agency Unit	FWS							
Region	7	7	7	7	7	7	7	7
State	AK							
Ignition Date/Cause	06/12/05 lightning	06/13/05 lightning	06/12/05 lightning	06/26/05 lightning	07/26/05 lightning	08/15/05 lightning	08/15/05 lightning	07/19/05 lightning
Zone	Upper Yukon							
Date Fully Contained	09/26/05	09/26/05	09/15/05	07/26/05	09/26/05	09/26/05	09/26/05	09/26/05
Jurisdiction	Acres							
US Fish and Wildlife Service	81,586	244,014	26,710	481	17,092	19,281	28,688	154,178
Other jurisdictions	33,011	586	0	0	1	64	4377	82,524
Total Acres	114,597	244,600	26,710	481	17,093	19,345	33,065	236,702

Table 3. Daily summary of 2005 Sheenjek River fire activity, suppression efforts, and acreage. This was the most important fire on Yukon Flats NWR in 2005. Information from preliminary AFS reports.

Date	Activity	Acres
June 12	Fire detected 25 miles NE of Fort Yukon in Limited near Modified, on NW bank of the Sheenjek River, within ½ mile of an allotment. Decision made immediately to deploy suppression resources. IA and air attack begin.	20 when detected
June 13	Fire driven rapidly southwest by strong winds. . Fire escapes initial attack. Crews work on cabin and allotment protection.	3000
June 14	Fire has progressed about 5 miles to the southwest and has spotted across the Sheenjek River.	4,500
June 15	The fire transitioned from Type 3 to Type 2 team. Successful burnout around 2 cabins.	8,000
June 16	Resources continued to hold and secure cabins and allotments. Aerial firing slowed fire growth to west.	15,000
June 17	Fireline construction towards 2004 Winter Trail burn scar. Active aerial watertanker use.	23,000
June 18	Fire weather watch for high easterly winds Spots over Sheenjek River secured.	23,510
June 19	Fire jumps first control line under high wind conditions. Smoke restricts aircraft operations.	37,120
June 20	Fire extends on western and southwestern perimeters; spots across Porcupine River.	
June 21	Second fireline construction extends westward from Sheenjek River to Winter Trail burn scar. Evacuation plan development begins for Ft. Yukon. Spots across Porcupine River secured.	59,572
June 22	Crews reinforced southern fireline perimeter. Fire very active under dry gusty winds. CL-215's effective for water drops. EFF's continue securing the perimeter towards Winter Trail burn.	
June 23	Crews continued to reinforce second main fireline and additional firelines around cabins and allotments. Fort Yukon evacuation plan finalized. Fire is 12 miles from Ft. Yukon.	68,400
June 24	Second main fireline holds even under hot and dry conditions.	71,040
June 25	Wind shifts from NE to SW. Crews mop up and secure additional firelines around cabins and allotments. Fire allowed to burn to N into FWS Limited Suppression land.	80,490
July 4	Numerous smoldering pockets, occasional torching within northern section of fire. Firefighters continue to protect allotments near the confluence of the Sheenjek and Porcupine Rivers. Staffing remained at 66.	105,787
July 5	Surveillance aircraft reported one interior smoke. Helicopters and some crews released.	
July 7	EFF completed mop up around the cabins, remaining personnel mopped up around allotments. No activity on southwest edge towards Ft. Yukon.	107,240.0
July 8	Fire behavior minimal.	
July 9-14	Crews and overhead demobilized and fire placed in monitor status.	
July 15	Only a few smokes were located on the western edge and in the interior of the fire.	
July 16	Intermittent smokes on the perimeter, scattered smokes in the interior, 1 smoke on SW control line.	
July 19	Fire backing to north and NW, smoldering and creeping, with interior smokes.	107,240.0
July 24	Surveillance plane reports 10% active perimeter to north, a few isolated interior smokes and no activity to SW.	
July 25	Fire is smoldering and creeping, 5% active on north end.	111,662.0
July 29	No smokes on entire fire. Overcast with light rain.	
July 31	Smoldering in interior, but no activity on perimeter.	114,135.2
August 5	One interior smoke reported.	114,135.2
August 9	Fire was smoldering, creeping and backing to N, NE in Limited.	114,135.3
Sept 2	Only a few smokes on northern perimeter in Limited.	114,135.3
Sept 8	A few scattered smokes on the north end of the fire and no activity on the south end.	
Sept 26	Fire had received significant rain. Fire declared out.	114,596.5

Table 4. Daily summary of 2005 Nelson Mountain Fire (BT8K) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
June 13	Fire discovered on south slope of Nelson Mountain 24 miles NW of Beaver in Limited. Probable lightning strike. Black spruce and hardwoods fuel type. 100% active. Fire placed in monitor status.	4 acres
June 24	Fire very smoky. SE corner backing into wind with intermittent runs.	11,116 acres
July 26	Fire backing at tail, running and intermittently crowning on the flanks with 100 ft spotting at the head.	25,711 acres
August 8	Fire very active on NW side, moving in arc to E, flanking to W, producing 10,000 smoke columns.	50,000 acres
August 25	One arm of the fire moves east towards Hadweenzic River and burns over a section of the old Caro Trail. No values determined at risk. Monitoring continues	164,637 acres
Sept. 26	Fire burns in Limited and becomes very large. Fire declared out on Sept 26 th after heavy rain.	244,600 acres

Table 5. Daily summary of 2005 Salmon Fork Fire (B02M) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
July 19	Fire discovered 37 miles NE of Chalkyitsik in Limited. Probable lightning strike. Black spruce and hardwoods fuel type. IA requested to respond. 8 SMJ's deployed to protect 2 FWS permitted cabins. Fire 50% active driven by 15 mph NE wind.	400 acres
July 20	Smokejumpers cut saw line, plumbed hose lays, sprinkler kits, brushed out, burned out and mopped up around one cabin, and cut helispots. Fire perimeter 85% active, w/ 8-10 mph winds. Smokejumpers demobilized and fire placed in monitor status.	1,000 acres
July 22	Fire approaches permitted second cabin. SMJ return and nearly complete burn out around second cabin as main fire nears.	
July 23	Successful burn out around second cabin.	
July 24	Main fire activity increases to 100% during day; 15 ft flame lengths..	
July 25	Smokejumpers mop up 50 ft from the cabin.	
July 26	Cabins secure. SMJ demobilized and fire placed in monitor status. Fire burns in Limited and becomes very large, until Sept. 8 th when last smokes observed.	
Sept. 26	Fire declared out on Sept. 26 th after heavy rains.	236,702 acres

Table 6. Daily summary of 2005 Glacier Creek Fire (B4BH) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
August 15	Fire discovered under very smoky conditions on north slope of White Mountains near confluence of Victoria Creek and Beaver Creek in Limited. Probable lightning strike. Black spruce fuel type. Fire placed in monitor status.	100 acres
August 23	Fire nears 2 permitted cabins on Beaver Creek under very smoky conditions. 2 SMJ crews deployed to clear trees and brush from around cabins, set up sprinkler systems for wet lines, and pre-treat perimeters.	3,643 acres
August 25	Fire never actually approaches cabins. Fire smoldering and creeping. Crews demobilized.	3,643 acres
August 26	Fire moving away from cabins. Fire continues smoldering and creeping under very smoky conditions.	
Sept. 2	No open flames.	
Sept. 26	Fire declared out Sept 26 th .	33,065 acres

Table 7. Daily summary of 2005 Hodzana Fire (BT7A) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
June 12	Fire begins as lightning strike into black spruce stands in Limited 43 miles NW of Beaver. Fire crowning through black spruce. Fire placed in monitor status.	500 acres
June 15	Fire smoldering and creeping after rainfall.	1,000 acres
June 17	Perimeter 5% active, smoldering.	
June 22	Fire 6% active, backing to SE.	
June 23	Fire perimeter 40% active, backing on 6 mi. flame front, with 20 – 30 ft flame lengths.	5,140 acres
June 27	Fire burning in black spruce and tundra, smoldering, creeping, and backing.	
July 19	No smokes observed.	
August 10	Small amount of smoke on west side of fire. Very little fire activity observed.	17,511 acres
Sept. 8	No smoke observed.	
Sept. 15	Fire declared out on Sept. 15 th .	26,710 acres

