

Oster Lake Fire

Burned Area Emergency Stabilization & Rehabilitation Plan

**Hagerman National Fish Hatchery
Hagerman Wildlife Management Area
Gooding County, Idaho**

U. S. Fish and Wildlife Service

Idaho Department of Fish and Game

**Prepared by:
Interagency Burned Area Emergency Response Team**

September 21, 2001

EXECUTIVE SUMMARY

This plan has been prepared in accordance with the *Interagency Policy Guidance and Direction: Wildland Fire Rehabilitation and Restoration (1998)* signed by the Assistant Secretary of Interior, Policy, Management and Budget and Under Secretary of Agriculture. This plan has been prepared according to the draft Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook (June, 2001). This plan provides emergency stabilization and rehabilitation recommendations for all lands burned within the Oster Lake Fire including lands administered by the US Fish and Wildlife Service - Hagerman National Fish Hatchery; and Idaho Fish and Game. The fire occurred in Gooding County, Idaho. The primary objective of the Oster Lake Fire Burned Area Emergency Stabilization and Rehabilitation (ESR) Plan are:

- " To prescribe post-fire mitigation measures necessary to protect human life, property, and critical cultural and natural resources; and
- " To promptly mitigate the unacceptable effects of the fire and suppression impacts on lands within and adjacent to the burned area in accordance with management policy guidelines and all relevant federal, state, and local laws and regulations.

This plan address emergency rehabilitation of fire suppression impacts and fire effects as a result of the Oster Lake Fire that meet national policy guidelines for treatment under the Burned Area Emergency Stabilization and Rehabilitation program. The Burned Area Emergency Response (BAER) Team has conducted an analysis of fire effects using ground reconnaissance methods throughout the lands impacted by the fire. The watershed group assessed and mapped the overall fire impacts on watershed conditions and developed a burn severity map. An archaeologist inventoried suppression impacts for potential damage to cultural sites as well as initiating consultation with the State Historic Preservation Office. The vegetation specialist evaluated and assessed fire effects and suppression impacts to vegetative resources including noxious weed populations and identified values at risk associated with vegetative losses. The Team also conducted an assessment of fire effects to Threatened and Endangered (T&E) wildlife species and their associated, suppression impacts to wildlife species, and initiated Section 7 Consultation with the US Fish and Wildlife Service. The GIS specialist gathered the data layers necessary for the plan, coordinated GPS activities, processed data calculations for other resource specialists, and produced maps for the ESR Plan and for presentations. The Team inventoried fire suppression impacts and infrastructure impacted by the fire and developed specifications for each.

Resource assessments produced by these specialists can be found in Appendix I and treatments identified in the assessments can be located within Part F, Specifications. A summary of costs by jurisdiction is located within Part E. Part I is provided as a signature page for agency review and approval. Appendix II contains the National

Environmental Policy Act (NEPA) compliance summary for all recommended treatments. Appendix III contains ESR Plan maps while Appendix IV contains photo documentation of fire effects. Appendix V contains supporting documentation.

Hagerman National Fish Hatchery Management

U.S. Fish and Wildlife Service - Hagerman National Fish Hatchery (FWS) was authorized in 1930 as one of 18 fish culture stations (hatcheries) under an Omnibus Authorization and was established in 1932. The hatchery is located on 303 acres located on a series of terraces above the Snake River. Construction of the hatchery commenced in 1932, and fish production began in 1933. In 1939 the function of the hatchery was consolidated by the Department of Commerce into the Department of the Interior to be known as Fish and Wildlife Service. In the late 1970's the hatchery became part of the Lower Snake River Compensation Plan which was authorized by the Water Resources Development Act of 1976. This plan was designed to mitigate for fish and wildlife losses caused by construction of four dams on the lower Snake River.

Under an agreement with the U.S. Army Corps of Engineers and Idaho Department of Fish and Game, the hatchery annually rears 340,000 pounds of summer steelhead trout. There are 78 outside raceways at the hatchery. Of these, 66 are devoted to steelhead production and 12 are reserved for other programs. The hatchery's water supply is spring-fed at a constant 59 degrees Fahrenheit with a flow rate of approximately 30,000 gallons per minute.

Wildlife on the hatchery complex is managed by Idaho State under a cooperative agreement dating from the 1940's. Of the total hatchery acreage, 218.8 acres are managed by the State for wildlife; the remaining 78.8 acres are dedicated for fish production and hatchery operations.

The Integrated Pest Management Plan for the hatchery focuses on weed control within the 78.8 acres designated as Hatchery Administration. The remaining 218.8 acres managed by the State are treated under their management goals. As part of its fire prevention program, the Hatchery maintains firebreaks around both the Administration Area and the property managed by the State. Control of noxious weeds on the firebreaks will be by mechanical means.

Idaho State Wildlife Management Area Management

The Oster Lake Fire effected state lands managed by Idaho Fish and Game. The Hagerman Wildlife Management Area (WMA) was created in 1940 and consists of 880 acres, including 223 acres licensed from the U.S. Fish and Wildlife Service. Sixteen ponds are located on the WMA. Spring water flowing through the WMA provides open water for approximately 50,000 ducks and 4,000 Canada geese during the winter. The

WMA is located near several communities and provides fishing opportunities for hundreds of fishermen.

The Idaho Fish and Game Commission policy directs management to consider the potential of wildlife to provide recreational opportunities. The WMA provides opportunities for wildlife-associated recreation, particularly those opportunities that further the purchase goal of wildlife restoration. The following measures have been proposed for the WMA:

- " Maintenance of ponds, water delivery systems, riparian vegetation, and dryland habitat to provide habitat for waterfowl and upland game species.
- " Development of irrigated fields to provide nesting cover, food plots, and security cover.

Included in the WMA Management Goals is a directive to Maintain upland gamebird habitat . Wildlife management objectives depend on successful vegetation management. Specific direction has been given to managers of the WMA to manage lands to protect, and enhance wildlife habitat. Efforts to reduce or eliminate noxious weeds and the potential for future infestation of undesirable plants are featured in an integrated pest management approach to weed control.

Other Lands

Grazing, agriculture and aquiculture are the primary activities occurring on private lands within Gooding County. The primary concern for private landowners is rehabilitation of suppression impacts and potential impacts from fire effects.

Fire Background

The Oster Lake Fire originated from a human caused fire the afternoon of September 7, 2001, on the east side of Highway 30 approximately six miles south of Hagerman, Idaho. Winds gusting to 40 mph pushed the fire east across the State Fish Hatchery, State Wildlife Management Area and Hagerman National Fish Hatchery. Initial attack was conducted by members of three rural fire departments, hatchery staff, and BLM engine crews. At the height of the incident there were 90 firefighters, nine aircraft (3 set, 3 helicopters, and 3 tankers) and a BLM Incident Commander assigned to the incident. On September 10, at 2000 hours the fire was declared contained. The fire was declared controlled on September 14, at 2000 hours.

The Oster Lake Fire consisted of: Fish and Wildlife Service - 279.9 acres; Idaho State - 154.3 acres; and Private - 143.2 acres. Elevation within the fire areas ranges from 2,900 to 3,100 feet.

Oster Lake Fire Summary of Acres by Ownership			
	Managed by Agency WMA by Idaho State	Managed as	Total
Fish & Wildlife Service	63.6	216	279.9
Idaho State	2.7	151.6	154.3
Private	143.2		143.2
Total			577.4

Fire suppression actions included 0.2 miles of handline. One helispot was created during the incident. A quarter-mile of secondary road was also impacted by suppression vehicles. Rehabilitation of 2.6 miles of vehicle tracks on Fish and Wildlife lands will need to be initiated.

The Fish and Wildlife Service - Hagerman National Fish Hatchery initially requested the Interagency Burned Area Emergency Response (BAER) Team (Gasser) on September 10 and on September 15 the agencies conducted a briefing with the team to identify the resource issues.

Upon arrival at the Oster Lake Fire the BAER Team was requested to prepare an Emergency Stabilization and Rehabilitation Plan to address potential effects of the fire and fire suppression impacts to all jurisdictions affected by the fire. There were 6 people on the BAER Team with a number of resource specialists from the Hatchery and State assisting in information compilation.

On September 20, the BAER Team Leader delivered a presentation to the Agencies providing preliminary findings and identifying proposed emergency stabilization and rehabilitation treatments.

The BAER Team, tasked with evaluation of short and long-term emergency fire rehabilitation needs, developed this plan to address the following issues:

- Protection of life, public safety, property, and critical cultural and natural resources.

- Protection of cultural and natural resource values impacted by the fire or fire suppression actions.

- Rehabilitation of roads and other improvements impacted by the fire or the suppression of the fire.

Assessment of Threatened and Endangered plant and animal species and their habitat.

Rehabilitation requirements established by Federal law, policies, and relevant agency resource management mandates.

Water quality.

Noxious weed and invasive species establishment and expansion within the fire area.

Implementation of treatments in a timely manner, prior to the first damaging storms.

Resource Damages and Threats to Human Safety and Resources

The Oster Lake Fire impacted a total of 577.4 acres on Federal, State and private lands. The fire has been mapped by the BAER Team for burn severity. Low burn severity occurred on 530.3 acres, while 47.1 acres were unburned.

Suppression impacts were minimal, thanks to the Minimum Impact Suppression Techniques (MIST) used by the suppression forces. Except for the removal of the burned BLM engine, all suppression impacts have been rehabilitated.

Watershed response following this fire will be minimal. The entire burned area was mapped as low burn severity, however, there will be some localized run-off on the slopes above the hatchery. Some ash may make it to the waterways. Straw bale silt fencing has been placed in the locations most likely to erode. In addition, hydro-seeding will be done once the rains have settled some of the ash. Infiltration of precipitation during the two rain events experienced since the fire has been good. To counter any sediment that may make it to the raceways an increase in the monitoring and cleaning of the filters is recommended following storms.

The primary vegetative impacts occurred within the shrub/steppe vegetative type. Shrub/steppe plant community makes up 90% of the burned area. The main components are cheatgrass, which was the carrier of the fire and basin big sagebrush. The sagebrush that was burned was killed. The cheatgrass was top killed but the seed bank within the soil remains intact. This is due primarily to the low residence time of the fire and its fast spread. Along the riparian areas, mostly Riley Creek, the tree species will either resprout or recover with the next growing season. Some trees will probably die. The wetland/pond areas will recover without any treatment. It was identified by Hagerman National Fish Hatchery and the Wildlife Management Area to take advantage of this fire to revegetate the cheatgrass areas with native grasses. It is being recommended to treat cheatgrass with a herbicide this fall and again in late winter followed by a seeding of native grasses including basin big sagebrush. In addition to the seeding, a planting of willow cuttings is recommended in selected burned areas along water edges. This activity will take place while the plant is dormant.

Section 7 Consultation was initiated and concluded under the Endangered Species Act for Federally listed T&E species. Threatened and Endangered species included three molluscs, bald eagle, and Ute ladies tresses. It was determined that none of them were present in the fire area and therefore no effect.

Prehistoric cultural resources were absent from all steep and mid-slope areas. Elsewhere, a previously documented prehistoric site was affected by the fire when the vegetation covering it was burned off. Hydro-seeding will help stabilize the site from potential erosion. A historic stacked stone wall, probably from the ranch era, was not impacted by the fire. Wood pipe segments were burned leaving the skeleton of wire used to wrap the pipe. Further, no undocumented archaeological sites were found during the survey of suppression impacts. Section 106, National Historic Preservation Act was initiated and completed for this plan.

Based on ground surveys the BAER Team has identified the following treatments for implementation. These treatments meet the new policy, June, 2001, Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook.

Fire Suppression Stabilization:

- " Rehabilitate Suppression Impacted Roads
- " Rehabilitate handline
- " Rake Off-Road Vehicle Tracks
- " Burned Engine Removal

Emergency Stabilization:

- " Catchment Basin
- " Remove tree hazards
- " Hydro-Seeding
- " Storm Patrol
- " Straw Bale Silt Fences
- " Rain Gauge
- " Emergency Relocation of Fish
- " Invasive Plant Control
- " Revegetation
- " Replace Fence
- " Replace Boundary Signs
- " Replace Satellite Dishes
- " Replace Burned PVC Pipeline
- " Implementation Leader

Rehabilitation:

- " Monitor Seeding Effectiveness
- " Monitor Water Quality

Implementing erosion control treatments, seeding, monitoring vegetation recovery, and mitigating non-native species invasion are necessary tasks . These activities should be initiated as quickly as possible through the Implementation Leader. It will be important for the Implementation Leader to coordinate the recommended activities, track budgets, coordinate contracts, and prepare accomplishment reports.

This BAER Plan is the initial funding request for Emergency Fire Rehabilitation (EFR) funds. This plan may also be used as a justification to seek funding from other sources for treatments proposed/recommended that are not covered by EFR funds. Additional supplemental requests may be made after this document has been reviewed and approved. It is recommended that supplemental requests be made on an annual basis, if necessary.

The Emergency Fire Rehabilitation funding for this plan extends over three years from the date control of the fire. At the conclusion of the funding period, a final Accomplishment Report will be due to the approval authority. The Accomplishment Report will document the funding received (initial and supplemental funding), treatments installed, the effectiveness of the installed treatments, and the results of monitoring activities. A template for this report is provided with the transmittal memorandum to Hagerman National Fish Hatchery and the Wildlife Management Area.

This BAER Plan was submitted to FWS - Hagerman National Fish Hatchery and Idaho Department of Fish and Game, in accordance with interagency Burned Area Emergency Stabilization and Rehabilitation guidelines within 10 days of fire control.

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

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**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
AND ACCOMPLISHMENT REPORT**

PART A FIRE LOCATION

Fire Name	Oster Pond Fie	Total Acres Burned	577.4
Fire Number	IDHFH-421	Acres / Jurisdiction	
Agency Unit	FWS, Hagerman National Fish Hatchery	BIA	
Region	Pacific (1)	BLM	
State(s)	Idaho	FWS	279.9
County(s)	Gooding	NPS	
Ignition Date/Source	September 7, 2001 / Cable Contractor Accident	State	154.3
Date Contained	September 8, 2001	Private	143.2
Date Controlled	September 14, 2001	Other	

PART B NATURE OF PLAN

I. Type of Plan (check one box below):

	Suppression Rehabilitation (complete Parts A, B, C, and H only)
	Emergency Stabilization and Rehabilitation (ESR- complete all parts)
	Both Suppression Rehabilitation and ESR

II. Type of Action (check one box below):

	Initial Plan Submission
	Updated or Revised Initial Submission
	Plan Amendment
	Different Project Phase
	Final Report (to comply with the closure of the ESR account)

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BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART C PLAN OBJECTIVES AND BAER TEAM ORGANIZATION

I. Emergency Stabilization and Rehabilitation Objectives

- " Locate and stabilize severely burned slopes which pose a direct threat to water quality, fisheries, life, and property at the Hagerman National and State Fish Hatcheries
- " Recommend post-fire stabilization and rehabilitation prescriptions to prevent irreversible loss of natural and cultural resources within the burned area
- " Assess and prescribe treatments for repair or replacement of minor infrastructure damaged by the fire to provide for safety and resource protection
- " Assess and prescribe treatments for rehabilitation of native plant communities as practical

II. Fire Suppression Rehabilitation Objectives

- " Conduct immediate post-burn reconnaissance for fire suppression related impacts to cultural resources
- " Assess and prescribe treatments for rehabilitation of all fire suppression related impacts

III. Team Organization and Members

TEAM POSITION	NAME/AGENCY	RESOURCE ASSESSMENT PREPARED (Yes or N/A)
Team Leader	Erv Gasser (NPS)	N/A
Hydrologist	Judy Hallisey (FS)	Yes
Soil Scientist	Jeff TenPas (Private Contractor)	Yes
Archeologist	Carla Bumside (FWS)	Yes
Vegetation	Erv Gasser (NPS)	Yes
GIS Specialist	John Price (BLM)	Yes
Environmental Compliance Specialist	Richard Hadley (FWS)	Yes
Documentation Specialist	Richard Hadley (FWS)	N/A

IV. Resource Advisors: Resource Advisors are individuals who assisted the BAER Team with the preparation of this plan (see Part H - Consultations for a full list of agencies and individuals who were consulted or otherwise contributed to the development and/or review of the plan)

NAME	AFFILIATION, SPECIALTY, OR PROFESSION
Bryan Kenworthy	Manager, Hagerman National Fish Hatchery
Lance Roberts	Fire Management Officer, SW Idaho NWRC
Jae Ahn	Assistant Manager, Hagerman National Fish Hatchery
Steve Money	Maintenance, Hagerman National Fish Hatchery

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART D SUMMARY OF APPROVAL AUTHORITIES

U.S. Fish and Wildlife Service

ACTIVITIES REQUIRING HATCHERY MANAGER APPROVAL	
Fire Suppression Rehabilitation (charged to Fire Suppression Account)	
Regrade Roads	\$1,728
Rake Off-Road Vehicle Tracks	F
Handline Rehabilitation	F
Burned Engine Removal	\$600
Tree Hazard Mitigation	F
SUBTOTAL	\$2,328
ACTIVITIES REQUIRING REGIONAL DIRECTOR APPROVAL	
Emergency Stabilization and Rehabilitation (charged to ESR Account)	
Straw Bale Silt Fence	\$1,800
Hydro-Seeding	\$9,485
Catchment Basin	\$739
Storm Patrol	\$8,392
Water Quality Monitoring	\$6,888
Emergency Relocation of Fish	\$2,098
Invasive Plant Control	\$9,972
Revegetation	\$81,894
Monitoring Seeding Effectiveness	\$13,500
Replace Fence	\$47,983
Replace Boundary Signs	\$280
Replace Spring Cover and Satellite Dishes	\$1,355
Replace Burned PVC Pipeline	\$18,835
SUBTOTAL	\$203,221
TOTAL COST (Fire Suppression Rehabilitation plus ESR)	\$205,549

Idaho Department of Fish and Game

ACTIVITIES REQUIRING WILDLIFE MANAGEMENT AREA MANAGER APPROVAL	
Fire Suppression Rehabilitation (charged to Fire Suppression Account)	
SUBTOTAL	
ACTIVITIES REQUIRING MAGIC VALLEY REGIONAL SUPERVISOR APPROVAL	
Emergency Stabilization and Rehabilitation (charged to ESR Account)	
Storm Patrol	\$1,450
Invasive Plant Control	\$4,776
Revegetation	\$36,886
Monitoring Seeding Effectiveness	\$7,500
Replace Burned PVC Pipeline	\$9,384
Implementation Leader	\$7,636
SUBTOTAL	\$67,632
TOTAL COST (Fires Suppression Rehabilitation plus ESR)	\$67,632

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART E COST SUMMARY

Part E provides both a summary of the specifications and trackable costs charged or proposed for funding from fire suppression rehabilitation, emergency stabilization and rehabilitation (ESR), agency operations accounts, or other funding sources. Only trackable expenditures are displayed in the total cost column in the summary table. They are coded with appropriate cost authority. The total cost of the rehabilitation effort to date, excluding the cost absorbed by the fire (fire crew, labor and associated overhead) is displayed as either Fire Suppression Rehabilitation (F), Emergency Stabilization and Rehabilitation (ESR), Agency Operations (OP), or Other (O).

