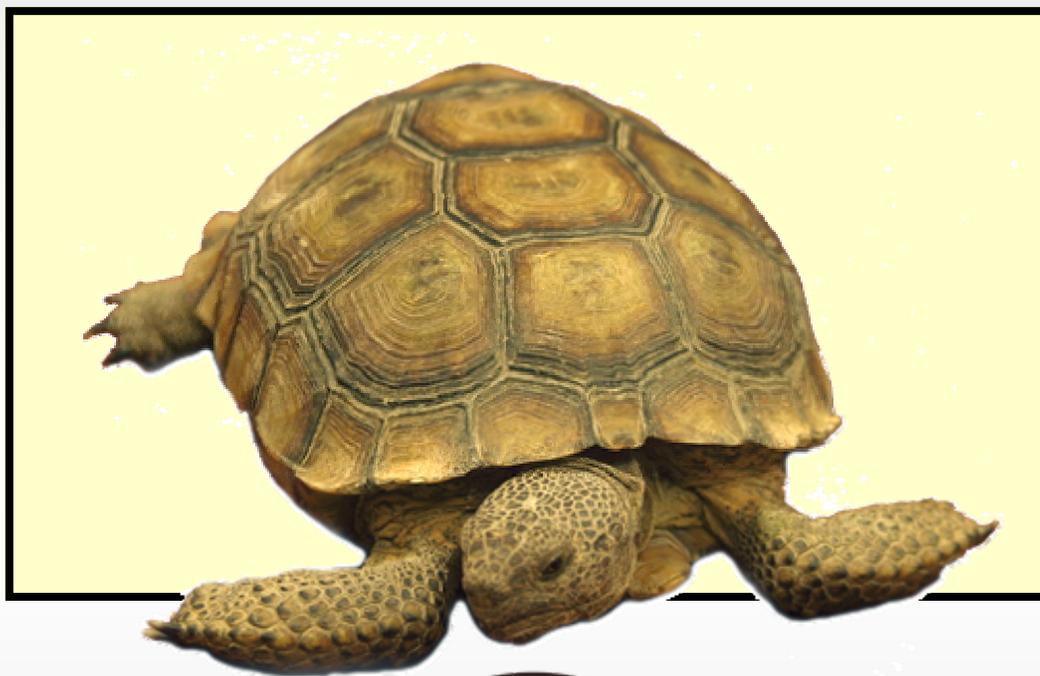


Southern Nevada Complex Coyote Sub-Complex Desert National Wildlife Refuge

BURNED AREA EMERGENCY STABILIZATION PLAN



Prepared By:

National-Interagency Burned Area Emergency Response Team
Las Vegas, Nevada, July 11, 2005

BURNED AREA EMERGENCY STABILIZATION PLAN

SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE

AGENCY/UNIT: U.S. Fish and Wildlife Service
Desert National Wildlife Refuge

LOCATION: Las Vegas, Nevada

DATE: July 11, 2005

PREPARED BY: National-Interagency Burned Area Emergency
Response Team (Hadley)



Submitted By: _____

Dick Birger, FWS, Project Leader, Desert NWRC

_____ Date

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

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

I. EMERGENCY STABLIZATION PLAN CONCURRENCE

- Concur**
- Concur with Revision**
- Disapproved**

Explanation for Revision or Disapproval:

Dick Birger, Project Leader, Desert National Wildlife Refuge Complex Date

I. EMERGENCY STABLIZATION PLAN CONCURRENCE

- Concur**
- Concur with Revision**
- Disapproved**

Explanation for Revision or Disapproval:

Doug Waggoner, Reg. Fire Management Coordinator, Calif/Nev Operations Date

II. EMERGENCY STABILIZATION PLAN APPROVAL

- Concur**
- Concur with Revision**
- Disapproved**

Explanation for Revision or Disapproval:

Steve Thompson, Manager, California/Nevada Operations Date

BURNED AREA EMERGENCY STABILIZATION PLAN

SOUTHERN NEVADA COMPLEX COYOTE SUB-COMPLEX DESERT NATIONAL WILDLIFE REFUGE FIRES

EXECUTIVE SUMMARY

This plan addresses emergency stabilization of fire effects as a resulting from the Southern Nevada Complex, Coyote Sub-Complex, Desert National Wildlife Refuge fires (DNWR Fires). The plan has been prepared in accordance with the *Department of the Interior, Departmental Manual, Part 620: Wildland Fire Management, Chapter 3: Burned Area Emergency Stabilization and Rehabilitation* (September, 2003) and the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook. This document provides emergency stabilization for lands on Desert National Wildlife Refuge administered by the US Fish and Wildlife Service.

The primary objectives of the Southern Nevada Complex, Coyote Sub-Complex, Desert National Wildlife Refuge fires Burned Area Emergency Stabilization are:

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

The DOI Interagency Burned Area Emergency Response (BAER) Team has conducted an analysis of fire effects using aerial and ground reconnaissance methods throughout the fire area.