Table 8. Daily summary of 2005 Squirrel Creek Fire (B13D) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
June 26	Fire discovered 25 miles SE of Fort Yukon in Modified 1.5 mi E of Yukon River. Probable lightning strike. Black spruce and tundra fuel types. 3-4 ft flame lengths. Placed in monitor status because of shortage of resources	1 acre
June 27	Fire 1.5 mi from permitted cabin and allotment. 2 sloughs and old burn between fire and cabin.	300 acres
July 29	Perimeter 70% active in black spruce with 4,500 smoke column.	600 acres
July 30	SMJ set up sprinkler system for cabin on allotment. Fire moving away from cabin.	
July 31	SMJ set up another sprinkler system for another cabin on allotment SE of fire. No open flames.	
August 2	Only three small areas of smoke at NNW corner of fire.	4,690 acres
August 10	Fire active on E and backing to NW, but cabin and allotment not threatened.	6,860 acres
August 18	Type 1 crew assigned to fire and arrive on site to protect cabin and allotment.	13,278 acres
August 19	Saw line cut around north cabin and hose lay in place. Defensible space improved.	
August 21	Reinforced and improved saw line surrounding allotment.	
August 22	Crew demobilized.	
Sept. 2	Last smoke observed Sept 2 nd .	
Sept. 26	Fire declared out Sept. 26 th .	19,345 acres

Table 9. Daily summary of 2005 John Herbert's Village Fire (B10F) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
July 25	Fire discovered 57 miles NE of Fort Yukon in Limited on south bank of Porcupine River across from John Herberts Village. Probable lightning strike. Black and white spruce fuel types. No open flame, smoldering.	1 acre
July 27	Zone surveillance reported fire 100% active.	300 acres
July 29	Fire 60% active with 2-3 ft flame lengths.	
July 31	Fire smoldering and backing, 70% active, but no open flame.	
August 5	Fire backing to SW and SE.	
August 9	Fire 70% active on all sides, but has grown most to west.	
August 10	Active crown fire with west wind, 50 to 75 ft. flame lengths	
August 13	Perimeter 75% active with 3 – 5 flame lengths with NE wind at 5-7 mph.	
August 22	No significant fire activity.	
Sept. 2	Smoldering in black spruce and tundra. No flames observed. Last smoke observed.	
Sept. 26	Fire declared out on Sept. 26 th after heavy rain.	17,092.9 acres

Table 10. Daily summary of 2005 Long Lake Fire (BWE2) activity, suppression efforts, and acreage. Information from preliminary AFS reports.

Date	Activity	Acres
June 26	Fire discovered smoldering in mixed hardwoods and spruce 13 miles NW of Beaver in Modified. Probable reburn of Adam Lake Fire. IA requested to respond: SMJ's, 2 CL-215, 2 Type 2 crews. Priority was to keep fire from spreading and protect allotments to south.	200 acres
June 27	3 helicopters, 2 air tankers, 2 crews worked the fire, setting up southern perimeter.	
June 29	3 additional type 2 crews arrive and are deployed, attempt to cut off the head of the fire.	407 acres
July 2	Crews worked on securing south flank with hose lay and pumps. 91 personnel assigned.	
July 3	Hose lay continues, working to establish around entire perimeter. Mop up and secure southern perimeter lines. Fire smoldering and creeping with intermittent torching.	
July 4	Crews secure hose lay around entire perimeter. Rain, high RH, clouds reduce fire activity.	
July 5	Crews tie in saw line and hose lay and mop up 100 ft within perimeter.	
July 7	Crews resume gridding within 300 feet into the fire. 2 crews demobilized.	
July 8	Crews backhaul equipment and extinguish hot spots. Fire contained 2150 hrs.	
July 9	Mop up and extinguish a few smokes. 2 more crews demobilized.	
July 10	All personnel demobilized. Fire placed in monitor status.	
Sept. 15	Fire declared out Sept. 15.	481 acres

PART B - NATURE OF PLAN

Type of Action (check one box below)

XXX	Initial Submission
	Amendment to the Initial Submission

PART C - EMERGENCY STABILIZATION ASSESSMENT

Emergency Stabilization Objectives:

- Locate and stabilize severely burned conditions that pose a direct threat to human life, property, or critically important cultural and natural resources.
- Recommend post-fire emergency stabilization prescriptions that prevent irreversible loss of natural, historic, and cultural resources.
- Locate and remove non-native invasive plants that have been introduced to areas occupied by fire personnel during suppression efforts or in severely burned sites adjacent to areas that may serve as seed sources for invasive species (e.g., winter trails, allotments, or other areas of human use where equipment/vehicles may serve as a vector for seed dispersal).
- Develop rehabilitation plans and eradication plans for non-native plant populations identified.

PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS

I. Burned Area Emergency Response Team Members: *(List of technical specialists used to develop the plan)*

Position	Team Member (Agency)
Team Leader	Sam Patten (FWS)
Operations	Barry Whitehill (FWS)
Cultural Resources/Archeologist	Debra Corbett (FWS)
Vegetation Specialist	Delia Vargas Kretsinger (FWS)
Biologist/GIS Specialist	Sheila Dufford (FWS)

II. Resource Advisors: (Note: Resource Advisors are individuals who assisted the burned area emergency response team with the preparation of the plan. See Part H for a full list of agencies and individuals who were consulted or otherwise contributed to the development of the plan.)

Name	Affiliation
Gene Long	USFWS - Regional Fire Management Coordinator
Karen Murphy	USFWS – Regional Fire Ecologist
Randi Jandt	BLM - Alaska Fire Service – Fire Ecologist

PART E - SUMMARY OF ACTIVITIES AND COSTS

The summary of activities and cost table below identifies emergency stabilization costs charged or **proposed** for funding from subactivity 9142 funding sources.

Table 9. Summary of emergency stabilization activity costs for 2005 Yukon Flats NWR Fires

Spec #	Title	Unit	Unit Cost	# of Units	Work Agent	Cost
1	Plan Development and Assessment	acres	\$0.01	597,713	FA	\$5,920
2	Assess Danger Trees at Campsites and Winter Trail	acres	\$161.00	Est. 88	FA & SC	\$14,225
3	Remove Hazards from Campsites and Winter Trail	acres	\$251.00	est. 40	FA & SC	\$8,821
4	Cultural Resources Protection	acres	\$279.40	est. 75	FA & SC	\$41,906
5	Invasive Plants Control	acres	\$285.00	251	FA & SC	\$71,578
TOTAL COST]						\$142,450
Work Agent: CA=Coop Agreement, FA=Force Account, G=Grantee, P=Permitee, SC=Service Contract, TSP=Timber Sales Purchaser, V=Volunteer						

PART F - INDIVIDUAL SPECIFICATIONS

Treatment/ Activity Name	Plan Development and Assessment	PART E SPECIFICATION #	1
NFPORS Treatment Category	Planning	FISCAL YEAR(S) (list each year):	2006
NFPORS Treatment type *	Prescription and Design	WUI? Y / N	No
Impacted Communities at risk	None	IMPACTED T&E SPECIES	None

