

# MARSH FIRE

## BURNED AREA REHABILITATION PLAN

U.S. FISH AND WILDLIFE SERVICE  
HAVASU NATIONAL WILDLIFE REFUGE  
August 2005



Resprouting Non-Native Invasive Tamarisk Trees in Burned Area

FIRE DATE: June 22, 2005

AGENCY/UNIT: U.S. Fish and Wildlife Service  
Havasu National Wildlife Refuge  
PO Box 3009, Needles CA. 92363  
Phone: 760-326-3853

LOCATION/SIZE: Mojave County, Arizona  
206 acres  
Lat. and Long.: 34° 45' 44.30" x 114° 30' 46"

PREPARED BY: U.S. Department of Interior  
U.S. Fish and Wildlife Service  
Havasu National Wildlife Refuge and  
Regional Office BAER Team

Prepared and Submitted By:

Date:

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Mark Kaib, Regional Fire Ecologist

## REHABILITATION PLAN REVIEW AND APPROVAL

**I. Refuge manager approval that the Rehabilitation Plan meets approved land management plan management objectives.**

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Refuge Manager, John Earle

Date

**II. Regional Fire Management Coordinator concurrence that the plan fits the Interagency Burned Area Response Handbook technical definition for use of Rehabilitation funding.**

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Dave Lentz, Regional Fire Management Coordinator, Region 2

Date

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

- Approved** Explanation for Revision or Disapproval:
- Approved with Revision**
- Disapproved**

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Regional Director, Region 2

Date

**IV. Rehabilitation Funding Approval (check one box below):**

- Approved** Explanation for Revision or Disapproval:
- Approved with Revision**
- Disapproved**

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Chief, National Wildlife Refuge System

Date

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## EXECUTIVE SUMMARY

### Introduction

This plan has been prepared in accordance with USFWS policy. This plan provides burned area rehabilitation recommendations for all lands burned within the Marsh Fire perimeter which lie within the Havasu National Wildlife Refuge (NWR) administered by the U.S. Fish and Wildlife Service (USFWS). The primary goals of the Marsh Fire Burned Area Rehabilitation Plan are:

- Utilize integrated management activities to improve lands unlikely to recover naturally from severe wildland fire damage by emulating historic ecosystem structure, function, diversity, and dynamics according to approved land management plans.
- Restore or establish healthy, functioning ecosystems, even if these ecosystems cannot fully emulate historic or pre-fire conditions as specified in approved land management plans.
- Reduce fire hazards to the surrounding resources and facilities, through restoration of native riparian vegetation in place of more flammable and hazardous monotypic salt cedar (*Tamarix chinensis*).

The primary objective of the Marsh Fire Burned Area Rehabilitation Plan is to:

- Enhance native species colonization and reestablishment of the burned area by minimizing the cover of invasive non-native salt cedar via aggressive treatments with herbicide.

This plan will be managed and implemented by John Earle (Refuge Manager), Jack Allen and Aimee Haskew (Refuge Biologists).

The 206-acre Marsh Fire encompasses an island dominated by salt cedar, screwbean mesquite (*Prosopis pubescens*), quailbush (*Atriplex lentiformis*), arrow-weed (*Tessaria sericea*) and spike rush (*Eleocharis caribaea*), along with other native grasses and forbs. Cottonwood (*Populus fremontii*) and willow (*Salix goodingii*) are also found in some wetter parts of the burn. The fire burned with mixed severity mostly under moderate (with some high and low) severity. Many of the species listed above are in the early stages of resprouting or emerging from seed including the salt cedar. Aggressive herbicide treatment of salt cedar resprouts and seedlings will be a major step in the successful rehabilitation to native vegetation and reduction of wildland fire risk. Additionally, limited seeding and plantings of native species in areas with poor potential for natural regeneration may be necessary.

### Fire Background

The lightning caused Marsh Fire was reported around 5:00 pm on Sunday, June 22, 2002, at Havasu NWR approximately one mile northeast of Topock Marsh, Mojave County, Arizona. The incident was managed by Deon Steile as the Incident Commander, with suppression forces from the Mojave Valley Interagency Fire Station. The fire exhibited moderate fire behavior including limited spotting, and torching with winds up to 15 mph. The fire was contained to an island on refuge lands using fire engine personnel transported by boat. The fire was contained on June 24 at 1900 and declared controlled on June 29, 2002 at 1200.

