

MEADOWS FIRE

BURNED AREA EMERGENCY STABILIZATION ACCOMPLISHMENT REPORT



U. S. FISH AND WILDLIFE SERVICE ASH MEADOWS NATIONAL WILDLIFE REFUGE

**Prepared by: Heather Hundt – Fish and Wildlife Biologist
October 18, 2006**

**MEADOWS FIRE
BURNED AREA EMERGENCY STABILIZATION ACCOMPLISHMENT REPORT**

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Brian Hamilton of SWEAT mechanically removes invasive salt cedar from the Meadows Fire area.

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

Fire Name	MEADOWS	Jurisdiction	Acres
Fire Number	NV-AMR-B2F1	U. S. Fish & Wildlife Service	150
Agency Unit	U. S. Fish and Wildlife Service Ash Meadows National Wildlife Refuge	Bureau of Land Management	131
Region	Region 8	Private	30
State	Nevada		
County(s)	Nye		
Ignition Date/Cause	July 29, 2005 Undetermined		
Zone	Western Great Basin		
Date Fully Contained	July 31, 2005		
Date Controlled	August 1, 2005	Total Acres	311

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PART B – ACCOMPLISHMENT REPORTS



Otis Bay Ecological Consultants obtain material for use in the stabilization of the Jackrabbit Channel.

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<i>Date Prepared:</i> October 10, 2006	<i>BAER Plan Name:</i> Meadows Fire	<i>Location (Region, Agency/Tribe):</i> California/Nevada Operations Fish and Wildlife Service, Ash Meadows NWR
<i>Prepared by:</i> Heather Hundt (USFWS)		<i>Project Implementation Leader:</i> Heather Hundt (USFWS)

<i>Line Item:</i> S-1, Road Clean-up	<i>Specification Title:</i> Road Clean-up	
<i>Percentage of Spec. Completed:</i> 100%	<i>Total funds Expended:</i> \$1,645	<i>Type of Funding Used:</i> ES

Narrative: Lee Talbot, Engineering Equipment Operator for Ash Meadows National Wildlife Refuge, performed approximately 32 hours of road clean-up following erosion events as a result of the Meadows Fire. Most of the work consisted of removing mud and rocks from roadways after storm events. Minor road work was also required on the main access route to the Refuge due erosion near one of the culvert crossings.

<i>Date Completed:</i> 7/28/2006
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<i>Prepared by:</i> Heather Hundt (USFWS)		<i>Project Implementation Leader:</i> Heather Hundt (USFWS)
<i>Line Item:</i> S-2, Culvert Replacement and Channel		<i>Specification Title:</i> Culvert Replacement and Channel
<i>Percentage of Spec. Completed:</i> 100%	<i>Total funds Expended:</i> \$25,870	<i>Type of Funding Used:</i> ES

Narrative: The Big Springs Road occurs within the perimeter of the Meadows Fire burned area. Because this road provides the only easement to private land in the area, it is imperative that the road be maintained and passable to land owners. The Jackrabbit channel ran under the Big Springs Road through a culvert, which was ill-equipped to handle storm run-off after the Meadows Fire. A contract was awarded to Otis Bay Ecological Consultants in November 2005 to install a new larger culvert in order to ensure that the Big Springs Road would not wash-out during storm events. In addition to the new culvert, Otis Bay was also contracted to clean out fire debris within the entire length of the Jackrabbit channel to help prevent blockages of the new culvert.

The clearing of the Jackrabbit channel as well as installation of the new culvert began in mid-July 2006 and was completed by July 21, 2006. At least three storm events have occurred since the channel clearing and culvert installation occurred, and no road wash-outs have occurred.

<i>Date Completed:</i> 7/12/2006
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Prepared by: Heather Hundt (USFWS)		Project Implementation Leader: Heather Hundt (USFWS)

Line Item: S-3, Noxious Weed Control	Specification Title: Noxious Weed Control	
Percentage of Spec. Completed: 100%	Total funds Expended: \$87,462	Type of Funding Used: ES

Narrative: During September 2005, Refuge staff and contractors from the Nevada Conservation Corps began mapping invasive weeds within the perimeter of the Meadows Fire. A revised total of 263 acres of invasive weeds were found to infest the burned area. This figure was greater than the original 180 acres mapped during the preparation of the Burned Area Emergency Stabilization Plan, and additional funding was requested in the Burned Area Rehabilitation Plan to control the weeds.