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

<p>Number and Describe Each Task:</p> <p>A. General Description: Gather necessary information concerning resources at risk (i.e., cultural resource sites, invasive species, and FWS minor facilities [trails, campgrounds, etc.]) to develop the necessary Burned Area Emergency Response and Burned Area Rehabilitation Plans for the 2005 fires on the Yukon Flats NWR, with primary focus on the Sheenjek River, Nelson Mountain, Salmon Fork, Glacier Creek, Hodzana River, Squirrel Creek, John Herberts Village, and Long Lake Fires.</p> <p>B. Location/(Suitable) Sites: 2005 burned areas with anticipated emergency stabilization or burned area rehabilitation issues. This plan covers the 2005 wildfires on the Yukon Flats NWR, with primary focus on the Sheenjek River, Nelson Mountain, Salmon Fork, Glacier Creek, Hodzana River, Squirrel Creek, John Herberts Village, and Long Lake Fires.</p> <p>C. Design/Construction Specifications:</p> <ol style="list-style-type: none"> 1. Review refuge land/fire management plans (i.e., CCP, HMP, FMP, etc.), 2005 wildfire suppression and first order fire effects monitoring records relative to the above resources at risk in the burned areas. Based on the approved land management plans, identify what constitutes “fire damage”, to what resource management standards will the fire damage need to be addressed, and are there administrative constraints that need to be addressed. Specifically: <ul style="list-style-type: none"> • What can realistically be done to each known cultural resource sites to minimize further degradation until additional long-term cultural resource management strategies can be developed and implemented? • What are the refuge winter trails and native use campground public use safety standards? • What is the approved refuge trail marking method. • What are the anticipated invasive species issues and where are the most likely locations for invasive species establishment? What invasive species control method are approved (i.e., approved pesticides). 3. Locate (map) resources at risk. (Note: these costs are incorporated into the individual specifications) <ul style="list-style-type: none"> • Known cultural resource sites. • High priority invasive species invasion sites in the burned area (e.g., public access points, winter trails, etc.). • FWS minor facilities (e.g., trails, campgrounds etc.). 4. Aerially assess each specific refuge resource at risk to preliminary determine whether any treatment is

needed and, if so, the type and degree of treatment needed. Specifically identify:

- Fire damage to known cultural resource sites containing combustible materials. Unstable culture resource sites or as site exposed by the wildfire and susceptible to erosion or looting.
- Fire damage to refuge facilities that will need to be repaired or replaced.
- Visible location of winter trails and the possible need for trail markers.
- Tree mortality along winter trails creating unacceptable (based on refuge approved land management plan standards) public safety standards.
- Fire damage to winter trails or native use campgrounds requiring rehabilitation to refuge approved land management plan standards.
- Significant ground disturbance (high burn severity or suppression actions) creating the potential for invasive plant establishment.

5. Record findings for plan preparation..

6. Prepare Burned Area Emergency Response and/or Burned Area Rehabilitation Plans to address each individual resource treatment issue.

D. Purpose of Specification: Develop specific treatment specifications

E. Treatment Effectiveness Monitoring Proposed: None

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
GS-11 Wildlife Biologist/Vegetation Specialist @ \$40/hour x 40 hrs (FY06)	\$1,600
GS-11 Wildlife Biologist/GIS Specialist @ \$40/hour x 60 Hours (FY06)	\$2,400
GS-12 Deputy Refuge Manager @ \$48/hour x 40 hours (FY06)	\$1,920
GS-11 Fire Management Officer @ \$40/hour x 60 hours (FY06) covered through 9131	0
TOTAL PERSONNEL SERVICE COST	\$5,920
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL MATERIALS AND SUPPLY COST	0
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
	0
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	0

SPECIFICATION COST SUMMARY

Fiscal Year	Planned Initiation Date (M/D/YYYY)	Planned Completion Date (M/D/YYYY)	Work Agent	Units	Unit Cost	Planned Accomplishments	Planned Cost
FY-06	10/11/2005	8/30/2006	F	acres	\$0.01/acre	597,713 acres	\$5,920
TOTAL							\$5,920

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

<ol style="list-style-type: none"> 1. Estimate obtained from 2-3 independent contractual sources. 2. Documented cost figures from similar project work obtained from local agency sources. 3. Estimate supported by cost guides from independent sources or other federal agencies 4. Estimates based upon government wage rates and material cost. 5. No cost estimate required - cost charged to Fire Suppression Account 	P
--	---

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS – Yukon Flats National Wildlife Refuge	597,713 acres	\$5,920
TOTAL COST		\$5,920

Treatment/ Activity Name	Assess Danger Trees at Campsites and Winter Trail	PART E SPECIFICATION #	2
NFPORS Treatment Category *	Trails	FISCAL YEAR(S) (list each year):	2006
NFPORS Treatment Type *	Assessment	WUI? Y / N	No
Impacted Communities at risk	Chalkyitsik, Fort Yukon	IMPACTED T&E SPECIES	None

* See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE

A. General Description:

Assess how many annually used campsites along the Porcupine, Yukon, and Sheenjek Rivers have standing danger trees associated with them that were killed in the 2005 Sheenjek River, Squirrel Creek and John Herberts Village fires. Both rivers have numerous traditional users, primarily from the Villages of Fort Yukon and Chalkyitsik, that heavily use the river corridors for subsistence activities. In addition, there are people floating these rivers for recreation from outside the area. A traditional winter trail that heads north from the Village of Chalkyitsik is within the burn perimeter of the John Herberts Village Fire for roughly three miles. Danger trees need to be assessed along its route within the fire perimeter. The winter trail portrayed on the USGS topographical map likely does not represent the current route. Assessment will include village meetings in Fort Yukon and Chalkyitsik, plus an on-the-ground assessment conducted by boat in June. The meeting, likely in March-April 2006, will be to discuss the actual campsite and trail locations and plans for treatment, if any is needed. The aerial assessment will be conducted in cooperation with the Council of Athabascan Tribal Governments (CATG), along with an operator and one village resident familiar with the route, plus a refuge staff member. Ground assessment will be done at identified campsites and along the trail route. This assessment will be used to determine how much work will be required to reduce fire-created hazards for public safety.

B. Location/(Suitable) Sites:

According to the USGS topographical map, approximately three miles of the Chalkyitsik winter trail was burned by the John Herberts Village Fire, just south of the Porcupine River. The trail crosses wetland areas, riparian habitat, and forested uplands within the fire perimeter. An unknown number of annually used campsites will be identified through the village meetings in Fort Yukon and Chalkyitsik and through the ground assessment work.

C. Design/Construction Specifications:

1. Determine the most cost effective treatment method to mark winter trail location and remove hazard tree (e.g., force account, contract with native village, etc.) and mark trails.
2. The assessment will consist of a meeting in Fort Yukon and a meeting in Chalkyitsik in March or April 2006 to discuss standing danger trees created by fire damage near annually used campsites and along the trail and the opportunity for hazard removal. Residents familiar with campsites and trails

will indicate the locations on a map.

3. One resident from the village, or the refuge Refuge Information Technician, will accompany refuge staff on an aerial survey of the Porcupine, Yukon, and Sheenjek rivers in June to identify sites with standing danger trees (large trees leaning in a manner which suggests that they could fall on unaware campers) within the 2005 fire perimeter that are within fall distance of annually used campsites and the trail on Refuge land. Campsites, trail route, and associated standing danger trees will be recorded in a GPS, plus specific trees will be described and flagged if landing the helicopter is possible.

D. Purpose of Treatment Specifications:

Standing danger trees pose a threat to campers and travelers through the Yukon Flats NWR. Blocked trails and debris on trails can represent significant safety risks to travelers that rely on trails for winter travel to allotments and seasonal hunting areas. This preliminary assessment is necessary to determine the exact location of danger trees near campsites and the trail. Information gained from this assessment will be used to modify Treatment #3 Remove Hazards from Campsites and Winter Trail.

