

**Shooting Range Fire Hanford Reach National Monument
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION (ESR) PLAN**



AGENCY/UNIT: Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge

LOCATION: Richland, Benton County, Washington

DATE: August 5, 2003

PREPARED BY: Hanford Reach National Monument ESR Team

Submitted By: _____ Date: _____
Gregory M. Hughes, Project Leader

A. REVIEW AND APPROVAL

USFWS, Hanford Reach National Monument

I. Suppression Operations Funding Approval (check one box below):

- Approved
- Approved with Revision (see attached)
- Disapproved

Gregory M. Hughes, Project Leader **Date**

II. Burned Area Rehabilitation (9262) Funding Approval (check one box below):

- Approved
- Approved with Revision (see attached)
- Disapproved

Gregory M. Hughes, Project Leader, **Date**

Regional Fire Management Coordinator concurrence that the plan fits the technical definition for use of Burned Area Rehabilitation finding.

Regional Fire Management Coordinator, Region 1 **Date**

III. Agency Operational Base Funding Approval (check one box below):

- Approved
- Approved with Revision (see attached)
- Disapproved

Gregory M. Hughes, Project Leader

Date

III. Burned Area Rehabilitation Funding Approval (check one box below):

- Approved
- Approved with Revision (see attached)
- Disapproved

Regional Director, Region 1

Date

EXECUTIVE SUMMARY

Introduction

This plan has been prepared in accordance with provisions contained with Chapter 620 DM 3-Burned Area Emergency Stabilization and Rehabilitation, Presidential Proclamation 7319 of June 9, 2000 and the Hanford Reach National Monument Fire Management Plan. This plan provides burned area emergency stabilization and rehabilitation (ESR) recommendations for all lands burned within the Shooting Range Fire perimeter and downstream impact areas including public lands administered by the U.S. Fish and Wildlife Service. The primary objectives of the Shooting Range Fire Burned Area Emergency Stabilization and Rehabilitation (ESR) Plan are:

Emergency Stabilization

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

Rehabilitation

- To repair or improve lands unlikely to recover naturally from severe wildland fire damage by emulating historic or pre-fire ecosystem structure, function, diversity, and dynamics according to approved land management plans.

This plan addresses the emergency stabilization and rehabilitation needs of fire suppression and fire related damages to lands administered by the Service on the Hanford Reach National Monument (HRNM). Based upon field assessments conducted by HRNM staff between July 16 and July 25, 2003 an analysis was conducted to include: suppression impacts, watershed stability, archaeological and vegetation impacts, fire effects on known threatened and endangered (T&E) species and their habitats. Our archeologists conducted initial inventories of suppression impacts for potential damage to cultural sites as well as initiating a cultural resource damage assessment. The vegetation specialist evaluated and assessed fire damages and suppression impacts to vegetative resources, including threatened and endangered (T&E) species, and identified values at risk associated with vegetative losses. The wildlife biologist conducted an assessment of T&E species.

Individual resource Burned Area Assessment Reports produced by these specialists are in Appendix I. The individual treatments specifications including the effectiveness monitoring identified in the assessments can be found in Part F. A summary of the costs is in Part E. Appendix II contains the National Environmental Policy Act (NEPA) compliance documentation summary. Appendix III contains the ESR Plan maps. Appendix IV contains photo documentation. Appendix V contains supporting documentation.

Fire Background

The Shooting Range Fire, Number 13700-9261-A439, started on July 16, 2003 at approximately 0930 hours by an apparent spark from the nearby shooting range. The fire grew rapidly driven by strong winds and slope of the landscape. The fire exhibited extreme rates of spread and threatened to jump road 106 on the Arid Lands Ecology Reserve (ALE). Firefighters from Benton, Franklin, and Walla Walla counties, the cities of Kennewick, Pasco, and Richland, Hanford Fire Department, USFWS, and BLM were on the scene. A unified command initiated initial attack at Road 106. Dozers pulling discs put in a firebreak on the west and southwest flank. Disking proved an effective method of line construction, and along with fire crews backfiring, the fire was contained. Ground disturbance within the shrub-steppe plant community was substantial given the fire location, and necessary fire suppression actions (disking actions) were employed to prevent the loss of an additional estimated 30,000 acres. The disk lines were later used by suppression forces to access the edges of the fire and thereby created wheel track trails that have compacted soils, increased access potential to off-road vehicles and negatively impacted native vegetation and micro-biotic crusts.

The Shooting Range Fire was contained at approximately 1600 hours on July 16, 2003.

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

- Cultural and natural resource values impacted by the fire or fire suppression actions.
- Rehabilitation requirements established by Federal law, policies, and relevant Department of the Interior resource management mandates.
- Rehabilitation requirements established by state laws, policies, and regulations.
- Implementation of treatments in a timely manner, prior to the first damaging rains.

Fire Damages and Threats to Human Safety and Natural and Cultural Resources

The Shooting Range Fire burned approximately 1391 acres, on public lands within a perimeter of approximately 5.6 miles. 507 acres were on Monument lands and the remaining 884 acres were on state and BLM managed lands. The 507 acres burned on the Arid Lands Ecology Reserve, which is designated a Research Natural Area (RNA), Important Bird Area (IBA) and part of a National Energy Research Park (NERP). Fire suppression impacts included: approximately 2.6 total miles of disked fireline, with 0.5 miles on Monument lands, damage to the Monument boundary fence, and the potential spread of kochia, Russian thistle, diffuse knapweed and rush skeleton weed by suppression forces and actions.

The entire fire has been mapped by the BAER Team for burn severity. One hundred percent of the fire area is classified as low burn severity. This attests to the fires' rapid spread through light fuels and low residence time. There were some pockets of higher burn severity where larger rabbit brush plants were consumed. Most of the soils examined were not water repellent. Therefore, an overall water yield increase due to the fire is expected to be minor and not exacerbate flooding events.

Almost all plant and litter cover that was present in the burn area has been consumed by the fire. The loss of vegetative cover has exposed fine sandy and silty soils to ablation. Nearly all

soils within the burn area have a fairly high risk of wind erosion, however, certain soils within the burn area are especially susceptible.

The ESR Team conducted field surveys after the fire to identify impacts and compile the following recommendations for rehabilitation of affected lands:

Fire Suppression Treatments:

- Inventory disklines for potential archeological sites prior to rehabilitation
- Rehabilitate 0.5 miles of diskline
- Repair the Monument boundary fence

Emergency Fire Stabilization and Rehabilitation Treatments:

- Conduct cultural resource damage assessment of known/documented sites
- Control unburned non-native invasive plants
- Protect ecological integrity of native shrub-steppe plant communities through native grass seeding
- Monitor seeding effectiveness for site stabilization
- Control noxious weeds and invasive plant species

Specifications were developed for all actions meeting the requirements of fire suppression or Emergency Fire Stabilization and Rehabilitation (ESR) funding.

Other resource impacts assessed as a result of the Shooting Range Fire included a review of cultural sites impacted, and impacts to vegetation resources. The cultural resource assessment addresses the discovery of lithic scatters and an isolated projectile point. Prior to rehabilitation of suppression lines, an archeological inventory will be required. A cultural resource damage assessment of the burn area still needs to be completed as quickly as possible.

Federal T&E plant species listed as occurring or having habitat within Benton County have not been previously mapped within the fire area. Listed wildlife species existing within the fire area include Burrowing Owls and Washington Ground Squirrels.

Burrowing Owls are a federal species of concern and a state candidate species. There is a known active burrow just on the edge of the disk line that may have been displaced by suppression activities. The owls utilizing this burrow have not been seen since the fire, although it is known that all young have fledged.

This area is also habitat for the Washington Ground Squirrel, a federal and state candidate species. There are known burrows along the powerline and the 106 road. Washington Ground Squirrels are inactive during most of the year, only appearing above ground for a few months in spring and early summer. Although no individuals are presumed affected, ground squirrels rely heavily on seeds produced from native forbs and grasses, so reseeding to ensure quality habitat and forage for ground squirrels is necessary.

Vegetation resources provide valuable wildlife forage and habitat, watershed protection, and comprise a visually pleasing landscape. Generally speaking, bunchgrass communities experienced greater than 75% vegetative loss. On approximately 85% of the fire area,

complete consumption of vegetative resources was observed. Most shrub, grass and forb species and organic material on the soil surface was consumed indicating extreme fire intensity. The primary vegetative concerns are the recovery of the shrub-steppe plant community and control of non-native species and noxious weed invasion.

This BAER Plan is the initial funding request for Emergency Fire Rehabilitation funds. The Emergency Fire Rehabilitation funding for this plan extends over three years from the date of plan approval. 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.

Hanford Reach National Monument Management Requirements

The uniqueness and biological diversity of the Hanford Reach was formally recognized by Presidential Proclamation 7319 of June 9, 2000 establishing this area as the Hanford Reach National Monument. The monument is described as a “biological treasure, embracing important riparian, aquatic, and upland shrub-steppe habitats that are rare or in decline in other areas. Within its mosaic of habitats, the monument supports a wealth of increasingly uncommon native plant and animal species, the size and diversity of which is unmatched in the Columbia Basin.” Because of the high diversity of native plant and animal species, the large number of rare and sensitive plant species, the well developed microbiotic crusts and significant breeding populations of nearly all steppe and shrub-steppe dependent species, the USFWS has been tasked to preserve and protect these objects of antiquity in perpetuity. Primary goals for the Monument through the current Comprehensive Conservation Plan include:

- Protect and restore the native habitats and biodiversity of the Hanford shrub-steppe ecosystem.
- Monitor, protect, and recover native plants and animals that are federally or state listed and any other species that are in any other way considered sensitive.
- Monitor status and trends of migratory birds, particularly those that are considered shrub-steppe obligate species and manage local populations.
- Provide for compatible education, interpretation, and wildlife-dependent recreational opportunities.
- Promote public understanding of the shrub-steppe ecosystem through scientific research and allow other compatible research opportunities afforded by the unique and isolated environment of the ALE Reserve.
- Manage for the protection, preservation, evaluation, and understanding of the cultural heritage and resources of the ALE Reserve while consulting with appropriate Native American groups and complying with historic preservation legislation.
- Provide for operation and maintenance activities without compromising ecological and cultural values.