An interagency agreement was created with the National Park Service, for the Lake Mead National Recreation Area Exotic Plant Management Team (EPMT) to assist the Refuge in treating weeds within the Meadows Fire perimeter. The EPMT crew began work on the Refuge on December 17, 2005, and intermittently sent crews of 2-10 people through May 25, 2006. The EPMT treated approximately 24-acres of Russian knapweed and salt cedar.

Besides the EPMT crew the Refuge also contracted the company SWEAT to perform mechanical extraction treatments of salt cedar. SWEAT treated 156-acres of salt cedar. Between the two contractors at least 180-acres of weeds were treated.

Date Completed: 7/31/2006

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Date Prepared: October 10, 2006	BAER Plan Name: Meadows Fire	Location (Region, Agency/Tribe): California/Nevada Operations Fish and Wildlife Service, Ash Meadows NWR
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Prepared by: Heather Hundt (USFWS)	Project Implementation Leader: Heather Hundt (USFWS)
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Line Item: S-4, Native Plantings	Specification Title: Native Plantings	
Percentage of Spec. Completed: 100%	Total funds Expended: \$58,785	Type of Funding Used: ES

Narrative: Native grasses/forbs, shrubs and trees were planted within the perimeter of the Meadows Fire during July through September 2006. The work was performed through contracts with Otis Bay Ecological Consultants and the Nevada Conservation Corps (NCC). Plants were propagated from native seeds and cuttings collected from the Refuge during Fall 2005 and Spring 2006, and grown out by the Community College of Southern Nevada, located in Las Vegas, NV. Extra seed not used for plant propagation was spread in disturbed areas to help aid in the recovery of the area. A total of 80-acres were planted and seeded by Otis Bay, NCC Research Associates, and Refuge staff.

Vegetation rehabilitation within the Meadows Fire perimeter will continue with funding approved through the BAER program and the Southern Nevada Public Lands Management Act. The continuation of vegetation rehabilitation is necessary in order to promote the recovery of native vegetation, protect biological diversity of plant communities and critical Threatened and Endangered habitats, minimize erosion, and prevent the return of invasive plant species which create fire prone conditions.

Date Completed: 7/31/2006

Fish and Wildlife Service MEADOWS FIRE BURNED AREA EMERGENCY STABILIZATION ACCOMPLISHMENT REPORT		
Date Prepared: October 10, 2006	BAER Plan Name: Meadows Fire	Location (Region, Agency/Tribe): California/Nevada Operations Fish and Wildlife Service, Ash Meadows NWR
Prepared by: Heather Hundt (USFWS)		Project Implementation Leader: Heather Hundt (USFWS)
Line Item: S-5, Monitor Noxious Weeds & Native Planting Treatments	Specification Title: Monitor Noxious Weeds & Native Planting Treatments	
Percentage of Spec. Completed: 100%	Total funds Expended: \$24,927	Type of Funding Used: ES
<p>Narrative: Invasive weed treatments and native planting effectiveness monitoring plots, transects and photo points were established during December, May and July 2006 to coincide with the beginning and ending of various weed treatments and native plantings. Monitoring was conducted by Otis Bay Ecological Consultants, Nevada Conservation Corps and the Lake Mead National Recreation Area's EPMT crew, utilizing standardized National Fish and Wildlife Service protocols and protocols developed by the U. S. Geological Survey.</p> <p>A total of 180-acres of invasive weed treatments and 80-acres of native plantings/seeding were monitored. Initial estimates are that 63% of the native plantings were successful, along with 96% of the mechanical salt cedar treatments. Unfortunately Russian knapweed and cut-stump salt cedar treatments were not very effective, having a success rate of only 32% and 44% respectively. The probable reason for the low success rate of the cut-stump treatments was the area where these treatments occurred had a very high water table, which limited the types of herbicides which could be used, and also diminished the effectiveness of the herbicide. The Russian knapweed treatments were not successful due to the abundant seed bed that existed in the treatment area. It is believed that continued knapweed treatments will begin to stress current populations and will diminish the seed bank over time.</p> <p>Treatment effectiveness monitoring will continue for the next 2 years under the approved Meadows Fire Burned Area Rehabilitation Plan.</p>		
		Date Completed: 9/26/2006