E. Treatment Effectiveness Monitoring Proposed:

A report of assessment results will be produced by refuge staff. Recommendation for hazard tree removal are in the following specification. No additional monitoring is required for this task.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
GS-12 Deputy Refuge Manager @ \$48/hour X 40 hours (FY06)	\$1,920
GS-11 Biologist/GIS Specialist @ \$40/hour X 16 hours (FY06)	\$640
TOTAL LABOR, MATERIALS, AND OTHER COST	\$2,560
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	\$0.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
AVgas @\$5.00/gal X 225 gallons	\$1,125.00
	00
TOTAL MATERIALS AND SUPPLY COST	\$1,125.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
Commercial flight for Deputy manager between Fairbanks and Fort Yukon/Chalkyitsik @\$270.00 X two trips	\$540.00
TOTAL TRAVEL COST	\$540.00

CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
R-44 Helicopter (charter) @\$600/hour x 16 hours	\$9,600.00
Village representative \$200/day X 2 days	\$400.00
TOTAL CONTRACT COST	\$10,000.00

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY-06	10/14/2005	08/30/2006	F & S	acres	\$161.00	est. 88 acres	\$14,225.00
FY-07							0
FY-08							0
FY-09							0
TOTAL							\$14,225.00

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	P, E, C
5.	No cost estimate required – cost charged to Fire Suppression Account	C

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

A map of the winter trail depicted on the USGS Fort Yukon 1:250,000 quadrangle, with an overlay of the fire perimeter, can be found in Figure 2.

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS – Yukon Flats National Wildlife Refuge	est. 88 acres	\$14,225.00
	TOTAL COST	\$14,225.00

Treatment/ Activity Name	Remove Hazards from Campsites and Winter Trail	PART E SPECIFICATION #	3
NFPORS Treatment Category *	Trails	FISCAL YEAR(S) (list each year):	2006
NFPORS Treatment Type *	Hazard Removal	WUI? Y / N	No
Impacted Communities at risk	Chalkyitsik, Fort Yukon	IMPACTED T&E SPECIES	None

* See NFPORS Restoration & Rehabilitation module – Edit Treatment screen for applicable entries.

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

Clear standing dead hazardous trees that pose a threat to the public within falling distance of annually used campsites along the Porcupine, Yukon, and Sheenjek Rivers that were killed by the 2005 Sheenjek River, Squirrel Creek, and John Herberts Village Fires. In addition, hazard trees along a roughly three mile section of the Chalkyitsik winter trail that traverses north from the Village of Chalkyitsik was burned over by the John Herberts Village Fire and possibly needs to be cleared. Details in this specification will likely be modified based on findings from Specification #4, Assess Damage to Campsites and Winter Trail, which will take place during village meetings during March-April and after an aerial/on-the-ground assessment in June. Acres to be treated will also be determined through Specification #4 assessment work.

B. Location/(Suitable) Sites:

Annually used campsites on Yukon Flats National Wildlife Refuge lands within the Sheenjek River, Squirrel Creek, and John Herberts Village Fires, plus approximately three miles of the Chalkyitsik winter trail was burned by the John Herberts Village Fire. The trail crosses wetland areas, riparian habitat, and forested uplands within the fire perimeter.

C. Design/Construction Specifications:

1. Implement most cost effective treatment method as early in the spring/summer of 2006 as possible.
2. Standing danger trees that were identified in Specification #2 will be fallen by a team of sawyers.
3. Clear original width of the trail from downed and leaning trees approximately 6 – 10 feet wide during summer or winter 2006 as described in assessment recommendations.
4. Recommend rehabilitation actions if hazards cannot be readily removed.

D. Purpose of Treatment Specifications:

Reduce public safety risks along refuge winter trails. Standing danger trees pose a threat to campers and travelers through the Yukon Flats NWR. Blocked trails and debris on trails can represent significant safety risks to travelers that rely on trails for winter travel to allotments and seasonal hunting areas. Burning can also remove familiar landmarks and destroy existing trail delineation that can result in travelers losing the trail in dark, cold conditions, a potentially life-threatening situation. Only trees considered to be hazardous will be removed.

Four members of the village fire crew will be hired to drop danger trees and clear the trail of debris if needed. Two crew members will be certified sawyers equipped with chain saws and one will be crew boss.

E. Treatment Effectiveness Monitoring Proposed:

Treatments will be monitored to determine if refuge winter trails are clearly marked and meet refuge safety standards. Monitoring results are reported annually and summarized in NFPORS.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
GS-12 Pilot @ \$48/hour X 12 hours (FY 06)	\$576
GS-12 FMO @ \$40/hour X 30 hours (FY 06) covered through normal salary	
TOTAL PERSONNEL SERVICE COST	\$576
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Cessna 185@\$148/hour X 8 hours (FY 06)	\$1,184.00
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	\$1,184.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Aviation fuel: 120 gallons @ \$5.00/gallon (FY06)	\$600.00
Miscellaneous equipment and spare parts for chainsaw	\$100.00
Stihl chainsaw model MS290@\$350.00 X 2	\$700.00
Fuel for boat/snowmobiles and chainsaws: 150 gal. @ \$5.00/gallon (FY06)	\$750.00
Chain saw and bar oil:	\$16.00
TOTAL MATERIALS AND SUPPLY COST	\$2,166.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
Roundtrip (72 miles) @ \$35 X 7 roundtrips X 4 snowmobiles	\$980.00
Roundtrip travel to Fort Yukon @\$270 for Deputy Manager	\$270.00
Camp food	\$120.00
TOTAL TRAVEL COST	\$1,385.00
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Crew Boss AD4@\$21.00/hr X 60 hrs (FY06)	\$1,260.00
Trail Crew AD1@\$15.00/hr X 50 hrs X 3 people (FY06)	\$2,250.00
TOTAL CONTRACT COST	\$3,510.00

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY-06	10/14/2005	08/30/2006	F & S	acres	\$251/acre	est. 40 acres	\$8,821.00
TOTAL							\$8,821.00

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	
3.	Estimate supported by cost guides from independent sources or other federal agencies	M, E
4.	Estimates based upon government wage rates and material cost.	C, T
5.	No cost estimate required – cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
--

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS – Yukon Flats National Wildlife Refuge	est. 40 acres	\$8,821.00
	TOTAL COST	\$8,821.00

Treatment/Activity Name	Cultural Resources Protection	PART E SPECIFICATION #	4
NFPORS Treatment Category *	Heritage Resources	FISCAL YEAR(S) (list each year):	2006
NFPORS Treatment Type *	Site Stabilization	WUI? Y / N	No
Impacted Communities at risk	None	IMPACTED T&E SPECIES	None

C. See NFPORS Restoration & Rehabilitation module – Edit Treatment screen for applicable entries.

WORK TO BE DONE

A. General Description: Implement emergency stabilization measures on protect known cultural resources within the burned area to minimize cultural resource degradation until additional long-term cultural resource management strategies can be developed and implemented.

B. Location/(Suitable) Sites: Known cultural resource sites in the 2005 burned areas. There are 5 prehistoric sites and 10 historic sites that have been identified within the 2005 fire perimeters. The total acreage of these sites is unknown at this time but probably does not exceed 5 acres/site.

C. Design/Construction Specifications: Conduct emergency stabilization measures on known sites during spring/summer 2006.

1. In consultation with the Regional 7 Historic Preservation Officer (RHPO) review known cultural site documentation (e.g., refuge Cultural Resource Management Plan; refuge, RHPO and THPO and SHPO cultural resource records including systematic inventory findings and 36 CFR 800 compliance determination; and all Cultural Resource Management Reports) to determine site locations, identified cultural resource management standards, wildfire problems possibly affecting particular resource(s) and those specific emergency stabilization measures that can alleviate or minimize degradation until additional long-term cultural resource management strategies can be developed and implemented. In addition develop NHPA appropriate site inspection protocols. Also in consultation with the RHPO and using information from the aerial assessment develop NHPA appropriate emergency stabilization treatments for each site identified as needing stabilization.
2. Acquire resources needed to address the likely cultural resource issues and anticipated emergency site stabilization actions.
3. Visit each known site identified as needing an emergency stabilization treatment and implement the RHPO approved treatment.
4. Document emergency stabilization measures taken and additional unanticipated emergency stabilization actions needed.
5. Follow-up on any unanticipated emergency stabilization actions no later than 1 year following wildfire containment (requires a plan amendment).