Emergency Stabilization

Emergency Stabilization actions for the Shooting Range fire include:

- Ecological stabilization through seeding of native species to prevent the establishment and reestablishment of non-native invasive plants.
- Cultural inventories of suppression impacted areas and known cultural sites to prevent further degradation or impacts.
- Noxious weed and invasive species control to protect ecological integrity of the site.

Rehabilitation

- Wildland fire activity damage suppression including control lines and fence repair.

The following statements in the approved HRNM Fire Management Plan direct the development of the proposed burned area rehabilitation treatments funded through the Burned Area Stabilization and Rehabilitation funds:

- Prior to the completion of an ESR, rehabilitation may be initiated by the Incident Commander, FMO, or Monument Manager. A set of standard treatments for slopes, channels, and roads are pre-approved and listed in the Fire Management Handbook on pg. 5.2-1. If emergency rehabilitation measures are needed or if rehabilitation is needed to reduce the effects of a wildland fire then the Monument can request appropriate funding through the Burned Area Emergency Rehabilitation (BAER) fund. ESR plans for each fire will be reviewed by the Fire Analysis Committee. A final plan will be submitted to Region for establishing an account. Rehabilitation should be initiated prior to complete demobilization or early the following season.
- Protect and restore the native habitats and biodiversity of the Hanford shrub-steppe ecosystem. (ALE -CCP)
- Monitor, protect, and recover native plants and animals that are federally or state listed and any other species that are in any other way considered sensitive. (ALE-CCP)

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PART A - FIRE LOCATION AND BACKGROUND INFORMATION

| | |
|-------------------------------|---------------------------------|
| Fire Name | Shooting Range |
| Fire Number | 13700-9261-A439 |
| Agency Unit | Hanford Reach National Monument |
| Region | 1 |
| State | WA |
| County(s) | Benton |
| Ignition Date/Cause | 7/16/2003 - Human Caused |
| Zone | CWICC |
| Date Contained/ Controlled | 7/16/2003 |
| Jurisdiction- USFWS | 507 Acres |
| Total Acres | 1391 Acres |

PART B - NATURE OF PLAN

I. Type of Plan (check one box below)

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Emergency Stabilization |
| <input type="checkbox"/> | Rehabilitation |
| <input type="checkbox"/> | Both Emergency Stabilization and Rehabilitation |

II. Type of Action (check one box below)

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Initial Submission |
| <input type="checkbox"/> | Updating or Revising the Initial Submission |
| <input type="checkbox"/> | Supplying Information of Accomplishment to Date on Work |
| <input type="checkbox"/> | Different Phase of Project |
| <input type="checkbox"/> | Final Accomplishment Report (To Comply with the Closure of the 9262 Account) |

PART C - EMERGENCY STABILIZATION AND REHABILITATION ASSESSMENT

Emergency Stabilization Objectives

- Locate and stabilize severely burned areas which pose a direct threat to human life, property or critically important cultural and/or natural resources.
- As practical and necessary, restore natural conditions to areas disturbed by fire suppression actions.
- Prevent the establishment of non-native invasive plants.
- Prevent degradation of unburned areas within the fire perimeter before spring greenup by wild ungulates.

Suppression Rehabilitation Objectives

- ✓ Rehabilitate suppression impacts to Columbia Basin shrub-steppe plant communities with native species as specified in the June 9, 2000 Presidential Proclamation and the Comprehensive Land Use Plan (DOE-1999) as prescribed within the existing Memorandum of Understanding.
- ✓ Repair or replace burned and damaged infrastructure along the Monument boundary.

PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS

I. Approval Authorities

U.S. Fish and Wildlife Service- Hanford Reach National Monument

| Activities Requiring Local Agency Administrator Approval Fire Suppression Damages (charged to Fire Suppression) | Status | Cost |
|--|--------|----------------|
| Dozerline/Disk line rehabilitation | P | \$4,174 |
| Boundary Fence Repair | P | \$3,607 |
| Cultural Resources Damage Assessment | P | \$1,000 |
| | | |
| | | |
| | | |
| Subtotal | | \$8,781 |

Status: C=Completed,; O=Ongoing; P=Planned

| Activities Requiring Regional/State/Headquarters Approval Emergency Stabilization and Rehabilitation (charged to BAR) | Status | Cost |
|--|--------|------------------|
| Noxious Weed and Invasive Species Control | P | \$ 41,248 |
| Ecological stabilization seeding | P | \$175,000 |
| Noxious weed control and revegetation effectiveness monitoring | P | \$ 5,820 |
| Cultural Resources Damage Assessment-Stabilization | P | \$ 3,940 |
| | | |
| | | |
| Subtotal | | \$226,008 |

Status: C=Completed,; O=Ongoing; P=Planned

| | |
|---|------------------|
| Total Emergency Stabilization and Rehabilitation Costs | \$234,789 |
|---|------------------|

II. Burned Area Emergency Stabilization and Rehabilitation (ESR) Team Members:

| Position | Team Member (Agency) |
|-----------------------------------|--|
| Team Leader | David Smith- USFWS-HRNM |
| Public Information | Ron Crouse and Paula Call- USFWS-HRNM |
| Operations | Jack Heisler- USFWS-HRNM |
| NEPA Compliance & Planning | David Smith- USFWS-HRNM |
| Hydrologist | |
| Soil Scientist | |
| Geologist | |
| Cultural Resources/Archeologist | Jenna Gaston- USFWS- HRNM |
| Vegetation Specialist | Jennifer Meisel- USFWS-HRNM |
| Wildlife Biologist | Heidi Newsome- USFWS-HRNM |
| GIS Specialist | |
| Documentation/Computer Specialist | Jack Heisler and Jennifer Meisel- USFWS-HRNM |
| Photographer | Jennifer Meisel- USFWS- HRNM |

III. Resource Advisors: (Note: Resource Advisors are individuals who assisted the ESR Team with the preparation of the plan. See Part H for a full list of agencies and individuals who were consulted or otherwise contributed to the development of the plan.

| Name | Affiliation |
|---------------|--|
| Paula Call | Hanford Reach NM, Outdoor Recreation Planner |
| Eric Hagen | Hanford Reach NM, Fire Management Officer |
| Tom Padgett | Hanford Reach NM, Range Technician |
| Robert Little | Hanford Reach NM, Engineering Equipment Operator |
| Greg Hughes | Hanford Reach NM, Project Leader |
| Mike Ritter | Hanford Reach NM, Deputy Project Leader |

PART E - SUMMARY OF ACTIVITIES AND COSTS

The summary of activities and cost table below identifies emergency stabilization and rehabilitation costs charged or proposed for funding from Suppression Operations, Burned Area Rehabilitation, agency operation, and other funding sources. Expenditures are displayed in the total cost column. They are coded with the appropriate cost authority. The total cost of the rehabilitation effort to date, excluding the costs absorbed by the fire account (fire crews, labor, and associated overhead) is displayed as either Suppression Operations (F), Burned Area Rehabilitation (BAR), Emergency Watershed Protection (EWP), or Agency Operations/Other (O/OP) or other.

Fire Name: Shooting Range

Specification Cost Summary

| Account | Dollars | Dollars |
|---|------------|-----------|
| Fire Suppression Activity Damage Rehabilitation (F) | | \$8,781 |
| Burned Area Rehabilitation (BAR) | | \$226,008 |
| Emergency Stabilization | \$ 220,188 | |
| Rehabilitation | \$ 5,820 | |
| Emergency Watershed Protection (EWP) | | |
| Agency Operations/Other (OP/O) | | |
| Funding Summary - Estimated Total | | \$234,789 |

PART E - SUMMARY OF REHABILITATION ACTIVITIES - COST SUMMARY TABLE - Shooting Range Fire

| Spec # | Title | Unit | Unit Cost | # of Units | Cost by Funding Source | | Implementation Method | Specification Total |
|-------------------|--|------|-----------|------------|------------------------|------|-----------------------|---------------------|
| | | | | | BAR | OP/O | | |
| 7 | Noxious Weed and Revegetation Effectiveness Monitoring | Acre | \$ 11.65 | 500 | \$ 5,820 | | C | \$5,820 |
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| | | | | | | | | |
| TOTAL COST | | | | | \$ 5,820 | \$ 0 | | \$ 5,820 |

COST: BAR=Burned Area Rehabilitation, OP/O=Agency Operations Funding, Other **METHOD:** FC=Crew Assigned to Fire, C=Contract, EFC=Emergency Fire Contract, P=Agency Personnel

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|--|----------------------------|------------|
| SPECIFICATION TITLE: | Diskline Rehabilitation | JURISDICTIONS: | USFWS-HRNM |
| PART E LINE ITEM: | #1- Diskline rehabilitation | FISCAL YEAR: | 2003 |
| ESR REFERENCE #: | 6.2.13 Wildland Fire Suppression Activity Damage | SPECIFICATION TYPE: | FS |

I. WORK TO BE DONE

- 1. General Description:** Rehabilitation of approximately 0.5 miles of suppression line is necessary to protect habitats from noxious weed infestation, off-road vehicle intrusion on the landscape and to minimize fragmentation of ecological areas. Monitoring of suppression line rehab is necessary to determine the need for future exotic plant mitigation needs. Dozer lines and disk lines within the burned area on lands managed by FWS will be treated according to methods described in the Hanford Site Biological Resource Management Plan (HSBRMP, 1996). Soils are currently too powdery for immediate rehabilitation therefore treatments should be delayed until fall of 2003 until soil conditions and growing conditions are favorable to maximize success of rehabilitation actions.
- 2. Location (Suitable) Sites:** See Appendix III and photo documentation section. Within and adjacent to the fire perimeter of the Shooting Range fire.
- C. Design/Construction Specifications:**
- Return soil in side-cast berms back into center profile of disturbed areas. Dozerline will be treated using a tractor and disk/harrow to return and recontour disturbed areas back to the natural land profile and break up compaction to a 6 inch depth.
 - Water rills will be constructed on lands with slopes greater than 5%.
 - Water rills should be skewed horizontally from the fall line of the slope approximately 15 to 20 degrees from horizontal and drained away from the fire burned area if possible.
 - Fill materials will be cleaned or removed from established drainages and live water courses if feasible without further disturbance of the drainage area.
 - Reseed disturbed lands with Hanford or Columbia Basin derived native seed. The seed mix will be tested for purity and germination rates. Contractor will provide written evidence (seed label and letter) that seed conforms to the origin, purity and germination requirements in the specification. Test methods specified in the *Rules for Testing Seeds, Proceedings of the Association of Official Seed Analysts* will be acceptable for determining the germination rate.
- Seed Mix for low elevations (<800')- 24 Acres (MOL)
- | | | |
|--|------------------|-----|
| Bluebunch wheatgrass (<i>Pseudoroegneria spicata</i>) | 6 lbs./ac. PLS | 34% |
| Indian Ricegrass (<i>Oryzopsis hymenoides</i>) | 4 lbs./ac. PLS | 22% |
| Sandberg's bluegrass (<i>Poa sandbergii</i>) | 5 lbs./ac. PLS | 28% |
| Squirreltail, <i>Sitanion hystrix</i> | 2 lbs./ac. PLS | 11% |
| Wyoming Big sagebrush (<i>Artemisia tridentata</i> var. <i>wyomingensis</i>) | 0.1 lbs/ac PLS | 01% |
| Yarrow, (<i>Achillea millefolium</i>) | 0.5 lbs./ac. PLS | 02% |
| Winterfat, (<i>Ceratoides lanata</i>) | 0.2 lbs/ac PLS. | 01% |
- D. Purpose of Treatment Specification:** Prevent surface and gully erosion on lands disturbed by dozerline and disking.
- D. Treatment Effectiveness Monitoring:** Visually inspect line after rain events and promptly correct any erosion problems. Monitor seeding effectiveness and retreat areas as needed to re-establish native grass cover and prevent expansion of non-native invasive species.