Oster Lake Fire

**FUNDING SUMMARY
ESTIMATED STABILIZATION AND REHABILITATION \$273,181**

**EFR - \$ 203,221
Fire - \$ 2,328
IF&G - \$67,632**

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART E COST AND SPECIFICATION SUMMARY TABLE - U.S. FISH AND WILDLIFE SERVICE

SPECIFICATION TITLE	UNIT	UNIT COST	# OF UNITS	COST BY FUNDING SOURCE			METHOD	TOTAL SPECIFICATION COST
				FIRE	EFR	OPERATIONS		
FIRE SUPPRESSION REHAB.								
1. Regrade Roads	Miles	\$ 7,513	0.23	\$ 1,728			C	\$ 1,728
2. Rake Off-Road Vehicle Tracks	Miles	F	2.5	F			FC	F
3. Handline Rehabilitation	Miles		0.19	F			FC	F
4. Burned Engine Removal	Engine	\$ 600	1	\$ 600			C	\$ 600
PUBLIC SAFETY								
5. Tree Hazard Mitigation	Trees	-	260	F			FC	F
SOIL WATERSHED STABILIZATION								
6. Straw Bale Silt Fence	Feet	\$ 3	525		\$ 1,800		C/FC	\$ 1,800
7. Hydro-Seeding	Acres	\$ 1,975	3		\$ 5,974		C	\$ 5,974
8. Catchment Basin	Basin	\$ 739	1		\$ 739		C	\$ 739
9. Storm Patrol	Patrol	\$ 1,399	6		\$ 8,392		P	\$ 8,392
10. Water Quality Monitoring	Sample	\$ 96	72		\$ 6,888		C	\$ 6,888
NATURAL RESOURCES								
11. Emergency Relocation of Fish	Runs	\$ 525	4		\$ 2,098		C	\$ 2,098
12. Invasive Plant Control	Acres	\$ 51	196		\$ 9,972		C	\$ 9,972
13. Revegetation	Acres	\$ 418	196		\$ 81,894		C	\$ 81,894
14. Monitor Seeding Effectiveness	Surveys	\$ 13,500	1		\$ 13,500		P	\$ 13,500
MINOR INFRASTRUCTURE								
15. Replace Fence	Miles	\$ 17,772	2.7		\$ 47,983		C	\$ 47,983
16. Replace Boundary Signs	Signs	\$ 7	40		\$ 280		C	\$ 280
17. Replace Spring Cover & Satellite Dishes	Minor Facilities	\$ 452	3		\$ 1,355		C/P	\$ 1,355
18. Replace Burned PVC Pipeline								
OTHER								
19. Implementation Leader	Position	\$ 18,835	1		\$ 18,835		P	\$ 18,835
TOTAL COST				\$ 2,328	\$ 205,549			\$ 205,549

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART E COST AND SPECIFICATION SUMMARY TABLE - IDAHO DEPARTMENT OF FISH AND GAME

SPECIFICATION TITLE	UNIT	UNIT COST	# OF UNITS	COST BY FUNDING SOURCE			METHOD	TOTAL SPECIFICATION COST
				FIRE	EFR	OPERATIONS		
FIRE SUPPRESSION REHAB.								
1. Regrade Roads								
2. Rake Off-Road Vehicle Tracks								
3. Handline Rehabilitation								
4. Burned Engine Removal								
PUBLIC SAFETY								
5. Tree Hazard Mitigation								
SOIL WATERSHED STABILIZATION								
6. Straw Bale Silt Fence								
7. Hydro-Seeding								
8. Catchment Basin								
9. Storm Patrol	Patrol	\$ 242	6			\$ 1,450		\$ 1,450
10. Water Quality Monitoring								
NATURAL RESOURCES								
11. Emergency Relocation of Fish								
12. Invasive Plant Control	Acres	\$ 52	91			\$ 4,776		\$ 4,776
13. Revegetation	Acres	\$ 405	91			\$ 36,886	C	\$ 36,886
14. Monitor Seeding Effectiveness	Survey	\$ 7,500	1			\$ 7,500	P	\$ 7,500
MINOR INFRASTRUCTURE								
15. Replace Fence								
16. Replace Boundary Signs								
17. Replace Satellite Dishes								
18. Replace Burned PVC Pipeline	Feet	\$ 4	2,640			\$ 9,384		\$ 9,384
OTHER								
19. Implementation Leader	Position	\$ 7,636	1			\$ 7,636	P	\$ 7,636
TOTAL COST						\$ 67,632		\$ 67,632

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PART F - SPECIFICATION

SPECIFICATION TITLE:	REGRADE ROADS	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	1. Regrade Roads	FISCAL YEAR:	2001
ESR REFERENCE #:	N/A	SPECIFICATION TYPE:	F

I. WORK TO BE DONE

<p>A. General Description: Rehabilitation of pre-existing roads is necessary to prevent risk of additional erosion of the road surface, and minimize the risk of sedimentation into springs and the stream system. The intent of this rehabilitation is to re-establish the prior drainage off of, and around active road systems. Abnormal amounts of traffic are normally associated with suppression activities and therefore there is need to take action to re-establish the proper drainage and maintain and/or repair the culverts associated with the road system.</p> <p>B. Location (Suitable) Sites: See Road Impacted by Suppression Actions Map, Appendix III.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> 1. On out-sloped roads the reshaping will be done to provide for adequate drainage off of the road surface within an adequate distance not to create abnormal road surface erosion. Berms will not be placed on the downslope side of the road surface. In addition all dips in the road constructed as part of the overall surface drainage will be maintained or reconstructed where necessary. 2. On roads requiring re-crowning, as part of the overall reshaping of the surface, all residual material will not be left as a berm on the ditch-line side of the road. 3. Completion of the desired specifications will meet the approval of the officer in charge prior to signing off on the completion of the work. 4. On road across Len Lewis Dike Road elevations needs to be brought back to pre-fire grade. <p>D. Purpose of Treatment Specification: The use of proper maintenance of the road system is to reduce potential sedimentation entering waterways.</p> <p>E. Treatment Effectiveness Monitoring: Roads repaired will be visually inspected during and after major storm events (greater than .5 inches in 24 hours) during first six months after control of fire. Significant problems will be reported and repaired.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
1½ gravel @ \$12 / yard X 12 yards delivered	\$144
TOTAL MATERIALS AND SUPPLY COST	\$144
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
Back-hoe @ \$65/hr. X 16 hours + \$400 travel cost	\$1,440
TOTAL CONTRACT COST	\$1,440

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Mile	\$7,513	0.23	\$1,728	F	EFC
FY-2						
FY-3						
TOTAL	Mile	\$7,513	0.23	\$1,728	F	EFC

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehab.

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Rehabilitation Operations Assessment, Appendix I and Roads Impacted by Suppression Actions Map, Appendix III.
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	0.23 Miles of Road	\$1,728
TOTAL COST	0.23 Miles of Road	\$1,728

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	VEHICLE TRACKS REHABILITATION	JURISDICTIONS:	FWS-HNFH IDFG
PARTE LINE ITEM:	2. Rake Off-Road Vehicle Track	FISCAL YEAR:	2001
ESR REFERENCE #:	N/A	SPECIFICATION TYPE:	FS

I. WORK TO BE DONE

<p>A. General Description: Fire engines traveled off-road to suppress the fire and left tracks and ruts in soft soils. Tracks are to be raked-out by handcrews.</p> <p>B. Location (Suitable) Sites: Various locations through-out the Oster Lake Fire burned area.</p> <p>C. Design/Construction Specification(s):</p> <p>1. Use steel rakes or Mclouds to rake-out tracks to match surround contours and. Tracks should roughly blend with adjoining soil elevations and appearance.</p> <p>D. Purpose of Treatment Specification: To prevent erosion and discourage additional off-road use by visitors.</p> <p>E. Treatment Effectiveness Monitoring: Visually inspect areas raked during the first growing season for additional off-road use. If you use is detected considered additional measures to obliterated tracks or restrict vehicle use.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Vehicles tracks rehabilitated by fire crews assigned to the fire - cost not tracked in ESR plan	FS
TOTAL PERSONNEL SERVICE COST	FS
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Miles	-	2.5	-	FS	FC
FY-2						
FY-3						
TOTAL	Miles	-	2.5	-	FS	FC

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehab.

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	F

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Soil and Watershed Assessment Appendix I.
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	1.75 Miles of Vehicle Tracks	FS
IDFG	.75 Miles of Vehicle Tracks	FS
TOTAL COST	2.5 Miles of Vehicle Tracks	FS

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	HANDLINE REHABILITATION	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	3. Handline Rehabilitation	FISCAL YEAR:	2001
ESR REFERENCE #:	N/A	SPECIFICATION TYPE:	F

I. WORK TO BE DONE

- A. General Description:** Rehabilitation of suppression constructed hand lines is necessary to avoid erosion that would result in gullies and to restore natural landscape surface water flows.
- B. Location (Suitable) Sites:** See incident Fire Suppression Impacts map for location of known hand line. Additional hand line should be rehabilitated as they are discovered in the field. All newly discovered line should be mapped.
- C. Design/Construction Specification(s):**
1. Use hand tools only chainsaws included.
 2. Trenching (if any) should be filled in and the hand line restored to blend with the undisturbed soil contours.
 3. Berms, topsoil, and organic matter should be pulled back onto the hand line.
 4. Green trees/branches, dead limbs, and cut downed logs are to be re-scattered onto the hand line to obliterate evidence of the line as much as practical.
 5. Waterbar spacing should be every 50 feet depending upon slope and soil susceptibility to erosion with waterbar spacing decreasing on steeper slopes. Generally...Waterbars are to be built on slopes as follows:

SLOPE	SPACING
0-5 %	400 ft.
6-10 %	300 ft.
11-20 %	200 ft.
21-40 %	100 ft.
41-60 %	50 ft. or less

Waterbars should be skewed horizontally from the fall line of the slope (not the hand line) approximately 15 to 20 degrees from horizontal and drained away from the fire burned area if possible.
 6. Utilize natural rolls and dips whenever possible.
 7. Scatter branches, wood, rock, sod, pine needles, or other material to naturalize the fire line and further retard mineral soil movement. Scattered material should be randomly placed along the hand line. Strive for 65% to 85% ground cover on areas treated with scattered material to prevent mineral soil movement and channeling of the hand line. In grassy areas, replace soil and sod, waterbar as necessary and scatter rocks or limbs to naturalize the hand line location.
 8. Seeding of hand lines is not necessary unless required by specific and uniquely sensitive areas such as highly erodible soils or other critical areas.
 9. Remove all trash, equipment, and flagging.
- D. Purpose of Treatment Specification:** To prevent surface and gully erosion along the length of or in areas adjoining hand lines. Waterbars are to be constructed on the hand line to restore natural surface runoff patterns and to provide adequate drainage on the hand line. Waterbars should not prevent the natural drainage of the adjacent landscape and should be constructed nearly perpendicular to the contour of the slope. Waterbars are only intended to stabilize disturbance. Waterbars should gradually disappear, blending with the adjacent terrain within a 2 to 4 year period.
- E. Treatment Effectiveness Monitoring:** Rehabilitated handline should be inspected after the first three major rain events (greater than 0.5 inches/24 hours) to ensure that water is adequately diverted from the line and resource damage is not occurring. Significant problems should be reported and corrected.

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Handline rehabilitated by fire crews assigned to the fire - cost not tracked in ESR Plan	F
TOTAL PERSONNEL SERVICE COST	F

EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Miles	-	0.19	-	FS	FC
FY-2						
FY-3						
TOTAL	Miles	-	0.19	-	FS	FC

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehab.
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	FS

P = Personnel Services M = Materials/Supplies T = Travel C = Contract FS = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Watershed Assessment Appendix I, and Treatment Maps, Appendix III.

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	0.19 Miles	FS
TOTAL COST	0.19 Miles	FS

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	REMOVE BURNED ENGINE	JURISDICTIONS:	IDFW-WMA
PART E LINE ITEM:	4. Remove Burned Engine	FISCAL YEAR:	2001
ESR REFERENCE #:	N/A	SPECIFICATION TYPE:	FS

I. WORK TO BE DONE

<p>A. General Description: A BLM fire engine was burned over on Idaho Department of Fish and Wildlife land. Upon completion of fire investigation vehicle needs to be removed.</p> <p>B. Location (Suitable) Sites: Adjoining Highway 30 (see Treatment Map Appendix III)</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> 1. Remove on destroyed fire engine (pickup). 2. Vehicle is accessible via dke off of Highway 30. 3. BLM will need to determine where the vehicle should be taken in consultation with the Manager, Hagerman National Fish Hatchery. <p>D. Purpose of Treatment Specification: Remove and disposal of burned fire engine.</p> <p>E. Treatment Effectiveness Monitoring: Inspect site after removal to ensure that all materials have been removed.</p>
--

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
4 WD tow truck @ \$600 / Tow	\$600
TOTAL CONTRACT COST	\$600

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	TOW	\$600	1	\$600	F	C
FY-2						
FY-3						
TOTAL	TOW	\$600	1	\$600	F	C

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehab.

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Treatment Map, Appendix III
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
IDFW-HWMA	1 engine	\$600
TOTAL COST	1 engine	\$600

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	TREE HAZARD MITIGATION	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	5. Tree Hazard Mitigation	FISCAL YEAR:	2001
ESR REFERENCE #:	N/A	SPECIFICATION TYPE:	FS

I. WORK TO BE DONE

A. General Description: Felling trees damaged or killed by fire which pose an immediate threat to public safety or property
B. Location (Suitable) Site: Trees within one tree length of roads ditches and other access points.
C. Design/Construction Specification(s):
<ol style="list-style-type: none"> 1. Trees within one tree length of the roadways, ditches, other public and other access points that pose an immediate or short-term (within 1 year) to the public, employees, or hatchery infrastructure. 2. Trees will be felled, bucked and slash will be scattered as mulch. 3. Stumps will be flush cut as low as possible. 4. Power company has been notified of hazard trees on private lands adjoining powerline and they have agreed to mitigate.
D. Purpose of Treatment Specification: To provide for public safety and protection of hatchery infrastructure.
E. Treatment Effectiveness Monitoring: During normal operations conduct visual inspection of stand dead trees and report and mitigate any newly discovered tree hazards.

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Work completed by fire suppression crews assigned to fire prior to control - cost charged to fire suppression account and not tracked in ESR Plan	FS
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	TREE	-	260	-	F	FC
FY-2						
FY-3						
TOTAL	TREE	-	260	-	F	FC

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehab.

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	F

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan:

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	260 Tree Hazards	F
TOTAL COST	260 Tree Hazards	F

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	STRAW BALE SILT FENCE	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	6. Straw Bale Silt Fence	FISCAL YEAR:	2002
ESR REFERENCE #:	6.21.1 Surface Stabilization and Prevention Strategy	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Install fences of straw bales to filter out sediments which would enter the water supply to the HNFH, Brailsford Ditch, and the IDFG Fish Hatchery.</p> <p>B. Location (Suitable) Sites: Locations are shown on the Watershed Treatments Map - Appendix III. Straw bale silt fences were located where they will catch sediment about to enter Brailsford Ditch or Bickel Spring, and below other slopes with higher erosion potential. Fences are located at points where runoff from more erodible areas would concentrate. The fences are not located in incised channels, or in other areas which show signs of concentrated runoff in the past. The silt fences are not expected to impound water more than a few inches deep.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> Bales: Use straw bales certified as weed-free. Installation: Place straw bales end-to-end in a tight row. Openings or cracks between bales should be stuffed with loose straw. The fences should follow the contour and be turned up slightly at the ends. Stake the bales in place with wood stakes driven through the bales. <p>D. Purpose of Treatment Specification: To filter sediments out of water flowing toward hatchery water sources, irrigation ditch, and streams.</p> <p>E. Treatment Effectiveness Monitoring: Monitor the silt fences after the first several storm events. Check that no concentrated water flows are escaping between bales or around the ends. Repair and reinforce as necessary.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Initial installation: Type 1 Crew, charged to fire suppression	F
Followup, remedial staking and placement of additional silt fences: WG-10 @ \$25.93 x 40 hrs	\$ 1,037
TOTAL PERSONNEL SERVICE COST	\$ 1,037
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
Straw bales @ \$3.50 each x 175	\$ 613
Wood stakes @ 1.50 each x 100	\$ 150
TOTAL MATERIALS AND SUPPLY COST	\$ 763
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1 Construct	Feet	\$ 2.88	525	\$ 1,513	ESR	FC, P
FY-2 Maintain	Feet	\$ 0.50	525	\$ 287	ESR	P
FY-3						
TOTAL	Feet	\$ 3	525	\$ 1,800	ESR	FC, P

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehab.