D. Purpose of Treatment Specifications: Stabilize known cultural resource sites.

E. Treatment Effectiveness Monitoring Proposed: All treated sites will be will be monitored annually through FY2009 or until additional long-term cultural resource management strategies can be

developed and implemented (which ever is sooner) to ensure that treatments are still in place and effective. Monitoring results are reported annually and summarized in NFPORS.

ANNUAL LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
Archaeologist, GS-12 @ \$48/hr X 80 hours	\$3,840
GS-12 Deputy Manager @ \$48/hour X 40 hours	\$1,920
GS-7 Archaeological technician @ \$20.75 x40 hours	\$830
GS-11 Biologist/GIS Specialist @ \$40/hour X 8 hours	\$320
TOTAL PERSONNEL SERVICE COST	\$6,910
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Avgas@\$5.00/hr X 225 gallons	\$1,125.00
Food for fieldwork	\$ 180.00
TOTAL MATERIALS AND SUPPLY COST	\$1,305.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
Commercial transport between Anchorage and Fairbanks @ \$360.00 X 1 person for village meeting	\$360.00
Per diem in Fairbanks@ \$154 day (winter rate) X 2days X 1 people	\$308.00
Commercial flight between Fairbanks and Fort Yukon @ \$270.00 X 2 people	\$540.00
Per Diem at "Other Alaska" rate@ \$135/day X 2 people	\$270.00
Commercial transport between Anchorage and Fairbanks @ \$360.00 X 2 people for fieldwork	\$720.00
Per diem in Fairbanks@ \$247/day X 2 days X 2 people	\$988.00
Commercial flight between Fairbanks and Fort Yukon @ \$270.00 X 2 people	\$540.00
Camp rate@ \$3/day X 2 days X 2 people	\$ 12.00
TOTAL TRAVEL COST	\$3,738.00
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
R-44 Helicopter (Charter)@ \$600/hr X 15 hours	\$9,000.00
TOTAL CONTRACT COST	\$9,000.00

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY-06	03/15/2005	08/30/2005	F	sites	\$279.40	est. 75	\$20,953
FY-07	03/15/2005	08/30/2005	F	sites	\$279.40	est. 75	\$20,953
TOTAL							\$41,906

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	
3.	Estimate supported by cost guides from independent sources or other federal agencies	T, C, M
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
--

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS – Yukon Flats National Wildlife Refuge	est 75 acres	\$20,953.00
	TOTAL COST	\$20,953.00

Treatment/ Activity Name	Invasive Plants Control	PART E SPECIFICATION #	5
NFPORS Treatment Category *	Invasive Species	FISCAL YEAR(S) (list each year):	2006
NFPORS Treatment Type *	Hand Treatment	WUI? Y / N	No
Impacted Communities at risk	None	IMPACTED T&E SPECIES	None

*See NFPORS Restoration & Rehabilitation module - Edit Treatment screen for applicable entries.

WORK TO BE DONE

A. General Description: Implement emergency stabilization measures to control and eradicate invasive species where ground wildfire suppression actions were taken and in the vicinity of public use and access areas.

B. Location/(Suitable) Sites: Ground wildfire suppression area and public use and access areas in the 2005 burned areas. Proposed field sites are listed below:

1. Sheenjek River Fire
 - a. Allotment perimeters within refuge lands (i.e. fire suppression areas)
 - b. Helispots
 - c. Gravel bar areas along the Sheenjek and Porcupine River downstream of allotments (where fire suppression activities occurred) and adjacent to burned areas
 - d. Sites where smokejumpers conducted suppression activities and spike camps
2. Salmon Fork Fire
 - a. Two permitted cabins and their associated trapping cabins (one on the Black River upstream of Old Salmon Village; the other on an eastern tributary of the Black River upstream of the first permitted cabin)
3. Glacier Creek Fire
 - a. Two permitted cabins
4. Squirrel Creek
 - a. Allotment perimeters
5. Long Lake Fire
 - a. Suppression areas
 - b. Fire suppression crews
 - c. spike camps

C. Design/Construction Specifications:

1. Utilize 2005 wildfire suppression, first order fire effects monitoring records and information in the aerial assessment, to locate priority assessment and treatment areas (i.e., areas where human use has potentially introduced nonnative vegetation).
2. Identify likely invasive species issues and cost effective eradication treatments (chemical, cultural, biological).
3. Data will be collected according to the Alaska Exotic Plants Information Clearinghouse (AKEPIC) methods, draft BAER Invasive Plant Monitoring methods (USFWS 2005), and other accepted plant inventory and monitoring protocols. Sites will be accessed via helicopter in mid-

to late July 2006. All sites visited and/or overflowed (if landing is not possible) will be photographed and GPS locations recorded.

4. For infestations involving a limited number of individuals, non-native species will be pulled up and destroyed. Plots may be established in areas where invasive plants are detected for future monitoring work.

5. Non native plants with questionable identification will be collected, pressed, and submitted to the University of Alaska Fairbanks Herbarium for species verification, cataloguing, and specimen mounting.

6. Acquire resources needed to address the likely invasive species issues and anticipated control actions (e.g., pesticide use permits, FWS approved herbicides, mechanical control equipment, etc.).

7. Plan to visit each identified site at the most ecologically appropriate time (i.e., when the anticipated invasive species is easiest to detect and control).

8. Travel to, inspect and implement the appropriate invasive species control treatments at least once in FY2006.

9. Document control actions taken and additional control actions needed.

10. Follow-up on any additional actions no later than 1 year following wildfire containment.

D. Purpose of Treatment Specifications: Control and eradicate invasive species within the burned area within the initial year after wildfire containment.

E. Treatment Effectiveness Monitoring Proposed: All treated area will be will be monitored (at least on the ground visits at the most ecologically appropriate time) through FY2009 to ensure that treatments are still in place and effective or additional burned area rehabilitation invasive species control treatments are needed. Monitoring results are reported annually and summarized in NFPORS.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
GS-11 Wildlife Biologist/Vegetation Specialist @ \$40/hr x 247 hrs (see breakdown below) Field preparations: 10 8hr days = 60 hrs Field: 5.5 days @ 10hrs/day = 55 hrs + 2 weather days (16hrs) = 71 hrs Plant identification: 5 days = 20 hrs Data summary/report write-up: 10 days = 80 hrs Budget management: 2 days = 16 hrs Total hrs: 247	\$9,880
GS-11 Wildlife Biologist/GIS Specialist @ \$40/hr x 24 hrs (consultation)	\$960
GS-7 Seasonal Biological Science Technician @ \$16/hr x 140 reg. hrs + \$22/hr x 10 overtime hrs (field prep, field work, AKEPIC data entry/summary)	\$2,460.
TOTAL PERSONNEL SERVICE COST	\$13,300
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that	COST / ITEM

demonstrates cost benefits over leasing or renting.	
Weed identification manuals	\$200
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
	\$200
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Jet A fuel @ \$5.00/gal x 676 gallons (26 gal/hr for Bell 206 x 26 hrs: [4hr/day x 5.5 days] = 22 hrs + 4 hrs transit time) = 676 gal.	\$3,380
Field camp food (\$15/person/day x 4 personnel [includes pilot and mechanic] x 7.5 days)	\$450
Miscellaneous non food field gear (2 prs. leather boots for helicopter work)	\$600
TOTAL MATERIALS AND SUPPLY COST	\$4,430
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
Roundtrip commercial transport between Fairbanks and Fort Yukon (\$250/person x 3)	\$750
Excess baggage/freight (food and gear)	\$200
Field per diem@\$3.00/day x 8 days x 2 personnel	\$48
TOTAL TRAVEL COST	\$998
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
DHC2@\$700/hour X 2 hours (fuel delivery to Beaver)	\$1,400
University of Alaska Museum Herbarium contract@\$35/hr x 40 hrs x 25% administrative overhead	\$1,750
Bell 206 Jet Ranger (Charter) \$4,950/day x 10 days -- includes: 2 weather days + 2 days for roundtrip transport of helicopter to job site from King Salmon)	\$49,500
TOTAL CONTRACT COST	\$52,650

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH -MENTS	Planned Cost
FY-06	10/11/2005	8/30/2006	F	acres	\$285/acre	Est.251 acres	\$71,578
TOTAL							\$71,578

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	E, M, C
3. Estimate supported by cost guides from independent sources or other federal agencies	M, T
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

Relevant Documentation and Cross Reference Location are listed within the Accomplishment
--

Report.

