

BURNED AREA REHABILITATION PLAN REVIEW AND APPROVAL

I. Project Leader approval that the Burned Area Rehabilitation Plan meets approved land management plan management objectives.

Alice C. Newton, Vegetation Program Manager, Lake Mead NRA

Date

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

Nelson Siefkin, Regional BAER Coordinator, Pacific West Region

Date

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

☐ Approved

☐ Approved with Revision (see attached)

☐ Not approved

Jon Jarvis, Regional Director, Pacific West Region

Date

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

☐ Approved

☐ Approved with Revision (see attached)

☐ Not approved

Richard Schwab, National BAER Coordinator, National Park Service

Date

Rogers Spring Fire

BURNED AREA REHABILITATION PLAN



UNIT: Lake Mead National Recreation Area

LOCATION: Boulder City, Clark County, Nevada

DATE: September 18, 2007

PREPARED BY: Alice Newton, Curt Deuser, and Sandee Dingman of the Lake Mead Resource Management Division

Submitted By: _____ Date: _____
Alice C. Newton, Vegetation Manager, Lake Mead NRA

EXECUTIVE SUMMARY

Introduction

This Burned Area Rehabilitation Plan has been prepared in accordance with Department of the Interior and National Park Service policy. This plan provides rehabilitation recommendations for all lands burned within the Rogers Spring Fire perimeter and downstream impact areas including: public lands administered by the National Park Service and other jurisdictions if necessary. The primary objectives of the Rogers Spring Fire Burned Area Rehabilitation Plan are:

- \$ 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.
- \$ Restore or establish healthy, stable ecosystems, even if these ecosystems cannot fully emulate historic or pre-fire conditions as specified in approved land management plans.
- \$ Repair or replace fire damaged minor operating facilities (e.g., campgrounds, interpretive signs and exhibits, shade shelters, fences, wildlife guzzlers, etc.)

This plan addresses rehabilitation treatments needed to re-establish native vegetation and prevent the establishment of non-native vegetation in a rare desert wetland that also serves as a popular visitor use area and picnic grounds.

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

Fire Background

The Rogers Spring fire burned 3.3 acres in one of the most biologically and geophysically unique settings as well as one of the park's most popular non-lake visitor use areas. The fire started on July 2, 2007 and was reported by a visitor at about 7pm. Shortly after 8pm, firefighters arrived on scene, including 4 engines and a water tender. The initial attack incident commander reported active flame lengths of 4 feet when they arrived and they had the fire contained by 10 pm using handtools and water. The fire was declared controlled by 3 pm on July 3 and out on July 4. The fire was human caused, the ignition source was illegal fireworks in the picnic area.

The fire perimeter included part of the picnic area, walking paths, riparian corridor, the wetland fringe of a perennial pond, and a small upland area.

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

While the burned area is small and the suppression operations were uneventful, the Rogers Spring fire presents an opportunity to either lose critical wetland habitat and a popular visitor attraction to invasive species, or to rehabilitate the site to protect this rare desert oasis that can continue to provide a shady respite for both visitors and wildlife.

The compelling issues of the site are:

- \$ Rogers Spring is one of only five extant habitats for the critically imperiled relict leopard frog (*Rana onca*). While the burned area itself is not known to be occupied habitat in recent years, it is hydrologically and biologically connected to the riparian zone where relict leopard frogs have been collected in the past for captive breeding and refugia establishment. Water temperature in the desert is dramatically affected by shade of surrounding vegetation, thus the re-establishment of woody riparian vegetation is important to moderate the thermal habitat for this species. Conservation of this species is a high priority for many partner organizations including federal, state, and local governments as well as the scientific and conservation communities.
- \$ The Rogers Spring site hosts desert fan palms (*Washingtonia filifera*), a palm tree that is popular in both landscaping and the lore of the desert. And while beloved by many locals and visitors alike, there is no evidence that fan palms are native to the Lake Mead region and there is no record of native palms at any spring in Lake Mead NRA. Photographs of Rogers Spring taken prior to the 1970s show no palms in the site. Twelve of these palms were severely damaged by the fire and need to be removed to both mitigate the hazard of falling and to provide safe and suitable locations for native trees to be replanted to provide habitat for riparian species and shade for visitors.
- \$ Lake Mead NRA hosts approximately 8 million visitors per year. Rogers Spring picnic area is a very popular stop for visitors traveling along the Northshore Road, and is one of the few “destinations” in the Park that is not on the water or shores of Lakes Mead and Mohave. Beyond the family travelers, tour buses and school field trips often make Rogers Spring one of their stops. As such, this popular location needs to be rehabilitated to both assure that it is safe for visitors and to demonstrate the stewardship of the National Park Service of this rare desert wetland.
- \$ The palm trees are known to be prolific seeders with a likelihood that the seeds will germinate now that the parent trees are no longer shading the ground. Also, any damp, open soil in the desert is subject to invasion by non-native saltcedar trees (*Tamarix ramosissima*) and while this site has been aggressively treated in the past to remove saltcedar it is likely that saltcedar seedlings will colonize the recently burned area as well. To provide quality habitat for native plants and animals, both the palm seedlings and the saltcedar seedlings need to be removed on a regular basis until the native vegetation has been established. Removing flammable palm trees and salt cedar and replacing with less flammable native plant species will help protect the site from future fires as well.