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	M
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	P

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan:

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
HNFH	525 Feet of Straw Barrier Fence	\$ 1,800
TOTAL COST	525 Feet of Straw Barrier Fence	\$ 1,800

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	HYDRO-SEEDING	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	7. Hydro-Seeding	FISCAL YEAR:	2002
ESR REFERENCE #:	6.21.1 Surface Stabilization and Prevention Strategy	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Hydro-seed 3 acres in two priority areas to protect high priority resource values. Use the same seed mix as that specified for the revegetation specification. Seeding should be done this fall, but after the ash is settled by rain. The areas are generally of 50-60% slope.</p> <p>B. Location (Suitable) Sites:</p> <ol style="list-style-type: none"> Site 1. The site includes the steep slopes below the Brailsford pipeline, from about 200' east of Spring 15 to the west end of the access road. The area includes a band about 120 to 150 feet wide, from the foot of the road fill and down the steep slopes about 120' to the point where slopes decrease. It includes the area above Spring 15. Mulch Site 2. This site lies southeast of Bickel Spring and covers a steep gullied area that feeds into the stream channel running along the boundary with private property. The upper limit of the area is about 100' above the limit of vehicular access at a burned olive tree. <p>C. Design /Construction Specification(s):</p> <ol style="list-style-type: none"> Hydro-seed: Contractor will utilize mulch and tackifier appropriate for 60 degree slopes. Mulch rate should be 2000 lbs/acre of cellulose fiber. Contractor is responsible for supplying all materials and equipment except seed. Material should contain no fertilizer. The tackifier should be starch based and must not contain a polyacrylamide. Seed mix:: Snake River wheatgrass 8 lbs/acre PLS Bannock Thickspike Wheatgrass 8 lbs/acre PLS Great Basin Wildrye 8 lbs/acre PLS Mixing Seed: Seed should be thoroughly mixed before adding to the hydro-mulch. Contractor must ensure the seed is thoroughly mixed in the mulch. <p>D. Purpose of Treatment Specification: To protect soils from raindrop impact and erosion, to preserve the water quality of the water supply from Spring 17 to the Hatchery, to protect the water quality in Riley Creek which supplies water to the IDFG Fish Hatchery, and to protect an archeological site from erosion or deposition of sediments.</p> <p>E. Treatment Effectiveness Monitoring: Monitor treated and untreated areas after significant storm events. If a measured storm produces significant erosion and sedimentation from untreated or treated slopes, and there is a significant probability (>10%) that another storm of equal or greater size will occur before vegetative cover is established, then additional treatment or retreatment should be considered.</p>
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II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item)	COST/ITEM
Do not include contract personnel costs here - see contract services below	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
None. Contracting and administration provided by Implementation Leader (see Implementation Leader Specification)	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
None. Hydro-seeding equipment to be included in contract for hydro-seeding services.	
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
Contracted hydro-seeding including materials, supplies, equipment, and application @ \$1,700/acre x 5 acres.	\$ 8,500
Seed cost @ \$197/acre x 5 acres (for 24lbs/acre PLS)	\$ 985
TOTAL CONTRACT COST	\$ 9,485

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Acres	\$ 1,897	5	\$ 9,485	ESR	C
FY-2						
FY-3						
TOTAL	Acres	\$ 1,897	5	\$ 9,485	ESR	C

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. SOURCE OF COST ESTIMATE

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

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Appendix III, Watershed Treatments Map.
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	5 Acres of Hydro-Seeding	\$ 9,485
TOTAL COST	5 Acres of Hydro-Seeding	\$ 9,485

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	CATCHMENT BASIN	JURISDICTIONS:	FWS-HNFH
PART LINE ITEM:	8. Catchment Basin	FISCAL YEAR:	2002
ESR REFERENCE #:	6.21.1 Surface Stabilization and Prevention	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. General Description: Construction of a catchment basin for runoff and sediment from storm events on the burned uplands of FWS Hagerman National Fish Hatchery lands.
B. Location (Suitable) Sites: One site, located at forks in Upper Bench road within the N2SE4 Section 6, Twp 8S, Rge 14E.
C. Design/Construction Specification(s):
<ol style="list-style-type: none"> 1. Natural depression area behind forks in road should be enlarged to a 20 foot diameter area and deepened 1 foot. 2. Excavated material should be used to create a berm along road's edge to reinforce catchment basin. 3. Equipment - small backhoe with appropriate safety and fire equipment. 4. Cultural resource clearance may be needed from certified archeologist.
D. Purpose of Treatment Specification: Prevention strategy for road drainage infrastructure and pollution of spring waters. Capture of increased surface runoff and associated sediments from upslope watershed which may drain into culvert system of Upper Bench Road and into Main Spring.
E. Treatment Effectiveness Monitoring: Associated water quality monitoring specification

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
GS-12 Supervisor \$29.86 x 4 hrs x 1 yr.	\$ 119
TOTAL PERSONNEL SERVICE COST	\$ 119
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
Misc. supplies	\$ 100
TOTAL MATERIALS AND SUPPLY COST	\$ 100
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
Backhoe and operator @ \$65/hr. X 8 hrs. X 1 yr.	\$ 520
TOTAL CONTRACT COST	\$ 520

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Each	\$ 739	1	\$ 739	ESR	P/C
FY-2						
FY-3						
TOTAL	Each	\$ 739	1	\$ 739	ESR	P/C

FUNDING SOURCES:

F = Fire Suppression Account
ESR = Emergency Stabilization & Rehabilitation
OP/O = Agency Operating or Other Account
EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: Watershed Assessment report, Watershed Treatment Map

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	1 catch basin	\$ 739
TOTAL COST	1 catch basin	\$ 739

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION**

PART F - SPECIFICATION

SPECIFICATION TITLE:	STORM PATROL	JURISDICTIONS:	FWS-HNFH, IDFG
PARTE LINE ITEM:	9. Storm Patrol	FISCAL YEAR:	2002, 2003,2004
ESR REFERENCE #:	6.21.2 Property Protection Strategy	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Patrol of road, canal, pipeline and spring in infrastructures after each major storm event to determine if plugging of infrastructures may occur. Implement appropriate measures for clean out and diversion of flows if necessary.</p> <p>B. Location (Suitable) Sites: Culverts along Upper Bench road, Len Lewis road; headgates for Brailsford pipeline and Len Lewis Spring, intakes for Brailsford, Main Spring, Spring 15 and 17, Bickel Spring and Riley Creek.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> Patrol infrastructure of road culverts, road prism, outlets for Len Lewis spring, and water intakes for both the National and State Hatcheries after receiving major precipitation event that may produce runoff. Approximately 0.5 inch or more of precipitation within 6 hours would be considered a major precipitation event. Spring intakes and pipeline intake would be cleaned of debris and sediments during patrols by raking of debris away from intakes and cleaning of screens with a high pressure pump. If flows at Len Lewis increase 10% and/or level of pool water is at risk of overtopping the Len Lewis road, excess water may be pumped from the spring pool into small ephemeral draws leading to Riley Creek. Culvert inlets along the Upper Bench road would be visually monitored for debris and sediment accumulations and kept clear for free flow of runoff water. Particular attention must be paid to the 22 inch culvert under the road immediately up stream of Spring 15 which appears most vulnerable to plugging and overtopping of the road. <p>D. Purpose of Treatment Specification: Property protection. An increase in small debris, detritus, and suspended sediments will increase due to the burned watersheds. Intakes for hatchery operations would need increased maintenance to insure open and unobstructed flows. Water levels may put road prisms at risk of failure if allowed to overtop; water levels may be controlled by pumping excess water. Keeping culverts in upper bench road clear of debris would reduce risk of fill failure.</p> <p>E. Treatment Effectiveness Monitoring: Water quality monitoring of samples taken after storm events at hatchery intakes will indicate need for increased maintenance or upslope treatments.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Maintenance Mechanic, WG-10, 10 hrs/event x 6 events/yr x 38.90/hrs x 3 yrs (HNFH)	\$ 7,002
Maintenance Mechanic, 2 hr/event x 6 events/yr x 38.90/hr x 3 yrs (State of Idaho)	\$ 1,400
TOTAL PERSONNEL SERVICE COST	\$ 8,402
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
Pump, Honda, high pressure, 5.5 hp, OHV, 132 gallons/minute capacity, HNFH	\$ 890
Misc. supplies (vehicle expenses, gasoline for pump, additional rakes) HNFH	\$ 500
Misc. supplies, State of Idaho	\$ 50
TOTAL MATERIALS AND SUPPLY COST	\$ 1,440

TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Ea	\$ 59	66	\$ 3,894	ESR, O	P
FY-2	Ea	\$ 45	66	\$ 2,970	ESR, O	P
FY-3	Ea	\$ 45	66	\$ 2,970	ESR, O	P
TOTAL	Ea	\$ 50	198	\$ 9,834	ESR, O	P

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Soil and Watershed Assessment, Appendix I
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWF-HNFH	180	\$ 8,392
IDGF	18	\$ 1,450
TOTAL COST	198	\$ 9,842

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	WATER QUALITY MONITORING	JURISDICTIONS:	FWF-HNFH
PART E LINE ITEM:	10. Water Quality Monitoring	FISCAL YEAR:	2002, 2003, 2004
ESR REFERENCE #:	6.11 Monitoring	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Certified lab analysis of water samples taken from hatchery intakes for water quality standards as set by State of Idaho</p> <p>B. Location (Suitable) Site: Samples taken at hatchery intakes at Springs 17, Bickel, Brailsford, and Main on the Hagerman National Fish Hatchery</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> 1. Samples of flow will be taken according to State of Idaho Department of Environmental Quality Protocols. 2. Samples will be taken after each major precipitation event, accumulating more than 0.5 inches in a 6 hr period by a data logger rain gauge. Samples taken in conjunction with Storm Patrol of intakes. 3. Samples will be analyzed by a certified water laboratory for suspended solids, phosphorus, nitrogen and pH. 4. If two consecutive samples indicate sediment and element levels above state standards, additional upslope treatments should be considered to reduce pollutants. <p>D. Purpose of Treatment Specification: To monitor for determination of treatment effectiveness in reducing sediment and associated nitrogen and phosphorus elements from entering hatchery waters. And to determine if additional upslope treatments are necessary to reduce sediments and elements if monitoring shows an increase above state standards.</p> <p>E. Treatment Effectiveness Monitoring: None needed</p>
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II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Maintenance mechanic, WG-10, 1 hr x 6 events x 3 yrs. X 38.90 (OT rate)	\$ 700
TOTAL PERSONNEL SERVICE COST	\$ 700
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
Metered rain gauge, time and date logger for 0.01" event, 1 each x 1 year x 380	\$ 380
Software for data logger rain gauge	\$ 95
Misc. supplies and expenses for rain gauge - set up, shuttle, batteries	\$ 300
TOTAL MATERIALS AND SUPPLY COST	\$ 775
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
Certified lab analysis, @ \$75.00/sample x 4 samples x 6 events/yr x 3 yrs	\$ 5,400
TOTAL CONTRACT COST	\$ 5,400

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Ea	\$ 117	24	\$ 2,808	ESR	P, C
FY-2	Ea	\$ 85	24	\$ 2,040	ESR	P, C
FY-3	Ea	\$ 85	24	\$ 2,040	ESR	P, C
TOTAL			72	\$ 6,888		

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Watershed Assessment, Appendix I and Hydrology Map location of springs, Appendix III

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWF-HNFH	72 Samples	\$ 6,875
TOTAL COST	72 Samples	\$ 6,875

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	EMERGENCY FISH RELOCATION	JURISDICTIONS:	FWS-HNFH
PARTE LINE ITEM:	11. Emergency Fish Relocation	FISCAL YEAR:	2001
ESR REFERENCE #:	6.21.3 Removal Strategy	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Remove 81,187 fish and plant them earlier planned to reduce the risk fish mortality associated with unstable post-fire watershed conditions above fish hatchery in takes.</p> <p>B. Location (Suitable) Sites: Fish were released into Horsethief Reservoir, and C.J. Strike.</p> <p>C. Design/Construction Specification(s): 1. Fish were transported using FWS tanker and contracted truck</p> <p>D. Purpose of Treatment Specification: While early release of fish will result in an increased risk of mortality due to unfavorable environmental conditions and fish size, watershed conditions and potential sedimentation of fish facilities were considered a greater risk.</p> <p>E. Treatment Effectiveness Monitoring: N/A</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
Relocated 81,187 rainbow trout through contract driver and equipment (see cost summary Appendix IV, Supporting Documentation)	\$2,098
TOTAL CONTRACT COST	\$2,098

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	TRIPS	\$525	4	\$2,098	ES	C
FY-2						
FY-3						
TOTAL	TRIPS	\$525	4	\$2,098	ES	C

FUNDING SOURCES:

F = Fire Suppression Account
ESR = Emergency Stabilization & Rehabilitation
OP/O = Agency Operating or Other Account
EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services **M** = Materials/Supplies **T** = Travel **C** = Contract **F** = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan:

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	4 Round Trips	\$2,098
TOTAL COST	4 Round Trips	\$2,098

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	NON-NATIVE INVASIVE PLANT CONTROL	JURISDICTIONS:	FWS, IDFG
PARTE LINE ITEM:	12. Invasive Plant Control	FISCAL YEAR:	2002
ESR REFERENCE #:	6.4.1 Non-native Invasive Plant Control	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: To prevent or reduce the spread of undesirable non-native invasive plants, e.g., cheat grass, on FWS and IDFG lands and to assist in the establishment of native grasses</p> <p>B. Location (Suitable) Sites: Primary treatment areas would be the shrub steppe lands within the burned area. See Appendix III, Vegetation Map for locations.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> 1. Control cheat grass in the fall and again in late February-early March, 2002, prior to seeding. 2. Approximate acreage is: FWS - 196 acres; IDFG - 91 acres. 3. Herbicide recommended to be used is Round-Up. In areas where there is live native vegetation do not use Round-Up, instead use the herbicide Plateau. 4. There should be a buffer zone of 25 feet between any treatment areas and water areas. This includes creeks, springs, irrigation ditches, and ponds. If it is necessary to get closer to water areas then the herbicide Rodeo should be used. 5. The application method can be by hand sprayer or tractor/ATV mounted sprayer. Aerial application is not recommended. 6. The area to be sprayed should be posted. 7. Winds in the area to be sprayed should be less than 3 miles per hour. 8. Applicator or person supervising the application should be state certified. <p>D. Purpose of Treatment Specification: To prevent or reduce the spread of non-native plants and to reduce the competition for recovering native vegetation and to promote the establishment of seeded vegetation.</p> <p>E. Treatment Effectiveness Monitoring: See Monitor Seeding Effectiveness Specification.</p>
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II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item)	COST/ITEM
Do not include contract personnel costs here - see contract services below	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
FWS - Herbicide and spraying of 196 acres @ \$15/acre + 6 gal. x \$341/gal x 2 sprayings	\$9,972
IDFG - Herbicide and spraying of 91 acres @ \$15/acre + 3 gal. x \$341/gal x 2 sprayings	\$4,776
TOTAL CONTRACT COST	\$14,748

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Acres	\$51	287	\$14,748	ESR, O	C
FY-2						
FY-3						
TOTAL	Acres	\$51	287	\$14,748	ESR, 0	C

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehabilitation

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Appendix I, Vegetation Resource Assessment. See Appendix III, Resource Treatments map.
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VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS -	196 acres	\$9,972
IDFG -	91 acres	4,776
TOTAL COST	287 acres	\$14,748

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	REVEGETATING BURNED CREEKBANKS, WATER EDGES, AND CHEAT GRASS AREAS	JURISDICTIONS:	FWS, IDFG
PART E LINE ITEM:	13. Revegetation	FISCAL YEAR:	2002
ESR REFERENCE #:	6.4.3 Revegetation	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

- A. General Description:** Revegetate areas of cheat grass by seeding to facilitate the natural succession of vegetative communities which will be subject to immediate and aggressive invasion by cheat grass. Revegetate along Riley Creek, Len Lewis Spring, and other water edges with willow cuttings.
- B. Location (Suitable) Site:** Areas of cheat grass as shown on the Vegetation Map and Resource Treatments Map, Appendix III. Seed 196 acres on FWS lands and 91 acres on IDFG lands. Revegetate burned creekbanks and water edges along Riley Creek, Len Lewis Spring, and other burned water edges with willow cuttings.
- C. Design/Construction Specification(s):**
- Seed Mixture Selection and Certification:** The seed mixture for the Oster Pond Fire was selected by Idaho Fish & Game in concurrence with FWS, NRCS, and BAER Team specialists. The seed mix should be tested for purity and germination rates. Before accepting delivery of seed shipment the contractor must provide written evidence (seed label and letter) to the hatchery manager that the seed conforms to the purity and germination requirements in the specification. Test methods specified in *Rules for Testing Seeds, Proceedings of the Association of Official Seed Analyst* will be acceptable for determining the germination rate. Seed shall conform to specifications outlined within Request for Formal Bid for Seed contained in Appendix V.

Seed Mix:	Indian ricegrass <i>Achmenoides hymenoides</i> (var. Nezpar)	8 lbs./acre PLS	10%
	Great Basin wildrye <i>Leymus cinereus</i> (var. Trailhead)	8 lbs./acre PLS	25%
	Snake River wheatgrass <i>Pseudoroegneria spicata</i> (var. Secar)	8 lbs./acre PLS	25%
	Bannock thickspike wheatgrass <i>Elymus lanceolatus</i>	8 lbs./acre PLS	40%
	Basin Big sagebrush <i>Artemisia tridentata</i> ssp. <i>tridentata</i>	.1lbs/acre PLS	
 - Delivery:** Deliver certified weed-free seed sold on pure live seed basis. Deliver to Hagerman National Fish Hatchery, Hagerman, Idaho, by March 1, 2002.
 - Storage:** Seed should be applied as soon as possible after delivery. If immediate application is not possible the seed should be stored under dry, cool conditions and protected from rodents and other wildlife. Seed also needs to be protected from dew and rain.
 - Timing of Seeding Application:** Seeding should occur in mid-March, two weeks after herbicide application (February-early March). See Specification: Control Invasive Species.
 - Application Rate:** Seed will be applied at the above rates, on a PLS basis. If the seed application is broadcast it is recommended that the seeding rate be doubled.
 - Application Method:** Seed can be applied by hand broadcast seeder, ATV broadcast seeder, hydro-seeding, or drilling or a combination of methods depending on the terrain. Indian ricegrass will need to be drilled to 3"-4" depth, so it should be applied first by itself followed by the remaining seed application by drilling or broadcast or a combination.
 - Mulch:** Certified weed-free straw mulch or a compost should be applied immediately after seeding. If applying compost the seed could be mixed with it.
 - Willow revegetation:** Take cuttings from existing live sandbar or peach-leaf willow (1/4"-1" diameter x 4-5 feet in length). Cuttings should be made while the plant is dormant. The cut should be made at a 45°-60° angle. Once cut the willow cut should be kept moist until planting. Planting should be done within one day of cutting. To plant, the cut end should be placed into the soil approximately 6" so that the cutting is near vertical. Spacing should be between 3' - 5' apart. The soil should then be tamped firm. Plant the willow cuttings starting near the creek/water edge, not at the edge, and back from the edge approximately 10 feet. This should be done only along burned creekbanks and water edges.
 - Coordination:** This treatment should be coordinated between agencies. Contact Malad Gorge State Park and NRCS to assist with the final seeding plan. Contacts can be found in the Vegetation Resource Assessment.
- D. Purpose of Treatment Specification:** To protect water quality, maintain site productivity, reduce the risk of noxious weed invasion into the burned area, and to facilitate the vegetative recovery to a native grassland.
- E. Treatment Effectiveness Monitoring:** Monitoring should be conducted to determine the relative establishment and effectiveness of seeding and revegetation. Supplemental seeding requests may be warranted should monitoring determine that initial seed did not meet resource protection objectives. See Monitoring for Treatment Effectiveness Specification.

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	

EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
FWS Seed cost @ \$274.62/acre PLS x 196 acres	\$53,826
FWS Certified weed-free straw mulch, @ 3.75/bale (FOB) x 25 bales/acre x 196 acres	\$18,375
IDFG Seed cost @ \$274.62/acre PLS x 91 acres	\$24,990
IDFG Certified weed-free straw mulch, @ 3.75/bale (FOB) x 25 bales/acre x 91 acres	\$8,531
2000 willow cuttings (¼-1" diameter x 4-5feet in length, cut at 45°-60° angle) (cut on-site)	\$0
TOTAL MATERIALS AND SUPPLY COST	\$105,722

TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
FWS Hand/ATV/tractor broadcast seeding and drilling @ 80 hours x \$50/hour x 1 fiscal year	\$4,000
FWS straw mulch application @ \$15/acre x 196 acres	\$2,940
IDFG Hand/ATV/tractor broadcast seeding and drilling @ 40 hours x \$50/hour x 1 fiscal year	\$2,000
IDFG straw mulch application @ \$15/acre x 91 acres	\$1,365
FWS Planting willow cuttings (crew of 6 x 40 hours x 11.47/hour)	\$2,753
TOTAL CONTRACT COST	\$13,058

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Acres	\$411	287	\$118,780	ESR, O	C
FY-2						
FY-3						
TOTAL	Acres	\$411	287	\$118,780	ESR, O	C

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. SOURCE OF COST ESTIMATE

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

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Appendix I, Vegetation Resource Assessment. See Appendix III, Resource Treatments Map.