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-9 @ \$30/hour x 20 hours x 1 fiscal year | \$ 600 |
| TOTAL PERSONNEL SERVICE COST | \$600 |

| 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 |
|---|----------------|
| Semi with trailer transport @ \$45/hour x 8 hours | \$360 |
| Challenger Tractor rental with disc @ \$50/hour x 20 hours x 1 fiscal year | \$1,000 |
| TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST | \$1,360 |

| MATERIALS AND SUPPLIES (item @ cost/each X quantity x fiscal year = cost) | COST/ITEM |
|---|----------------|
| Fuel, Oil and Filters @ \$60/day x 2 days | \$120 |
| Native Seed @ \$360/acre x 5 acres | \$1,800 |
| TOTAL MATERIALS AND SUPPLY COST | \$1,920 |

| TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost) | COST/ITEM |
|---|--------------|
| 4 X 4 Pickup @ 200 miles/rt x 3 round trips x .365/mile x 1 fiscal year | \$219 |
| TOTAL TRAVEL COST | \$219 |

| CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost) | COST/ITEM |
|---|-------------|
| Drill Seeder Contract @ \$15/acre x 5 acres | \$75 |
| TOTAL CONTRACT COST | \$75 |

III. SPECIFICATION COST SUMMARY

| FISCAL YEAR | UNIT | UNIT COST | # OF UNITS | COST | FUNDING SOURCE | METHOD |
|--------------|--------------|--------------|------------|----------------|----------------|------------|
| FY-1 | acres | \$834 | 5 | \$4,174 | F | P, C |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| TOTAL | acres | \$834 | 5 | \$4,174 | F | 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 | |
| 3. Estimate supported by cost guides from independent sources or other federal agencies | F |
| 4. Estimate based upon government wage rates and materials cost. | F |
| 5. No cost estimate required - cost charged to Fire Suppression Account | |

P = Personnel Services M = Materials/Supples 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: Refer to Appendix I: Operations Assessment and Appendix III- Fire Suppression Impacts Map.

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|--|----------------------------|------------|
| SPECIFICATION TITLE: | Boundary Fence Repair | JURISDICTIONS: | USFWS-HRNM |
| PART E LINE ITEM: | #2-Boundary Fenceline Repair | FISCAL YEAR: | 2003 |
| ESR REFERENCE #: | 6.2.13 Wildland Fire Suppression Activity Damage | SPECIFICATION TYPE: | FS |

I. WORK TO BE DONE

| |
|---|
| <p>1. General Description: Repair approximately 1/4 mile of damaged boundary fence between the Hanford Reach National Monument and adjacent state and federal lands.</p> <p>2. Location (Suitable) Sites: See Appendix III and photo documentation section. Repair approximately 1/4 mile of HRNM boundary fence on western edge associated with the Shooting Range fire.</p> <p>C. Design/Construction Specifications:</p> <p>1. Repair 4-strand fence with 12.5 gauge barbed wire, 5 1/2 foot steel fence posts, stays, and brace posts as required.</p> <p>2. Remove and dispose of damaged and weakened metal posts and wire.</p> <p>D. Purpose of Treatment Specification: To restore and maintain the integrity of the National Monument boundary, prevent trespass, reduce ORV access opportunities, and protect the ecological integrity of shrub-steppe plant communities in and around the fire area.</p> <p>E. Treatment Effectiveness Monitoring: Conduct contract performance reviews through visual inspections.</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 |
|--|------------------|
| WG-9 @ \$30/hour x 12 hours x 1 fiscal year | \$360 |
| TOTAL PERSONNEL SERVICE COST | \$360 |
| 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 |
| 4 rolls- 12.5 Gauge Barbed wire @ \$42/roll x 1 fiscal year | \$168 |
| 80 - 5.5 foot steel posts @ \$2.75 each x 1 fiscal year | \$220 |
| TOTAL MATERIALS AND SUPPLY COST | \$388 |
| TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost) | COST/ITEM |
| 4 X 4 Pickup @ 200 miles/rt x 3 round trips x .365/mile x 1 fiscal year | \$219 |
| TOTAL TRAVEL COST | \$219 |
| CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost) | COST/ITEM |
| 1/4 mile Contracted Fence Repair @ \$2.00/lineal foot x 1,320 lineal feet x 1 fiscal year | \$2,640 |
| TOTAL CONTRACT COST | \$2,640 |

III. SPECIFICATION COST SUMMARY

| FISCAL YEAR | UNIT | UNIT COST | # OF UNITS | COST | FUNDING SOURCE | METHOD |
|--------------|-------|-----------|------------|---------|----------------|--------|
| FY-1 | miles | \$901.75 | .25 | \$3,607 | F | C |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| TOTAL | miles | \$901.75 | .25 | \$3,607 | F | 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 | F |
| 4. Estimate based upon government wage rates and materials cost. | F |
| 5. No cost estimate required - cost charged to Fire Suppression Account | |

P = Personnel Services M = Materials/Supples 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: Refer to Appendix I: Operations Assessment and Appendix III- Fire Suppression Impacts Map.

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|---|----------------------------|------------|
| SPECIFICATION TITLE: | Noxious Weed-Invasive Species Control | JURISDICTIONS: | USFWS-HRNM |
| PART E LINE ITEM: | #3-Noxious Weed-Invasive Species Control | FISCAL YEAR: | 2003-2004 |
| ESR REFERENCE #: | 6.3.2.1 Non-native Invasive Plant Control | SPECIFICATION TYPE: | ES |

I. WORK TO BE DONE

| |
|---|
| <p>1. General Description: Control noxious weed infestations remaining within Shooting Range Fire area prior to seed-set and maturation. Current weed species observed include Rush skeleton weed (<i>Chondrilla juncea</i>), diffuse knapweed (<i>Centaurea diffusa</i>), kochia (<i>kochia scoparia</i>), and Russian thistle (<i>Salsola kali</i>). Utilize integrated pest management techniques (herbicides, biological, mechanical and cultural control methods) as appropriate to prevent the spread and establishment of noxious weeds within the fire area. Also, suppression of Cheatgrass (<i>Bromus tectorum</i>) for establishment of native grass seeds.</p> <p>2. Location (Suitable) Sites: Control all visible noxious weed populations along roads and suppression lines within the fire area. Control sites identified include dozerlines, rush skeleton weed, diffuse knapweed, kochia, and Russian thistle populations.</p> <p>C. Design/Construction Specifications:</p> <ol style="list-style-type: none"> Control noxious weeds as identified in USFWS and DOE monitoring surveys (approximately 70% of fire area -350 ac.) prior to seed set in accordance with guidelines contained within ALE and DOE management plans and approved Environmental Assessments. Recommended herbicide for cheatgrass control is Roundup© (glyphosphate). Application at low concentrations (3.5-6.0oz./acre) during late winter-early spring will minimize damage to native species. Recommended herbicide for Rush Skeleton weed, diffuse knapweed, kochia, and Russian thistle is Transline (Clopyralid) @ 1pt/gallon spot treatment and 2,4-D @ 2.5oz/gallon. Application methods may include hand sprayer or tractor/ATV mounted sprayer. Aerial application is preferred if environmental conditions permit. Winds in the area to be sprayed should be less than 3 MPH. A buffer of 150 feet will be adhered to around all open water or wetland areas. Applicator will be state certified. Follow-up control in subsequent years on all new infestation sites as identified through noxious weed monitoring surveys. <p>D. Purpose of Treatment Specification: Protect the ecological integrity and site productivity of shrub-steppe plant communities within the ALE and DOE lands in accordance with established management plan guidelines.</p> <p>E. Treatment Effectiveness Monitoring: Conduct fall and spring surveys for noxious weeds and invasive species establishment. Should new occurrences be identified, immediate action will be taken to control new infestations.</p> |
|---|

II. LABOR, MATERIALS AND OTHER COST

| PERSONNEL SERVICES (Grade @ cost/hour X # hours X fiscal year = cost 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 |
| 27 Gallons of Roundup© @ \$15/gallon x 2 fiscal years | \$810 |
| TOTAL MATERIALS AND SUPPLY COST | \$810 |
| TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost | COST/ITEM |
| 4 X 4 Pickup @ 200 miles/rt x 3 round trips x .365/mile x 2 fiscal years | \$438 |
| TOTAL TRAVEL COST | \$438 |

| CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost | COST/ITEM |
|---|------------------|
| Herbicide Application- 500 acres @ \$40/acre x 2 fiscal years | \$40,000 |
| TOTAL CONTRACT COST | \$40,000 |

III. SPECIFICATION COST SUMMARY

| FISCAL YEAR | UNIT | UNIT COST | # OF UNITS | COST | FUNDING SOURCE | METHOD |
|--------------------|--------------|------------------|-------------------|-----------------|-----------------------|---------------|
| FY-1 | acres | \$41.25 | 500 | \$20,624 | ESR | C |
| FY-2 | acres | \$41.25 | 500 | \$20,624 | ESR | C |
| FY-3 | | | | | | |
| TOTAL | acres | \$82.50 | 500 | \$41,248 | ESR | C |

FUNDING SOURCES:

F = Fire Suppression Account

SPECIFICATION TYPE

ES = Emergency Stabilization P = Agency Personnel Services

ESR = Emergency Stabilization & Rehabilitation

R = Rehabilitation

OP/O = Agency Operating or Other Account

FS = Fire Suppression

EWP = Emergency Watershed Protection (NRCS)

METHODS FOR COMPLETION:

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, T |
| 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/Supples

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: Refer to Appendix I: Vegetation Assessment. |
|---|

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|---|----------------------------|------------|
| SPECIFICATION TITLE: | Ecological Stabilization - Native grass seeding | JURISDICTIONS: | USFWS-HRNM |
| PART E LINE ITEM: | #4- Ecological Stabilization - Native grass seeding | FISCAL YEAR: | 2003/2004 |
| ESR REFERENCE #: | 6.3.2.3 Revegetation | SPECIFICATION TYPE: | ES |

I. WORK TO BE DONE

A. General Description: Apply native seed mix in burned area to stabilize ecological integrity of native shrub steppe community, prevent invasion by noxious weeds and non-native species, and to limit erosion and stabilize soils.