Lake Mead NRA Management Requirements

Visitor use at Rogers Spring is addressed in the Park’s General Management Plan (NPS 1985), which describes this site as follows:

“Rogers Spring is extremely popular. Groups on bus tours and individuals stop to enjoy this charming oasis year-round. Large trees surround and shade the warm spring pool.”

Thus, the park managers would like to maintain the oasis character of the site, without the re-planting of non-native palm trees.

The park’s draft Weed Management Plan (NPS 2007) includes the replacement of palms with native trees in developed sites on an opportunistic basis, specifically when the palms die or the site is redesigned. The fire damage to the palms at Rogers Spring clearly fits this description. Furthermore, the draft Weed Management Plan provides for the continued removal of saltcedar and other wetland invasive species near park springs, shorelines, and riparian areas.

Finally, site treatment at Rogers Spring must serve to protect the habitat of the highly imperiled relict leopard frog (*Rana onca*). This species was thought to be extinct and was rediscovered in the early 1990’s. The existing population occupies about 10% of its historical range, known from five locations including Rogers Spring area (although not directly within the burned area). The species is threatened by habitat alteration and fragmentation as well as the direct effects of non-native aquatic species. Relict leopard frog has the legal standing as a candidate species under the federal Endangered Species Act; is state-listed in Arizona, Nevada, and Utah; and has a IUCN Red List Category of Endangered (NatureServe 2007). It is also one of the species included in the Clark County Multiple Species Habitat Conservation Plan, thus protection of this species and its habitat benefits many federal, state, county, and university partners working on the its recovery. The Public Lands Institute of the University of Nevada Las Vegas has been monitoring frog occurrence and frog habitat condition at this site for many years and will continue to do so.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
TABLE OF CONTENTS	6
PART A - FIRE LOCATION AND BACKGROUND INFORMATION	7
PART B - NATURE OF PLAN	7
PART C - REHABILITATION ASSESSMENT	7
PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS	8
PART E - SUMMARY OF ACTIVITIES AND COSTS.....	9
PART F - INDIVIDUAL SPECIFICATIONS.....	10
PART G - CONSULTATIONS.....	18
PART H - REFERENCES	18
APPENDIX I - BURNED AREA ASSESSMENT REPORTS.....	19
APPENDIX II - ENVIRONMENTAL COMPLIANCE	23
APPENDIX III - MAPS.....	24
APPENDIX IV - PHOTO DOCUMENTATION.....	27

PART A - FIRE LOCATION AND BACKGROUND INFORMATION

Fire Name	Rogers Spring Fire (aka Roger Springs Fire in the WFMI report)
Fire Number	54
Agency Unit	Lake Mead National Recreation Area (NVLAP)
Region	Pacific West Region
State	Nevada
County(s)	Clark
Ignition Date/Cause	July 2, 2007; human
Zone	
Date Fully Controlled	July 3, 2007
Jurisdiction	Acres
Lake Mead NRA	3.3
Total Acres	3.3
Date Contained	July 2, 2007

PART B - NATURE OF PLAN

Type of Action (check one box below)

☒	Initial Submission
☐	Amendment to the Initial Submission

PART C - REHABILITATION ASSESSMENT

Rehabilitation Objectives

- \$ Remove fire-damaged, non-native palm trees to mitigate potential hazards due to falling.
- \$ Replace non-native palms lost in the fire with native trees suitable to the site to provide thermal cover for the aquatic habitat, roosting/perching sites for birds and other riparian species, and shade for the picnic tables.
- \$ Prevent the establishment of non-native invasive plants, namely palms and saltcedar.

PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS

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

Position	Team Member (Agency)
Team Leader	Alice C. Newton, Vegetation Manager, LAME 702-293-8977 or alice_corrine_newton@nps.gov
Public Information	N/A
Operations	N/A
NEPA Compliance & Planning	Sandee Dingman, Natural Resource Specialist, LAME
Hydrologist	N/A
Soil Scientist	N/A
Geologist	N/A
Cultural Resources/Archeologist	N/A
Vegetation Specialist	Curt Deuser, EPMT Liaison, LAME Alice C. Newton, Vegetation Manager, LAME
Wildlife Biologist	N/A
GIS Specialist	Sandee Dingman, Natural Resource Specialist, LAME
Documentation/Computer Specialist	Sandee Dingman, Natural Resource Specialist, LAME
Photographer	Curt Deuser, EPMT Liaison, LAME
<i>Other Technical Specialists</i>	

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

Name	Affiliation
Kent Turner	Chief of Resources Management, LAME
Bob Trodahl	Fire Management Officer, LAME
Ross Haley	Wildlife Manager, LAME

PART E - SUMMARY OF ACTIVITIES AND COSTS

REHABILITATION TREATMENTS COST SUMMARY TABLE - Rogers Spring Fire

Spec #	Title	Unit	Unit Cost	# of Units	Work Agent	Cost
1	Remove fire-damaged palm trees	Acres	\$17,305	3	S	\$51,916
2	Replant native trees	Acres	\$1497	3	FA	\$4490
3	Invasive species control	Acres	\$3563	3	FA	\$10,689
4	Compliance consultations	N/A	N/A	N/A	FA	\$3732
TOTAL COST						\$70,827
Work Agent: CA=Coop Agreement, FA=Force Account, G=Grantee, P=Permittee, SC=Service Contract, TSP=Timber Sales Purchaser, V=Volunteer						

TREATMENTS BY FISCAL YEAR – Rogers Spring Fire

Spec #	Title	Cost FY08	Cost FY09*	Cost FY10*	Total
1	Remove fire-damaged palm trees	\$33,972	\$8972	\$8972	\$51,916
2	Replant native trees	\$3260	\$615	\$615	\$4490
3	Invasive species control	\$6093	\$2298	\$2298	\$10,689
4	Compliance consultations	\$3732	\$0	\$0	\$3732
Total		\$47,057	\$11,885	\$11,885	\$70,827

* FY09 and FY10 costs are estimates only and these figures will be reconsidered based on the results of monitoring the treatments in FY08.