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS – Yukon Flats National Wildlife Refuge	251 acres	\$71,578
	TOTAL COST	\$71,578

PART G - CONSULTATIONS

U.S. Fish and Wildlife Service

Debbie Corbett Regional Archeologist
Karen Murphy, Regional Fire Ecologist

Bureau of Land Management

Randi Jandt, Fire Ecologist

Tanana Chiefs Conference

Tom Gillispie, Archaeologist

Council of Athabascan Tribal Governments

Craig Fleener, Director
Bruce Thomas, Natural Resource Director

Village of Chalkyitsik

Paul Edwin, Chief
Everett Herbert, Natural Resources Director

Village of Fort Yukon

Bruce Thomas, Chief
Davey James, Natural Resources Director

Village of Beaver

Selina Petruska, Chief

Village of Birch Creek

Winston James, Chief

APPENDIX I – RESOURCE ASSESSMENTS:

- **VEGETATION ASSESSMENT**
- **LANDSAT7 IMAGERY ASSESSMENT**
- **CULTURAL RESOURCE ASSESSMENT**
- **CAMPSITE AND WINTER TRAIL ASSESSMENT**

BURNED AREA EMERGENCY RESPONSE STABILIZATION PLAN

2005 Yukon Flats National Wildlife Refuge Fires

VEGETATION ASSESSMENT

I. Objectives

- Evaluate potential for invasive plant species introduction or encroachment into native plant communities within, and adjacent to, fire areas, downstream impact areas and along river corridors.
- A burn severity and vegetation mortality assessment will be made following the acquisition and analysis of soil burn severity and vegetation mortality imagery.
- Evaluate and assess fire impacts on vegetation resources and identify values at risk associated with vegetation losses.

II. Issues

- Non-native noxious and invasive plant species may be inadvertently introduced on firefighting equipment or have a greater chance of proliferation in burned areas adjacent to existing seed sources in areas of human use

III. Observations

A. Invasive Plant Species

One of the establishing refuge purposes is "...to conserve fish and wildlife populations and habitats in their natural diversity...". Natural disturbance events such as fire are integral to maintaining plant diversity across the landscape. However, when wildland fires burn into areas that require suppression action, the potential juxtaposition of allotments (some are actively used) near high burn severity areas may serve as avenues for the introduction of invasive plant propagules. Smoke jumpers and other fire suppression crews originate from Alaska and also the Lower 48 states, where invasive plants are a problem, potentially transporting plant seeds/vegetative parts on their equipment. Federal land managers in Alaska have a unique opportunity to take proactive measures to prevent the establishment or spread of invasive plants, especially in areas that are vulnerable or at risk such as riparian corridors.

Invasive plants are known to occur on the Yukon Flats NWR. A plant survey conducted along Beaver Creek found several exotic/invasive plant species but none that were ranked high according to the Weed Ranking project of the Alaska Natural Heritage Program (ANHP). Exotics are also known to occur in Villages within the refuge, primarily along roadways, airports and boat launches.

In 2005, the Alaska Natural Heritage Program, under contract with the USFWS, conducted invasive plant surveys on the Yukon Flats NWR, in areas that were within or adjacent to 2004 fire scars (Carlson and Cortes-Burns 2005). The surveyed sites included nine allotments and/or perimeters, four cabin areas, and a portion of the Lower Mouth winter trail. In addition, ANHP crews surveyed fire suppression staging areas (airport runway/ramp and boat launch) in Fort Yukon and found five exotic plant species that had a low to medium ranking in terms of invasiveness (ANHP 2005).

Exotic plant surveys will occur July 2006 on the 2005 Sheenjek River, Salmon Fork, Long Lake and Glacier Creek Fires, in high burn severity areas with an increased potential for infestation because their proximity to human use areas including allotments, fire suppression areas, and downstream impact areas.

Exposed mineral soil in high burn severity areas provide suitable colonization sites for invasive plants if a seed source is nearby. The BARC maps proposed in this plan will provide refuge staff with a distribution of differing burn severities within fire perimeters of interest and will allow staff to prioritize areas based on burn severity and proximity to human use activities. At present, this plan is being developed without the preliminary BARC imagery; although the imagery and subsequent maps, will be available this winter for use in the BAER spring assessment planning.

B. *Sensitive Plant Communities*

A purpose of the refuge's comprehensive conservation plan is to conserve habitats in their natural diversity. One of the 2001 Yukon Flats NWR fire management objectives is to protect critical refuge resources from undue damage from wildland fire and fire suppression activities. Here, we define a critical refuge resource as a habitat and plant community that is rare on the Refuge and contributes to the overall diversity of plant communities. These steppe-bluff plant communities are restricted to steep south-facing river bluffs on several tributaries of the Yukon River. Plant communities on north-facing river bluff also sport an unusual assemblage of plants including several orchid species.

Previous work in these bluff communities has documented the presence of two species new to science (*Erigeron* and *Asterella*) and other species considered rare within the state or globally (USFWS 2001). *Crypthantha shackletteana* and *Posdistera yukonensis* have a state ranking of S1 while *Eriogonum flavum* var. *aquilinum* and *Draba murrayi* both have a state ranking of S2. Species with S1 and S2 rankings are considered critically imperiled and imperiled, respectively.

Plant communities on north-facing bluffs were located within or adjacent to the John Herberts Village fire perimeter on the Porcupine. Current fire perimeter maps place the south and south-west facing bluff plant communities just north of the Salmon Fork fire perimeter. Although some work has been done to inventory bluff plant communities, little is known on this communities response to fire and if special management actions should be taken to protect these areas from burning in the future. Work to evaluate vulnerability of steppe-bluff plant communities will occur under the BAER rehabilitation plan.

IV. Recommendations

Areas with moderate to high severity ratings, areas where suppression activity occurred, and downstream impact areas should be resurveyed in subsequent years to identify early invasive plant infestations before they can become established.

Consultations

No additional consultations were made.

V. References

Alaska Exotic Plants Information Clearinghouse
2005 <http://akweeds.uaa.alaska.edu/>

Carlson, M. and H. Cortes-Burns. 2005. BAER Accomplishment Report - Invasive Plant Monitoring Following 2004 Fires, report for the USFWS National Wildlife Refuge System – Region 7 Alaska. pp12.

USFWS. 2001. Yukon Flats National Wildlife Refuge Fire Management Plan, September 2001. pp56.

BURNED AREA EMERGENCY RESPONSE STABILIZATION PLAN

2005 Yukon Flats National Wildlife Refuge Fires

CULTURAL RESOURCES ASSESSMENT

Figure CR-1. Mudbank Cabin remains after the 2005 Nelson Mountain Fire.

I. OBJECTIVES

- Assess damage to known historic and prehistoric cultural resource sites on Yukon Flats National Wildlife Refuge lands caused by 2005 wild land fire and fire suppression activities.
- Protect these sites from fire-caused erosion, the destabilization of standing structures, and from exposure of previously hidden artifacts that now may be subjected to looting.

II. ISSUES

- There is significant potential for impacts to cultural resources resulting from the direct and indirect effects of fires.
- Known historic and prehistoric sites, including cabins, burials, lithic scatters, and house depressions, are located within the burned areas.
- Adverse conditions, including smoke, weather, lack of aircraft or personnel availability, and snow have prevented monitoring of known sites to determine post-fire conditions.