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

The current burned area poses no threat to human safety or cultural resources in the area. The area lies within the Havasu NWR and is an important wildlife and recreational area east of the Colorado River between the river and Topock Marsh. The nearby marsh and adjacent riparian forests are habitat for the Threatened and Endangered Yuma clapper rail, and the southwestern willow flycatcher. The adjacent river and marsh is popular for boating, skiing, hunting, fishing, and is used by tourists and local residents. The majority of the burned area encompasses an entire island (Map 1) where non-native invasive salt cedar, native screwbean mesquite and native surface vegetation cover including native grasses, forbs, sedges, and cattails were consumed. Although salt cedar has begun to resprout in many locations, the native vegetation is also resprouting and seedlings are germinating. If left unmanaged, the salt cedar likely will spread across and cover the majority of this island--even in places where it did not exist prior to the fire. This will result in salt cedar being the predominant species cover type on this island, habitat with less biological diversity, degradation and loss of native and Threatened and Endangered species habitat, and increased hazardous fuels and wildland fire threats. The rehabilitation of native riparian and wetland habitats will help restore wildlife habitat and natural resource values, while providing alternative habitat for the rails and the flycatchers, and reduce future threats from wildland fires.

### **Management Requirements**

Aggressive control of salt cedar is recommended throughout the burned area using manual labor to apply herbicide to resprouts, seedlings, and cut stumps. This area will need to be treated three times over the next year to adequately cover missed plants, new resprouts, and new seedlings. A portion of the burned area will be revegetated using local plant resources (native seeds and plant materials for pole planting) where the fire burned under moderate to high severity or where local environmental conditions permit. Additionally, monitoring the effectiveness of the treatments upon salt cedar mortality and native vegetation response will be conducted over the life of the project. If no management of salt cedar occurs, the area will likely be invaded by salt cedar within five years creating a severe fire hazard and degraded wildlife habitat and resource values.

### **Rehabilitation**

The following statements in approved management plans justify the proposed burned area rehabilitation treatments funded with Emergency Fire Rehabilitation funds.

Lower Colorado River National Wildlife Refuges Comprehensive Management Plan and Environmental Assessment, page 55, lists revegetation, including salt cedar removal, as a goal and objective of Havasu NWR (approved 9/94, J. Rogers).

Restore riparian areas invaded by salt cedar to historic southwestern willow flycatcher habitat, (Lower Colorado River Refuge Complex Comprehensive Conservation Plan, page 31, C. Smith, 10/97).

Guidance for rehabilitation of wildfire areas is provided by the USFWS Fire Management Handbook (Release: 7/17/00) and 095 FW3 (2/00).

The burned area presents an opportunity to prevent the invasive exotic salt cedar from further dominating this area by restoring it with native plant species. This will enhance the wildlife habitat at this site through the establishment of native species, habitat with greater biological diversity and resource values. Additionally the use of native species will provide habitat and fuels that are less susceptible to wildland fires.

## **PART A - FIRE LOCATION AND BACKGROUND INFORMATION**

<b>Fire Name</b>	<b>Marsh</b>
<b>Fire Number</b>	<b>BVX4</b>
<b>Agency Unit</b>	<b>Havasu National Wildlife Refuge</b>
<b>Region</b>	<b>Southwest</b>
<b>State</b>	<b>Arizona</b>
<b>County(s)</b>	<b>Mojave</b>
<b>Ignition Date/Cause</b>	<b>June 22, 2005 / Lightning Caused</b>
<b>Zone</b>	<b>LCR Interagency</b>
<b>Date Controlled</b>	<b>June 29, 2005 @ 1200</b>
<b>Total Acres</b>	<b>206</b>
<b>Date Contained</b>	<b>June 24, 2005 @ 1900</b>

## **PART B - NATURE OF PLAN**

### **I. Type of Plan (check one box below)**

**Emergency Stabilization**

**Rehabilitation**

**Both Emergency Stabilization and Rehabilitation**

### **II. Type of Action (check one box below)**

**Initial Submission**

**Updating or Revising the Initial Submission**

**Supplying Information of Accomplishment to Date on Work**

**Different Phase of Project**

**Final Accomplishment Report (To Comply with the Closure of the 9262 Account)**

## **PART C - REHABILITATION PLAN OBJECTIVES**

- Prevent regrowth and re-establishment of undesirable exotic plant species, primarily salt cedar, through integrated management with herbicide treatments.
- Rehabilitate areas burned under moderate to high fire severity with native forbs, grasses, willows, mesquites and other native species as specified in the Lower Colorado River National Wildlife Refuges Comprehensive Management Plan.