The following criteria and points system is used to prioritize rehabilitation funding among the Bureau of Land Management, National Park Service, Bureau of Indian Affairs and U.S. Fish and Wildlife Service. Suggested points for applicable criteria for each treatment (#1, #2, and #3) and activity (#4) proposed in FY08 are listed.

#1	#2	#3	#4	BAR Criteria
+1	+1	+1	+1	Supports Federally listed threatened or endangered species recovery (2 points). Supports Federally listed candidate or proposed threatened or endangered species recovery (1 point).
+2	+2	+2	+2	There are partners and/or cooperators benefiting from the implementation of the plan (2 points)
+1	+1	+1	+1	The partners and/or cooperators are contributing funds or in kind services to implement the plan (< 50 Percent = 1 Point; 50+ Percent = 2 Points)
+2				The treatment or activity is contracted (< 50 Percent = 1 Point; 50+ Percent = 2 Points)
+2	+2	+2	+2	A treatment or activity is designed to achieve a resource objective(s) (2 points). A treatment is designed to repair or replace a minor facility (0 points)

PART F - INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	Remove fire-damaged palm trees	PART E SPECIFICATION #	1
NFPORS TREATMENT CATEGORY*	Reforestation	FISCAL YEAR(S) (list each year):	FY08, FY09, FY10
NFPORS TREATMENT TYPE *	Site preparation (acres)	WUI? Y / N	N
IMPACTED COMMUNITIES AT RISK	N	IMPACTED T&E SPECIES	Y

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

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

Number and Describe Each Task: A. General Description: A local contractor will be used to fell and shred on site 20 large palm trees damaged by the fire that present a falling hazard as well as interfere with the restoration of native riparian vegetation to the site. These are large, tall, unstable palms and for safety should be removed by a professional. The felled trees should then be mulched/shredded on site by contractor and the mulch material scattered over the burned area to improve soil condition for natural regeneration. B. Location/(Suitable) Sites: The blackened trees at the Rogers Spring site. C. Design/Construction Specifications: 1. Prepare scope of work and contracting package. Solicit bids and award contract according to the requirements of the Federal Acquisition Regulations. 2. Someone from resource management will be assigned to serve in the capacity of the Contracting Officers Technical Representative (COTR) 3. Twenty (20) large palms will be flagged by the COTR and then should be felled and shredded/mulched on site by the contractor. Work expected to take approximately 2 weeks on site and should be conducted prior to March 2008. 4. The stumps should be flush cut to the ground surface and treated with herbicide as per label instruction. 5. With biotech labor, the mulch should be distributed over the burned area to a thickness of no more than 3 inches. 6. Site will be monitored for stump re-sprout and mulch distribution and project will continue for up to three years if conditions in year 1 warrant. 7. The Vegetation Manager or the EPMT Liaison or a similar position will serve as the project manager for this project, developing the scope of work, serving as the COTR on the contract, overseeing the tree removal and mulching effort, and monitoring the results. This person will also serve as the BAR implementation leader and complete the annual accomplishment reports and NFPORS data entry. D. Purpose of Treatment Specifications: The purpose of this treatment is to mitigate the hazard presented by the fire-damaged trees, provide a safe area to replant suitable native trees. The purpose of scattering the mulch over the burned area is to moderate the soil surface temperature, help retain soil moisture, help stabilize the soil surface, and add organic material to improve soil conditions for natural regeneration of native annual and perennial plant species. E. Treatment Effectiveness Monitoring Proposed: The stumps will be inspected annually to assure there is no re-sprout. The mulch distribution will be inspected annually to see that there remains a fairly even distribution and that the mulch isn't redistributed in a way that interferes with natural regeneration. There is no specific monitoring of the natural regeneration proposed. Frog recovery at this location will continue to be monitored by partners at UNLV without cost to this project.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
3 GS-5 Biotech @ \$18.73/hour x 80/hrs each = \$4495/FY x 3 FY	\$13,486
1 GS-12 Program Manager/COTR @ \$46.65/hour x 80 hours = \$3732/FY x 3 FY	\$11,196
TOTAL PERSONNEL SERVICE COST	\$24,682
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
2.5 gallons of Herbicide @ \$100/gal = \$250/FY x 3 FY	\$750
TOTAL MATERIALS AND SUPPLY COST	\$750
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
2 GSA trucks @ \$0.45/mile x 110 miles/per round trip x 5 trips/FY = \$495/FY x 3 FY	\$1485
TOTAL TRAVEL COST	\$1485
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Contractor for palm tree removal and shred/mulch on site x 1 FY	\$25,000
TOTAL CONTRACT COST	\$25,000

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY08	10/01/2007	09/30/2008	S	acres	\$11,324	3	\$33972
FY09	10/01/2008	09/30/2009	F	Acres	\$2991	3	\$8972
FY10	10/01/2009	07/04/2010	F	acres	\$2991	3	\$8972
TOTAL							\$51,916