B. Location (Suitable) Sites: Fire area on Monument lands (~500 acres) is located adjacent to hwy 225 approximately 5 miles north of Benton City, WA, on the Arid Lands Ecology Reserve. Reseeding should take place across the entire fire area (500 acres) to stabilize soils, limit weed invasion, and promote ecological integrity.

C. Design/Construction Specification(s):

Purchase native seed mix: in appropriate amounts to stabilize soils and ecological function according to the following specifications for native seed mix.

Seed Mix: (500 acres):

| | | |
|--|-----------------|-----|
| Bluebunch wheatgrass (<i>Pseudoroegneria spicata</i>) | 6 lbs./ac. PLS | 34% |
| Indian Ricegrass (<i>Oryzopsis hymenoides</i>) | 4 lbs./ac. PLS | 22% |
| Sandberg's bluegrass (<i>Poa sandbergii</i>) | 5 lbs./ac. PLS | 28% |
| Squirreltail, <i>Sitanion hystrix</i> | 2 lbs./ac. PLS | 11% |
| Wyoming Big sagebrush (<i>Artemisia tridentata</i> var. <i>wyomingensis</i>) | 0.1 lbs/ac PLS | 01% |
| Yarrow, (<i>Achillea millefolium</i>) | 0.5 lbs./ac PLS | 02% |
| Winterfat, (<i>Ceratoides lanata</i>) | 0.2 lbs/ac PLS. | 01% |

Seed Mixture Selection and Certification: 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 Monument managers (Deputy Project Leader or Natural Resources Specialist) that the seed conforms to the purity and germination requirements in the specification. Seed must also be source identified as originating from the Columbia Basin and should be grown in the Columbia Basin Ecoregion.

Delivery: Deliver certified weed-free seed sold on pure live seed basis. Deliver to Hanford Reach National Monument.

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 December, 2003, or no later than late January, 2004.

Application Rate: Seed will be applied at the above rates, on a PLS/acre basis.

Application Method: Seed will be applied by aerial seeding from a fixed wing aircraft or helicopter.

D. Purpose of Treatment Specification: To promote ecological recovery of native shrub/steppe ecosystem, to prevent invasion by non-native species and noxious weeds, and to stabilize soils.

E. Treatment Effectiveness Monitoring: Monitor to determine effectiveness and if a second seeding is needed. See specification 'Monitor Revegetation and Seeding Effectiveness'.

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 |
|--|------------|
| Seed mix – @ \$350.00/acre x 500 acres x 1 year | \$ 175,000 |
| TOTAL MATERIALS AND SUPPLY COST | \$175,000 |

| 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 |
|--|-----------|
| Seed application @ \$12/acre x 500 acres x 1 fiscal year | \$ 6,000 |
| Move in and Move out costs (mobilization expense) @ \$3000 x 1 fiscal years | \$ 3,000 |
| TOTAL CONTRACT COST | \$ 9,000 |

III. SPECIFICATION COST SUMMARY

FISCAL

| <u>YEAR</u> | <u>UNIT</u> | <u>UNIT COST</u> | <u># OF UNITS</u> | <u>COST</u> | <u>FUNDING SOURCE</u> | <u>Method</u> |
|-------------|-------------|------------------|-------------------|-------------|-----------------------|---------------|
| FY-1 | acres | \$350 | 500 | \$175,000 | ESR | C |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| Total | Acres | \$350 | 500 | \$175,000 | 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

V. 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, 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: Refer to Vegetation Assessment- Appendix I

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|--|----------------------------|-------------------|
| SPECIFICATION TITLE: | Cultural Resource Assessment-Suppression | Jurisdictions: | USFWS-HRNM |
| PART E LINE ITEM: | #5 Cultural Resource Damage Assessment- Suppression | FISCAL YEAR: | 2003-2004 |
| ESR REFERENCE #: | 6.3.1 Cultural Resources | SPECIFICATION TYPE: | ES |

I. WORK TO BE DONE

| |
|--|
| <p>A. General Description: Within 90 days of control of the fire, complete a cultural resource field inventory and evaluation of previously recorded and documented sites within the area burned by the Shooting Range Fire in order to develop a condition assessment for cultural resource compliance and rehabilitation purposes.</p> <p>B. Location (Suitable) Sites:</p> <ol style="list-style-type: none"> Review all disturbed areas within the fire perimeter for cultural/archaeological resources that may have been affected during suppression actions The location and description of cultural resources is sensitive and exempt from public disclosure under the Archaeological Resources Protection Act of 1979 and the Freedom of Information Act. The Department of Energy and US Fish and Wildlife Service maintain their own cultural resource records, and may issue detailed written descriptions of sites to be evaluated by field personnel, including site descriptions, GPS and/or TSR, and cross-referenced to agency maps. <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> Visit and evaluate each recorded site and all disturbed areas within the perimeter of the burned area. These evaluations should be completed within 90 days of the control of the fire, unless extended by the affected agency as authorized by a specific time waiver approved by NIFC. Site damage assessments should include post fire effects such as wind deflation, undercutting and loss of integrity, as well as wind-aided burial or erosion of surface features, increased visibility and vulnerability to looting. Develop mitigation, rehabilitation or monitoring recommendations, measures and cost estimates for each site that may be threatened by burial, destabilization, exposure to the public, or erosion consequent to fire effects. Initiate consultation with Tribal governments, Native American Indian communities and SHPO as required under 36 CFR 800. Implement the individual site treatments through a supplemental specification for Cultural Resources General Rehabilitation and Preservation Techniques for Sites. <p>D. Purpose of Treatment Specification: This action is necessary to meet legislative mandates under Section 106 of the National Historic Preservation Act and 36 CFR 800.</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 |
|--|------------------|
| Photographic film and processing @ \$12/roll x 5 rolls | F |
| TOTAL MATERIALS AND SUPPLY COST | F |

| TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost) | COST/ITEM |
|--|------------------|
| 4 X 4 Pickup @ 200 miles/day x 10 days x .365/mile x 1 fiscal year | F |
| TOTAL TRAVEL COST | F |

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

III. SPECIFICATION COST SUMMARY

FISCAL

| <u>YEAR</u> | <u>UNIT</u> | <u>UNIT COST</u> | <u># OF UNITS</u> | <u>COST</u> | <u>FUNDING SOURCE</u> | <u>Method</u> |
|-------------|-------------|------------------|-------------------|-------------|-----------------------|---------------|
| FY-1 | | | | | F | P |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| Total | | | | | F | 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, T |
| 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: Refer to Appendix I: Cultural Resources Assessment and FireMap- Appendix III. |
|---|

INTERAGENCY

BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

| | | | |
|----------------------|--|---------------------|----------------|
| SPECIFICATION TITLE: | Cultural Resource Assessment- Stabilization | Jurisdictions: | USFWS- HRNM |
| PART E LINE ITEM: | #6 Cultural Resource Damage Assessment- Stabilization | FISCAL YEAR: | 2003-2004 |
| ESR REFERENCE #: | 6.3.1 Cultural Resources | SPECIFICATION TYPE: | ES |

I. WORK TO BE DONE

| |
|--|
| <p>A. General Description: Complete a cultural resource field inventory and evaluation of previously recorded and documented sites within the area burned by the Shooting Range Fire in order to develop a condition assessment for cultural resource compliance and rehabilitation purposes.</p> <p>B. Location (Suitable) Sites:</p> <ol style="list-style-type: none"> Review all known or discovered historical and cultural sites within the fire perimeter for cultural/archaeological resources that may have been disturbed during suppression actions No known sites were discovered during the fire event however unrecorded historical sites were found during field reviews that have been impacted by the fire. The location and description of cultural resources is sensitive and exempt from public disclosure under the Archaeological Resources Protection Act of 1979 and the Freedom of Information Act. The Department of Energy and US Fish and Wildlife Service maintain their own cultural resource records, and may issue detailed written descriptions of sites to be evaluated by field personnel, including site descriptions, GPS and/or TSR, and cross-referenced to agency maps. <p>C. Design/Construction Specification(s):</p> <ol style="list-style-type: none"> Visit and evaluate each recorded site and all disturbed areas within the perimeter of the burned area. These evaluations should be completed within 90 days of the control of the fire, unless extended by the affected agency as authorized by a specific time waiver approved by NIFC. Site damage assessments should include post fire effects such as wind deflation, undercutting and loss of integrity, as well as wind-aided burial or erosion of surface features, increased visibility and vulnerability to looting. Develop mitigation, rehabilitation or monitoring recommendations, measures and cost estimates for each site that may be threatened by burial, destabilization, exposure to the public, or erosion consequent to fire effects. Initiate consultation with Tribal governments, Native American Indian communities and SHPO as required under 36 CFR 800. Implement the individual site treatments through a supplemental specification for Cultural Resources General Rehabilitation and Preservation Techniques for Sites. <p>D. Purpose of Treatment Specification: This action is necessary to meet legislative mandates under Section 106 of the National Historic Preservation Act and 36 CFR 800.</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 |
|--|------------------|
| Photographic film and processing @ \$12/roll x 5 rolls | \$60 |
| TOTAL MATERIALS AND SUPPLY COST | \$60 |

| TRAVEL COST (Personnel @ rate X round trips X fiscal year = cost) | COST/ITEM |
|--|------------------|
| 4 X 4 Pickup @ 200 miles/day x 10 days x .365/mile x 1 fiscal year | \$730 |
| TOTAL TRAVEL COST | \$730 |

| CONTRACT COST (Labor, equipment, and travel @ cost/hr. X hrs. X fiscal year = cost) | COST/ITEM |
|--|------------------|
| Tribal consulting, oral history, other consulting parties x 5 days @ \$350/day | \$1,750 |
| Contract Archaeologist @ \$35/hr. x 40 hours x 1 fiscal year | \$1,400 |
| TOTAL CONTRACT COST | \$3,940 |