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS	196 acres	\$81,894
IDFG	91 acres	36,886
TOTAL COST	287 acres	\$118,780

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	MONITOR REVEGETATION AND SEEDING EFFECTIVENESS	JURISDICTIONS:	FWS, IDFG
PART E LINE ITEM:	14. Monitor Seeding Effectiveness	FISCAL YEAR:	2002, 2003
ESR REFERENCE #:	6.11 Monitoring	SPECIFICATION TYPE:	R

I. WORK TO BE DONE

<p>A. General Description: Conduct seeding monitoring in first year following seeding treatment to determine success of seeding efforts on the Oster Lake Fire on both FWS and IDFG managed lands.</p> <p>B. Location (Suitable) Sites: Establish monitoring transects within each plant association type seeded. Final site selections to be made by Agency personnel. Within revegetated areas along burned creekbanks and water edges, visual observation is all that is necessary. See Appendix III, Vegetation and Resource Treatment Maps.</p> <p>C. Design/Construction Specification (s): Monitoring transects shall be established and methodologies designed to determine:</p> <ol style="list-style-type: none"> 1. This specification can be accomplished through a contract with a college/university. 2. A minimum seeding establishment of 9-15 plants per square foot should be present in seeded areas. If seeding establishment does not meet this requirement then a second application of seed should be applied. 3. Sampling should determine species composition, root depth and area, plant height, and vigor. 4. Count seedlings per square foot - Seeded species/Native species/total # and compare to seeding rate per square foot for treatment success. 5. Estimate root mass/square foot - Pull plants on representative area, measure diameter of root wad and test for hydrophobic layer (H2P) in root mass to estimate treatment effectiveness of grass roots in penetrating to H2P. 6. Estimate effective root cover area due to grasses. 7. Sampling methodologies shall represent all plant community types, all aspects, and all slope variations within the seeded areas. Digital photos shall accompany data records as supporting documentation of findings. 8. In areas along creekbanks and water edges where willow cuttings have been planted, an assessment of whether or not the planting took effect is all that is necessary. A replanting may occur to replace plantings that did not survive or if it is determined that more density is desired. 9. Observations should be documented to record other factors such as herbivory, surface erosion, etc. 10. A final report shall be published that documents sampling methodologies, techniques, areas sampled, and summary of findings. This report should be submitted with the Accomplishment Report at the conclusion of funding. <p>D. Purpose of Treatment Specification: To ensure establishment of willow cuttings and seeded species for water quality protection, prevention of noxious weed establishment, maintaining site productivity, and conversion from cheat grass to native grassland.</p> <p>E. Treatment Effectiveness Monitoring: See above.</p>
--

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item)	COST/ITEM
Do not include contract personnel costs here - see contract services below	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost)	COST/ITEM
Do not include contract personnel costs here -see contract services below	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	

TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
FWS - Monitoring 196 acres \$5,400 x 2 fiscal years + 25% overhead	\$13,500
IDFG - Monitoring 91 acres \$3,000 x 2 fiscal years + 25% overhead	7,500
TOTAL CONTRACT COST	\$21,000

III SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Surveys	\$10,500	1	\$10,500	ESR, O	C
FY-2	Surveys	\$10,500	1	\$10,500	ESR, O	C
FY-3						
TOTAL	Surveys	\$21,000	1	\$21,000	ESR, O	C

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Appendix I, Vegetation Resource Assessment. See Appendix III, Resource Treatment Map.

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS	1 Survey	\$13,500
IDFG	1 Survey	\$7,500
TOTAL COST	2 Surveys	\$21,000

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	REPAIR BOUNDARY FENCE	JURISDICTIONS:	FWS-HNFH
PART E LINE ITEM:	15. Replace Fence	FISCAL YEAR:	2002
ESR REFERENCE #:	6.8.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Repair all fences damaged by fire.</p> <p>B. Location (Suitable) Sites: See Treatment Map Appendix III. for fence lines within burned perimeter.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> 1. Repair 4-strand fences with 12 ½ gauge barbed wire 2. Remove and dispose of burned wire and wooden posts 3. Replace wooden brace posts and corner posts 4. Replace wooden gates. <p>D. Purpose of Treatment Specification: To protect burned area during recovery.</p> <p>E. Treatment Effectiveness Monitoring: Contracted installed fence lines will be visually inspected for quality control</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
Remove and dispose burned 4 strand bared wire fence @ \$750 / mile X 2.7 miles	\$2,025
4 strand barbed wire installed (using existing metal t-post) \$2.25 / foot X 14,256 feet	\$32,076
H-brace installed @ \$100 / ea. X 50	\$5,000
HD 16 foot gate installed @ 250 each X 5	\$1,250
6 ft. X 80 ft. 9 gauge cyclone fence galvanized plus 5 posts and 10 foot cross bar installed	\$660
engineering overhead	\$6,972
TOTAL CONTRACT COST	\$47,983

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1						
FY-2	MILES	\$17,772	2.7	\$47,983	EFR	C
FY-3						
TOTAL	MILES	\$17,772	2.7	\$47,983	EFR	C

FUNDING SOURCES:

F = Fire Suppression Account

ESR = Emergency Stabilization & Rehabilitation

OP/O = Agency Operating or Other Account

EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization

R = Rehabilitation

FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services

C = Contract

EFC = Emergency Fire Contract

FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	C
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services

M = Materials/Supplies

T = Travel

C = Contract

F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Treatment Map Appendix III.
--

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	2.7 Miles Remove & Replace Fence	\$47,983
TOTAL COST	2.7 Miles Remove & Replace Fence	\$47,983

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	REPLACE BOUNDARY SIGNS	JURISDICTIONS:	FWS-HNFH
PARTE LINE ITEM:	16. Replace Boundary Signs	FISCAL YEAR:	2002
ESR REFERENCE #:	6.8.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Replace resource protection signs burned in the fire including boundary signs.</p> <p>B. Location (Suitable) Sites: On National Fish Hatchery Boundary fence (see Treatments Map, Appendix III for location of fencelines).</p> <p>C. Design /Construction Specification(s):</p> <ol style="list-style-type: none"> 1. Replace burned boundary signs with standard National Fish Hatchery Boundary Signs. 2. Replace damaged signs along National Fish Hatchery Boundary. <p>D. Purpose of Treatment Specification: To inform area visitors of National Fish Hatchery boundary</p> <p>E. Treatment Effectiveness Monitoring: N/A</p>
--

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
National Fish Hatchery boundary sign @ \$7 ea. X 40	\$280
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	\$280
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1						
FY-2	Signs	\$7	40	\$280	ES	C
FY-3						
TOTAL	Signs	\$7	40	\$280	ES	C

FUNDING SOURCES:

F = Fire Suppression Account
ESR = Emergency Stabilization & Rehabilitation
OP/O = Agency Operating or Other Account
EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	C
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Appendix III for location of fence line with boundary signs.

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	40 Signs	\$280
TOTAL COST	40 Signs	\$280

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	SPRING COVER AND SATELLITE DISH REPLACEMENT	JURISDICTIONS:	FWS-HNFH
PARTE LINE ITEM:	17. Replace Satellite Dish	FISCAL YEAR:	2002
ESR REFERENCE #:	6.8.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. General Description: Replace government owned metal spring cover and satellite dishes burned in fire.
B. Location (Suitable) Site s: Residential Area Hagerman National Fish Hatchery
C. Design/Construction Specification(s):
<ol style="list-style-type: none"> 1. Purchase and install 2 damaged satellite dishes burned by Oster Lake Fire 2. Purchase and install 1 spring metal spring cover
D. Purpose of Treatment Specification: Replace minor facilities destroyed by fire.
E. Treatment Effectiveness Monitoring: Inspect spring cover and dish installation location and function of new units. Correct any problems identified.

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
WG-GS 10 @ \$19.10 / hr. X 16 hours remove and install metal spring cover	\$ 305
TOTAL PERSONNEL SERVICE COST	\$ 305
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
Replace Burned Metal Spring Cover @ \$450 each (includes all materials)	\$ 450
TOTAL MATERIALS AND SUPPLY COST	\$ 450
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
Remove burned satellite dishes and purchase and install satellite dish @ \$300 ea. X 2 dishes	\$600
TOTAL CONTRACT COST	\$600

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Minor Facilities	\$452	3	\$1,355	ESR	C
FY-2						
FY-3						
TOTAL	Minor Facilities	\$452	3	\$1,355	ESR	C

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Treatment Map for location of Hagerman National Fish Hatchery housing area.
--

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH	3 Minor Facilities	\$1,355
TOTAL COST	3 Minor Facilities	\$1,355

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	REPLACE PVC PIPELINE	JURISDICTIONS:	IDFG-HWMA
PART E LINE ITEM:	18. Replace PVC Pipeline	FISCAL YEAR:	2002
ESR REFERENCE #:	6.8.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. General Description: Replace PVC Irrigation Line damaged by fire.
B. Location (Suitable) Sites: See Treatment Map Appendix III for location.
C. Design/Construction Specification(s): 1. Removed and recycle burned 12 inch PVC irrigation pipeline. 2. Purchase and install new 12 inch PVC irrigation pipeline.
D. Purpose of Treatment Specification: Replace minor infrastructure necessary to maintain wild life habitat.
E. Treatment Effectiveness Monitoring: Visually inspect site for removal of all materials after construction and for function. Remove any construction materials and repair any leaks detected.

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
Two person crew @ \$40 / hour X 30 hours	\$1,200
TOTAL PERSONNEL SERVICE COST	\$1,200
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost	COST/ITEM
12 PVC pipe @ \$3.10 / ft X 2,640 feet	\$8,184
TOTAL MATERIALS AND SUPPLY COST	\$8,184
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Feet	\$4	2,640	\$9,384	O	P
FY-2						
FY-3						
TOTAL	Feet	\$4	2,640	\$9,384	O	P

FUNDING SOURCES:

F = Fire Suppression Account
ESR = Emergency Stabilization & Rehabilitation
OP/O = Agency Operating or Other Account
EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

IV. 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 resources	P/M
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services **M** = Materials/Supplies **T** = Travel **C** = Contract **F** = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Treatments Map Appendix III for location of pipeline

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
IDFG-HWMA	2,640 feet of pipeline	\$9,384
TOTAL COST	2,640 feet of pipeline	\$9,384

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	IMPLEMENTATION LEADER	JURISDICTIONS:	FWS, IDFG
PART E LINE ITEM:	19. Implementation Leader	FISCAL YEAR:	2002
ESR REFERENCE #:	6.0 Implementation Leader (New)	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Project Implementation Leader will coordinate and oversee the implementation of the Oster Pond Fire ESR Plan on FWS lands. This specification provides funding for 4 months.</p> <p>B. Location (Suitable) Sites: Treatment areas are located on FWS lands. Duty station will be at the Hagerman National Fish Hatchery.</p> <p>C. Design/Construction Specification(s): The Project Implementation Leaders are responsible for the oversight of the ESR Plan implementation on FWS/IDFG lands. The Leaders will coordinate on cross-jurisdictional projects to achieve efficient use of funds, personnel, equipment, and contracts. The Leaders will specifically oversee implementation, monitoring, program review, proposed plan amendments and funding requests. The Leaders track ESR budgets and complete Accomplishment Reports. (Options for these positions can include: temporary hire, detail, contract, or a Cooperative Agreement with IDFG or BLM).</p> <p>D. Purpose of Treatment Specification: To provide quality control over project implementation and to ensure a comprehensive plan implementation.</p> <p>E. Treatment Effectiveness Monitoring: The respective hatchery managers will supervise the Implementation Leader.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
FWS - GS-11 @ \$49,102/year (4 months)	\$16,367
IDFG - Bio-Tech @ \$11.23/hour x 680 hours	7,636
TOTAL PERSONNEL SERVICE COST	\$24,003
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
FWS - GSA Pickup Rental (½ ton) @ \$417/month x 4 months	\$1,668
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	\$1,668
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
FWS - Administrative materials	\$800
TOTAL MATERIALS AND SUPPLY COST	\$800
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
TOTAL CONTRACT COST	

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-1	Project	\$13,236	2	\$26,471	ESR	P
FY-2						
FY-3						
TOTAL	Project	\$13,236	2	\$26,471	ESR	P

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within ESR Plan: See Executive Summary.
--

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS	Project	\$18,835
IDFG	Project	7,636
TOTAL COST	Project	\$26,471

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART H REVIEW AND APPROVAL - U.S. FISH AND WILDLIFE SERVICE

A. Suppression Related Rehabilitation Approval (check one box below):

- * Approved Explanation for revision or disapproval:
* Approved with Revision
* Disapproved

Project Leader, Hagerman National Fish Hatchery **Date**

B. Emergency Stabilization and Rehabilitation (ESR) Review (check one box below):

- * Concur Explanation for revision or non-concurrence:
* Concur with Recommendations
* Do not Concur

Project Leader, Hagerman National Fish Hatchery **Date**

C. Emergency Stabilization and Rehabilitation (ESR) Review (check one box below):

- * Concur Explanation for revision or non-concurrence:
* Concur with Recommendations
* Do not Concur

Regional Fire Management Coordinator, R1, U.S. Fish and Wildlife Service **Date**

D. Emergency Stabilization and Rehabilitation (ESR) Approval (check one box):

- * Approved Explanation for revision or disapproval:
* Approved with Revision
* Disapproved

Regional Director, Region 1, U.S. Fish and Wildlife Service **Date**

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

PART H REVIEW AND APPROVAL - IDAHO DEPARTMENT OF FISH AND GAME

A. Idaho Department of Fish and Game Review (check one box below):

- * **Concur** Explanation for revision or non-concurrence:
- * **Concur with Recommendations**
- * **Do not Concur**

Manager, Hagerman Wildlife Management Area

Date

B. Idaho Department of Fish and Game Approval (check one box):

- * **Approved** Explanation for revision or disapproval:
- * **Approved with Revision**
- * **Disapproved**

Magic Valley, Regional Supervisor

Date

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

APPENDIX I - BAER TEAM RESOURCE ASSESSMENTS

- * SOIL AND WATERSHED ASSESSMENT
- * CULTURAL RESOURCE ASSESSMENT
- * THREATENED AND ENDANGERED SPECIES ASSESSMENT
- * VEGETATION RESOURCE ASSESSMENT

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

**OSTER LAKE FIRE
SOIL AND WATERSHED ASSESSMENT**

I. OBJECTIVES

- " Assess overall watershed changes caused by the fire, particularly those that pose substantial threats to human life, property, and critical natural and cultural resources. This includes evaluating changes to soil conditions, hydrologic function, and watershed response to precipitation events.
- " Identify the most critical soil and watershed areas and issues related to the Oster Lake Fire based on increased flood potential, loss of soil resources, and water quality impacts and prescribe treatments to mitigate impacts and risks.
- " Develop maps of burn severity and treatments, if necessary.
- " Identify future monitoring needs.

II. ISSUES

- " Risk to the water quality of several springs used as source waters for the Hagerman National Fish Hatchery (HNFH), with ensuing threat to aquatic life.
- " Risk to the water quality of Riley Creek, a source water for the State of Idaho Fish Hatchery and a 303(d) water quality limited stream.
- " Increased erosion from the upland slopes, with associated loss of site productivity and sediment transport to downstream waters.

III. OBSERVATIONS

A. BACKGROUND

Geology

Geology. The burned area is on lands along the Snake River in the Snake River Plain, a high volcanic plateau built by basalt lava flows during the last few million years. The lava flows intermittently blocked watercourses and created pluvial lakes that filled with sediment. About 14,000 years ago, the Bonneville Flood swept down the Snake River canyon and over the plateau, adding a mixture of sandy and gravelly flood deposits. A mixture of the basalt flows, lacustrine deposits, volcanic materials, Bonneville Flood deposits, alluvial deposits, and glacial debris are represented in the area. These materials form the basis for the topography and soils.

The site begins up on the plateau about 300 ft. above the Snake River. From the plateau the site falls about 200 feet to a terrace about 100 ft above the Snake River, then falls over basalt ledges to the Snake River. The shape of the slopes from the upper plateau to the terrace is varied depending on the geologic strata. West of Spring 17 the plateau breaks steeply down, sometimes over a basalt ledge, falls in a concave slope toward a midpoint, and then breaks and falls down a second concave slope to Riley Creek and the terrace. East of Spring 17 and in the watershed to Len Lewis Spring, the upper slope segment is less steep, around 20%. On the terrace the terrain is generally flat to rolling or hummocky and about 100 ft above the Snake River.

Soils

The major soil map units in the burned area are those listed below. The predominant soils are light textured soils with sandy surfaces, mostly they were formed from the sandy flood deposits and alluvial deposits, and lacustrine deposits described above. Small areas of silt textured soils are also found. The sandy soils have rapid permeability and high infiltration, but are also easily detached and eroded. The sandy soils have low available water capacities, generally less than 0.10 inch/inch.

Table 1. Major soil map units occurring within the Oster Lake Fire

101	Kecko-Vining-Rock Outcrop complex, 2 to 15 percent slopes	Kecko - coarse-loamy, mixed, mesic Xerollic Camborthid Vining - coarse-loamy, mixed, mesic Xerollic Camborthid
160	Rubbleland-Typic Calciorthids complex, 20 to 65 percent slopes	
198	Ticeska-Minveno-Taunton complex, 3 to 10 percent slopes	Ticeska - coarse-loamy, mixed, mesic Xerollic Durorthids Minveno - loamy, mixed, mesic, shallow Xerollic Durorthids Taunton - coarse-loamy, mixed, mesic Xeric Haplodurids
60	Fathom-Taunton complex, 1 to 4 percent slopes	Fathom - sandy, mixed, mesic Xerollic Calciorthids Taunton - coarse-loamy, mixed, mesic Xeric Haplodurids
202	Tupper extremely bouldery fine sandy loam, 2 to 8 percent slopes	Tupper - loamy-skeletal, mixed, mesic Durixerollic Camborthids
59	Fathom-Kudlac-Anchustequi complex, 8 to 35 percent slopes	Fathom - sandy, mixed, mesic Xerollic Calciorthids Kudlac - fine-silty, mixed, calcareous, mesic Xeric Torriorthents Anchustequi - coarse-loamy, mixed, calcareous, mesic Aquic Torriorthents

Climate

The climate is primarily continental, with some moderating effect due to maritime air flows following up the Snake River. The average annual precipitation in the Hagerman Valley, is 8 - 10 inches, with approximately 25 inches of annual snowfall. Snowfall is transient within the valley, often melting within hours of occurrence. During the summer, the climate is generally arid, with little rainfall between May and October. Temperatures range from minus 35 degrees to 110 degrees Fahrenheit. The growing season averages approximately 6 months.

Hydrology

The most conspicuous hydrologic features in the analysis area are the thousand springs which emerge from below the rimrock cliffs. These springs are the outflow from the Lost River basin a hundred miles to the north and east of the area, and as such, are not influenced by the local climate or watersheds. Recent monitoring of the springs have noted a steady decline in flows, attributed to changes in irrigation methods in agricultural lands to the north and east. There are 13 developed springs within the burn area and numerous small free-flowing springs. Water from these springs emerges at 59 degrees Fahrenheit and is relatively free from sediment.

The HNFH has decreed and established water rights permits for Springs 11, 12, 13, 14, 15 and 17, Bickel Main and Len Lewis Springs, and Riley Creek. The University of Idaho Hagerman Lab, an inholding located within the HNFH proper, has decreed and established water right permits for Springs 8, 9, and 10. In addition, a local water district has water right permits to Len Lewis Spring and the Brailsford Pipeline transports water downstream for irrigation purposes. All water rights in the State of Idaho are currently under review in the Snake River Basin Adjudication Court.