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

SOURCE OF COST ESTIMATE

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

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

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURSDICTION

JURISDICTION	UNITS TREATED	COST
NPS	3 acres	\$51,916
TOTAL COST		\$51,916

PART F - INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	Replant native trees	PART E SPECIFICATION #	2
NFPORS TREATMENT CATEGORY*	Reforestation	FISCAL YEAR(S) (list each year):	FY08, FY09, FY10
NFPORS TREATMENT TYPE *	Planting (acres)	WUI? Y / N	N
IMPACTED COMMUNITIES AT RISK	N	IMPACTED T&E SPECIES	Y

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

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

Number and Describe Each Task: A. General Description: The park's own native plant nursery will provide 5 gallon root stock of screwbean mesquite and/or other suitable native riparian tree species to plant where the palm trees have been removed from the riparian area. Goodings willows will be replanted adjacent to the two picnic tables to provide shade where the shade trees were lost in the fire. B. Location/(Suitable) Sites: Rogers Spring site where soil and slope conditions are appropriate for planting. C. Design/Construction Specifications: 1. After the palm trees are removed and mulched on site (see specification #1), identify 5 gallon root stock from the park nursery. Based on availability and site conditions, preference will be given to screwbean mesquite for the riparian area and Goodings willows for the shade trees in the picnic area. 2. The Lake Mead Exotic Plant Management Team and Vegetation Restoration Crew will be used to transport the trees, prepare the planting sites and plant the trees. Work is expected to be completed in one work day, sometime during winter or spring of 2007-08. 3. Planted trees will be protected from herbivory and trampling by the installation of tree shelters around the outplanted trees. These tree shelters will be removed when the trees reach a suitable size where they are no longer vulnerable to damage. 4. The park's Vegetation Manager or Horticulturalist will serve as the project manager, selecting the plants, directing the planting, and monitoring the results. D. Purpose of Treatment Specifications: The purpose of this treatment is to replace the ecological function of the non-native palm trees that were lost in the fire, using native trees suitable to the site to provide thermal cover for the aquatic habitat, roosting/perching sites for birds and other riparian species, and shade for the picnic tables. E. Treatment Effectiveness Monitoring Proposed: The outplanted trees will be assessed quarterly for the first year and annually thereafter to determine survivorship. Dead trees will be replaced as needed. Supplemental care, such as watering, will be considered on a case by case basis as determined by site conditions. Frog recovery at this location will continue to be monitored by partners at UNLV without cost to this project.
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
3 person restoration crew (GS-7 @ \$23.20/hr x 10 hours x 1 FY)	\$696
8 person EPMT crew (GS-5 @ \$18.73/hr x 10 hours x 1 FY)	\$1498
Oversight and monitoring (GS-12 @ \$46.65/hr x 10 hrs = \$467/FY x 3 FY = \$1400)	\$1400
TOTAL PERSONNEL SERVICE COST	\$3594
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Nursery stock in 5 gallon containers (trees @ \$10/tree x 25 trees x 1 FY)	\$250
Tree guards and miscellaneous planting supplies	\$200
TOTAL MATERIALS AND SUPPLY COST	\$450
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
3 trucks @ \$.45/mile x 110/per round trip x 1 trip/FY = \$149/FY x 3 FY	\$446
TOTAL TRAVEL COST	\$446
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY08	10/01/2007	03/01/2008	F	acres	\$1087	3	\$3260
FY09	10/01/2008	05/01/2009	F	Acres	\$205	3	\$615
FY10	10/01/2009	05/01/2010	F	acres	\$205	3	\$615
TOTAL							\$4490

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

SOURCE OF COST ESTIMATE

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

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

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURSDICTION

JURSDICTION	UNITS TREATED	COST
NPS	3 acres	\$4490
TOTAL COST		\$4490

PART F - INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	Invasive species control	PART E SPECIFICATION #	3
NFPORS TREATMENT CATEGORY*	Invasive Species	FISCAL YEAR(S) (list each year):	FY08, FY09, FY10
NFPORS TREATMENT TYPE *	Hand treatment (acres)	WUI? Y / N	N
IMPACTED COMMUNITIES AT RISK	N	IMPACTED T&E SPECIES	Y