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<i>Date Prepared:</i> October 10, 2006	<i>BAER Plan Name:</i> Meadows Fire	<i>Location (Region, Agency/Tribe):</i> California/Nevada Operations Fish and Wildlife Service, Ash Meadows NWR
<i>Prepared by:</i> Heather Hundt (USFWS)		<i>Project Implementation Leader:</i> Heather Hundt (USFWS)
<i>Line Item:</i> S-6, Cultural Resource Protection	<i>Specification Title:</i> Cultural Resource Protection	
<i>Percentage of Spec. Completed:</i> 55%	<i>Total funds Expended:</i> \$8,920	<i>Type of Funding Used:</i> ES

Narrative: An Interagency Agreement was created during March 2006, between the Bureau of Land Management's Las Vegas Field Office (BLM) and the Refuge to provide law enforcement protection to cultural sites found within the Meadows Fire perimeter. Unfortunately, due to higher priorities, the BLM was not able to provide law enforcement officers to patrol the area.

In August 2006, the Refuge was able to hire its own law enforcement officer who began patrolling the area immediately. A total of 16 historic sites were protected during this 2-month period.

<i>Date Completed:</i> 9/26/2006
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<i>Prepared by:</i> Heather Hundt (USFWS)		<i>Project Implementation Leader:</i> Heather Hundt (USFWS)
<i>Line Item:</i> S-7, Implementation Leader	<i>Specification Title:</i> Implementation Leader	
<i>Percentage of Spec. Completed:</i> 100%	<i>Total funds Expended:</i> \$40,044	<i>Type of Funding Used:</i> ES

Narrative: On March 5, 2006 an implementation leader was hired and began managing projects which fell under the Meadows Fire Burned Area Emergency Stabilization Plan (ES Plan). The implementation leader took over as the Contracting Officer Representative (COR) for all the contracts that were in place for the Meadows Fire ES Plan. The COR began by coordinating all work to ensure completion by specific deadline dates and to ensure that contract milestones were completed.

Besides acting as COR, the implementation leader also acted as a fish and wildlife biologist to complete biological clearance surveys for various ground disturbing projects. Endangered Species Act Section 7 consultation was completed to ensure that projects approved under the ES Plan minimized impacts to threatened or endangered species found within the affected burned area.

The Implementation Leader also completed a Burned Area Rehabilitation Plan for the Meadows Fire, in order to continue work that began under the ES Plan and to develop strategies to increase success of treatments that have already been completed.

<i>Date Completed:</i> 9/26/2006
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<i>Prepared by:</i> Heather Hundt (USFWS)		<i>Project Implementation Leader:</i> Heather Hundt (USFWS)
<i>Line Item:</i> S-8, Cultural Resource Assessment	<i>Specification Title:</i> Cultural Resource Assessment	
<i>Percentage of Spec. Completed:</i> 100%	<i>Total funds Expended:</i> \$7,744	<i>Type of Funding Used:</i> ES

Narrative: A cultural resource assessment of the Meadows Fire Burned Area occurred during October 2005. A Region 1, U. S. Fish and Wildlife Service Archeologist conducted the assessment, including activities pursuant to Section 106 of the National Historic Preservation Act. A total of 180-acres were surveyed as part of the resource assessment. During this assessment, 16 historic sites were discovered, three of which were newly recorded. Any damage to historic sites due to the Meadows Fire was described within the Cultural Resource Assessment.

Besides the resource assessment, the Regional Archeologist also provide resource protection oversight during the implementation of ground disturbing activities to ensure no damage occurred to the cultural sites.

<i>Date Completed:</i> 3/7/2006

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Prepared by: Heather Hundt (USFWS)		Project Implementation Leader: Heather Hundt (USFWS)
Line Item: S-9, Channel Stabilization	Specification Title: Channel Stabilization Assessment	
Percentage of Spec. Completed: 100%	Total funds Expended: \$45,170	Type of Funding Used: ES

Narrative: The Meadows Fire impacted over 95% of the Jackrabbit Spring outflow channel. This channel is home to the Federally endangered Ash Meadows speckled dace, and is only one of two areas in the world where this fish occurs, both sites occur within the on Ash Meadows National Wildlife Refuge.