III. OBSERVATIONS

A. Background

During the 2005 fire season 597,713 acres burned on Yukon Flats National Wildlife Refuge. A wide variety of prehistoric and historic sites are known to occur in the area. The area encompassed by the Refuge was occupied by several groups of Athabaskan people at the time of white contact, distinguishable on linguistic and cultural grounds. Descendents of these people still live and subsist on these lands, primarily residing in the villages of Venetie, Chalkyitsik, Fort Yukon, Circle, Birch Creek, Beaver, and Stevens Village. These villages are either located within the Refuge boundary or immediately adjacent to it.

The early historic period involved sporadic contacts from explorers, traders, and missionaries. Canadian traders entered the area from the east, establishing a Hudson Bay

trading post at Fort Yukon in 1847. Goods were traded widely from trading posts. At the same time missionaries began the transformation of native belief systems. However, nothing could match the impact of the gold rush, beginning in 1886 with the discovery of gold on the Fortymile River. Impacts to the Native culture spread rapidly throughout the region. As gold production declined, many of the smaller and more remote camps died out, leaving ghost towns and isolated cabin ruins scattered across the landscape.

Both historic and late prehistoric sites are often characterized by wooden structures. These may include such things as cabins, caches, and game fences. Elements of these structures may include other organic materials. For example, *Sphagnum* mosses are a common element of both historic cabins and pre-contact native dwellings. Such sites may or may not have associated scatters of artifacts, and bone derived from game animals captured and processed into food. These structural sites are largely intact and undecayed. They stand above the natural ground surface and can be easily recognized as cultural sites by non-specialists. Since structural sites are defined by preserved structures built of organic materials and exposed above the ground, they are highly vulnerable to damage and destruction by wildfire.

The second category of cultural sites consists of prehistoric and historic localities lacking intact organic structures. These sites typically consist of scatters of artifacts organized by their association with task-specific activity areas. Sites of this type may include camp sites, butchering areas, raw-material processing areas, and middens. These sites typically lie on top of the natural surface or are buried under it. Most will not be recognized as cultural sites by laypersons, particularly if no distinctive artifacts are visible. These non-structural sites may have included wooden structures in the past, but these have been lost through decomposition over time. In certain conditions these structures may have left behind soil stains as evidence of their existence; however this evidence can generally be recognized only by pains-taking archaeological excavation. Some of these sites may also preserve earthen features such as pit caches or the berms surrounding dwellings. The vulnerability of non-structural sites to wildfire is highly variable and depends on several factors. Most important among these are: site contents, depth of burial, age, burn intensity, and local wildfire history. Fire could still impact such sites through post-fire erosion or through exposing hidden material that increases the chance for looting. Prehistoric sites could also be seriously damaged or destroyed as a result of fire line construction or other surface disturbing activities.

B. Findings

During August 2005, while doing cultural emergency stabilization work from the 2004 fires in the Hodzana River region, an historic cabin was quickly visited (see Figure CR-1) that was found to be still smoldering after being burned by the Nelson Mountain Fire. This site and several other known historic and prehistoric sites are within the boundaries of the 2005 wildfires on the Yukon Flats National Wildlife Refuge. Table CR-1 notes the number of known historic and prehistoric sites listed in Tanana Chiefs GIS Coverage of Cultural Sites that were within 2005 wildfire boundaries.

Table CR-1. Known sites by Individual Fires.

Fire Name	Number of Prehistoric Sites	Number of Historic Sites
Nelson Mountain	2	2
Sheenjok River		8
John Herbert's Village	1	
Salmon Fork	2	

All eighteen fires that burned in 2005 on Yukon Flats National Wildlife Refuge lands had the potential to impact cultural sites. In the absence of concrete, on-the-ground observations, besides a quick look at a smoldering historic site in the 2005 Nelson Mountain Fire during August 2005, it is impossible to develop any certain findings. However, the analysis presented here establishes a clear potential for impacts to historic and prehistoric sites.

I. RECOMMENDATIONS

Visit all known sites within the 2005 fire boundaries (Specification #6). Assess each individual situation involving the known sites with the assistance of an archaeologist and conduct emergency stabilization actions if warranted. If additional archaeological sites are discovered during the course of known site visits, or situations are found where unique archaeological material is discovered that the fire action has set into motion an accelerated decay process, such as with burned bone assemblages, additional action will be recommended through a rehabilitation plan.

II. CONSULTATIONS

Tanana Chiefs Conference, Tom Gillispie, Archaeologist, (907) 452-8251 ext. 3415

U.S. Fish and Wildlife Service, Debbie Corbett Regional Archeologist, (907) 786-3399

III. REFERENCES

Alaska Fires Burned Area Emergency Stabilization and Rehabilitation Plan. October 2004.

Slaughter, Dale C. 1985. Yukon Flats Cultural Resources Survey. pp207. January 1985

Tanana Chiefs Conference, GIS Coverage of Cultural Sites within the Doyon Region. December 2005.

BURNED AREA EMERGENCY RESPONSE STABILIZATION PLAN

2005 Yukon Flats National Wildlife Refuge Fires

CAMPSITE AND WINTER TRAIL ASSESSMENT

I. OBJECTIVES

- Determine the location of annually used campsites and main winter trails used by recreational and subsistence users on Refuge lands within the 2005 wildfire boundaries.
- Assess these sites for standing fire-killed danger trees that pose a threat to users of these sites and travel corridors.
- Recommend treatments to mitigate short and long-term impacts of tree fall, resulting from the 2005 fires, on these sites and travel corridors.

II. ISSUES

- There is significant potential for public safety due to falling trees on traditional camping areas and main winter trails.
- Adverse conditions, including smoke, weather, lack of aircraft or personnel availability, and snow have prevented locating annually used campsites and main winter trail locations.

III. OBSERVATIONS

A. Background

The eighteen wildfires that burned on the Yukon Flats National Wildlife Refuge in 2005 engulfed 597,713 acres of Refuge land. Much of this area is used throughout the year by residents of seven villages that are either located within the Refuge boundary or immediately adjacent to it. The residents of these villages; Venetie, Chalkyitsik, Fort Yukon, Circle, Birch Creek, Beaver, and Stevens Village, are predominately of Athabascan heritage. Their ancestors were the same people that were living a subsistence lifestyle at the time of white contact. Many still lead subsistence lifestyles on the land that is now managed as the Yukon Flats National Wildlife Refuge. Subsistence activities include hunting, fishing, trapping, berry picking, and wood gathering. Many of these activities include annually camping for extended periods at traditional sites that have been used for years.

Recreational users also use Refuge land. Primarily this involves floating down major rivers during the summer months. The 2005 fires burned along the banks of the Sheenjek, Porcupine, and Yukon Rivers, all corridors for recreational users.

The 2005 Sheenjek River, Squirrel Creek, and John Herbert's Village Fires in particular may have annually used campsites within their fire boundaries. Also major winter trails, used primarily by subsistence users are at risk to hazards created by falling and downed trees impacted by the 2005 wildfires. Of particular concern is for the safety of the public in close proximity to standing trees, of sufficient size to cause harm, that have had their root system damaged by the fires.

B. Findings

All eighteen fires that burned in 2005 on Yukon Flats National Wildlife Refuge lands had the potential to impact campsites and trails used annually by the public. In the absence of concrete, on-the-ground observations, it is impossible to assess the need to address danger trees at campsites and trails. However, the analysis presented here establishes a clear potential for impacts to annually used campsites and winter trails.

IV. RECOMMENDATIONS

Assessment should include village meetings in Fort Yukon and Chalkyitsik, plus an on-the-ground assessment conducted by boat in June. The meetings, likely in March-April 2006, will be to discuss the locations of annually used campsite and main trail locations within the 2005 burns. The June on-the-ground work will visit sites identified during the public meeting process. Additional action will be recommended through a rehabilitation plan.