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

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

Number and Describe Each Task: A. General Description: Non-native palm and saltcedar seedlings will be removed quarterly from the burned area generally using hand pulling to prevent establishment. As needed, immediately adjacent seed trees may be removed by mechanical or chemical means as appropriate. No other weedy species are anticipated, but if any other weed species do occur in the burned area they will also be removed. B. Location/(Suitable) Sites: Rogers Spring site where weeds invade and immediately adjacent unburned areas that could distribute weed seed into the burned area. C. Design/Construction Specifications: 1. The Lake Mead Exotic Plant Management Team will inspect and treat the site quarterly, hand-pulling all newly established seedlings in the burned area and treating other weeds or adjacent seed sources as conditions warrant. It is expected to take one day per quarter for this treatment. 2. The treated area will be mapped and the data entered into APCAM as the agency standard for weed treatment. 3. If conditions of FY08 indicate that such treatment is needed in subsequent years, this treatment will be continued. D. Purpose of Treatment Specifications: The purpose of this treatment is to prevent the establishment of non-native woody vegetation in this desert riparian area to allow for the re-establishment of native riparian habitat for the benefit of a host of native plant and animal species, including the highly imperiled relict leopard frog. E. Treatment Effectiveness Monitoring Proposed: The treated areas will be inspected and re-treated quarterly as needed. Treatments will be mapped and the data managed as per standard operating procedures for the Exotic Plant Management Team. Frog recovery at this location will continue to be monitored by partners at UNLV without cost to this project.
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
8 person EPMT crew (GS-5 @ \$18.73/hr x 40 hours x 1 FY [FY08])	\$5994
3 person EPMT crew (GS-5 @ \$18.73/hr x 40 hours = \$2248/FY x 2 FY [FY09+FY10])	\$4495
TOTAL PERSONNEL SERVICE COST	\$10,489
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
GSA Vehicles (2 trucks @ \$0.45/mile x 110/ round trip x 1 trip/FY x 1 FY [FY08])	\$100
GSA Vehicles (1 truck @ \$0.45/mile x 110/round trip x 1 trip/FY = \$50/FY x 2 FY [FY09+FY10])	\$100
TOTAL TRAVEL COST	\$200
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY08	10/01/2007	09/30/2008	F	acres	3		\$6093
FY09	10/01/2008	09/30/2009	F	acres	3		\$2298
FY10	10/01/2009	09/30/2010	F	acres	3		\$2298
TOTAL							\$10,689

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

SOURCE OF COST ESTIMATE

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

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

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURSDICTION

JURSDICTION	UNITS TREATED	COST
NPS	3 acres	\$10,689
	TOTAL COST	\$10,689

PART F - INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	Compliance consultations	PART E SPECIFICATION #	4
NFPORS ACTIVITY CATEGORY*	Planning	FISCAL YEAR(S) (list each year):	FY08
NFPORS ACTIVITY TYPE *	Consultation	WUI? Y / N	N
IMPACTED COMMUNITIES AT RISK	N	IMPACTED T&E SPECIES	Y

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

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

Number and Describe Each Task:

A. General Description:
Park staff will complete environmental compliance documentation and consultations. It is anticipated that informal consultation with the US Fish and Wildlife Service will be completed in compliance with Section 7 of the Endangered Species Act due to the projects relationship to habitat for the relict leopard frog. It is anticipated that consultation with the State Historic Preservation Office will be conducted in compliance with Section 106 of the National Historic Preservation Act due to the potential for disturbance to cultural resources, including potential archaeological sites (commonly associated with perennial water in the desert) and cultural landscape features.

B. Location/(Suitable) Sites: The entire project area at Rogers Spring.

C. Design/Construction Specifications:
1. Complete internal processing of the NPS Environmental Screening Form as per Lake Mead standard operating procedure.
2. Determine need for consultations and prepare consultation materials as needed.
3. Complete consultations and documentation for the administrative record.
4. Incorporate any required monitoring or mitigation requirements into proposed treatments.

D. Purpose of Treatment Specifications: The purpose of this activity specification is to assure the proposed treatments are in compliance with applicable laws, including consultations with US Fish and Wildlife Service and State Historic Preservation Office.

E. Treatment Effectiveness Monitoring Proposed: Not applicable.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
1 GS-12 Cultural Resource Specialist @ \$46.65/hour x 40 hours = \$1866/FY x 1 FY	\$1866
1 GS-12 Natural Resource Specialist @ \$46.65/hour x 40 hours = \$1866/FY x 1 FY	\$1866
TOTAL PERSONNEL SERVICE COST	\$3732
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACPL SHMENTS	PLANNED COST
FY08	10/01/2007	02/01/2008	F	--	--	--	\$3732
TOTAL							\$3732

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

SOURCE OF COST ESTIMATE

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

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

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURSDICTION

JURISDICTION	UNITS TREATED	COST
NPS	N/A	\$3732
	TOTAL COST	\$3732

PART G – CONSULTATIONS

Consultations with the US Fish and Wildlife Service and the Nevada Historic Preservation Officer will be undertaken as described in Activity #4.

Several members of the park staff as well as cooperators from the Public Lands Institute of the University of Nevada Las Vegas were consulted during the development of this plan to assure that resource concerns were adequately addressed and to determine that the proposed actions are likely to attain their desired effects.

PART H – REFERENCES

The following documents served as primary reference materials in the development of this plan:

National Park Service. 1985. General Management Plan and Environmental Impact Statement for Lake Mead National Recreation Area. National Park Service.

National Park Service. 2007. Draft Weed Management Plan for Lake Mead National Recreation Area. National Park Service.

NatureServe. 2007. Comprehensive Report for Species *Rana onca* on NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: September 12, 2007).

APPENDIX I - BURNED AREA ASSESSMENT REPORTS

\$ *Vegetation Damage Assessment Report*

No other assessment reports were determined to be necessary given the small size of the fire and the treatments proposed.

- \$ While frog habitat is an important issue at this site, the fire itself did not impact the habitat other than through the removal of shade trees upstream of the most recently occupied frog habitat. The proposed actions to remove the burned palms, replant native trees, and prevent the establishment of invasive trees are the only actions needed to address this concern. As those actions are all adequately described in the Vegetation Assessment, it was determined that a Wildlife Assessment is not needed.
- \$ The burned area is relatively flat and the fire was somewhat patchy in its distribution, leaving unburned patches between burned patches. No measurable rainfall has occurred in the three months since the fire and most of the ash has been winnowed by wind and the desert pavement is being re-established through natural processes. As such, there is no great increase in fine particles to be mobilized in a rain event and water chemistry alteration as a result of ash is not anticipated. For these reasons, it was determined that a Watershed Assessment is not needed.
- \$ Cultural resource concerns are limited to the hole digging necessary for planting new trees and will be addressed in consultation with the SHPO during project review and mitigation measures, if any, will be implemented (e.g. on-site archaeological monitor present during planting). There are no other cultural resource issues, so it was determined that a Cultural Resource Assessment is not needed.