During November 2005, a contract was completed to acquire the services of Otis Bay Ecological Consultants to complete a Channel Stabilization Assessment for the Jackrabbit Spring Channel Outflow Assessment, in order to minimize impacts to the Ash Meadows speckled dace during implementation of the stabilization of the Jackrabbit channel.

The Channel Stabilization Assessment was completed at the beginning of July 2006 and implementation of actual channel stabilization began immediately thereafter.

<p>Date Completed: 7/6/2006</p>
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Prepared by: Heather Hundt (USFWS)	Project Implementation Leader: Heather Hundt (USFWS)
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Line Item: S-10, Channel Stabilization	Specification Title: Channel Stabilization Implementation
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Percentage of Spec. Completed: 100%	Total funds Expended: \$106,770	Type of Funding Used: ES
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Narrative:

Channel stabilization of the Jackrabbit Spring outflow channel began in July 2006. Otis Bay Ecological Consultants was retained to implement stabilization activities. This channel provide critical habitat for the federally endangered Ash Meadows Speckled Dace and Ash Meadows Amargosa pupfish. Ash Meadows National Wildlife Refuge is the only place in the world where these two fish occur. While the Ash Meadows Amargosa Pupfish is distributed throughout the refuge, the Ash Meadows speckled dace is only found in the Jackrabbit Spring outflow channel and the adjacent Big Springs outflow channel, as well as in the Bradford system.

Channel stabilization work lasted approximately three weeks and was completed concurrently with channel clearing and culvert replacement. A total of 3 miles of stream channel were improved as a result of this project.

Date Completed: 7/31/2006

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PART C – MONITORING REPORT

SPECIFICATION TITLE:	Monitor Noxious Weeds & Native Planting Treatments	JURISDICTION	FWS-ASME
PART E LINE ITEM:	Monitor Noxious Weeds & Native Planting Treatments	FISCAL YEAR:	2006
SITE ID	N/A	SPECIFICATION TYPE:	ES

I. TREATMENT EFFECTIVENESS REPORT

A. Objectives: Utilize integrated pest management practices (herbicides, biological mechanical, and cultural control methods), as appropriate to prevent the spread and establishment of noxious weeds and undesirable exotic species known to exist within the fire perimeter of the Meadows Fire, and as defined by monitoring.

Install native plantings in conjunction with noxious weed control to reduce encroachment by non-native invasive species and protect biological diversity of plant communities and critical T&E habitats.

B. Prescribed Treatment:

1. Control non-native invasive weeds within the burn area utilizing a variety of control techniques including herbicide and mechanical treatments. Timing of herbicide application may need to be adjusted to ensure treatment of each species is conducted in the proper phenological stage to ensure the protection and recovery of native, endemic and Federally listed species.
2. Follow-up control in the fall, spring and subsequent years on treated sites.
3. Locate, map, and document (using photography, topographic maps, and Global Positioning System--GPS—technology), new weed occurrences within burned area. Provide GPS shape files to contractors for use in GPS guided applications. Document percent control or kill of noxious weeds.
4. Initiate Agency approved control measures on new weed occurrences where monitoring demonstrates the establishment or expansion of known weed populations.
5. Monitor water quality in aquatic areas adjacent to herbicide treatments areas using passive samplers to detect herbicides.
6. For establishment of native plants within the burned area, collect native seed and propagate plants at private nurseries to produce tublings for planting.
7. Hand-plant native grasses, shrubs and trees by contract crews to re-establish native vegetation within moderate to high burn severity areas.

C. Treatment Modifications: More weeds were found within the Meadows Fire perimeter than were originally mapped for the Burned Area Emergency Stabilization Plan (Plan). The original Plan estimated that 180-acres of the burned area were infested with weeds. Since the writing of the original Plan, an additional 83-acres have been discovered to be infested with non-native species.

There were no modifications to the native planting treatments.