## **PART D – BURNED AREA REHABILITATION TEAM MEMBERS**

Position	Team Member (Agency)
Team Leader*	John Earle, Refuge Manager (USFWS)
NEPA Compliance and Planning	Aimee Haskew, Refuge Biologist (USFWS)
Hydrologist	Andrew Hautzinger (USFWS)
Fire Ecologist/Planner	Mark Kaib (USFWS)
Wildlife Biologist	Aimee Haskew (USFWS)
Contracting	Joe Grainey
Threatened and Endangered Species Compliance	Leslie Fitzpatrick, Ecological Services Biologist (USFWS)

**PART E - SUMMARY OF ACTIVITIES AND COSTS**

The summary of activities, treatments, and estimated costs below are proposed for funding from Burned Area Rehabilitation, agency operation, and other funding sources.

Summary of Activities, Treatments, and Estimated Cost						
No.	Treatment Specification	Unit	Unit Cost (\$)	# Units	Implementation Method (FY)	Specification Total (\$)
<b>Contractor/Agency Services</b>						
1	Herbicide Treatments	Job	\$20,000	3	Contract/Agency (06)	\$60,000
2	Native Seed and Revegetation Stock	Job	\$10,000	1	Contract/Agency (06)	\$10,000
3	Monitoring Treatment Effectiveness	Job	\$5,000	3	Contract/Agency (06)	\$15,000
<b>Supplies</b>						
	Herbicide	gal	\$106	465	Contract (06)	\$49,300
	Native Seed Stock	pounds	\$20	400	Contract (06)	\$8,000
	Herbicide Backpack Sprayers	each	\$175	6	Contract (06)	\$1,100
	Travel	week	\$625	21	Contract (06)	\$13,200
<b>Wages</b>						
	Refuge Biologist Planning/ Implementation	PP	\$3,200	4	Agency (06)	\$12,800
	Invasive Species Task Force Team Leader	PP	\$3,200	6	Agency (06)	\$19,200
	Regional Fire Ecologist Planning	PP	\$4,000	3	Agency (06)	\$12,000
	Hydrologist Consultation	PP	\$4,000	1	Agency (06)	\$4,000
<b>Total Rehabilitation Funding Requested.....</b>						<b>\$204,600</b>

**PART F - INDIVIDUAL TREATMENT SPECIFICATIONS**

<b>SPECIFICATION TITLE:</b>	Herbicide Treatments	<b>AGENCY:</b>	Contractor/Or Agency
<b>PART E: Treatment Specification # 1</b>		<b>FISCAL YEAR(S) (list each year):</b>	1, 2, 3

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

<p>Number and Describe Each Task:</p> <p><b>A. General Description:</b> Apply Herbicide ‘Habitat’ (imazapyr) in 0.5-5% concentration using a back pack pump sprayer for foliar treatment of re-sprouts and seedlings; 6-67% solution for cut stump treatments.</p> <p><b>B. Location/Suitable Sites:</b> 206 acre Marsh Fire</p> <p><b>C. Design/Construction Specifications:</b> Apply herbicide in adherence with the label guidance to salt cedar resprouts when 3-4 feet, cut stumps, and seedlings.</p> <p><b>D. Purpose of Treatment Specifications:</b> To cause mortality to a large percentage of the salt cedar in this burned area/island.</p>
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**II. LABOR, MATERIALS AND OTHER COSTS:**

<b>PERSONNEL SERVICES:</b>	<b>COST/ITEM</b>
TOTAL PERSONNEL SERVICE COST	77,000
<b>EQUIPMENT PURCHASE, LEASE AND/OR RENT</b>	<b>COST/ITEM</b>
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	1,100
<b>MATERIALS AND SUPPLIES</b>	<b>COST/ITEM</b>
TOTAL MATERIALS AND SUPPLY COST	49,300
<b>TRAVEL COST</b>	<b>COST/ITEM</b>
TOTAL TRAVEL COST	6,000
<b>CONTRACT COST</b>	<b>COST/ITEM</b>
<b>TOTAL</b>	<b>\$133,400</b>

**SPECIFICATION COST SUMMARY**

FISCAL YEAR	UNIT	UNIT COST	# OF UNIT	COST	FUNDING SOURCE	METHOD
1, 2, 3					r	

**FUNDING SOURCE**

F - Suppression Operations  
R – Burned Area Rehabilitation  
OP/O - Agency Operations/Other

P - Agency Personnel Services  
C - Contract (long-term)

**METHODS**

EWP - Emergency Watershed Protection  
EFC - Emergency Fire Contract (short-term)  
FC - Incident Management Crew Assignment

**SOURCE OF COST ESTIMATE**

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	

4. Estimates based upon government wage rates and material cost.	P, E, M/S, T
5. No cost estimate required -- cost charged to Fire Suppression Account.	