Rogers Spring Fire
VEGETATION ASSESSMENT

Prepared by Alice C. Newton, LAME Vegetation Manager

I. Objectives

- \$ To determine the potential for natural recovery of the site.
- \$ To determine the need for rehabilitation or restoration to recover the site to continue to serve as wetland habitat for native plants and animals (including *Rana onca*) and as a popular visitor use area.

II. Issues

- \$ Hazard trees – specifically fire-damaged or killed palms
- \$ Restoration of native riparian habitat
- \$ Loss of shade trees in the picnic area
- \$ Potential for invasion/re-invasion by non-native species, specifically palm and saltcedar

III. Observations

A. Background Information

Rogers Spring is a perennial wetland habitat, classified as a rheocene spring. The North American Benthological Society states that “Desert rheocene (springbrook) ecosystems are unique habitats formed where groundwater discharges to the earth’s surface and flows in a confined channel.” Rogers Spring is one of the most accessible and well-known springs in LAME.

The soils of the Rogers Spring area are classified as Govwash-Guardian-Badlands Association which are primarily coarse gravels on the upland and silty loams in the wetlands.

The native vegetation is composed of baccharis, arrowweed, vitis and other halophytic plant species with aquatic rushes, sedges and other wetland obligates. Screwbean and honey mesquites are dominant tree species, with desert willow and true willow (*salix*) species scattered throughout.

B. Reconnaissance Method

Alice Newton, Vegetation Manager for LAME, and Curt Deuser, Exotic Plant Management Team Liaison visited the Rogers Spring burned area on July 13. They walked the entire burned area, noting vegetation composition, tree mortality, and potential for invasion/re-invasion by non-native species. Both are long-time employees of Lake Mead who had been on this site many times in the past decade.

C. Findings

Twenty (20) large palms were severely damaged by the fire and in their dead and/or weakened condition present a falling hazard to visitors and/or infrastructure (tables, paths, signs) below. Should these trees fall unmitigated, they would also damage native vegetation, potentially impact the aquatic habitat in some cases, and the deadfall could harbor seedlings of saltcedar and palm. The potential for these palms to be re-established is high, but would be undesirable as they are non-native to LAME and the policy is to replace them in developed areas with native tree species. Two of the palms served as shade trees for picnic tables.

The soils of the site are high in gypsum content and tend to be salty, as evidenced by the species composition of the site. As such, it is generally unsuitable for cottonwood (which had been planted unsuccessfully there in the past) but would be suitable for screwbean mesquite or honey mesquite which are more salt tolerant. Goodings willow has proven to be a suitable shade tree in similar environments elsewhere in LAME, but would be harder to establish in the wetland edge. The risk for invasion by saltcedar is high, as this species is tolerant of the soil conditions and can readily invade wet soils and interfere with the establishment of native wetland trees. While saltcedar has been aggressively treated in the Rogers Spring area for many years, it is likely there are still nearby seed sources and/or intact seedbanks that could aid in the colonization of the site by this weedy species. The potential for natural recovery of the woody riparian trees by native tree species is relatively low as the native tree species tend to be very slow to establish and compete poorly against saltcedar.

The aquatic vegetation is composed of rushes and sedges (*Scirpus* spp., *Juncus* spp., *Eleocharis* spp., and *Carex* spp.) and where scorched are already re-sprouting. The root mats were in mud or water and are largely intact. The potential for natural recovery of the herbaceous aquatic vegetation is very high.

There is a small upland area that burned along the side of the wetland/riparian vegetation. While the shrub mortality in this area is high, the success in replanting such sites in the Mojave Desert is generally low. The soil chemistry makes invasion by annual or perennial herbaceous weeds somewhat unlikely. So while the potential for natural recovery of the upland shrub community is likely to take many years, it is not particularly vulnerable to weeds and should eventually re-establish itself.

IV. Recommendations

A. Management (specification related)

Specification #1: Remove fire-damaged palm trees. A local contractor should be hired to fell and shred on site 20 large palm trees damaged by the fire that present a falling hazard as well as interfere with the restoration of native riparian vegetation to the site. These are large, tall, unstable palms and for safety should be removed by a professional. The felled trees should then be mulched/shredded on site by contractor and the mulch material scattered over the burned area to improve soil condition for natural regeneration.

Specification #2: Replant native trees. The park's own native plant nursery should provide 5 gallon root stock of screwbean mesquite and/or other suitable native riparian tree species to plant where the palm trees have been removed from the riparian area. Goodings willows can be

replanted adjacent to the two picnic tables to provide shade where the shade trees were lost in the fire.

Specification #3: Invasive species control. Non-native palm and saltcedar seedlings should be removed quarterly from the burned area generally using hand pulling to prevent establishment. As needed, immediately adjacent seed trees may be removed by mechanical or chemical means as appropriate. No other weedy species are anticipated, but if any other weed species do occur in the burned area they should also be removed.