D. Treatment Effectiveness Monitoring:

1. Permanent transects for each treatment were established prior to treatments to continue short-term monitoring on known noxious weed occurrences, and in areas of potential spread within the burned area to determine spread of noxious and invasive plant species. The monitoring protocol was developed by USGS-BRD, using a modified version of the National Park Service FMA protocol.
2. For native planting areas, permanent transects and photo points were established to monitor survival rates of planted species and to adjust planting methods or timing if monitoring indicates a deficiency in methods.

F. Observations: Effectiveness monitoring of weed treatments occurred weekly during the month of May and then monthly during June – September. For mechanical treatments of salt cedar treatments were 96% successful. Initial treatments of Russian knapweed were deemed to be 32% successful but due to a heavy seedbank, and not being able to plant native species immediately after treatments, knapweed resprouted and spread beyond the original boundaries of the infestation. Cut-stump treatments of salt cedar in the Tubbs Ranch Treatment area were found to be 44% successful.

Since native planting was not completed until late July, effectiveness monitoring was only conducted twice, occurring on August 31 and September 21, 2006. After transects were monitored it was found that native plantings were approximately 65% successful. Monitoring of these transects will continue to determine a more long-term survivorship.

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PART D – FINANCIAL SUMMARY

Treatment Specification	Unit	Unit Cost	# of Units	Approved Funds	Total Funds Expended
S-1 Road Clean-up	Events	\$1,645	1	\$1,645	\$1,645
S-2 Culvert Replacement and Channel Clearing	Each Miles	\$5,462 \$12,368	1 1	\$17,830	\$25,870
S-3 Noxious Weed Control	Acres	\$503	180	\$90,576	\$87,462
S-4 Native Plantings	Acres	\$766	80	\$61,340	\$58,785
S-5 Monitor Noxious Weeds and Native Planting Treatments	Survey	\$567	44	\$24,927	\$24,927
S-6 Cultural Resource Protection	Acres	\$326	180	\$58,646	\$8,920
S-7 Implementation Leader	Months	\$8,011	6	\$48,068	\$40,044
S-8 Cultural Resource Assessment	Acres Reports	\$42 \$2,702	180 3	\$15,665	\$7,744
S-9 Channel Stabilization Assessment	Acres Plan	\$220 \$5,560	180 1	\$45,170	\$45,170
S-10 Channel Stabilization Implementation	Acres	\$1,074	100	\$107,400	\$106,770
TOTAL	N/A	N/A	N/A	\$471,267	\$407,337

MEADOWS FIRE BURNED AREA EMERGENCY STABILIZATION ACCOMPLISHMENT REPORT

PART E - PHOTO DOCUMENTATION

- Native Plantings
- Culvert Replacement and Channel Clearing
- Noxious Weed Control
- Channel Stabilization
- Effectiveness Monitoring
- Cultural Resource Protection



Trays of screwbean mesquite being grown out by the Community College of Southern Nevada, for use in the reestablishment of native vegetation within the perimeter of the Meadows Fire.

NATIVE PLANTINGS



Kathie Taylor an employee of Otis Bay Ecological Consultants, installs native vegetation along the recently stabilized Jackrabbit Channel.



Lee Turner, of Otis Bay Ecological Consultants, collects native bulrush to plant along the stabilized Jackrabbit Channel.

CULVERT REPLACEMENT AND CHANNEL CLEARING



structures that were found to be inadequate to support increased flows due to habitat damage caused by the Meadows Fire.



Channel clearing along the Jackrabbit Outflow.

NOXIOUS WEED CONTROL



Mechanical removal of invasive salt cedar being performed by Brian Hamilton of SWEAT.



Through an interagency agreement, Lake Mead National Recreation Area's Exotic Plant Management Team performs noxious weed control on invasive Russian knapweed after the Meadows Fire.

EFFECTIVENESS MONITORING



Nevada Conservation Corps Research Associate, Amber Shanklin, installs photo points for effectiveness monitoring of the channel stabilization work on the Jackrabbit Outflow Channel.



Nevada Conservation Corps Research Associate, **Matt Burks**, participates in effectiveness monitoring of Russian knapweed control.

CULTURAL RESOURCE PROTECTION



Remains of a historic stone cabin, discovered during cultural resource surveys after the Meadows Fire, required resource protection during channel stabilization implementation.



Numerous objects of cultural resource value were uncovered during the Meadows Fire, and were in need of cultural resource protection to prevent looting.