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

**PART F - INDIVIDUAL TREATMENT SPECIFICATIONS Cont.**

<b>SPECIFICATION TITLE:</b>	Native Seed and Revegetation Stock	<b>AGENCY:</b>	Contractor/Agency
<b>PART E: :Treatment Specification # 2</b>		<b>FISCAL YEAR(S) (list each year):</b>	1, 2

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

<p>Number and Describe Each Task:</p> <p>A. General Description: Collection of Native Seed and Revegetation Stock</p> <p>B. Location/Suitable Sites: throughout Havasu NWR</p> <p>C. Design/Construction Specifications: 206-acre Marsh Fire</p> <p>D. Purpose of Treatment Specifications: Reestablish native vegetation</p>
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**II. LABOR, MATERIALS AND OTHER COSTS:**

<b>PERSONNEL SERVICES:</b>	<b>COST/ITEM</b>
TOTAL PERSONNEL SERVICE COST	25000
<b>EQUIPMENT PURCHASE, LEASE AND/OR RENT</b>	<b>COST/ITEM</b>
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
<b>MATERIALS AND SUPPLIES</b>	<b>COST/ITEM</b>
TOTAL MATERIALS AND SUPPLY COST	8,000
<b>TRAVEL COST</b>	<b>COST/ITEM</b>
TOTAL TRAVEL COST	6,000
<b>CONTRACT COST</b>	<b>COST/ITEM</b>
Replace Fence	
<b>TOTAL</b>	<b>\$39,000</b>

**SPECIFICATION COST SUMMARY**

FISCAL YEAR	UNIT	UNIT COST	# OF UNIT	COST	FUNDING SOURCE	METHOD
1, 2					r	

**FUNDING SOURCE**

F - Suppression Operations  
R - Burned Area Rehabilitation  
EWP - Emergency Watershed Protection  
OP/O - Agency Operations/Other

**METHODS**

P - Agency Personnel Services  
C - Contract (long-term)  
EFC - Emergency Fire Contract (short-term)  
FC - Incident Management Crew Assignment

**SOURCE OF COST ESTIMATE**

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

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

**PART F - INDIVIDUAL TREATMENT SPECIFICATIONS Cont.**

<b>SPECIFICATION TITLE:</b>	Monitoring Treatment Effectiveness	<b>AGENCY:</b>	Contractor/Agency
<b>PART E: Treatment Specification # 3</b>		<b>FISCAL YEAR(S) (list each year):</b>	1, 2, 3

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

<p><b>Number and Describe Each Task:</b></p> <p><b>A. General Description:</b> Monitor effectiveness of restoration efforts</p> <p><b>B. Location/Suitable Sites:</b> 206 acres burned in Marsh Fire</p> <p><b>C. Design/Construction Specifications</b></p> <p><b>D. Purpose of Treatment Specifications:</b> Determine effectiveness of restoration treatments</p>
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**II. LABOR, MATERIALS AND OTHER COSTS:**

<b>PERSONNEL SERVICES:</b>	<b>COST/ITEM</b>
<b>TOTAL PERSONNEL SERVICE COST</b>	<b>31,000</b>
<b>EQUIPMENT PURCHASE, LEASE AND/OR RENT</b>	<b>COST/ITEM</b>
<b>TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST</b>	
<b>MATERIALS AND SUPPLIES</b>	<b>COST/ITEM</b>
<b>TOTAL MATERIALS AND SUPPLY COST</b>	
<b>TRAVEL COST</b>	<b>COST/ITEM</b>
<b>TOTAL TRAVEL COST</b>	<b>1,200</b>
<b>CONTRACT COST</b>	<b>COST/ITEM</b>
<b>TOTAL</b>	<b>\$32,200</b>