Other notable hydrologic features within the burn area are Oster Lakes, five impoundments supplied by diverted water from the springs and hatcheries and by direct precipitation. These small lakes provide recreational fishing to the local area.

Riley Creek (Hydrologic Unit Code 17043212) is fed by springs on the Hagerman National Fish Hatchery (HNFH) proper and flows 2.47 miles to its confluence with the Snake River. HNFH uses Riley Creek as receiving waters from its settling ponds. The State of Idaho Fish Hatchery diverts flow from Riley Creek for source waters for its operations. Riley Creek was listed in 1994 by the State of Idaho as water quality limited (water quality segment 2385) due to bacteria, dissolved oxygen, sediment, nutrients, and nitrogen as pollutants of concern. It remains on the 303(d) list under Clean Water Act regulations until a Total Maximum Daily Load (TMDL) is set. The mid Snake River Basin is currently undergoing the setting of a TMDL which will cover Riley Creek and all other contributing waters.

Reconnaissance Methodology and Results

The purpose of a burned area assessment is to determine if the fire caused emergency watershed conditions and if there are values at risk from these conditions. If an emergency is not identified, the assessment stops. If emergency conditions are found, and values at risk are identified, then the magnitude and scope of the emergency is mapped and described, values at risk and resources to be protected are analyzed, and treatment prescriptions are developed to protect values at risk. Emergency watershed conditions include both hydrologic and soil factors; typically potential for flash floods and debris flows and deterioration of soil condition, particularly loss of soil cover, leading to a decline in soil productivity. Table 2 describes terms commonly used in assessing soils and watersheds that have been burned.

Table 2. Definitions of terms commonly used in soil and watershed burned area assessments.

Term	Definition
Fire Intensity	Based on temperature, flame length, rate of spread, heat of combustion and total amount and size of fuel consumed. Accounts for convective heat rising into the atmosphere and fire effects to the overstory.
Fire Severity	A relative measure of the post-fire appearance of vegetation (residual fuels/mortality) as it relates to the intensity of the fire and its consumptive effects on vegetation.
Burn Intensity	Based on temperature, moisture content of duff and fuels lying on the ground, heat of combustion of conductive and radiant heat that goes down into the soil, affecting soil characteristics.
Burn Severity	A relative measure of the degree of change in a watershed that relates to the intensity of the fire on soil hydrologic function. Burn severity is delineated on topographic maps of polygons. Classes of burn severity are high, moderate, low and unburned.
Watershed Response	A qualitative degree and/or modeled measure of how a watershed will respond to precipitation. Parameters include pre-existing soil moisture; amount of soil cover; amount and distribution of impermeable surfaces (rock outcrop, hydrophobic soils) amount and duration of rainfall; lag time between initiation of storm and peak flow runoff; and peak flow discharge and sediment yield. Changes in the characteristics of a watershed brought about by a fire will increase the efficiency with which a watershed yields runoff.

Field visits and direct soil observations were conducted to identify the spatial distribution and extent of fire severity and burn severity conditions. Burned area evaluations included, but were not limited to:

- " Fire-caused changes in soil properties and hydrologic function;
- " Areal extent and strength of hydrophobic soil conditions;
- " Mapping burn severity;
- " Conditions of sediment source areas;
- " Threats to human life and property from flood or mud and debris flows.

Burn Severity

Burn severity is not the same concept as fire intensity and fire severity as recognized by fire behavior specialists. Fire intensity and fire severity relate to fire behavior and fire effects on overstory and understory vegetation, respectively, while burn severity relates specifically to effects of the fire on soil conditions and hydrologic function (e.g., amount of surface litter and duff, erodibility, soil structure, infiltration rate, runoff response). Although burn severity is not primarily a reflection of fire effects on vegetation, vegetative conditions and pre-fire vegetation density are among indicators used to assess burn severity.

Site indicators used to evaluate and map burn severity include soil hydrophobicity (water repellency), ash depth and color (burn intensity), size of residual fuels (fire intensity), soil texture and structure, and post-fire effective ground cover. These criteria provide clues about fire residence time, depth of litter layer consumed, radiant heat throughout the litter layer and upper topsoil; as well as ease of detachability of the surface soil. Using these indicators, burned areas are mapped into three principle relative burn severity categories - high, moderate, and low. A category of unburned may be mapped separately if there are large unburned islands inside the burn perimeter. Alternatively, mosaics of low and moderate burned areas with unburned islands that are too small to be mapped individually may be lumped together for mapping and assessment purposes.

In some cases there may be complete consumption of vegetation by fire, with little effect on soil and watershed function. In general, the denser the pre-fire vegetation and the longer the residence time, the more severe the effects of the fire are on soil hydrologic function. For example, deep ash after a fire usually indicates a deeper litter layer prior to the fire, which generally supports longer residence times.

Increased residence time promotes the formation of water repellent layers at or near the soil surface, and loss of soil structural stability. The results are increased runoff and soil particle detachment by water and transport off-site (erosion). The presence of white ash can indicate a hotter fire and more complete consumption of organic matter. Powdery ash without identifiable remnants of twigs and leaf litter also indicates more complete consumption. Generally there is a close correlation between soil properties and the amount of heat experienced by the soil as well as the residence time of the heat in contact with the soil.

The burn severity map becomes a basis to predict the hydrologic response of soil as a result of the fire and the rate of natural revegetation of the site following the fire. It is important to note that burn severity polygons are usually mapped at no less than 40 acres in size and may include areas of other burn severity, which are too small to segregate. Small areas of different burn severity (inclusions) can therefore be present in each map unit.

Soil Condition

Soil condition and hydrologic function are important components of healthy ecosystems. These can be affected by wildfires. A wildfire has the potential to impact the soil beyond the limits of natural variability, including reduced soil aggregate stability, reduced permeability, increased runoff and erosion, and reduced organic matter/nutrient status. These combined effects can cause the runoff following a rain event to increase significantly; increasing the overland flow

available to initiate soil erosion, either as sheet or rill erosion. The potential for erosion is highest on the steeper slopes that burned with a high burn severity.

The soil processes most important to hydrologic function include infiltration and percolation. The fire effects on infiltration and percolation were evaluated by observing the changes in litter and duff (vegetative ground cover), soil structure, destruction of fine and very fine roots in the surface horizon, and development of hydrophobic (water repellent) soil surfaces. Changes in vegetative ground cover as affected by the fire were noted and compared to pre-fire conditions. Stability and strength of surface soil structural aggregates were examined. Surface soils were examined for the presence of fine and very fine roots. Water repellency (hydrophobic soils) was evaluated by observing the depth and thickness of a water repellent horizon in surface soils where it exists, and the length of time a water drop remained beaded on the surface. Soils were assessed in the field to determine if there is an increased risk of erosion.

Formation of Hydrophobic Soil: The heat of a fire can cause the development of a hydrophobic layer on or in the surface soil horizon. This occurs due to volatilization of organic matter that has high amounts of lignin and other waxy compounds. After the fire passes, the gasses cool to a waxy coating on soil particles. The effect is similar to putting wax on a car to cause water to bead up and run off. If the hydrophobic layer is thick, or the degree of water repellency is strong, it can seriously inhibit infiltration of rainfall, increasing runoff and detachment of soil particles, and increasing flooding, erosion and sedimentation. Some soils can be significantly hydrophobic, even without fire. Vegetation type, amount of organic matter and soil texture are the primary factors that determine whether or not soils will become hydrophobic.

Soil Erosion Estimates: The expected erosion from the burned area was estimated with the Universal Soil Loss Equation. The effects of fire and its burn severity were reflected in the values assigned to terms in the equation:

$$A = R \times K \times LS \times C \times P$$

The terms are as follows:

- A Estimated soil loss (tons/acre/yr)
- R Rainfall erosivity
- K Soil erodibility
- LS Slope factor
- C Cover factor - which changes due to fire
- P Conservation practice factor - which can change due to treatments

The R factor was based on the 2-yr 6-hr rainfall for the area which is 0.6 inches. This is a mild storm and yields a low R of 0.10. The K factors were taken from the tables of soil properties provided by the NRCS. The LS factor was taken from the table of LS factors based on the median slope and estimated slope length for each soil map unit. The P factor was 1.00 to reflect conditions before any treatments.

The C factor is the term that is altered by the fire because the fire destroys part or all of the overstory, understory, and surface cover of the soil. In this case, we used a C factor of 0.36. This is a conservative estimate; based on a C factor of 0.45 for a burned woodland site with poor soil condition, no live vegetation, and no litter cover, as modified by an allowance for the fine root mat of 20 percent under 100 percent bare soil.

Watershed Response

Field observations within and downstream of the burn area were conducted to determine the potential for high runoff response. Channel features related to transport and deposition processes were noted, along with channel crossings and stream outlets. Observations included condition of riparian vegetation and the volume of sediment stored in channels and on slopes that could be mobilized. Field reconnaissance included upland slope processes and potential for runoff

contributions to springs, channels and downslope values. Burn severity and changes in soil infiltration were considered.

On many burn area analyses, the Natural Resource Conservation (NRCS) model for runoff, TR-16, is used to compute peak flows and percent increase in flow between pre-fire and post-fire conditions. However, TR-16 will not be used for this analysis. The small watersheds contributing to each spring are too small for valid modeling results. Similarly, the entire thousand springs Lost River watershed is too large for the model. Instead, selected Runoff Curve Number Tables from the SCS National Engineering Handbook were used to estimate changes in runoff conditions for the site. NRCS hydrologists were consulted for appropriate pre-fire conditions; Runoff Curve Number 71 was selected for use based on herbaceous/grassland/shrub communities and hydrologic soil group B. Group B soils are moderately deep with good infiltration rates. Post fire conditions of low burn severity but with higher fire severity on vegetation suggest a Runoff Curve Number of 80.

B. FINDINGS

Burn Severity

Field investigations of the size of fuels consumed, litter and duff consumption, ash color and depth, fine roots, and soil structure were done. This field reconnaissance showed that in most places with accumulated litter, the fire left charred and blackened litter. This is an indicator of low residence time and a low degree of soil heating. Ash colors were predominantly black with only scattered patches of white ash. Ash depths were generally shallow, about 1 inch. Short charred grass stubble from cheatgrass remained over much of the area. Fine roots in the surface soil were unburned and continued to bind the soil.

Based on these indicators, we mapped the fire all in the low burn severity class. There were minor inclusions of moderate burn severity which were too small to map, and no areas of high burn severity. The moderate burn severity occurred where there was more fuel and longer fire residence time. This was the case where the fire burned out small areas of trees or heavier brush with accumulations of litter on the ground, including some wooded slopes above Riley Creek, and in some more heavily vegetated drainages.

Soil Condition

Soil characteristics were investigated at numerous points across the burned area with emphasis on the steeper slopes. We also checked soil conditions in unburned areas as a basis for comparison.

Hydrophobicity was very slight across the burned area. The slight hydrophobicity, including water beads that lasted for up to 10 seconds, occurred at the interface of the litter and the mineral soil in burned and unburned areas both. No hydrophobicity was found at any depth below the mineral soil surface. There was no significant change as a result of the fire.

Surface textures were predominantly sandy, but included areas of silty and silty clay loam. The sandy areas have a high permeability and a high infiltration rate. The silty and silty clay loam areas were on contrasting soils which could generally be identified by the blocky almost columnar pattern of the surface. The silty soils will have slower infiltration especially after the surface becomes fully wetted. The silty surface soils are limited.

The presence and condition of fine root mats was observed at many points. The presence of a root mat was closely tied to vegetation and particularly to cheatgrass. Cheatgrass and other grass roots survived the fire in condition to bind the soil. The density of the cheatgrass varied depending on soil depth and shrub and tree cover. In the areas which had a sage brush and grass cover, there is generally 30 to 70 percent of the surface area with a fine root net. Where grasses were shaded out under a tree or shrub canopy, the fine root mat is generally sparse or missing.

Soil Erosion Estimates

The overall soil erosion rate from the burn area is expected to be quite low and within allowable ranges for the preservation of soil productivity. However two soil units had erosion rates over 5 tons/acre/year. Soil map unit (SMU) 160 is 6.55 acres, and is differentiated by the steep 20 to 65 percent slopes in this unit. SMU 59 is 5.21 acres, and is differentiated by the slopes of 8 to 35 percent in combination with finer textured soils with lower permeability. In general, the relatively mild nature of rainstorms in this region are a benefit in keeping erosion low.

Discussions of rainfall and runoff with local sources indicate pre-fire runoff was very low and even uncommon from these lands. Observations of the ditches and slopes bear this out, showing little sign of concentrated overland flow. Swales showed no signs of erosion or deposition. A closed basin with a drainage area estimated at 20 acres was not reported to pond water.

Table 3. Soil erosion estimates using USLE method.

SMU		Est. Erosion (tons/acre/yr)	Acres
160	Rubbleland-Typic Calciorthids complex	6.55	103
59	Fathom-Kudlac-Anchustequi complex	5.21	30
198	Ticeska-Minveno-Taunton complex	1.37	79
56	Fathom	0.84	9
53	Ephrata	0.61	20
101	Kecko-Vining-Rock Outcrop complex	0.43	136
206	Vining-Kecko-Rock Outcrop complex	0.43	2
66	Fluvaquents	0.22	10
202	Tupper	0.19	33
60	Fathom-Taunton complex	0.13	69
193	Taunton-Ticeska complex	0.09	23

Watershed Response

The annual hydrologic cycle for Hagerman Idaho, based on an 18 year period of record, indicates probability of rainfall increases in November through March. Rainfall in this area is normally of low intensity with most precipitation events amounting to less than 0.25 inches. Soil erosion ratings are based on the 2 year, 6 hour rainfall event which for Hagerman amounts to 0.6 inch. This rain event has a 50% likelihood of occurring. Pre-fire conditions produced little surface runoff from 0.6 inch of rain. Post fire conditions of bare soil and no evapotranspiration, according to Runoff Curve Number 80, will begin to produce runoff under this rainfall amount. Larger precipitation events, such as rapid snowmelt, could produce runoff which entrains soil particles, ash, and debris.

With increased runoff and sediment, the upland watersheds may not have the capacity to store this input. Flows which normally would infiltrate and dissipate, may now concentrate and cause in-channel scour, increasing sediment loads. Small depressions in the landscape now serve as storage but they may not be large enough in capacity to handle any significant increase in runoff.

Within the uplands above the rimrock and springs, normal drainage has been diverted from several small drainages into one which drains to the west of springs 13 and 14 into a culvert system to carry runoff through the upper bench road system and across Len Lewis pond. This culvert system telescopes down in size, with a potential bottleneck in the lower culvert which is much smaller in diameter than upslope culverts. If the inlet plugs from sediment and debris, downstream infrastructure (road, spring intakes, water quality) is at risk from increased flows and sediment.

The eastern portion of the burn occurred on the upper bench and rimrock area on HNFH property. These areas are quite flat with rocky soils. Runoff from these low burn areas is expected to be limited because infiltration should remain high. Should runoff occur, drainage over the rimrock cliffs may occur. Private homes and fish farms are built below the cliffs but have buffers of unburned vegetation to filter and divert flows.

Springs in the area are supplied by flows from watersheds over a hundred miles to the north and east. Local conditions do not drive their hydrologic cycles. Monitoring at the HNFH have not detected seasonal fluctuations in flows. Seasonal runoff from winter and early spring precipitation would not be enough direct input to change flows of the springs for any detection in the hatchery source waters.

With the increase in runoff and sediments, an increase in nitrogen and phosphorus from ash and soil most likely will occur. These elements and sediment pose a risk to water quality of the springs, Riley Creek, and indirectly to the aquatic life.

Water quality of Oster Lakes may be compromised from erosion on banks and additional sediments discharged from the hatchery. However, this is considered to be of low risk and may only cloud the lakes waters. Scenic values may be reduced temporarily but other recreational activities should not be affected.

Values at Risk

Aquatic life, including steelhead trout, rainbow trout, and white sturgeon in confined raceways at the national and state hatcheries are at risk from fire effects. Ash flushes during initial precipitation events will pass readily to the stream and spring network and may increase turbidity of waters temporarily. Sight feeding by the fish may be limited during such times. Sediment increases in the waters can irritate fish gills, disrupt sight feeding, increase phosphorus and nitrogen of the waters and stress the fish in general. Cumulatively these effects could lower survival rates of the hatchery fish.

Water quality of Riley Creek, a water quality stream segment on the Idaho 303(d) list. Fire is recognized as a natural disturbance and fire effects to water quality are not regarded as violations to State water quality standards. However, increased pollutant loads from natural causes may limit the hatcheries load allocation for discharge into the waters of Riley Creek. Increased pollutants from any source would slow recovery trends. Cumulative effects to the waters must be considered and sources of all pollutants be limited and transport potential reduced for the general water quality of Riley Creek.

Operations and infrastructure at the national and state hatcheries are at risk from increased sediment in water intakes, pumps, filtration systems, and raceways. Sediment transported from upland slopes may clog intake grates, valves and pumps and shorten their working life. If culvert inlets in the road system plug, water may overflow onto the road prism, erode the running surface, result in fill failure and cumulatively increase sediment into the spring intakes. Increased maintenance of all operations on the hatcheries would be incurred.

IV. RECOMMENDATIONS

A. Emergency Stabilization

Management Recommendations

Specification # 8. Catchment Basin

Situation: Increased runoff and erosion are expected in the uplands. Pre-fire conditions produced little runoff. A small watershed basin s normal drainage pattern has been diked by the Upper Bench road. A depression area behind the road prism serves as a catchment for water and sediment but may not be large enough to accommodate increased runoff. The road would be at risk of failure. Downstream culverts and spring developments would be at risk.

Recommendation: Excavate the depression area behind the Upper Bench road forks to increase its holding capacity. Further enlarge the capacity by using excavated material to berm the road.

Specification # 7. Hydro-Seeding

Situation: Slopes with estimated erosion potential over 5 tons/acre are located directly above Spring 17 and Riley Creek. Another slope with significant erosion potential is located above an archeological site and an unnamed creek. Sediments washed from these slopes would threaten water quality for the hatcheries. Erosion near the archeological site could threaten the site.

Recommendation: Hydro-seed the slopes with a cellulose fiber mulch, a starch based tackifier, and a native seed mix. These slopes were covered mainly in trees or shrubs and may not have seed bank, so should be seeded.

Specification # 6. Straw Bale Silt Fence

Situation: Slopes with an erosion potential greater than 5 ton/acre lie above the Len Lewis spring, Main spring, Bickel spring, and the Brailsford Ditch. Sediments delivered to these points would affect the water quality for the hatcheries, and would decrease the conveyance capacity of the Brailsford Ditch with the potential to block it.

Recommendation: Construct straw bale sediment fences at identified points on the slopes above these water sources. The specified sites are mainly at the foot of slopes where the gradient declines to less than 15 percent and the fences can impound shallow water without danger of washing out. The sediment fences should be constructed to enhance the natural deposition in favorable slope locations.