V. CONSULTATIONS

U.S. Fish and Wildlife Service, Wennona Brown, Subsistence Coordinator, (907) 456-0408

VI. REFERENCES

Alaska Fires Burned Area Emergency Stabilization and Rehabilitation Plan. October 2004.

Slaughter, Dale C. 1985. Yukon Flats Cultural Resources Survey. pp207. January 1985

APPENDIX II - ENVIRONMENTAL COMPLIANCE

Federal, State, and Private Lands Environmental Compliance Responsibilities

All projects proposed in the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan that are prescribed, funded, or implemented by Federal agencies on Federal, State, or private lands are subject to compliance with the National Environmental Policy Act (NEPA) in accordance with the guidelines provided by the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508) and the Department of the Interior. This Appendix documents the burned area emergency response team considerations of NEPA compliance requirements for prescribed emergency stabilization and monitoring actions described in this plan for all jurisdictions affected by the Yukon Flats National Wildlife Refuge 2005 Fires.

Related Plans and Cumulative Impact Analysis

Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan (12/05/05). The Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan was reviewed and it was determined that actions proposed in the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan within the boundary of the Sheenjek River Fire are consistent with the management objectives established in the Comprehensive Conservation Plan. The Comprehensive Conservation Plan NEPA compliance process specifically addresses:

- Fire management and suppression activities within the refuge;
- Maintaining water quality;
- Conserving fish and wildlife populations and habitats in their natural diversities; and
- Provide for continued subsistence uses by local residents.

The Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan was reviewed and it was determined that actions proposed in the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan within the boundary of the Sheenjek River Fire are consistent with the management objectives established in the Yukon Flats National Wildlife Refuge Fire Management Plan and Environmental Assessment for Refuge Fire Management Plan (dated September 2001). The fire management plan specifically addresses:

- Protection of sensitive biological communities, cultural and historic sites, Native allotments, privately owned and legally registered cabins, and refuge administrative facilities on Yukon Flats NWR from wildland fires to the extent practicable;
- Restoration, perpetuation and protection of native wildlife and plant species on Yukon Flats NWR by maintaining a diversity of plant communities that would be expected under a natural regime of wildland fire; and
- Maintenance of natural fire-related ecosystem processes on Yukon Flats NWR to the maximum extent feasible and initiate studies if the role of fire in these processes is poorly understood.

Cumulative Impact Analysis

Cumulative effects are the environmental impacts resulting from the incremental impacts of a

proposed action when added to other past, present, and reasonably foreseeable future actions, both Federal and non-Federal. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. The emergency stabilization treatments for areas affected by the Yukon Flats National Wildlife Refuge 2005 Fires, is proposed in the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan. Past actions and reasonably foreseeable future actions do not result in an intensity of impact (i.e. major ground disturbance, etc.) that would cumulatively constitute a significant impact on the quality of the environment. The treatments are consistent with the above jurisdictional management plans and associated environmental compliance documents and categorical exclusions listed below.

Applicable and Relevant Categorical Exclusions

The individual actions proposed in this plan for the Yukon Flats National Wildlife Refuge 2005 Fires are Categorically Excluded from further environmental analysis as provided for in section 516 DM 2, Appendix 2 of the Departmental Manual. All applicable and relevant Department and Agency Categorical Exclusions are listed below. Categorical Exclusion decisions were made with consideration given to the results of required emergency consultations completed by the Burned area emergency response team and documented below.

Applicable Department Categorical Exclusions

- The operation, maintenance, and management of existing facilities and routine recurring management activities or improvement, including renovations and replacement which result in no nor only minor changes in the use, and have no no negligible environmental effect on-site or in the vicinity of the site.
- Fire management activities, including prevention and restoration measures, when conducted in accordance with Departmental and Service procedures.
- Consultation and technical assistance activities directly related to the conservation of fish and wildlife resources.

U.S. Fish and Wildlife, Region 7 Statement of Compliance

This section documents consideration given to the requirements of specific environmental laws in the development of the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan. Specific consultations initiated or completed during development and implementation of this plan are also documented. The following executive orders and legislative acts have been reviewed as they apply to the Yukon Flats National Wildlife Refuge 2005 Fires Burned Area Emergency Stabilization Plan:

Project Name: Burned Area Emergency Response Stabilization Plan. Yukon Flats National Wildlife Refuge.

Location: Selected fire locations within Yukon Flats National Wildlife Refuge.

Description: The U.S. Fish and Wildlife Service proposes to conduct emergency stabilization activities within the perimeters of seven 2005 fires on refuge lands. These activities include assessment of burn severity and fire effects, detection of introduced noxious and invasive non-native plants, and assessment of fire damage to cultural resources, danger trees and winter trails.

National Environmental Policy Act: The Service has determined that implementation of the specifications of the plan for the proposed project qualifies as a categorical exclusion under 516 DM 6, Appendix 1,C (4), to the National Environmental Policy Act of 1969 (see attached Qualification for Categorical Exclusion).

Endangered Species Act: The proposed action will not affect listed, proposed or candidate species of adversely modify critical habitat.

Coastal Zone Management Action, Section 307: The Alaska Coastal Management Program (ACMP) has concurred with the National Weather Service's negative determination, and that a ACMP review is not necessary.

Telecommunications Act of 1996, Section 704: Not applicable.

Coastal Barrier Resources Act, Section 6: Not applicable.

Subsistence Evaluation and Finding, Section 810 – Alaska Lands Act: Subsistence uses of the area will not be impacted by the proposed action (see attached Section 810 evaluation).

National Historic Preservation Act, Section 106: The Service's Regional Archeologist has determined that this action will have no effect on historic properties following regulations at 36 CFR 8.00.5 (b)

Executive Order 11988 – Floodplain Management: Not applicable.

Executive Order 11990 – Protection of Wetlands: No wetlands areas will be affected by the proposed project.

Executive Order 12372 – Intergovernmental Review of Federal Programs: Inter-governmental review was accomplished during formal review by the State of Alaska through the Alaska Coastal Management Program.

NEPA Checklist: If any of the following exception applies, the Burned Area Emergency Stabilization Plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes) (No)

- (X) Adversely affect Public Health and Safety
- (X) Adversely affect historic or cultural resources, wilderness, wild and scenic rivers aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
- (X) Have highly controversial environmental effects.
- (X) Have highly uncertain environmental effects or involve unique or unknown environmental risks.
- (X) Establish a precedent resulting in significant environmental effects.
- (X) Relates to other actions with individually insignificant but cumulatively significant environmental effects.
- (X) Adversely effects properties listed or eligible for listing in the National Register of Historic Places.
- (X) Adversely affect a species listed or proposed to be listed as Threatened or Endangered.
- (X) Threaten to violate any laws or requirements imposed for the "protection of the environment" such as Executive Order 1 1 988 (Floodplain Management) or Executive Order 1 1990 (Protection of Wetlands).

National Historic Preservation Act

Ground Disturbance:

- None
- Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared under contract as specified by the Burned Area Emergency Stabilization Plan.

A NHPA Clearance Form:

- Is required because the project may have affected a site that is eligible or on the national register. The clearance form is attached. SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).
- Is not required because the Burned Area Emergency Stabilization Plan has no potential to affect cultural resources (initial of cultural resource specialist).

Other Requirements

(Yes) (No)

- (X) Does the Burned Area Emergency Stabilization Plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.
- (X) Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

APPENDIX III - MAPS

Map 1: 2005 Fires on the Yukon Flats National Wildlife Refuge

Map 2: Sheenjek River Fire

Map 3: Nelson Mountain Fire

Map 4: Salmon Fork Fire

Map 5: Glacier Creek Fire

Map 6: Hodzana River Fire

Map 7: Squirrel Creek Fire

Map 8: John Herberts Village Fire

Map 9: Long Lake Fire