B. Specification Monitoring (specification related)

Stumps should be monitored for re-sprout, outplanted seedlings should be monitored for establishment and replaced in the event of mortality, and weeds should be monitored using standard procedures of the Exotic Plant Management Team.

C. Management (non-specification related)

The visitor use facilities should be redesigned and a large-scale landscaping plan should be established for this site, as was first recommended in the 1985 General Management Plan. As some of the facilities are nearing the end of their useful life and the park should develop an overall site plan that includes visitor education opportunities as well as protection of the natural features of this desert oasis. Such a project is beyond the scope of BAR and should be considered as a capital improvement project.

APPENDIX II - ENVIRONMENTAL COMPLIANCE

As per Lake Mead Policy this project will be submitted to the management team for conceptual approval and then an NPS environmental screening form will be drafted for the proposed treatments. It is expected that the environmental screening form will be signed sometime in October 2007. Compliance consultations will be completed as outlined in Activity #4. The three proposed treatments and one activity are all suitable for categorical exclusion under the National Environmental Policy Act (NEPA) as shown on the table below.

#	Treatment	Applicable Categorical Exclusion (reference DO/RM-12)
1	Remove fire damaged palm trees	E(3): Removal of individual members of ...exotic plants that pose an imminent danger to visitors or an immediate threat to park resources.
2	Replant native trees	E(2): Restoration of non-controversial native species into suitable habitats within their historic range.
3	Invasive species control	E(3): Removal of individual members of ...exotic plants that pose an imminent danger to visitors or an immediate threat to park resources.
4	Compliance consultations	M. (undocumented categorical exclusion) Day-to-day ... resource management... activities that have no potential for environmental impact or are not otherwise listed.

APPENDIX III - MAPS

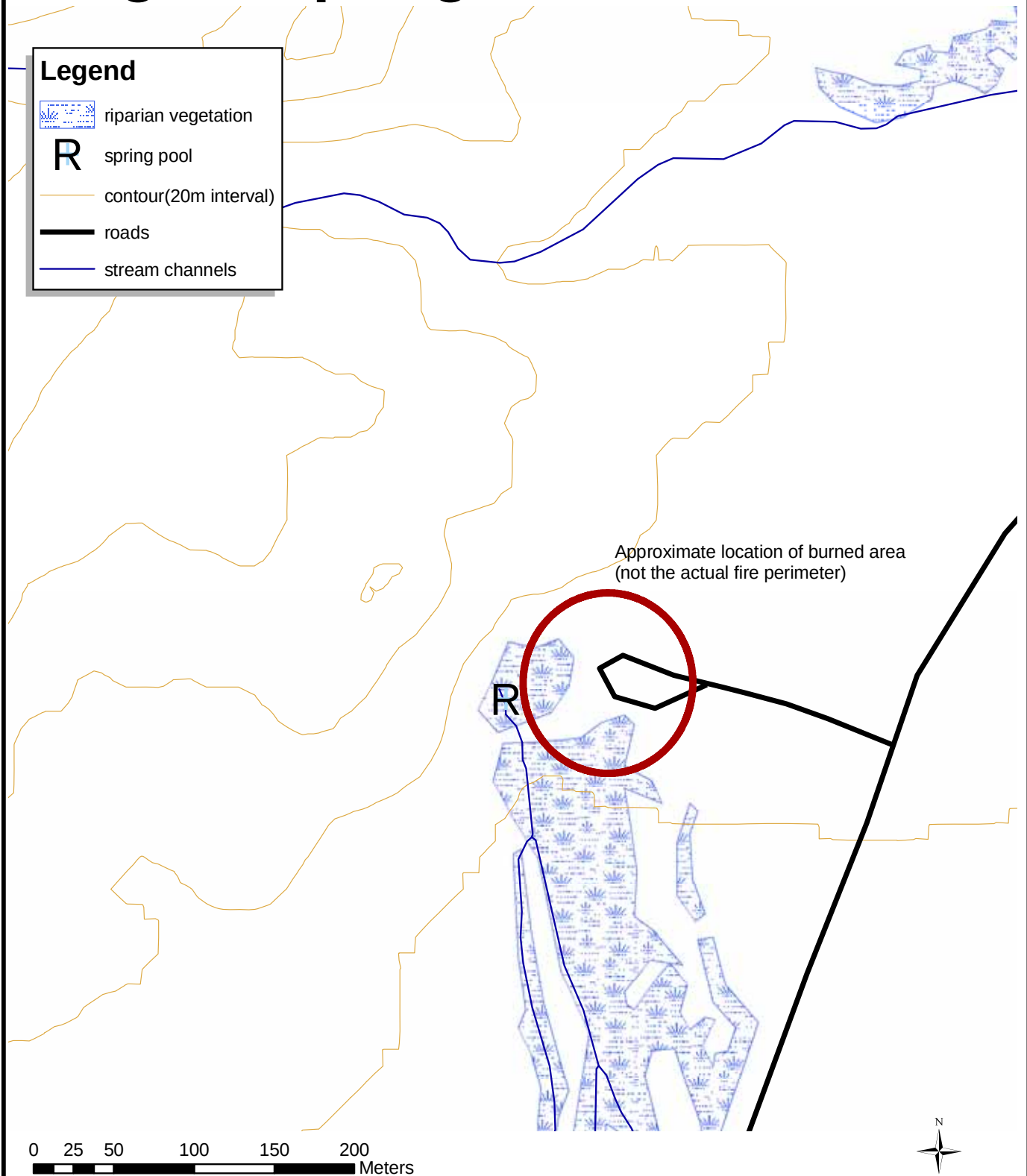
- \$ Rogers Spring Site Map
- \$ Rogers Spring Location Map