**SPECIFICATION COST SUMMARY**

FISCAL YEAR	UNIT	UNIT COST	# OF UNIT	COST	FUNDING SOURCE	METHOD
2, 3					R	

**FUNDING SOURCE**

- F - Suppression Operations
- R - Burned Area Rehabilitation
- EWP - Emergency Watershed Protection
- OP/O - Agency Operations/Other

**METHODS**

- P - Agency Personnel Services
- C - Contract (long-term)
- EFC - Emergency Fire Contract (short-term)
- FC - Incident Management Crew Assignment

**SOURCE OF COST ESTIMATE**

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

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

**PART G - POST-REHABILITATION**

The following are post-rehabilitation, implementation, operation, maintenance, monitoring, and evaluation actions potentially beyond three years to ensure the effectiveness of initial investments. Cost for monitoring and revegetation beyond three years will be incurred by refuge.

**Restoration**

1. Restore former vegetation to site with appropriate species as specified in the Lower Colorado River National Wildlife Refuges Comprehensive Management Plan. Plant willow, cottonwood, mesquite, grass, and forb seedlings, poles, and/or seeds to restore desired vegetation, and wildlife habitat.
2. Continue invasive species monitoring and control
3. Long-term monitoring: monitor native and riparian vegetation recovery

**APPENDIX I - ENVIRONMENTAL COMPLIANCE**

**Federal, State, and Private Lands Environmental Compliance Responsibilities**

All projects proposed in the Marsh Fire Burned Area Rehabilitation 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); Fish and Wildlife Service Fire Management Handbook (Release 7/17/00) and 095 FW3,3.9B,C. This appendix documents the Team considerations of NEPA compliance requirements for prescribed rehabilitation and monitoring actions described in this plan for all jurisdictions affected by the Marsh burned area emergency.

**Related Plans and Cumulative Impact Analysis**

The Lower Colorado River National Wildlife Refuges Comprehensive Management Plan, approved

9/19/94, was reviewed and it was determined that actions proposed in the Marsh Fire Plan within the boundary of the Marsh Fire are consistent with the management objectives established in the Comprehensive Management Plan. The Comprehensive Management Plan NEPA compliance process specifically addresses:

- Part X: Synthesis, Goals and Objectives, Issue 8: Revegetation  
“In cooperation with the Bureau of Reclamation (BR), revegetate substantial amounts of habitat with native mixes of vegetation leading to biological diversity.”

### **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 Marsh Fire, as proposed in the Marsh Fire 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.

### **Applicable and Relevant Categorical Exclusions**

The individual actions proposed in this plan for rehabilitation of the Marsh Fire are Categorically Excluded from further environmental analysis as provided for in the DM 516, DM 6, Appendix 1, 1.4 B. (3) iii, (5), (6), and (11).

### **Statement of Compliance for the Marsh Fire Burned Area Rehabilitation Plan.**

This section documents consideration given to the requirements of specific environmental laws in the development of the Marsh Fire 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 Marsh Fire Plan:

- National Historic Preservation Act (NHPA).
- Executive Order 11988. Floodplain Management.
- Executive Order 11990. Protection of Wetlands.
- Executive Order 12372. Intergovernmental Review.
- Executive Order 12892. Federal Actions to Address Environmental Justice in Minority and Low-income Populations.
- Endangered Species Act.
- Secretarial Order 3127. Federal Contaminated
- Clean Water Act.
- Clean Air Act.

### **CONSULTATIONS**

- BOR

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

(Yes) (No)

- Adversely affect Public Health and Safety
- Adversely affect historic or cultural resources, wilderness, wild and scenic rivers aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
- Have highly controversial environmental effects.
- Have highly uncertain environmental effects or involve unique or unknown environmental risks.
- Establish a precedent resulting in significant environmental effects.
- Relates to other actions with individually insignificant but cumulatively significant environmental effects.
- Adversely effects properties listed or eligible for listing in the National Register of Historic Places
- Adversely affect a species listed or proposed to be listed as Threatened or Endangered.
- Threaten to violate any laws or requirements imposed for the "protection of the environment" such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

**National Historic Preservation Act:**

Ground disturbance will occur on sites below elevation 461 msl.

**A NHPA Clearance Form:**

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

**Other Requirements:**

- (Yes) (No)
- Does the Plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.
- Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted. (Note: Herbicides are proposed.)

I have reviewed the proposals in the Marsh Fire Burned Area 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. Team technical specialists will complete 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.

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**Refuge Manager, Havasu National Wildlife Refuge**

**Date**