III. SPECIFICATION COST SUMMARY

FISCAL

| <u>YEAR</u> | <u>UNIT</u> | <u>UNIT COST</u> | <u># OF UNITS</u> | <u>COST</u> | <u>FUNDING SOURCE</u> | <u>Method</u> |
|-------------|-------------|------------------|-------------------|-------------|-----------------------|---------------|
| FY-1 | surveys | \$788 | 5 | \$3,940 | ES | C |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| Total | surveys | \$788 | 5 | \$3,940 | ES | C |

FUNDING SOURCES:

F = Fire Suppression Account
ESR = Emergency Stabilization & Rehabilitation
O/P/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, M, T |
| 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/Supples **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: Refer to Appendix I: Cultural Resources Assessment and FireMap- Appendix III. |
|---|

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

PART F - SPECIFICATION

| | | | |
|-----------------------------|--|----------------------------|-------------------|
| SPECIFICATION TITLE: | Noxious Weed and revegetation effectiveness monitoring | Jurisdictions: | USFWS-HRNM |
| PART E LINE ITEM: | #7 Noxious weed and revegetation effectiveness monitoring | FISCAL YEAR: | 2003-2004 |
| ESR REFERENCE #: | 6.3.5 Monitoring | SPECIFICATION TYPE: | R |

I. WORK TO BE DONE

| |
|--|
| <p>A. General Description: Conduct monitoring for noxious weed infestations and of seeding treatment in first year following treatment to determine success of rehabilitation efforts on the Shooting Range Fire. Weed monitoring will include mapping to determine weed abundance and spread, seeding success will be monitored to assess establishment of native grasses, but also to evaluate reseeding as a method to control weed spread.</p> <p>B. Location (Suitable) Sites: Noxious weeds, including Rush skeleton weed (<i>Chondrilla juncea</i>), diffuse knapweed (<i>Centaurea diffusa</i>), kochia (<i>kochia scoparia</i>), and Russian thistle (<i>Salsola kali</i>), are located either in the fire area, or adjacent to the fire area. These upland weeds have the potential to invade any disturbed location. The entire fire area should be monitored for noxious weeds, but particular emphasis should be placed on the disclines and areas that burned particularly hot. The 507 acres within the Hanford Reach National Monument be monitored.</p> <p>C. Design/Construction Specification(s): Sampling plots shall be established in areas representing the range of major plant community types and important environmental variables (topographic variations, soil types, etc.) within the seeded areas.</p> <ol style="list-style-type: none"> 1. Sampling methodology will determine native species composition and percent cover, seedling density/ m² and vigor, and presence and abundance of invasive non-native plants. 2. Additional observations will be documented to record other factors such as herbivory, surface erosion, etc. 3. Sampling will be conducted during May-June of the first year to capture initial establishment, and during October (at the end of summer drought) to capture ultimate first year survival. 4. A minimum seedling establishment of 4 plants of large bunchgrass species and 10 plants of Sandberg's bluegrass per square meter should be present in seeded areas at the end of the first growing season. If seedling establishment does not meet this requirement then a second application of seed should be applied. 5. Abundance of cheatgrass (<i>Bromus tectorum</i>) or other invasive non-native species exceeding 10% cover during the first year following seeding will trigger appropriate action to control the invasives. If intensive mechanical or herbicide treatment of invasive species is indicated, the effected area may require reseeding after treatment. 6. A second year's monitoring is necessary to confirm survival of seedings, and in the event that a second seeding is applied. 7. 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 insure establishment of planted and seeded species for maintaining ecosystem structure and function as native wildlife and plant habitat, for prevention of noxious weed establishment, and to facilitate the vegetative recovery to native shrub-steppe plant communities.</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) 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 |
| Ecologist/Botanist: 10 days @ 250.00/day x 1 years | \$2,500 |
| Field Assistants: 1 x 10 days @ \$ 122/day x 1 years | \$ 1,220 |
| Travel and lodging: \$ 1,600.00 x 1 years | \$ 1,600 |
| Equipment, supplies, communications and photography: \$500.00 x 1 years | \$ 500 |
| TOTAL CONTRACT COST | \$ 5,820 |

III. SPECIFICATION COST SUMMARY

| FISCAL YEAR | UNIT | UNIT COST | # OF UNITS | COST | FUNDING SOURCE | METHOD |
|--------------|--------------|-----------------|------------|----------------|----------------|----------|
| FY-1 | acres | \$ 11.65 | 500 | \$5,820 | R | C |
| FY-2 | | | | | | |
| FY-3 | | | | | | |
| TOTAL | acres | \$ 11.65 | 500 | \$5,820 | R | 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 | M, 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: Refer to Vegetation Assessment- Appendix I

PART G - POST-REHABILITATION REQUIREMENT¹

The following are post-rehabilitation, implementation, operation, maintenance, monitoring, and evaluation actions beyond three years to ensure the effectiveness of initial investments. Estimated annual cost and funding source is indicated.

Emergency Stabilization

1. Continue effectiveness monitoring of treatments- (\$5,000-OP/O)
2. Continue noxious weed monitoring and treatment(\$5,000-OP/O)

Rehabilitation

1. Continue effectiveness monitoring of treatments- (\$5,000-OP/O)
2. Continue noxious weed monitoring and treatment(\$5,000-OP/O)

¹ Non-9262 funding

APPENDIX I - ESR BURNED AREA ASSESSMENT REPORTS

- **Vegetation Damage Assessment Report**
- **Cultural Resource Damage Assessment Report**
- **Suppression/Operations Assessment**



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 and monitoring needs supported by specifications to aid in vegetative recovery and soil stabilization.
- Evaluate potentials for invasive species encroachment into native plant communities within the fire area.
- Provide management recommendations to assist in vegetative recovery, watershed stabilization, site productivity and species habitat protection and rehabilitation.

2. ISSUES

- Suppression effects and short/long-term impacts to plant communities and vegetative resources within the Shooting Range Fire on federal and private lands.
- Protection and enhancement of other resource values including site productivity, wildlife habitat, vegetative resources, cultural resources and watershed stability.
- Management strategies which provide for the stabilization, natural regeneration and recovery of impacted areas.
- Monitoring of the planting/seeding effectiveness of rehabilitation efforts.
- Monitoring of impacted lands for the early detection and control of invasive and noxious weed species.

III. OBSERVATIONS

This report identifies and addresses known and potential impacts to vegetative resources within the Shooting Range Fire area, Fitzner-Eberhardt Arid Lands Ecology Reserve (ALE) near Richland, Washington.

The burned area consists of approximately 1391 acres of contiguous area, 507 acres of which were within the boundaries of the Monument. Vegetative resources provide forage and cover for a variety of wildlife species, aesthetic values, watershed stability, and biologically diverse plant associations. The particular area is near Rattlesnake Mountain and near/within the ALE. The ALE provides much on-going research due to its significant untouched shrub-steppe habitat. The ALE is a designated Research Natural Area (RNA), Important Bird Area (IBA) and is part of a National Energy Research Park (NERP).

Findings and recommendations contained within this assessment are based upon field reconnaissance of the fire area, interviews with local resource specialists, local land managers, and review of relevant documents and literature.

This report will detail the known damage to the vegetative resources; will discuss re-vegetation processes and future monitoring criteria, and will outline management considerations for recovery of vegetative resources.

B. Reconnaissance Methodology and Results

Ground reconnaissance was conducted on July 17, 2003. Photographs were taken and are in the photo documentation section of this plan. The fire burned in a mosaic pattern on approximately 15 % of the fire area. Vegetation resources were significantly reduced over the remainder of the fire area. The standing biomass of shrubs, grasses, forbs, were 70- 100 % consumed over approximately 85% of the fire area.

Literature available at the Monument headquarters relating to vegetation resources in the area was consulted for baseline data relating to pre-fire conditions on the burned area.

1. Vegetation:

The Shooting Range fire burned approximately 1391 acres of federal and private lands near Horn Rapids on the Yakima River. The area is part of the recently designated Hanford Reach National Monument. The Monument area was identified as unique and deserving of full protection by Presidential proclamation in 2000. One of the unique features of the Monument that contributed to its establishment is the diversity and vast size of native plant communities. The area has been surveyed by The Nature Conservancy of Washington and the Washington Natural Heritage Program. These surveys have identified a total of 17 terrestrial, native plant community types (or elements) that occurred as 48 separate element occurrences on the ALE Reserve and North Slope. These elements are unique in the state for their character and plant associations. Additionally, 112 populations/occurrences of 28 rare plant taxa were located across the Hanford Site. This area also burned in the 24 Command Fire of 2000, and was not rehabilitated due to missed windows of opportunity and lack of funding support because of a change in national BAER policy.

Primary plant communities impacted by the fire included the following plant associations:

Big Sagebrush/Sandberg's bluegrass: This community type is characterized by big sagebrush, Sandberg's bluegrass, spiny hopsage (*Grayia spinosa*) and low forb diversity. The plant community type is generally confined to locations too dry for bluebunch wheatgrass on soil that is finer-textured than is typical for needle-and-thread associations.

Big Sagebrush/Needle-and thread: Big sagebrush is the dominant shrub, although bitterbrush (*Purshia tridentata*) commonly occurs at varying levels. Thickspike wheatgrass (*Agropyron dasystachum*) may occur in the understory. Where intermixed with bluebunch wheatgrass, needle-and-thread is thought to increase with disturbance.

Big Sagebrush/Cheatgrass: This community is primarily composed of Big sagebrush with an understory dominated by cheatgrass (*Bromus tectorum*).

Winterfat/Sandberg's Bluegrass: This community has winterfat as the dominant shrub and Sandberg's bluegrass as the major grass. It occurs at 800' in elevation on the ALE Reserve.