Specification # 9. Storm Patrol

Situation: Due to lack of vegetation on the upland slopes, rainfalls over 0.5 inch may produce increased surface runoff. Increases in debris, detritus and sediment will transport into the spring intakes for the HNFH, the Brailsford pipeline, and at the State hatchery's Riley Creek intake due to the burned watershed conditions. Intakes will need additional cleaning to keep flows running freely into the hatcheries.

Recommendation: Increase maintenance of the intakes to insure free flow. Rainfall events over 0.5 inch within a 6 hour period should trigger a storm patrol for cleaning and monitoring of the intakes and culverts. A data logger rain gauge to measure rainfall in 6 hour periods is needed for this trigger. A high pressure pump to clean intakes is recommended.

Monitoring Recommendations

Specification # 10. Water Quality Monitoring

Situation: Changes in sediment, nitrogen, phosphorus and pH may occur to the water quality of the spring waters due to the fire and anticipated increased runoff. High standards of water quality are required in the operations of the HNFH for sustaining aquatic life. Assurances are needed that source waters for the hatchery meet water quality standards after fire effects. In addition, water quality monitoring would show whether upland treatments (storm patrol, catchment basin, hydromulching, seeding) adequately reduce sediment and runoff.

Recommendation: During storm patrols of the spring intakes, water samples should be taken and then analyzed by a certified water laboratory to determine if water quality standards are being met for aquatic life and support of the beneficial uses. If water quality standards are violated by two consecutive samples, additional upslope treatments may be needed and implemented.

Management Recommendations - Non Specification Related

Examine the need for upgrading headgates on Len Lewis Spring Pond relief valves for better control of pool level management.

B. Rehabilitation Recommendations

None recommended

V. CONSULTATIONS

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**DEPARTMENT OF THE INTERIOR
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

**OSTER LAKE FIRE
CULTURAL RESOURCE ASSESSMENT**

I. OBJECTIVES

- " Assess potential damage to cultural resources for the purposes of recommending treatments to stabilize and rehabilitate archaeological sites from adverse effects following wildland fires, suppression activities and rehabilitation projects.
- " Conduct cultural resource inventory of land disturbance activities associated with the Oster Lake Fire and recommend treatments of those sites adversely affected by suppression activities and rehabilitation projects in a manner that meets legal requirements.

II. ISSUES

- " Possible impacts to known prehistoric and historic resources resulting from fire suppression activities, proposed rehabilitation activities and fire effects.
- " Possible impacts to previously unknown prehistoric and historic resources resulting from fire suppression activities, proposed rehabilitation activities and fire effects.

III. OBSERVATIONS

A. Background

The Oster Lake Fire began on September 7, 2001 on the east side of State Highway 30. This human caused fire rapidly spread eastward aided by 30-40 mph winds. Within minutes of ignition, dense vegetation in the Idaho State Wildlife Management Area and at the State Fish Hatchery carried the fire onto lands administered by Hagerman National Fish Hatchery. Initial suppression efforts, which included engines from three Rural Fire Departments, Hatchery and BLM fire engines, helicopters and tankers were able to protect hatchery buildings and facilities, and private residences in the vicinity of the fire. The fire consumed 577.4 acres between State Highway 30 and agricultural fields located above the Hatchery.

The fire was contained on September 10, 2001 at 20:00 after suppression efforts extended to hand line construction along a riparian area, and mop up of smokes within the fire perimeter. The fire was declared controlled on September 14, 2001. The fire burned the bench above the Snake River; the south side of Riley Creek; above and south of Bickel Spring; around Springs 13, 14, 15, 17, and Len Lewis Spring; on the mid slope between the hatchery complex and Len Lewis road; and into the alfalfa fields above the basalt cliffs of the Hatchery.

Cultural History

The cultural history of Hagerman National Fish Hatchery is summarized in a Cultural Resource Overview prepared for the Hatchery (Burnside and Parks 2000). Cultural resources fall into two categories: prehistoric and historic, which includes early ranching/agriculture on the property and hatchery developments beginning in the 1930's. The Hatchery sits on the northeast bank of the Snake River at the base of basalt cliffs which discharge massive amounts of spring water. Historically the springs have been important areas for habitation; both prehistoric and historic.

The Hatchery is located near the upstream limit of the anadromous fishery in the Snake River. Two prehistoric sites associated with this fishery have been recorded within the 279.9 acres of the

Hatchery. One of these sites has been determined eligible to the National Register of Historic Places, the other site is unevaluated. The unevaluated site is within the burn area of the fire.

Historic properties are associated with late 1880's ranching, Public Works Administration Projects, and Hatchery Developments. With the exception of irrigation ditches and segments of wooden water pipes, historic properties are not found within the burn area.

B. Reconnaissance Methodology and Results

Cultural resources anticipated in the burn area include prehistoric flake scatters, isolated stone tools, and temporary camps. Historic resources would include ditches, wood pipe segments, foundations, and road segments. Prehistoric and historic resources are more likely to occur on areas with little or no slope. However, given the importance of spring water to historic agricultural and hatchery operations and for prehistoric occupation of the area the potential exists for cultural resources in the immediate vicinity of springs.

In anticipation of rehabilitation activities around hatchery springs, slopes above the springs were examined for the presence of historic and prehistoric resources. Slopes between the Len Lewis road and the hatchery complex were surveyed where possible. Areas immediately adjacent to springs received high priority for survey. Other high probability areas for survey included: the river bench between the Hatchery Complex and the Snake River from Oster Lake #1 to the south boundary of the hatchery, and the burned area adjacent to Riley Creek between the Bickel Ditch and the Hatchery Access Road. The area between Bickel Spring and Site 10GG36 was examined for the presence of historic wood pipe segments which were noted during an earlier survey of the area.

Approximately 0.19 miles of suppression hand line constructed along the south side of Bickel Spring was surveyed for evidence of cultural resources.

Prehistoric Site 10GG36 was examined with the Team Hydrologist and Soil Scientist to determine the potential for erosion of the site due to removal of vegetative cover by the fire, the effects of suppression and rehabilitation effects.

As a result of the above fieldwork, all areas subject to rehabilitation efforts, and considered high probability areas were surveyed during one and one-half days of fieldwork. Surface visibility was variable and depended upon the density of vegetation prior to the fire. Flat and low slope areas covered with cheat grass and sagebrush had shallow layers or no ash covering the surface of the ground providing fair to good visibility of mineral soils. Slopes with dense vegetation (shrubs and trees) had thick layers of ash permitting little direct observation of mineral soils. Ash was swept aside in areas exhibiting a high potential for cultural resources. Springs in the burn area issue directly from talus on the steep slopes which obscure mineral soils.

C. Findings

Prehistoric cultural resources were absent from all steep and mid slope areas. A historic stacked stone wall probably dating from the ranch era was found along the low cliff above the Brailsford Ditch. It was not effected by the fire or suppression efforts and will not be effected by rehabilitation efforts.

Wood pipe segments located between Bickel Spring and Site 10GG 36 were consumed by the fire. All that remains of the segments are concrete connections and wire used to wrap the pipes. Segments buried in the soil were burned from both ends until the entire segment was consumed. The ditch containing portions of the pipe was denuded of vegetation by the fire.

The Riley Creek survey did not located any cultural resources. It appears that this area has been modified by deposition of fill dirt, leveling and subsequent attempts by Idaho Fish and Game to grow sagebrush on the area.

The survey of the bench above the Snake River did not result in the identification of cultural resources. A stone and concrete building foundation was found at the southwest corner of the survey area. It may represent the remains of a small storage building, possibly dating from the ranching era of the property. It was not effected by the fire or suppression efforts, and it will not be effected by rehabilitation activities.

Examination of Prehistoric Site 10GG36 was complicated by the presence of a thick layer of ash obscuring approximately 80% of the mineral soil on the site. Previous vegetation on the site consisted of sagebrush and cheat grass which was all consumed by the fire. Cheat grass root mass remains across a good portion of the site and is expected to regrow. Erosion is likely to occur on the east side of the site where existing erosional gullies extend into the site from the adjacent drainage. Artifacts can be seen eroding out of gully cutbanks. The ash layer also obscured the differentiation previously seen between disturbed and undisturbed areas of the site. Other than removal of vegetation by the fire, no fire effects were observed for the site. Suppression efforts were directed away from the site by hatchery staff, so no suppression effects are present. Erosion of soil during runoff events remains a concern. Vegetation rehabilitation efforts using broadcast or hydro-seeding methods will benefit stabilization of the site.

IV. RECOMMENDATIONS

Erosion on Site 10GG36 appears to be the biggest threat to site integrity. To prevent immediate erosion along the east side of the site, hydro-mulching will be applied to the northeastern side where the slope begins. The mulch can be applied from the road along the north side of the site. This will stop erosion which extends from the nearby drainage. Overall stability of the site will be accomplished by the application of native grass seed, which will be broadcast or hydro-seeded across the site in Spring 2002 after chemical removal of cheat grass from the site.

V. CONSULTATIONS

Susan Neitzel, Deputy State Historic Preservation Officer, Idaho State Historic Preservation Office, Boise 208-334-3847

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VI. REFERENCES

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Carla Burnside, USFWS, Malheur National Wildlife Refuge, Princeton, OR (541)493-4236

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
OSTER LAKE FIRE
THREATENED AND ENDANGERED SPECIES RESOURCE ASSESSMENT**

I. OBJECTIVES

- " Identify and locate Threatened and Endangered species impacted by fire and/or suppression actions.
- " Determine impacts of fire or proposed emergency stabilization or rehabilitation actions to Threatened and Endangered species and/or their habitat.

II. ISSUES

- " Determine presence of Threatened and Endangered species within the burned area.
- " Determine impacts of fire, its suppression, and proposed emergency stabilization or rehabilitation actions to Threatened and Endangered species and/or their habitat.

III. OBSERVATIONS

This assessment addresses potential Threatened and Endangered (T&E) species that may be in the area of Hagerman National Fish Hatchery and Hagerman Wildlife Management Area near Hagerman, Idaho. It also identifies and addresses potential impacts of the fire, its suppression, and proposed rehabilitation actions within the 577 acre burned area. Initial discussions with hatchery staff and that of Hagerman Wildlife Management Area (WMA) indicated no presence of T&E species within lands managed by the two agencies.

A. Background

The Oster Lake Fire burned 530 acres within a perimeter of 577 acres within three vegetation types. Land ownership within the burned area consisted of: federal - 280 acres; state - 154 acres; and private - 143 acres. The federal acreage consisted of 64 acres managed by the hatchery and 216 acres managed by the state under a Cooperative Agreement. The state acreage consisted of 151 acres managed as a Wildlife Management Area and 3 acres managed by the University of Idaho. The private acreage consisted of 143 acres managed primarily as farm land. The fire started on September 7, 2001 and was declared controlled on September 14th.

The BAER Team's hydrologist and soil scientist assessed the burned area for burn severity (reaction of vegetation and soils to the fire) and declared the entire burn area, 530.3 acres, as low burn severity. Within the burned perimeter of the fire there were 47.1 acres unburned, mostly around the hatchery facilities and some of the riparian/wetland-pond areas.

Within the burned area, vegetation communities included: riparian - 34.4 acres; wetland/pond - 25.6 acres; and shrub steppe - 517.4 acres. The dominant vegetation type in the shrub-steppe community consists of: basin big sagebrush (*Artemisia tridentata tridentata*); spiny hopsage (*Grayia spinosa*); rabbitbrush (*Crysothamnus spp.*); Indian ricegrass (*Oryzopsis hymenoides*); streambank wheatgrass (*Agropyron riparium*); Sandberg bluegrass (*Poa sandbergii*); sand dropseed (*Sporobolus cryptandrus*); cheatgrass brome (*Bromus tectorum*); crested wheatgrass (*Agropyron cristatum*); purple aster (*Machaeranthera canescens*); penstemon (*Penstemon spp.*); and tumble mustard (*Sisymbrium altissimum*).

Riparian vegetative cover exists along Riley Creek, spring seeps, and irrigation canals and consists primarily of: Russian olive (*Elaeagnus angustifolia*); sandbar willow (*Salix exigua*);

peachleaf willow (*S. Amygdlaoides*); black cottonwood (*Populus trichocarpa*); black locust (*Robinia pseudoacacia*); river birch (*Betula nigra*); reed canarygrass (*Phalaris arundinacea*); goldenrod (*Solidago spp.*); dock (*Rumex spp.*); golden currant (*Ribes aereum*); scouringrush (*Equisetum hyemale*); bulrush (*Scirpus spp.*); sedges (*Carex spp.*); rushes (*Juncus spp.*); and cattail (*Typha spp.*).

The wetland/pond vegetative cover type are dominated by: hardstem bulrush (*Scripus acutus*); cattails (*Typha spp.*); sedges(*Carex spp.*); and rushes (*Juncus spp.*).

Elevational range within the burned area ranged from 2900 feet to 3100 feet. Approximately 10 inches of precipitation occur annually, primarily in winter and mostly in the form of snow. Riley Creek is perennial within the fire area. There also exist a number of irrigation ditches/canals, ponds, and springs that emanate from the basalt cliffs above the hatchery, and Oster Lakes. The federal and state lands provide habitat for a wide variety of wildlife species. The lands have been an important wintering area for waterfowl such as Canada geese (*Branta canadensis*); mallards (*Anas platyrhynchos*); gadwall (*Anas strepera*); red heads (*Aythya americana*); and ruddy ducks (*Oxyura jamaicensis*). Other wildlife species include: ring-necked pheasants (*Phasianus colchicus*); California quail (*Lophortyx californicus*); mourning doves (*Zenaidura macroura*); yellow-bellied marmots (*Marmota flaviventris*); mule deer (*Odocoileus hemionus*); muskrats (*Onsatra zibethicus*); beaver (*Castor canadensis*); weasels (*Mustela spp.*); coyotes (*Canis latrans*); and river otters (*Lutra canadensis*).

Guidelines for the treatment of T&E species require Section 7 consultation with US Fish and Wildlife Service (FWS) personnel. Federally listed T&E species are protected under the Endangered Species Act of 1973, 16 USC 1531 wt.feq. Therefore, Federally Listed T&E species identified for the area by FWS are addressed in this assessment.

B. Reconnaissance Methodology and Results

On September 15, 2001, the Burned Area Emergency Response (BAER) Team met with resource specialists from the Hagerman National Fish Hatchery and Hagerman Wildlife Management Area for the initial briefing and to obtain baseline information relating to resource impacts caused by the Oster Lake Fire, resource issues of concern, and objectives for the BAER Team. It was identified that no Threatened and Endangered species were known to occupy the burned areas within the fire.

On September 17, 2001, the BAER Team Leader attempted to contact the Region 1 office of FWS, Ecological Services to initiate emergency consultation. On September 18th, a FAX was sent by the BAER Team Leader requesting an updated T&E species for the burned area. A return FAX that day identified the listed and candidate species (Appendix V, Supporting Documentation).

Emergency consultation was held with the U.S. Fish and Wildlife Service (FWS) on Threatened and Endangered (T&E) species with the potential to occur within the burned area of the Oster Lake Fire. Research was conducted on species currently listed by FWS to determine the presence of T&E species within the fire area. Contacts were made with local experts to determine presence and if additional sensitive species of concern were potentially affected by the fire or its suppression.

FWS listed the following species:

Bald Eagle (LT)	<i>Haliaeetus leucocephalus</i>
Utah valvata snail (LE)	<i>Valvata utahensis</i>
Idaho springsnail (LE)	<i>Fontelice lla idah oensis</i>
Bliss Rapids snail (LT)	<i>Taylorconcha serpenticola</i>
Ute ladies tresses (LT)	<i>Spiranthes diluvialis</i>
Yellow-billed cuckoo (C)	<i>Coccyzus americanus</i>

LT	Listed Threatened
LE	Listed Endangered
C	Candidate

The purpose of this assessment is to discuss the potential effects of the fire, suppression actions, and proposed emergency rehabilitation activities to Federally listed, species that occur within, adjacent to, or downstream from the Oster Lake Fire area. Effects to other plant or animal species are not discussed. The focus of this assessment is only to determine the potential for immediate, emergency actions that may be necessary to prevent further affects to federally listed species.

A review of hatchery files revealed the results of a mollusc survey conducted in 1996. The objective of the survey was to determine the presence Endangered Species Act listed molluscs. The survey covered Riley Pond (Creek) and Bickel Pond. The detailed survey assessed all the areas that seemed likely macroinvertebrate habitat. The survey found no evidence of endangered molluscs. Furthermore, an Environmental Assessment completed in September, 1999, states that the habitat necessary to support the above listed snails does not occur on hatchery property.

That same Environmental Assessment, written for the Brailsford Ditch Pipeline project, also addressed the bald eagle and Ute Ladies tresses. The Threatened bald eagle is an occasional winter migrant as determined by the Environmental Assessment.

The only listed plant which may occur in the area is the Ute ladies tresses, classified as Threatened. The plant is known to occur within the upper Snake River Plain. Primary habitat is a gravel or cobble substrate and has the potential to occur in wetland and riparian areas including springs, wet meadows, and river meanders. The Environmental Assessment mentioned states that the gravel or cobble substrate is not found in the spring area.

C. Findings

The emergency rehabilitation activities proposed in this plan will have the effect to hold soils on the slopes, protect water quality, revegetate burned creekbanks and water edges, treat non-native invasive plants, and seed the burned areas with native grasses.

The habitat within Hagerman National Fish Hatchery does not support the federally listed molluscs or Ute ladies tresses. In addition, bald eagles, which may use the site as a migrant during the winter was not present during the fire. Further, there are no proposed emergency rehabilitation activities which will take place during the winter. Therefore, the finding for each of the species identified in the listing requested from FWS is no effect.

IV. RECOMMENDATIONS

No treatments recommended.

V. CONSULTATIONS

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 Scott Gamo, Wildlife Biologist, Idaho Department of Fish and Game, Hagerman Wildlife Management Area

Dianne Cazier, Aquatic Invertebrate Biologist, Idaho Power Company, Boise, Idaho
 Joseph Russell, Wildlife Biologist, Bureau of Land Management, Shoshone Field Office
 Kevin Lynott, Park Manager, Malad Gorge State Park
 Dave Parrish, Idaho Department of Fish and Game

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**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
OSTER LAKE FIRE
VEGETATION RESOURCE ASSESSMENT**

I OBJECTIVES

- " Evaluate and assess fire and suppression impacts to vegetative resources and identify values at risk associated with vegetative losses.
- " Determine rehabilitation needs supported by specifications to aid in vegetative recovery and soil stabilization efforts.
- " Provide management recommendations to assist in vegetative recovery, physical improvement repairs and species habitat protection and rehabilitation.

II ISSUES

- " Short and long-term fire impacts to plant communities and vegetative resources within the Oster Lake Fire.
- " Protection and enhancement of other resource values including site productivity, wildlife habitat and watershed stability.
- " Management strategies which provide for the natural recovery and revegetation of impacted areas.
- " Management strategies for the conversion of cheat grass to a native grass ecosystem component.
- " Identification and early detection of noxious weed spread into fire areas.

III OBSERVATIONS

This report identifies and addresses known and potential impacts to vegetative resources within the Oster Lake Fire on hatchery lands managed by Hagerman National Fish Hatchery and lands managed by Idaho State Fish and Game, Wildlife Management Area.