Rogers Spring Site

Legend

-  riparian vegetation
-  spring pool
-  contour(20m interval)
-  roads
-  stream channels



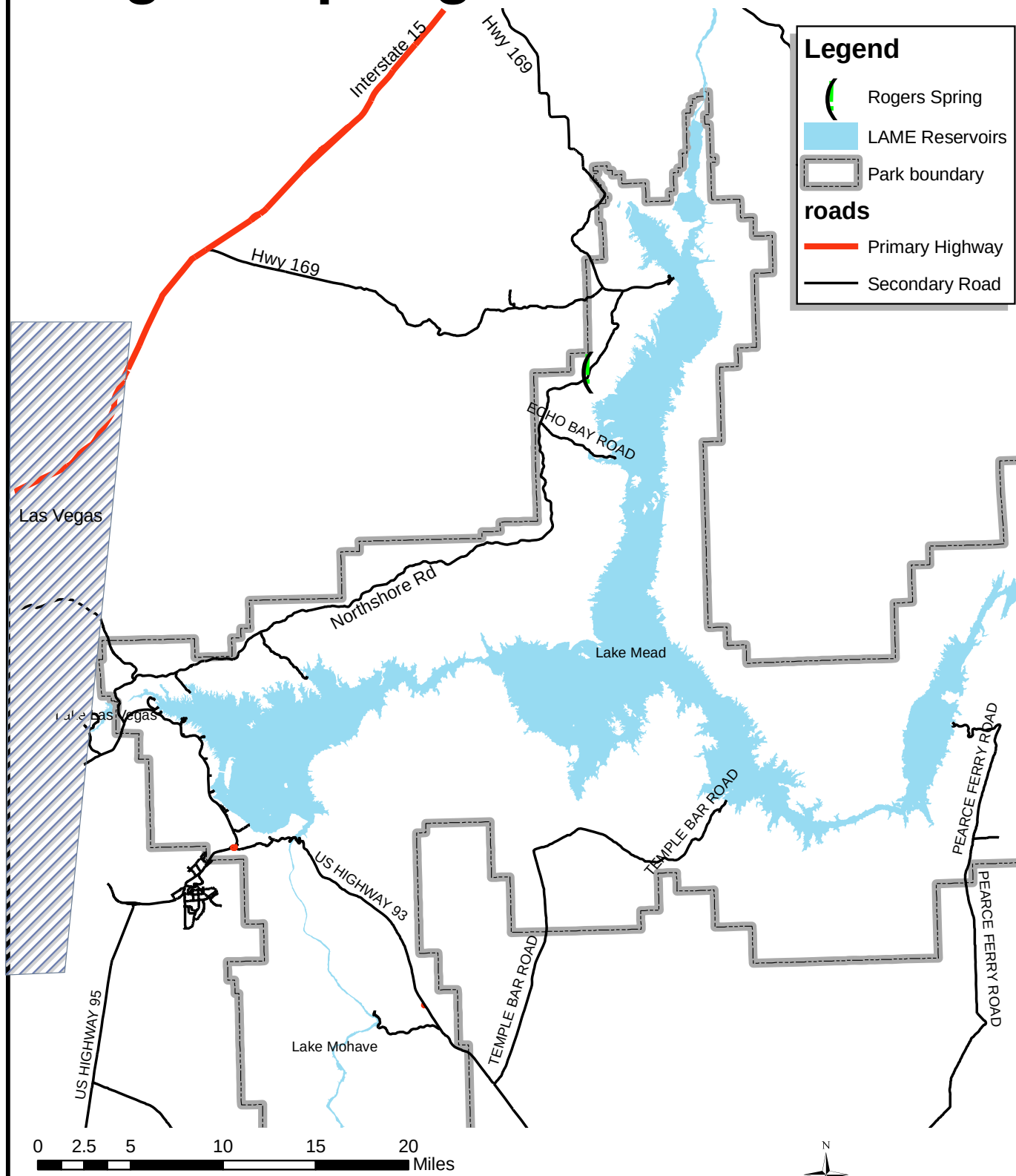
Produced by S. Dingman, NPS Biologist

September 2007

FILE: C:/Documents and Settings/SDingman/My Documents/LAME Fire/RogersSpringBAR/map.mxd



Rogers Spring Location



Produced by S. Dingman, NPS Biologist

FILE: C:/Documents and Settings/SDingman/My Documents/LAME Fire/RogersSpringBAR/map.mxd



September 2007

APPENDIX IV - PHOTO DOCUMENTATION



Photo 1: Aerial overview of Rogers Spring riparian corridor shown as green wetland area near top of photo (pre-fire)



Photo 2: Rogers Spring pool several years ago before saltcedar treatment (pre-fire)



Photo 3: Relict leopard frog (*Rana onca*)



Photo 4: View to southeast of parking area (post-fire).



Photo 5: View to the southwest of parking area showing picnic structure (post-fire)



Photo 6: View to the southwest of picnic structure showing burned vegetation on pond edge (post-fire).



Photo 7: Burned riparian area showing wetland emergent recovery (post-fire).



Photo 8: Looking north, showing patchy burn pattern (post-fire).



Photo 9: Intense burn here, little emergent recovery (post-fire).