The above list of plant communities is a very simplified accounting of the major plant communities that have been impacted by the Shooting Range Fire area. Species diversity within each of the major community types has been altered in some areas due to the activities of neo-European people that entered the region beginning 200 years ago. In more recent history, alien plants were introduced and established a foot-hold in the shrub-steppe communities with the advent of livestock grazing in the mid-1800's and through agricultural cultivation and urbanization later in the century.

Vegetation within this area has also been altered through the establishment of cheatgrass within sage communities and the shortening of the natural fire return interval. Historically, fire return intervals were between 50-100 years in the shrub-steppe region. Fires burned in a mosaic fashion across the landscape leaving many healthy remnant stands of bunchgrass and sage. The mosaic fire patterns allowed for the survival of healthy sage communities and habitat for wildlife species.

Within the Big sagebrush community, cheatgrass provided ladder fuels for fire to quickly spread into and throughout these stands. In areas where native bunchgrass dominated the understory, fire impacts to some shrub stands were greatly reduced.

2. Vegetation/Structural Impacts

Vegetation resources were directly impacted by the Shooting Range Fire and by suppression tactics utilized to control the fire. Documented impacts to vegetation resulted from:

- a) Construction of diskline on previously undisturbed sites

- b) Impacts to native microbiotic crust, shrub and grass species during line construction, suppression and mop-up activities.
- c) Vegetation losses due to fire intensity. Most grassland communities were completely consumed and/or scorched. Some additional loss is expected within remaining shrub communities.
- d) Loss of the organic litter layer on approximately 95 percent of the fire.
- e) Damage to structural improvements, (e.g. boundary fence) by suppression actions. Fences were cut or damaged.

B. Vegetation Recovery

Revegetation of the fire area through natural processes will take between 7-10 years to visually represent pre-fire conditions. However, due to the presence of non-native plants and noxious weeds, the site is at risk of becoming dominated by non-native annuals such as cheatgrass and tumbleweed. Without active restoration it is unlikely that the site will recover to its pre-fire characteristics. Some impacted plant communities will take decades to re-establish back to pre-fire levels. Most research indicates that fire will eliminate sagebrush for at least several years. Because big sagebrush reproduces by seed and not by sprouting, recovery can be very prolonged on many sites. In most cases, sagebrush eventually returns, however, since this site burned in 2000, sagebrush species recovery will certainly be reduced for the next several decades. Concern has been expressed about the re-establishment of critical sagebrush communities for agency listed T&E wildlife habitat and the protection of the ecological integrity of the shrub-steppe community.

Other direct impacts to vegetation include the loss of shrub lands previously occupied by dense vegetation which are now open and traversable. Increased visitor/research use into areas off of designated road systems can be expected and could have negative impacts to wildlife, microbiotic crusts, vegetative recovery, and cultural resources. Impacts to natural regeneration process and the protection of cultural resources will be jeopardized if travel within the fire area is not regulated for the remainder of this calendar year.

1. Noxious Weed Establishment

Rush skeleton weed (*Chondrilla juncea*), diffuse knapweed (*Centaurea diffusa*), kochia (*kochia scoparia*), and Russian thistle (*Salsola kali*) infestations are located within or near the fire area. These noxious weeds spread vigorously, and are a threat to the burned area.

2. Revegetation

Revegetation in the area should be conducted in order to protect soils in the area, to reduce the change of further erosion and degradation. Additionally, because the site is at risk from non-native species and noxious weeds, revegetation must be completed to protect the plant community and ecology of the site. As stated above, it is unlikely that the fire area will recover without some intervention and active restoration effort.

IV. RECOMMENDATIONS

A. Emergency Stabilization : (specification related)

The following recommendations are offered to assist in the timely recovery of the Shooting Range Fire:

#1-Dozer/Disc line Rehabilitation- Reseed all disturbed areas resulting from suppression actions with native seed species to protect the ecological integrity of the area.

#3- Noxious Weed- Invasive Species Control- Control noxious weed infestation remaining within the Shooting Range Fire area utilizing integrated pest management techniques.

#4- Ecological Stabilization- Native Grass Seeding- Apply native seed mix in burned area to stabilize ecological integrity of native shrub steppe community, prevent invasion by noxious weeds and non-native species, and to limit erosion and stabilize soils.

B. Rehabilitation (non- specification related)

#7- Monitor Noxious weed and Revegetation Effectiveness- Monitor for noxious weed infestations and of seeding treatment in first year following native grass seed planting to determine success of revegetation efforts and to determine if additional treatments are required to protect and maintain ecological integrity of the site.

V. References:

Final Report. 1994-1999. Biodiversity Inventory and Analysis of the Hanford Site. The Nature Conservancy of Washington.

USFWS. Draft Comprehensive Plan and Environmental Assessment. Arid Lands Ecology Refuge. 10/99.

1995 Annual Report. Biodiversity Inventory and Analysis of the Hanford Site. The Nature Conservancy of Washington.

Field Guide to Washington's Rare Plants: Washington State Department of Natural Resources, 2000.

Fire Effects Information System (FEIS)- National Interagency Fire Center Web Site

Proclamation 7319 of June 9, 2000. Establishment of the Hanford Reach National Monument.

National Wildlife Refuge System Improvement Act of 1997.

USFWS. Fire Management Handbook. Emergency Fire Rehabilitation Standards.

Joel G. Peterson. 1995. . Ecological Implications of Sagebrush Manipulation.

1972. Federal Natural Research Areas in Oregon and Washington- Rattlesnake Hills RNA.

C.A. Brandt et al. 1999. Plant Reestablishment After Soil Disturbance: Effects on Soil, Treatment, and Time.

Steven O. Link et al. 1990. Response of a Shrub-Steppe Ecosystem to Fire: Soil Water and Vegetational Change.

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Jennifer Meisel, Biological Technician - Hanford Reach National Monument 509-371-1801

**U. S. DEPARTMENT OF THE INTERIOR
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION TEAM**

Shooting Range Fire

CULTURAL RESOURCE ASSESSMENT

I. OBJECTIVES

- Identify and protect previously recorded or documented prehistoric and historic cultural resources within the fire perimeter area.
- Assess damage to known and documented archaeological sites, historic structures, and cultural landscape features from the effects of wildfire and suppression activities.
- Inventory areas disturbed by fire suppression activities and recommend treatments for those cultural properties adversely affected by suppression and rehabilitation actions.

II ISSUES

- Assessment of fire and fire suppression effects on previously documented cultural resources as well as those associated with rehabilitation of the Shooting Range Fire.
- Protection of cultural resources from suppression-related effects;
- Inventory of cultural properties potentially affected by the wildfire and fire suppression activities;
- Protection of prehistoric and historic archaeological resources, culturally significant locations, historic structures, and historic landscapes within the fire suppression and burned areas;
- Evaluation, monitoring, or preservation treatments for cultural resources affected by fire, suppression, or rehabilitation activities.

III OBSERVATIONS

a) Background Information

The following information is derived from several widely available sources and is intended to be a cursory overview of present knowledge to provide a context within which the fire, suppression activity, post-suppression inventory, and recommended cultural resource prescriptions may be considered. Supporting documents are cited in the Reference, Part V.

The HRNM contains extensive archaeological deposits left by more than 10,000 years of human activity. Several National Register of Historic Places Districts are located within the HRNM site. The remains of pithouses, graves, rock cairns, hunting and fishing camps, game drives and quarries are represented, as are the structural and archaeological remains of historic farming, ranching, road, irrigation, ferry crossings and other features of early settlement and mineral exploitation. The Yakama, Umatilla, Colville, Nez Perce Tribes and the Wanapum People maintain cultural ties to the area.

The Columbia Plateau region has been formed by basalt flows, catastrophic flooding, and environmental flux. Prehistoric cultural subsistence systems have been shaped by these changing conditions. The early

Holocene (ca. 10,000 years B.P.) was cooler and moister than present conditions. People at this time were probably quite mobile, concentrating on hunting activities. The environment became drier about 8,000 years B. P.; a pattern of seasonal subsistence collection of a wide variety of resources developed with a riverine base. With the return to a more moist and cool environment at approximately 4,500 years B. P. the regional culture began constructing house pits and had a hunter-gatherer subsistence pattern. There is a brief period (3,800 to 3,400 years B.P.) in the archaeological record for which no house pits have been found. When house pits reappear the hunter-gatherer lifestyle continues but with evidence for intensified food processing and food storage, thus setting the pattern for the Columbia Basin that remained into modern times.

The Monument is an important area to members of the Yakama, Umatilla, Colville and Nez Perce Tribes, as well as the Wanapum People. Their ancestors resided on the land, utilized its resources and in so doing created a culture closely woven with the landscape. This connection is retained with use of traditional properties for gathering and ceremonies.

Euro-Americans first came into the region with the Lewis and Clark expedition. They were followed by fur trappers, military units, and miners passing through on the major rivers and White Bluffs road by the 1860's. The lack of timber and fur-bearing animals, the presence of numerous, well-established Native Americans, and the scorching summers were among the salient reasons that the area was not immediately settled by Euro-Americans.

Like the tribes along the Columbia and Yakima rivers, when the Euro-Americans did settle, they placed ranches and farms adjacent to these important irrigation sources and transportation corridors. By 1880 cattle ranches were established and the railroad soon arrived. The towns of Hanford, White Bluffs, and Richland thrived along the riverbanks in the early 20th century. Oil exploration was conducted in the Rattlesnake Mountain and Rattlesnake Hills area in the 1920's and 1930's, but useful deposits were not found. Natural gas was discovered on Rattlesnake Mountain in the 1920's but the deposits proved too small to be a major continuing economic force. The remains of numerous exploration sites and gas wells are scattered along the foot of Rattlesnake Mountain. The federal government acquired the land for the Hanford Engineering Works in 1943 and proceeded to evacuate all civilians (Indians and whites) from the area.

Between 1955 and 1961 NIKE Ajax and Hercules missiles were deployed by the U.S. Army at four locations on the Hanford Site, three on the North Slope and one on the ALE. The White Bluff fire was adjacent to the main road system that was developed for accessing the NIKE Ajax missile site on the Wahluke plateau. An earlier road associated with the ferry for the Hanford town site traverses the bluff just below the fire.

B. Reconnaissance Methodology

Protection of human life and property from wildfire takes precedence over the protection of historic and prehistoric cultural properties. However, the diminishing numbers of archaeological sites, traditional cultural sites and resources of cultural importance representing millennia of human life must be provided protection whenever possible.