The burned areas consist of lands managed by US Fish & Wildlife Service (FWS) as Hagerman National Fish Hatchery and Idaho Department of Fish & Game (IDFG) primarily for the production of fish and for wildlife habitat. Both FWS and IDFG operate fish hatcheries within the burned area. The vegetative resource provides forage and cover for a variety of wildlife species as well as protection of the water quality of many springs, lakes, ponds, and Riley Creek.

Findings and recommendations contained within this assessment are based upon information obtained from personal interviews with hatchery, IDFG, Natural Resources Conservation Service (NRCS), Malad Gorge State Park, and Bureau of Land Management (BLM) staff; literature research and field reviews of the fire area.

Reconnaissance of impacted areas was conducted utilizing ground survey methods. This assessment captures the concerns expressed by FWS and IDFG staff for the future management of these lands; will detail the known damage to the vegetative resource; will discuss revegetation needs and monitoring criteria; and outline management considerations for recovery of the vegetative resources.

A. Background

The Oster Lake Fire originated as a human-caused fire on September 7, 2001, at approximately 1400 hours. The fire spread rapidly because of erratic winds and extremely dry vegetation. Cheatgrass was the primary carrier of the fire. The Oster Lake Fire impacted 280 acres of federally managed lands on the Hagerman National Fish Hatchery (HNFH); 154 acres on Hagerman Wildlife Management Area (WMA); and 143 acres of private land. The burned acreage was 530 acres with 47 acres within the fire perimeter unburned.

Resource concerns expressed by staff of HNFH and WMA for vegetative resources include: vegetative loss and the short and long term impacts to site productivity, loss of wildlife habitat, accelerated soil deposition into Riley Creek and the springs, ponds and lakes on HNFH. In addition, concern was expressed about hazard trees, invasive species management, and suppression impacts. Additional resource management direction was obtained for HNFH from the Wildfire Prevention Plan, Integrated Pest Management Plan, Cooperative Agreement with IDF G-WMA, and personal communications with the hatchery Project Leader. Additional direction was obtained for the WMA from its Long Range Management Plan.

Plant associations within the fire area includes shrub/steppe, riparian, and wetland/pond. The dominant vegetation type in the shrub-steppe community consists of: basin big sagebrush (*Artemisia tridentata tridentata*); spiny hopsage (*Grayia spinosa*); rabbitbrush (*Crysothamnus spp.*); Indian ricegrass (*Oryzopsis hymenoides*); streambank wheatgrass (*Agropyron riparium*); Sandberg bluegrass (*Poa sandbergii*); sand dropseed (*Sporobolus cryptandrus*); cheatgrass brome (*Bromus tectorum*); crested wheatgrass (*Agropyron cristatum*); purple aster (*Machaeranthera canescens*); penstemon (*Penstemon spp.*); and tumble mustard (*Sisymbrium altissimum*).

Riparian vegetative cover exists along Riley Creek, spring seeps, and irrigation canals and consists primarily of: Russian olive (*Elaeagnus angustifolia*); sandbar willow (*Salix exigua*); peachleaf willow (*S. Amygdaloides*); black cottonwood (*Populus trichocarpa*); black locust (*Robinia pseudoacacia*); river birch (*Betula nigra*); reed canarygrass (*Phalaris arundinacea*); goldenrod (*Solidago spp.*); dock (*Rumex spp.*); golden currant (*Ribes aereum*); scouringrush (*Equisetum hyemale*); bulrush (*Scirpus spp.*); sedges (*Carex spp.*); rushes (*Juncus spp.*); and cattail (*Typha spp.*). The overstory vegetation within the riparian areas is primarily comprised of black locust, black cottonwood, river birch, willow, and Russian olive.

The wetland/pond vegetative cover type is dominated by: hardstem bulrush (*Scripus acutus*); cattails (*Typha spp.*); sedges (*Carex spp.*); and rushes (*Juncus spp.*).

Elevational range within the burned area ranges from 2900 feet to 3100 feet. Approximately 10 inches of precipitation occur annually, primarily in winter and mostly in the form of snow. Riley Creek is perennial within the fire area. There also exist a number of irrigation ditches/canals, ponds, and springs that emanate from the basalt cliffs above the hatchery, and Oster Lakes. The federal and state lands provide habitat for a wide variety of wildlife species.

Fire impacted plant communities of special note, include the riparian zones in and around Oster Lakes, Riley Creek, and many springs and ponds. Each plant community has been evaluated within this assessment. Plant community types and fire effects vary across the landscape therefore treatment recommendations will be keyed appropriately.

B. Reconnaissance Methodology and Results

On September 15, 2001, the Interagency Burned Area Emergency Response (BAER) Team arrived and received an initial briefing and orientation to the Oster Lake Fire by HNFH and WMA staff. Ground surveys continued the following day by the BAER Team Vegetation Specialist to observe fire effects concerning vegetation resources, Threatened and Endangered species, noxious weeds, suppression impacts and infrastructure damage caused by the fire. In addition to

the ground surveys, telephone consultation was conducted with Natural Resource Conservation Service (NRCS), Malad Gorge State Park, and Bureau of Land Management regarding recommendations for revegetation potential and invasive plant control treatments.

During the ground surveys vegetation losses were assessed, fire effects to vegetative species were determined, and vegetative rehabilitation actions were analyzed. Ground reconnaissance included traversing affected areas and recording observations on plant community types, species composition, burn severity and impacts on vegetation and duff, topographic features, noxious weed species, and fire and suppression damage.

In order to better address resource issues and concerns, each major issue will be discussed separately. These issues, however, are intertwined and cannot be properly assessed separately. Management recommendations follow these issues to more succinctly address treatment actions and prescriptions.

1. Vegetation

The Oster Lake Fire burned approximately 280 acres of federal lands, 154 acres of state lands, and 143 acres of private lands. Due to extremely dry fuel conditions and weather/wind patterns during the incident, a significant amount of vegetative ground cover was lost within the shrub/steppe vegetation type on approximately 517 acres or 90% of the fire area.

The BAER watershed group (hydrologist and soil scientist) characterized the entire fire area as low burn severity. Cheatgrass was the primary carrier of the fire. As a result of the fast moving fire there was a low residence time within the shrub/steppe vegetation type which has left the seed bank within the soils intact.

Shrub/Steppe Vegetation

Within the fire perimeter, 517 acres, or 90% of the burned acres make up the shrub/steppe vegetation type. The predominant species include basin big sagebrush and cheatgrass.

Cheatgrass is a highly flammable species due to its complete summer drying, its fine structure, and its tendency to accumulate litter. Although above ground vegetation was completely consumed wherever it burned, cheatgrass will recover. Research shows that following a late summer burning the next spring's cheatgrass production may be reduced.

Other grasses burned such as Indian ricegrass and crested wheatgrass, although burned, will also recover by the next growing season. Other shrubs in this category will resprout and recovery will be realized in two to three years.

Basin big sagebrush is readily killed when aboveground plant parts are charred by fire. The plant does not resprout after fire. Throughout the fire area sagebrush affected by the fire was completely consumed for the most part.

Riparian

The riparian areas within the fire perimeter consisted of 34 acres, mostly located along Riley Creek and irrigation ditches/canals. The dominant species include black locust, willow, river birch, and Russian olive. Scorch heights among the canopy species was up to 12 feet or more in some instances, however the heat from the fire turned the leaves brown. Some of the younger trees may not survive, others will resprout from the bole or roots.

Wetland/Pond

The ponds are dominated by hardstem bulrush, cattails, sedges, and rushes. Although

some plants were top-killed they will recover. Reed canarygrass although top-killed in some locations will come back thicker.

2. Non-native Invasive Species

Noxious weeds within the fire area include Canada thistle, musk thistle, and field bindweed among others. Cheatgrass is a non-native as well as Russian olive. Other weed species include Russian thistle, stinging nettle, and kochia. Although many of these species were top-killed they will recover by the next growing season.

3. Suppression Impacts

Suppression tactics (Minimum Impact Suppression Techniques) used by the suppression forces made a minimum impact to vegetation. Only .2 mile of handline was constructed. Suppression vehicles did impact .23 mile of the Len Lewis spring road and 2.6 miles of deep vehicle tracks across the shrub/steppe vegetation type. One other suppression impact was that of a Bureau of Land Management engine which was overrun by the fire and burned on WMA lands.

4. Infrastructure Impacts

Some minor facilities were affected by the fire. They included: two satellite dishes, 2.7 miles of barb wire fencing on HNFH lands and .4 mile on WMA lands, 80 feet of galvanized chain-link fencing on HNFH lands, .5 mile of 12 inch PVC pipe on WMA lands, and the tin cover box on Spring 17.

C. Findings

1. Vegetation

Natural regeneration is expected to revegetate the majority of the fire area adequately to protect soil productivity and prevent unacceptable erosion and site degradation. However, in the shrub/steppe vegetation type, emergency revegetation actions should be taken to protect ecological integrity of the site.

Because of the low residence time throughout most of the fire area and the resulting low burn severity, vegetative recovery for grasses and forbs should be realized by the next growing season. Root systems and the seed bank within the soil is intact. Shrub species for the most part will resprout, except for basin big sagebrush, and recovery is expected within two to three years. Tree mortality should be minimal.

Natural regeneration of grass, forb, shrub and tree species throughout the fire area should occur within 2-3 years. No emergency vegetation treatments are proposed from the standpoint of erosion control as natural regeneration will effectively revegetate the burn area. Adequate seed is available within the soil profile to promote natural regeneration on these sites.

However, in order to take advantage of this fire and to meet long-range management goals in relation to the vegetation type, planting, seeding, and non-native invasive plant control recommendations have been developed. In consultation with the HNFH Project Leader burned creekbanks and water edges will be spot planted with willow cuttings. Riparian areas, creekbanks, water edges, and areas adjacent to existing trails should be evaluated for spot treatment. Willow cuttings should be made while the plant is dormant and planted within a few days of cutting. Plant spacings have been recommended on a three-five foot pattern for two rows away from water edges. The primary function of these treatments will be to control non-native invasive plants, promote the reestablishment of native species, and to inhibit the immediate and aggressive invasion of cheatgrass.

Tree hazards have already been removed. However, visitor safety is still a concern. Visitors should be advised to stay on established roads and trails because of the potential hazards of stump holes.

2. Non-native Invasive Species

Noxious weeds present included Canada thistle, musk thistle, Scotch thistle, puncturevine and field bindweed. These species are invaders into disturbed sites and will probably spread into the burn area. Recommendations proposed are to conduct non-native invasive plant control and to monitor for revegetation effectiveness. Monitoring may indicate the need for additional control, in which case an amendment will need to be submitted for the funding. Plant control is recommended for cheatgrass prior to seeding with native grasses. Noxious weed invasion potentials exist, therefore fire areas should be reviewed for the next two years to identify any new weed occurrences and treat.

3. Suppression Impacts

Except for the removal of the burned BLM engine, suppression impacts have been rehabilitated. There still exist a number of evident off-road vehicle tracks throughout the burn. Once the seeding activity has been accomplished these tracks will have been obliterated.

4. Infrastructure Impacts

The barb-wire fence line that burned is a boundary fence which is being recommended for replacement. Some interior burned fence lines have been removed and will not be replaced. The two satellite dishes are being recommended for replacement. The cover box for Spring 17 is also being recommended for replacement. These minor facilities, damaged by the fire, are addressed in the hatchery's facility plan or the WMA's Long-Range Management Plan.

IV RECOMMENDATIONS

Outlined below are the emergency stabilization and rehabilitation recommendations for fire suppression, vegetative resource and infrastructure.

A. Fire Suppression Rehabilitation

Specification # 1, Regrade Road - The Len Lewis Spring road (.23 mile) was used extensively by suppression forces. The road surface will need to be regravelled and the surface regraded. This activity is in the process of being completed.

Specification # 2, Rake Off-Road Vehicle Tracks - Numerous tracks were made across the landscape during the fire suppression effort. Some tracks were ruts in the soil. The ruts have been rehabilitated. The remaining tracks will be obliterated during the seeding operation.

Specification # 3, Handline Rehabilitation - The handline was .19 mile long and has been rehabilitated.

Specification # 4, Remove Burned Engine - A BLM engine was burned over during the fire. Once the investigation is completed the engine can be removed.

Specification # 5, Tree Hazard Mitigation - Tree hazards have been removed by the suppression crews. In addition, the crews chipped the branches and spread it as mulch.

B. Emergency Stabilization

Specification #12, Non-native Invasive Plant Control - The purpose of this treatment is to prevent or reduce the spread of undesirable non-native invasive plants, e.g., cheatgrass, and to assist in the reestablishment of native grasses. The control method being recommended is a herbicide spraying of RoundUp in the fall and again in late February while cheatgrass is growing. This treatment needs to be coordinated with the seeding. There will be a barrier of 25 feet between the treatment areas and any water. Near water, the herbicide Rodeo can be used. Herbicide applications will need to comply with agency approval authorities. Aerial application of herbicide for this site is not recommended.

Specification #13, Revegetation - There are two aspects to this specification, seeding and planting. The seeding will protect water quality on the slopes, maintain site productivity, reduce the risk of weed invasion, and facilitate the vegetative recovery to a native grassland. The proposed seed mix consists of:

Seed Mix: Indian ricegrass <i>Achmenoides hymenoides</i> (var. Nezpar)	8 lbs./acre PLS	10%
Great Basin wildrye <i>Leymus cinereus</i> (var. Trailhead)	8 lbs./acre PLS	25%
Snake River wheatgrass <i>Pseudoroegneria spicata</i> (var. Secar)	8 lbs./acre PLS	25%
Bannock thickspike wheatgrass <i>Elymus lanceolatus</i>	8 lbs./acre PLS	40%
Basin Big sagebrush <i>Artemisia tridentata</i> ssp. <i>tridentata</i>	.1lbs/acre PLS	

The seed can be drilled or broadcast spread by hand or with the use of an ATV with an attached spreader. This can be followed with a machine to bury the seed called the Back-country Mechanical Vector (BMV-sweet sixteen) and can be borrowed from Malad Gorge State Park. Before initiating this project consultation should occur with WMA and NRC S. Seeding should occur two weeks following the second herbicide application, approximately mid-March. Following seeding consideration should be given to mulching the seeded site with certified weed-free straw or compost.

Planting of willow cuttings can be done selectively along Riley Creek where the banks burned. This will fill in any areas that may not recover. The willow cuttings should be made while the plant is dormant and planted within a few days of cutting. The cut end should be kept moist, not wet, during this period.

Specification #15, Replace Fence - This treatment will repair the burned 4-strand barbed wire fence along 2.7 miles of boundary. It also replaces a burned 80 foot section of galvanized chainlink fence around a pond which keeps visitors from falling in.

Specification #16, Replace Boundary Signs - Replaces 40 resource protection signs burned including boundary signs.

Specification #17, Replace Satellite Dishes - Replaces 2 burned satellite dishes identified as minor facilities. This Government property is part of the employee housing contract administered by Contracting and General Services.

Specification #18, Replace PVC Pipeline - Replaces .5 mile of 12 inch PVC pipe burned on WMA lands.

C. Rehabilitation

Specification #14, Monitor Seeding Effectiveness - This specification will determine the success of seeding and planting efforts and identify areas of additional treatment. Funding for additional seeding treatments will need to be requested if the need can be demonstrated.

D. Management Recommendations (non-specification related)

Coordinate rehabilitation treatments to ensure proper application and success (e.g. invasive plant control and seeding).

Assess the many visitor-made roads and identify which roads will be used and which to be closed and rehabilitated. Signing or physical barriers may be used to designate roads.

Following consultation with NRCS, WMA, and Malad Gorge State Park, prepare a vegetation management plan for the lands beyond the administrative facility of the HNFH.

Immediately hire implementation coordinators to ensure timely application of treatments.

V CONSULTATIONS:

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Scott Gamo, Idaho Department of Fish and Game	208-324-4359

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Hagerman Wildlife Management Area, Long Range Management Plan, Magic Valley Region, Idaho Department of Fish and Game, July, 1999.

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**INTERAGENCY
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APPENDIX II - ENVIRONMENTAL COMPLIANCE DOCUMENTATION

- * National Environmental Policy Act (NEPA) Compliance Documentation
- * Environmental Action Statement, Categorical Exclusion Checklist

**OSTER LAKE FIRE
BURNED AREA EMERGENCY REHABILITATION PLAN
Environmental Compliance Considerations and Documentation**

I. FEDERAL, STATE, AND PRIVATE LANDS ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES

All projects proposed in the Oster Lake Fire Interagency Burned Area Emergency Stabilization and Rehabilitation (ESR) 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)*. This Appendix documents the Interagency BAER Team considerations of NEPA compliance requirements for prescribed rehabilitation and monitoring actions described in this plan for all jurisdictions affected by the Oster Lake Fire burned area emergency.

This plan has been developed by an Interagency BAER Planning Team comprised of representatives from the: U.S. Department of the Interior (DOI), National Park Service (NPS), U.S. Fish and Wildlife Service, and Bureau of Land Management; and U.S. Department of Agriculture (DOA), Forest Service (FS).

II. RELATED PLANS AND CUMULATIVE IMPACTS ANALYSIS

Hagerman National Fish Hatchery Management Plans: The BAER Team Environmental Protection Specialist reviewed the: Hagerman National Fish Hatchery Master Plan; Integrated Pest Management Plan; Wildlife Management Plan; and Wildland Fire Management Plan. In consultation with the Project Leader the Environmental Protection Specialist has determined that the actions proposed in the Oster Lake Fire BAESR Plan within the boundary of the Hagerman National Fish Hatchery are consistent with the management objectives established in the Hatchery and Federal best management practices for emergency watershed protection and rehabilitation.

Hagerman Wildlife Management Area (WMA):

The BAER Team Environmental Protection Specialist reviewed both the Hagerman Wildlife Management Area Long-Range Management Plan and determined that actions proposed in the Oster Lake Fire BAESR Plan within the boundaries of the WMA are consistent with the Long-Range Plan.

III. AGENCY AND PUBLIC SCOPING

Multi-Agency Scoping: Upon arrival at the Oster Lake Fire the Interagency BAER Team immediately requested the establishment an informal multi-agency group to review BAER Team recommendations for post fire treatments. Representatives of each affected jurisdictions detailed above were represented on the group and each of the specifications within this plan have been review by local representatives.

Technical Scoping: Upon arriving at the Oster Lake Fire incident BAER Team Technical Specialist immediately consulted with local agency Technical Specialist to scope issues of concern and develop a mutual agreed to approach to the assessment of resources damages, analysis of findings, and development of recommendations. All specifications and resources assessments were development and reviewed after extensive consultation with and review by local technical specialist for the affected agencies.

Public Outreach: Public scoping and review was further facilitated through several news releases, individual contacts with interested members of the public, and a public briefing / scoping meetings held in Hagerman, Idaho on September 20, 2001. Issues of concern to the public where recorded and addressed through the plan development. BAER Team representatives were available to answer questions during and after this meeting.

The BAER Team was also interviewed by local and regional television news stations and newspapers which broadcasted and printed stories on the damage assessment under way at the National Fish Hatchery.