The explosive spread of the fire and the very limited cultural resource personnel available prevented any effective intervention during suppression. Cultural resource assessment and protection efforts began on July 17, 2002 with a cursory survey conducted by the HRNM archaeologist.

BAER policy recognizes cultural resources as a critical resource requiring assessment and protection. A guiding principle as well as a legal requirement of burned area stabilization and rehabilitation is to regard

archaeological sites and other materially fragile cultural resources when proposing emergency rehabilitation treatments. If post-fire conditions indicate erosion threats or other actual or potential watershed problems, cultural resources must receive special attention to ensure that their unique and irreplaceable values are given full consideration.

Incident-related damages to cultural resources fall in two broad categories: fire-related and suppression-related. Fire-related impacts include thermal fracture of, basalt, chert, granite and other stone artifacts, destabilization or destruction of structures and features. Other impacts include destruction of organic elements in an occupational or midden deposit, destabilization of soils within a site or landscape with resultant increased erosion and deflation of loosened sediments, and increased susceptibility to looting and surface collection due to greater visibility.

Suppression related impacts occur with disturbance or destruction from dozer line construction. Rehabilitation activities also may cause impacts, including restoration of dozer lines and restoration of range land.

C. Findings

Sites within the Shooting Range fire area range from lithic scatters to historic debris scatters, to hunting and gathering sites.

A preliminary inventory of pre-historic and historic sites on the fire area was conducted July 17, 2003. No previously recorded sites appear within documents maintained by the U.S. Fish and Wildlife Service. However, during the initial field review USGS bench marks and several historic debris scatters, lithic scatters and projectile points were noted.

Overall, the area burned at a low severity. The fire was wind-driven through native grasslands and cheatgrass and did not dwell long enough to completely consume all vegetation or to create hydrophobic soils. Fine plant roots were usually observed immediately below the surface, indicating that the organic composition of the soil and consequently of archaeological sites has not been affected to a significant extent within the main body of the fire. However, these areas have been significantly impacted by suppression line construction and could potentially negatively impact archaeological sites.

IV. RECOMMENDATIONS

Two specifications were prepared to address known and potential effects to cultural resources. These specifications may be accomplished by force account, contract or inter-agency agreement. The specifications address potential affects and specific rehabilitation needs for properties damaged by the fires and inventory/assessment of identified cultural resources.

The inventory of previously uninventoried areas in advance of ground disturbing activity for other rehabilitation projects will be accomplished under the compliance process for those undertakings. At this writing no subsurface deposits appear to have been damaged or are threatened by post fire erosion. Therefore no archaeological site data recovery is recommended at this time.

A. Emergency Stabilization (specification related)

#5- Cultural Resources Damage Assessment - Suppression

A field inventory of locations disturbed by the fire suppression effort, or areas with the potential to be effected by rehabilitation activities will be undertaken to identify potential effects to cultural resources. Evaluation of those effects and development of necessary mitigation or treatment plans will be undertaken as required.

#6- Cultural Resources Damage Assessment - Stabilization

A complete cultural resource field inventory and evaluation of identified sites within the area burned by the Shooting Range Fire will be accomplished. The product will be a condition assessment for cultural resource compliance and rehabilitation purposes. Site stabilization measures will be developed and implemented as warranted.

B. Rehabilitation- None

C. Management (non-specification related)

Post suppression rehabilitation of vegetation through planting of seeds or container plants has the potential to effect historic and prehistoric cultural properties. As specific revegetation plans are developed they must be reviewed by agency archaeologists, Tribes, and consultation with the State Historic Preservation Officer must be documented.

Specifications for rehabilitation undertakings must include Section 106 compliance, and include specific provisions for the protection of identified cultural resources. The contractor must be informed of areas to be avoided by flagging or UTM locations, and of the requirement to follow specific site treatment requirements. Inspectors must be responsible for monitoring and documenting compliance. Archaeological monitors may be required at specific locations. Monitors should have direct contact with the Contracting Officers Representative to ensure compliance with the cultural resource protection requirements.

The locations and expressions of archeological sites can not be determined with certainty. If in the course of any rehabilitation or restoration activity cultural resources are discovered all work in the vicinity must stop and the appropriate agency archaeologist consulted.

V. REFERENCES

2000, Establishment of the Hanford Reach National Monument. Presidential Proclamation 7319.

1998, Handbook of North American Indians, Volume 12: Plateau. Walker, Jr. Deward (Editor) Smithsonian institution, Washington.

1996, Draft National Register of Historic Places Multiple Property Documentation Form. Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington Prepared for U.S. Department of Energy, Richland Operations Office by Battelle Pacific Northwest National Laboratory

N.D., EE.II Hanford Area Land Use A Historical Perspective. M.S. Gerber, Ph.D

Jenna Gaston, Archaeologist- USFWS-Hanford Reach National Monument

509-371-1801

**U. S. DEPARTMENT OF THE INTERIOR
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION TEAM**

Shooting Range Fire

OPERATIONS ASSESSMENT

I. OBJECTIVES

- Identify, inventory, and map fire suppression impacts on jurisdictions affected by the fire.
- Specify rehabilitation measures to mitigate fire suppression impacts.
- Coordinate with local agencies so that specification recommendations are consistent with agency objectives.
- Protect natural and cultural resource values during rehabilitation efforts.

II. ISSUES

- Critical natural and cultural resources.
- Extensive soil disturbance on highly erodible soils from fire suppression activities.
- Damage to fences within fire perimeter associated with fire suppression actions.

III. OBSERVATIONS

A. Background

Please refer to fire history summary.

B. Reconnaissance Methodology and Results

On July 17, 2003 HRNM staff began evaluating resource impacts caused by the suppression effort. Team members did reconnaissance from the ground and obtained information from local sources. Information was also gathered from interviews with Division Supervisors, and from engine crews assigned to the fire.

C. Findings

The Shooting Range fire burned approximately 507 acres on the Hanford Reach National Monument and approximately 884 acres on adjacent BLM and State lands. Approximately 2.57 miles of discline was created to stop the fire. Approximately 1/4 mile of fence was impacted by suppression crews and the fire on the HRNM boundary.

Rehabilitation of suppression line is necessary to protect habitats from noxious weed infestation, ORV intrusion on the landscape and to minimize fragmentation of ecological areas. Monitoring of suppression lines is necessary to determine the need for future noxious weed mitigation needs. Disclines within the burned area on lands managed by FWS will be treated according to methods described in the Hanford Site Biological Resource Management Plan (HSBRMP, 1996). Private land owners to the east of the fire have not requested rehabilitation assistance to date.

There are five types of suppression impacts to be considered:

- Completion of Cultural Resource inventory in accordance with Section 106 regulations prior to rehabilitation initiation.
- Diskline built on FWS which require restoration and revegetation.
- Repair of the boundary fence and interior fence on the HRNM.

Access roads to the fire area that were used for suppression actions are now impassible due do the amount of lose powdery soils resulting from the destruction of soil structure in the upper horizons. These roads will only be rehabilitated after completion of the cultural resource inventory and weather permits further action (accumulation of adequate moisture).

IV. RECOMMENDATIONS

A. Fire Suppression

- **#1- Disk line and Dozer Line Rehabilitation.** Rehabilitate disk lines and other sites directly or indirectly impacted by fire suppression activities. Disk line rehab should be done at a later date due to the degraded soil conditions at this time. This activity should take place in the late fall or early winter when soil moisture content is higher.
- **#4- Cultural Resource Damage Assessment-** Conduct inventory of all suppression lines and impact areas prior to rehabilitation actions to determine suppression impacts and potential mitigation measures to cultural and historical resources.
- **#2- Fence Repair.** Repair suppression damaged fence around perimeter of the fire between HRNM boundary and other public lands.

B. Management (non-specification related)

- Continue to review rehabilitation specifications with operators and other personnel associated with implementation of the BAER Plan to insure rehabilitation specifications are clearly understood for protection of sensitive resources and land productivity.
- Guarantee safety of personnel assigned to rehab operational assignments in the fire area.
- Monitor suppression related damage on dirt roads following fall and winter moisture events to see if additional rehab measures are necessary.

V. CONSULTATIONS

Greg Hughes, Project Leader FWS

Jenna Gaston, Archaeologist, FWS

Jennifer Meisel, Biological Technician, FWS

Eric Hagen, Fire Management Officer, FWS
Mike Ritter, Deputy Project Leader, FWS
David N. Smith, Natural Resource Specialist, FWS

VI. REFERENCES

USDI, 1995. BAER Field Team Leader Reference Book
DOE, 1996. Hanford Site Biological Resource Management Plan

Jack Heisler, Refuge Operations Specialist -USFWS

APPENDIX II - ENVIRONMENTAL COMPLIANCE

ENVIRONMENTAL COMPLIANCE CONSIDERATIONS, DOCUMENTATION, AND CONSULTATIONS

Shooting Range Fire Burned Area Emergency Rehabilitation Plan

FEDERAL, STATE, AND PRIVATE LANDS ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES

All projects proposed in the Shooting Range Fire Burned Area Emergency Rehabilitation (BAER) 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); Department of the Interior Manual, Part 516, U.S. Fish and Wildlife Service, NEPA Guidelines, Part 516 DM 6, Appendix 1; and DOE, NEPA Regulations (10 CFR Part 1021). This Appendix documents the BAER Team considerations of NEPA compliance requirements for prescribed rehabilitation and monitoring actions described in this plan for all jurisdictions affected by the Shooting Range Fire burned area emergency rehabilitation.

B. RELATED PLANS AND CUMULATIVE IMPACTS ANALYSIS

Draft Hanford Biological Resources Management Plan and Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement: The BAER Team Environmental Protection Specialist reviewed the Draft Hanford Biological Resources Management Plan (1996) and Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement (September 1999) and in consultation with the Department of Energy (DOE) NEPA coordinator determined that actions proposed in the Shooting Range Fire BAER Plan within the boundary of the Hanford National Laboratory are consistent with the management objectives established in the Land-Use Plan. The EIS incorporates the management plan by reference. The EIS/management plan specifically addresses bulldozer lines and provides NEPA compliance for bulldozer line rehabilitation under NEPA.

Arid Lands Ecology (ALE) Facility Management Plan: The BAER Team Environmental Protection Specialist reviewed the Arid Lands Ecology (ALE) Facility Management Plan (1993) and determined that actions proposed in the Shooting Range Fire BAER Plan within the boundaries of the ALE, now incorporated as part of the Hanford Reach National Monument, is consistent with the plan.

Cumulative Impact Analysis: Cumulative effects are the environmental impacts resulting from the incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, both Federal and non-Federal. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. The emergency protection and rehabilitation treatments for areas affected by the Shooting Range Fire, as proposed in the Shooting Range Fire BAER Plan, do not result in an intensity of impact (i.e. major ground disturbance, etc.) that would cumulatively constitute a significant impact on the quality of the environment. The treatments are consistent with the above jurisdictional management plans and associated environmental compliance documents and categorical exclusions listed below.

C. APPLICABLE AND RELEVANT CATEGORICAL EXCLUSIONS

U.S. Fish and Wildlife Service: The individual actions proposed in this plan for Hanford Reach National Monument are Categorically Excluded from further environmental analysis as provided for in the Department of the Interior Manual Part 516 and U.S. Fish and Wildlife Service, NEPA Guidelines, Part 516 DM 6, Appendix 1. 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.

Applicable Departmental Categorical Exclusions

- 516 DM2 App. 2, 1.6 Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research and monitoring activities.
- 516 DM 6 App. 4.4 A Operations, maintenance, and replacement of existing facilities (includes road maintenance).
- 516 DM 6 App. 4.4 L(5) Emergency road repairs under 23 U.S.C. 125.
- 516 DM 6 App. 7.4 C(3) Routine maintenance and repairs to non-historic structures, facilities, utilities, grounds and trails.
- 516 DM 6 App. 7.4 C(19) Landscaping and landscape maintenance in previously disturbed or developed areas.

Applicable U.S. Fish and Wildlife Service Categorical Exclusions

- 516 DM 6 App. 1.4B (1) Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources which involve negligible animal mortality of habitat destruction, no introduction of contaminants, or no introduction of organisms not indigenous to the affected ecosystem.
- 516 DM 6 App. 1.4B (3) i The installation of fences.
- 516 DM 6 App. 1.4B (3)iii The planting of seeds or seedlings and other minor revegetation actions.
- 516 DM 6 App. 1.4B (3)v The development of limited access for routine maintenance and management purposes.
- 516 DM 6 App. 1.4B (5) Fire management activities, including prevention and restoration measures, when conducted in accordance with Departmental and Service procedures.516 DM 6 App. 1.4B (6). The reintroduction or supplementation (e.g. stocking) of native, formerly native, or established species into suitable habitat within their historic or established range, where no or negligible environmental disturbances are anticipated.

D. STATEMENT OF COMPLIANCE FOR THE SHOOTING RANGE FIRE BURNED AREA EMERGENCY REHABILITATION PLAN

This section documents consideration given to the requirements of specific environmental laws in the development of the Shooting Range Fire BAER Plan. Specific consultations initiated or completed during development and implementation of this plan are also documented. The following executive orders and legislative acts have been reviewed as they apply to the Shooting Range Fire BAER Plan:

1. National Historic Preservation Act (NHPA). The BAER Team archeologists have initiated necessary consultation with the Washington State Historic Preservation Office (SHPO) and the Yakama, Umatilla, Nez Perce, and Wanapum Tribes regarding treatments proposed in the Shooting Range Fire BAER Plan.
2. Executive Order 11988. Floodplain Management. No treatments are proposed within the 100-year floodplain.
3. Executive Order 11990. Protection of Wetlands. No treatments are proposed within jurisdictional wetlands.
4. Executive Order 12372. Intergovernmental Review. Coordination and consultation is ongoing with affected Tribes, Federal, State, and local agencies. A copy of the BAER Plan will be disseminated to all affected agencies.
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 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 BAER Team wildlife biologist and vegetation specialists have consulted with the Service and Washington Department of Fish and Wildlife regarding actions proposed in this plan and potential affects on Federally and State listed species. Individual agencies are responsible for continued consultations during plan implementation.
7. Secretarial Order 3127. Although contaminated sites are known to occur on properties owned by the Hanford National Laboratory, no treatments are proposed that would affect contaminated sites. There are no known contaminated sites on other jurisdictions affected by the Shooting Range Fire.
8. Clean Water Act. No treatments are proposed within jurisdictional wetlands.
9. Clean Air Act. Federal Ambient Air Quality Primary and Secondary Standards are provided by the National Ambient Air Quality Standards, 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 Shooting Range 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 Shooting Range Fire burned area.

E. CONSULTATIONS

Department of Energy, Hanford National Laboratory

Tom Ferns, Program Manager, Richland Operations Office

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

(Yes) (No)

- () (X) Adversely affect Public Health and Safety
- () (X) Adversely affect historic or cultural resources, wilderness, wild and scenic rivers aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
- () (X) Have highly controversial environmental effects.
- () (X) Have highly uncertain environmental effects or involve unique or unknown environmental risks.
- () (X) Establish a precedent resulting in significant environmental effects.
- () (X) Relates to other actions with individually insignificant but cumulatively significant environmental effects.
- () (X) Adversely effects properties listed or eligible for listing in the National Register of Historic Places
- () (X) Adversely affect a species listed or proposed to be listed as Threatened or Endangered.
- () (X) Threaten to violate any laws or requirements imposed for the "protection of the environment" such as Executive Order 1 1 988 (Floodplain Management) or Executive Order 1 1 990 (Protection of Wetlands).

National Historic Preservation Act

Ground Disturbance:

- () None
- (X) Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared under contract as specified by the ESR Plan.

A NHPA Clearance Form:

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

Other Requirements

(Yes) (No)

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

I have reviewed the proposals in the Shooting Range 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. ESR 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 environment review requirements.

ESR Team Environmental Protection Specialist

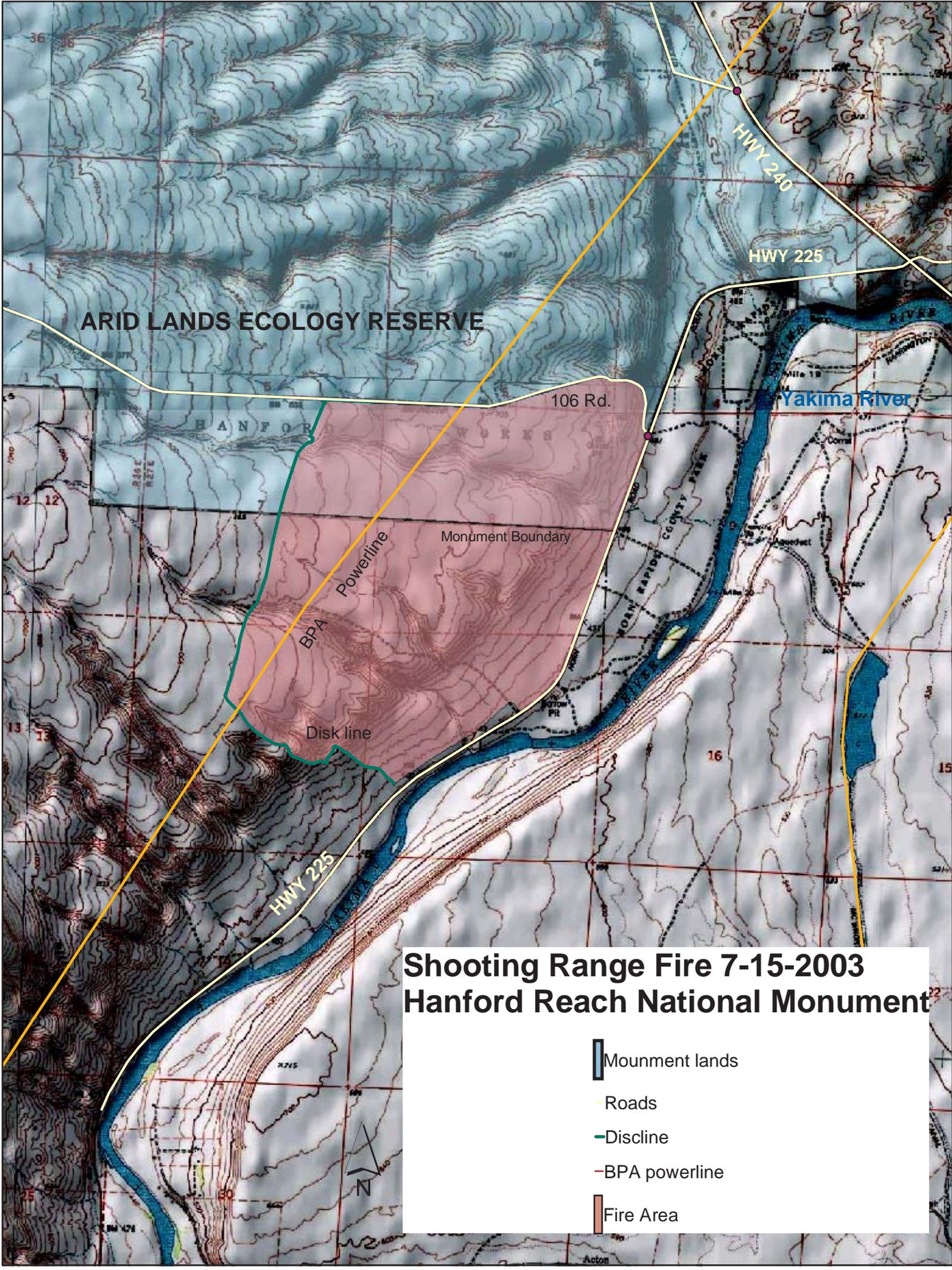
Date

Project Leader, Hanford Reach National Monument

Date

APPENDIX III - MAPS

- **Fire Perimeter**



ARID LANDS ECOLOGY RESERVE

Shooting Range Fire 7-15-2003 Hanford Reach National Monument

- Monument lands
- Roads
- Discline
- BPA powerline
- Fire Area



APPENDIX IV - PHOTO DOCUMENTATION



View of fire activity from hwy 240 looking across the Yakima River



High burn intensity fire activity observed from 106 Road



Fire activity and dust devil observed from Hwy 225



90% vegetation consumption in a drainage



Mosaic burn



Burned area, disk line, and native bunchgrass habitat adjacent to burn



Disk line around burn perimeter



Disk line adjacent to 106 road



Microbiotic crust and vegetation impacted by disk