IV. APPLICABLE AND RELEVANT CATEGORICAL EXCLUSIONS

U.S. Fish and Wildlife Service: The individual actions proposed in this plan for Hagerman National Fish Hatchery are Categorical Exclusions from further environmental analysis as provided for in the Department of the Interior Manual Part 516 and 516 DM 2, Appendix 1 and 516 DM 6, Appendix 1.4. All applicable and relevant Department and Agency Categorical Exclusions are listed below. Department exceptions (516) DM 2.3 do not apply to any of the individual actions proposed. Categorical Exclusion decisions were made with consideration given to the results of required emergency consultations completed by the BAER Team and documented in Section E below.

- (1) Non-destructive data collection, inventory (including field, aerial and satellite surveying and mapping), study, research and monitoring activities.

- B. Resource Management. Prior to carrying out these actions, the Service should coordinate with affected Federal agencies and State, Tribal, and local governments.

- (2) The operation, maintenance, and management of existing facilities and routine recurring management activities and improvements, including renovations and replacements which result in no or only minor changes in the use, and have no or negligible environmental effects on-site or in the vicinity of the site.

- (3) The construction of new, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, instream, or native habitats, which result in no or only minor changes in the use of the affected local area. The following are examples of activities that may be included.
 - i. The installation of fences.
 - ii. The construction of small water control structures.
 - iii. The planting of seeds or seedlings and other minor revegetation actions.
 - iv. The construction of small berms or dikes.
 - v. The development of limited access for routine maintenance and management purposes.

- (5) Fire management activities, including prevention and restoration measures, when conducted in accordance with departmental and Service procedures.

V. STATEMENT OF COMPLIANCE FOR THE OSTER LAKE FIREINTERAGENCY BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

This section documents considerations given in development of the Oster Lake Fire BAER Plan to the requirements of specific environmental laws. 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 Oster Lake Fire BAESR Plan.

1. **Executive Order 11593. Protection and Enhancement of Cultural Environment and National Historic Preservation Act (NHPA).** The BAER Team archeologist has initiated necessary consultation with the Idaho State Historic Preservation Office (SHPO) regarding treatments proposed in the Oster Lake Fire Interagency BAESR Plan. In some instances, treatments have been implemented as emergency measures subsequent to SHPO consultations and prior to completion of this plan. Should the BAESR plan be modified to adapt to post-flood emergencies individual agencies will be responsible for continued SHPO consultations.
2. **Executive Order 11988. Floodplain Management.** Some treatments proposed within the Oster Lake Fire Interagency BAESR Plan occur within the 100-year floodplain. The BAER Team Environmental Protection Specialist has determined that the treatments prescribed in this plan do not constitute structures, fills, or changes in land use as defined under this order.
3. **Executive Order 11990. Protection of Wetlands.** The BAER Team Environmental Protection Specialist has determined that the treatments prescribed in this plan do not occur within a jurisdictional wetland.
4. **Executive Order 12372. Intergovernmental Review.** Coordination and consultation is ongoing with affected Tribes, Federal, State, and local agencies. A copy of the BAESR Plan will be disseminated to all affected agencies. The Interagency BAER Team has specifically U.S. Fish and Wildlife Service, Idaho SHPO, Idaho Department of Fish and Game, U.S. Natural Resources Conservation Service, and private landowners.
5. **Executive Order 12892. Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.** All Federal actions must address and identify, as appropriate, disproportionately high and adverse human health or low-income populations, and Indian Tribes in the United States. The actions proposed in this plan have been designed to protect properties that contain cultural resources of interest to local Tribes. The BAER Team Environmental Protection Specialist has determined that the actions proposed in this plan will result in no adverse human health or environmental effects for minority or low-income populations and Indian Tribes.
6. **Endangered Species Act.** The Interagency BAER Team Wildlife Biologists has consulted with the U.S. Fish and Wildlife Service and the Idaho Department of Fish and Game regarding actions proposed in this plan and potential effects on federally and State listed species and has determined that there is no affect.
7. **Secretarial Order 3127. Contaminants and Hazardous Waste.** . There are no known contaminated sites on Federal or state lands affected by the Oster Lake Fire.
8. **Clean Water Act.** Any alteration to streams or waters of the United States requires compliance with Section 404 of the Clean Water Act. The BAER Team Environmental Protection Specialist has determined that the actions proposed in this plan will result in no alteration to streams or waters of the United States.
9. **Clean Air Act.** Federal Ambient Air Quality Primary and Secondary Standards are provided by the National Ambient Air Quality Standards (NAAQS), as established by the U.S. Environmental Protection Agency (EPA) (Clean Air Act, 42 U.S.C. 7470, et seq., as amended). The BAER Team Environmental Protection Specialist has determined that treatments prescribed in the Oster Lake Fire burned area will have short-term minor impacts to air quality that would not differ significantly from routine land use practices for the area. Long-term, treatments proposed in this plan would be expected to have a beneficial impact to air quality through stabilization of ash and soils within the Oster Lake Fire burned area.

**ENVIRONMENTAL COMPLIANCE AND CONSULTATIONS
DOCUMENTATION AND DECISION
Oster Lake Fire Burned Area Emergency Stabilization and Rehabilitation Plan**

NEPA CHECKLIST: If any of the following exception applies, the project cannot be Categorical Excluded and an Environmental Assessment (EA) is required.

(Yes) (No)

Adversely affect Public Health and Safety

Adversely affect historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.

Have highly controversial environmental effects.

Have highly uncertain environmental effects or involve unique or unknown environmental risks.

Establish a precedent resulting in significant environmental effects.

Relates to other actions with individually insignificant but cumulatively significant environmental effects.

Adversely effects properties listed or eligible for listing in the National Register of Historic Places.

Affect a species listed or proposed to be listed as Threatened or Endangered.

Threaten to violate any laws or requirements imposed for the protection of the environment such as Executive Order 1198 (Floodplains Management) or Executive Order 11990 (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 has been performed. A report has been prepared by the prepared by the BAER Team archeologist.

A NHPA Clearance Form :

Is required because the project affects 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 project has no potential to affect cultural resources (initial of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

Does the project have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed (see Cultural Resource Assessment, Appendix I).

Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

I have reviewed the proposals in the Oster Lake Fire Burned Area Emergency Stabilization and Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effect. Therefore it is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to insure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State and local environmental review requirements.

BAER Team, Environmental Protection Specialist Date

I concur and it is my decision to approve the plan.

I do not concur because.

Manager, Hagerman National Fish Hatchery Date

**INTERAGENCY
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APPENDIX III - PLAN MAP

- * **JURISDICTION MAP**
- * **BURN SEVERITY MAP**
- * **VEGETATION MAP**
- * **WATERSHED TREATMENT MAP**
- * **WATERSHED TREATMENT ORTHO PHOTO MAP**
- * **RESOURCE TREATMENT MAP**

**INTERAGENCY
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APPENDIX IV - PHOTO DOCUMENTATION

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN**

APPENDIX V - SUPPORTING DOCUMENTATION

- * □ **COST/RISK ANALYSIS**
- * □ **BAER NEWS RELEASE (9/16/01)**
- * □ **AGENCY SCOPING MEETING NOTES (9/15/01)**
- * □ **TRIP REPORT, U.S. FISH & WILDLIFE SERVICE NATIONAL BAER COORDINATOR (9/18/01)**
- * □ **ESA SECTION 7 CONSULTATION PACKAGE (correspondence, species lists, etc.)**
- * □ **EMERGENCY FISH RELOCATION COST DOCUMENTATION**
- * □ **SEED BID SOLICITATION PACKAGE**
- * □ **MAGIC VALLEY NEWS - ARTICAL ON CAUSE OF FIRE (9/11/01)**
- * □ **THE TIME NEWS - ARTICAL ON BAER DAMAGE ASSESSMENT (9/19/01)**
- * □ **GOODING COUNTY LEADER - ARTICAL ON BAER DAMAGE ASSESSMENT (9/20/01)**
- * □ **HAGERMAN FIRE PROTECTION DISTRICT FIRE INCIDENT REPORT**
- * □ **BAER CLOSE-OUT AGENDA AND BRIEFING PACKAGE**
- * □ **FIRE EFFECTS INFORMATION SYSTEM VEGETATION REPORTS**

MEMORANDUM

DATE: August 14, 2002

TO :Regional Director, Region 1
Attn: Rich Johnson, Fisheries

FROM :Project Leader, Hagerman National Fish Hatchery

SUBJECT: Spring 17 Amendment, Oster Lake Fire, Burned Area Emergency Stabilization and Rehabilitation (BAER) Plan

I have enclosed for your review and approval the subject amendment to the BAER Plan for the fire that occurred at the Hagerman National Fish Hatchery September 7, 2001. It addresses the rehabilitation of Spring 17. The issues identified in the assessment need to be corrected soon due to a potential risk of losing the spring if the erosion is not stopped. It is important to note, this amendment does not request any additional funds. All costs identified in the amendment will be covered by savings realized for contracts already completed in the BAER Plan.

This amendment was developed in consultation with Mr. Wayne Patton, Implementation Coordinator, Oster Lake Fire BAER Plan. Mr. Patton has had over 30 years of experience in the field of wildland restoration with the Forest Service and as a private contractor since his retirement from government service. Mr. Mike Eberle, Supervisory Hydraulic Engineer, FWS Region 1, has also assessed the situation and has provided input in development of this Document.

Please call me if you have any questions regarding this matter.

Approved:	Regional Director _____	Date _____
Concur:	Fire Mgt Office Manager _____	Date _____
Approved:	Fishery Supervisor _____	Date _____

Enclosures

- cc: Rich Johnson Fisheries
- Chuck Eggleston Fisheries
- Mike Eberle Engineering
- Randy Schmeller Engineering
- Wayne Patton Implementation Coordinator

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

PART F - SPECIFICATION

SPECIFICATION TITLE:	Rehabilitation of Spring 17	JURISDICTIONS:	FWS-HNFH
PART LINE ITEM:	Amendment request	FISCAL YEAR(S):	2002, 2003
ESR REFERENCE #:	6.21.1 Surface Stabilization and Prevention Strategy	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

<p>A. General Description: Clean up approximately 9 yards of rocks, dirt and stumps around the edges of Spring 17 followed by re-seeding and mulching. The spring-box will be modified to take care of drainage and flow problems exacerbated by the Oster Lake Fire.</p> <p>B. Location (Suitable) Sites: Spring 17 at the Hagerman National Fish Hatchery. See <i>Oster Lake Fire Jurisdiction Map</i> in the Oster Lake Fire BAER Plan.</p> <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> Carefully remove 9 yards of unstable dirt and rocks from around and within the spring. Remove stumps of fire-killed trees. Temporarily divert spring flow. Extend the existing spring-box by approximately 14-feet and reconstruct the cover (Specification #17). Raise height of water over the intake pipe by raising height of new wall by 1 to 1.5-feet. Rake in native seed mix previously used in Specification #7 and spread weed-free straw mulch to a depth of 1/4" to 1/2". This cost will be covered by funding listed in Specification #7, Hydro-Seeding. <p>D. Purpose of Treatment Specification: Cleaning out the spring and extending the spring-box will allow the capture of all the water in the spring and will stop its channeling around the box. The failed hyromulch job will be re-seeded to stabilize slope around the spring. Increasing the depth of water over the intake pipe by raising the height of the concrete wall will prevent air traps and the subsequent problem of gas supersaturation.</p> <p>E. Treatment Effectiveness Monitoring: Water quantity and quality from Spring 17 will be measured at no additional cost.</p>

II. LABOR, MATERIALS AND OTHER COST

PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost/item) Do not include contract personnel costs here - see contract services below	COST/ITEM
GS-12, 80 hrs x \$48 for design and COR work on Spring 17	\$ 3840
TOTAL PERSONNEL SERVICE COST	\$ 3840
EQUIPMENT PURCHASE, LEASE OR RENTAL (item @ cost/hour or day X #hours or days X fiscal year = cost) Do not include contract personnel costs here -see contract services below	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost)	COST/ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost)	COST/ITEM
Engineer, GS-12 @ \$377 X 5 round trips	\$ 1885
TOTAL TRAVEL COST	\$ 1885
CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost)	COST/ITEM
Contract work including labor, equipment, and materials @ \$2846/day X 10 days	\$ 28460
TOTAL CONTRACT COST	\$ 28460

III. SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
FY-2	Ea	\$34,185	10 days	\$34,185	ESR	C
TOTAL	Ea	\$34,185	10 days	\$34,185	ESR	C

FUNDING SOURCES:

F = Fire Suppression Account
 ESR = Emergency Stabilization & Rehabilitation
 OP/O = Agency Operating or Other Account
 EWP = Emergency Watershed Protection (NRCS)

SPECIFICATION TYPE

ES = Emergency Stabilization
 R = Rehabilitation
 FS = Fire Suppression

METHODS FOR COMPLETION:

P = Agency Personnel Services
 C = Contract
 EFC = Emergency Fire Contract
 FC = Crew Labor Assigned to Fire

IV. 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 resources	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimate based upon government wage rates and materials cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Fire Suppression

V. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN REPORT

List relevant documentation and cross-references within Oster Lake Fire BAER Plan: See page 25; Specification #7, Hydro-Seeding. See page 47; Specification #17, Replace Satellite Dish. See Appendix III, Jurisdiction Map.

VI. UNITS AND COSTS BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
FWS-HNFH / Pre-funded BAER Plan	1 Spring	\$ 34,185
TOTAL COST	1 Spring	\$ 34,185

**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN**

OSTER LAKE FIRE

**SOIL AND WATER SHED ASSESSMENT
AMENDMENT**

I. OBJECTIVES

- * □ The purpose of this Burned Area Emergency Stabilization and Rehabilitation Plan Amendment is to assess Spring 17 which is not responding to earlier stabilization treatments. The objectives are to develop treatments that will stop degradation of Spring 17, which was triggered by the Oster Lake Fire, and to stay within the Oster Lake BAER Plan spending authorization. No new funding will be requested. Cost savings realized from specifications already completed will be used for this project.

II. ISSUES

- * □ The Oster Lake Fire burned all the riparian vegetation around Spring 17 (Photo 1). The loss of this riparian zone has resulted in destabilization of the slope and talus rock proximate to the spring diversion box (Photo 2.). The temperature of the fire was sufficiently hot in that the organic matter in the soil was affected and dry ravel caused rocks and soil to fall into the spring. Additionally, all trees around the spring were killed by the fire resulting in woody material further compromising the spring. A fall hydromulch seeding failed and made many of the fire-caused soil stability problems worse. Without additional treatment, the soil slumping and related stability problems will continue.
- * □ Because of the soil instability, water is leaking around the spring-box. As this erosion continues it exasperates the soil stability problem and reduces spring flow diverted to the fish rearing ponds. The hatchery staff had to place sandbags in and around the spring box, on two occasions since the fire, to stop water loss and maintain adequate flows to the fish rearing ponds (Photo 3).
- * □ Any sudden water loss from the spring due to accelerated erosion will cause the water level in the spring box to lower. This results in the formation of a venturi at the pipeline intake. The venturi action traps air in the water which has the potential to cause super saturation of nitrogen gas in the water supply. This situation can be stressful and even lethal to fish. It manifests as a nitrogen gas embolism in the fish's blood, analogous to the bends in human scuba divers.
- * □ Without physical repairs to the spring box and concrete retaining wall, maintaining an adequate water flow to the rearing ponds will be a problem. Continued erosion around the spring has the potential for complete loss of this spring flow.

III. OBSERVATIONS

- A. Background** - Background Soil stability problems were first discovered by the Interagency BAER Team in their assessment of the damage caused by the Oster Lake Fire of September 7, 2001. They recommended hydromulch seeding which was completed around Spring 17 during October 2001. This seeding failed and soil, rocks and woody debris continue to slump into the spring. Moreover, some of the spring water has found a new route out of the unstable side of the spring and is flowing into Riley Creek at a point where it is lost for fish rearing. This valuable resource should be routed back into the hatchery.
- B. Reconnaissance Methodology and Results** - Ocular methodology was used to assess the lack of plant cover and the lack of roots to hold the soil together. One could easily see that the fire-killed trees continue to fall onto the spring box lid and into the spring. The

new spring opening where water is escaping into Riley Creek is also easy to see. Water levels and flows were measured directly at the spring.

- C. Findings** - Results show that soil, rocks and woody debris falling into Spring 17 has, and is disrupting the flow from the spring. Moreover, periodic diminished flow has occurred due to erosion in and around the spring box. On February 12, 2002 hatchery staff placed sandbags in the spring box to stop a leak. This increased flow approximately 0.1 cubic feet per second. On May 5, 2002 it was necessary for the crew to sandbag the spring box again resulting in an increase in flow by approximately 0.5 cubic feet per second (Attachment #1 RECORD OF IN-LINE FLOW METER MEASUREMENTS, HAGERMAN NFH, 2002). The sudden loss of water level in the spring box pool creates air funneling at the intake pipe and the potential for gas super saturation of the water supply which can be lethal to fish. The spring box cover has been damaged by fire and badly dented as a result of rocks and limbs falling on it. Repair of this damage is already addressed in Specification #17. All this damage was directly caused by the Oster Lake Fire which burned very hot at the mouth of Spring 17.

IV. RECOMMENDATIONS

Based on the results of the above observations, the following recommendations are made:

A.

* □

Rehabilitation

1. Approximately 9 yards of rocks and soil will be removed from around the spring, from the spring itself and from the area excavated for the new wall.
2. Stumps of trees killed by the fire will be removed to prevent woody debris from falling into the spring.
3. Once this clean-up work is complete, native seed will be raked into the soil and weed free straw mulch will be scattered to stabilize the site. This work will be done with BAER funding still available in the hydromulch cost center.
4. The existing, concrete spring box will be extended by about 14 feet to stabilize the west side of the spring at the point where water is now escaping and eroding the slope.
5. The new wall will be 1 to 1.5 feet higher than the existing wall. At the same time, an extension will be poured on top of the old wall, making it the same height as the new wall.
6. Spring water will be temporarily diverted from the area of the new wall while work is being done. The steep, rocky talus slope and running water make this a difficult and complex project, so estimated costs for the work are high. Refer to the attached Specification Sheet for the cost estimates. All funding for this project will come from existing BAER Plan spending authorization that was saved from other cost centers. No additional funding is requested.

* □

Management Recommendations (non-specification related)

1. Hatchery Staff will continue to monitor water flow from spring 17 on a weekly basis.
2. Hatchery staff will continue to include Spring 17 as part of Specification 9. Storm Patrol.

V. CONSULTATIONS

Consultations for work around this spring were completed as documented in the Oster Lake Fire Burned Area Emergency Stabilization and Rehabilitation Report of September 21, 2001.

VI. REFERENCES

Several references in this Amended Request were made to the Oster Lake Fire Burned Area Emergency Stabilization and Rehabilitation Report, Hagerman National Fish Hatchery, Hagerman Wildlife Management Area, Gooding County, Idaho. Prepared by the Interagency Burned Area Emergency Response Team, September 21, 2001.

Additional quotes and references were made to discussions between Bryan Kenworthy, Michael Eberle and Paul Rauch regarding engineering solutions to problems at Spring 17. Additional consultation with Brian Patton, a civil engineer at the Idaho State Department of Water Resources.

Bryan Kenworthy, Project Leader Hagerman National Fish Hatchery - (208) 837-4896
Wayne Patton, Implementation Coordinator, Oster Lake Fire BAER Plan - (208) 377-4583