Archaeologists determined that no known cultural resources within the fire were impacted by suppression impacts nor would post-fire effects impact cultural resources. The vegetation specialist evaluated and assessed fire effects to vegetation resources including noxious weed populations and identified values at risk associated with vegetation losses. The wildlife biologist conducted an assessment of fire effects to Threatened and Endangered (T&E) wildlife and their associated habitat. The biologist also evaluated suppression impacts to wildlife species and initiated emergency Section 7 consultation with the U.S. Fish and Wildlife Service, Las Vegas Field Office. The GIS specialists gathered data layers necessary for the plan, coordinated GPS activities, processed data calculations for other resource specialists, and produced maps for analysis, for the ES Plan, and for presentations.

Resource assessments produced by these specialists can be found in Appendix I and treatments identified in the assessments are located within Part F, Specifications. A summary of treatment costs is located within Part E. Part I is provided as a signature page for agency review and approval. Appendix II contains the National Environmental Policy Act (NEPA) compliance summary for all recommended treatments. Appendix III contains photo documentation of fire effects while Appendix IV contains ESR Plan maps. Appendix V contains supporting documentation.

Fire Location

The DNWR Fires began on June 22, 2005 at between 1:00 AM and 9:00 AM as a lightning storm rolled across the refuge. The Dry lake, Dry Rock, and the Forgotten Fires were reported at 9:00 am by a citizen, and at 10:00 am fire personnel reported the Coyote Fire. The Lamb and Wamp Fires were discovered on June 23, 2005 at 11:00 AM by the Refuge Complex Fire Management Officer. The Dry Lake and Middle Fires burned together, as did the Lamb and Coyote Fires. Suwyn's Type II, Incident Management Team was managing a series of fires within the Southern Nevada Complex including the Coyote Sub-Complex on Desert NWR. Command was transferred to Krugman's Type I IMT on June 30, 2005. All five fires were contained on July 4, 2004 and controlled on July 6, 2005. The Desert NWR

manages approximately 19,821 acres with the fire perimeters, the Bureau of Land Management manages 5,463 acres.

Vegetation resources were impacted to varying degrees as fire intensities varied across the landscape. Combinations of wind, fuel, slope and plume driven fire behavior contributed to difficult suppression conditions. Thunderstorms moving through the area caused downburst winds with little to no precipitation over the fire area. Suppression resources were pulled back to safety zones several times during the incident. The Mojave Desert was lush with vegetation following a record-setting winter and therefore rates of spread were extreme.

Coyote Sub-Complex fire suppression actions included the use of two Type 4 engines, one Type 3 engine, and two twenty-person hand crews. A scratch line was placed along the northern edge of the Dry Rock Fire.

Elevations range from 3,000 feet to 5,600 feet. Primary plant communities include desert scrub, mixed mid-elevation desert scrub, and it burned up into the pinyon-juniper woodland and substantial sparsely vegetated rock outcrops.

Management

Two plans relevant to ES which contain management direction are the Complex's Fire Management Plan and the Desert Tortoise (Mojave Population) Recovery Plan.

ISSUES AND OBJECTIVES

The BAER Team received an initial team briefing on July 6, 2005 at the Desert National Wildlife Refuge Complex Office. The fire and resource staff were present and provided valuable information concerning fire history, resources at risk, logistics, BAER plan issues and objectives.

Primary issues identified by the Complex and Refuge personnel included:

- Impacts to Desert Tortoise populations and their habitats
- Impacts to Big Horn sheep habitat
- Impacts to cultural resources
- Potential for looting of cultural resources
- Non-native species invasion
- Impacts to boundary signs

Between July 6, 2005 and July 8, 2005 the BAER Team conducted field investigations within the Coyote Sub-Complex fires, interfaced with local resource advisors, and program staff, and evaluated emergency stabilization needs. Based upon field reviews and findings, the team has developed this plan to address the following issues:

- Protection of critical cultural and natural resources.
- Assessment of Threatened and Endangered Desert Tortoise and their habitat.
- Noxious weed and invasive species establishment and expansion within the fire area.
- Protection of the ecological integrity of fragile desert ecosystems

Resource Assessments

Vegetation

No Threatened & Endangered or Sensitive plant species were affected by the fires. The potential exists for invasion of burned areas by non-native weeds, which could negatively impact suitable desert tortoise habitat. Otherwise, impacts to vegetation resources were relatively minor and burned areas are expected to recover over time.

Wildlife

Endangered Species Act Section 7 Emergency Consultation has been initiated for federally listed species. It was determined that there were no significant effects to species included within the assessment caused by fire or suppression actions.

One tortoise was found within the Dry Rock Fire that had perished as a result of the fire, however live tortoises were observed by suppression crews while on the incident.

Cultural Resources

No prehistoric or historic sites have been documented within the fire perimeters. No emergency stabilization treatments were necessary for cultural resource sites. Two agave roasting pits are documented within the Lamb Fire and five others were noted during the over flight of the fire by Team Archaeologists.

Emergency Stabilization

Based on aerial and ground surveys the BAER Team identified the following treatments for implementation. These treatments are in accordance with National ESR Policy, and the Interagency Burned Area Emergency Stabilization, September, 2003.

- Replace and Install public safety signs
- Non-Native Invasive Species Control
- Road Closure

The BAER Team conducted a closeout presentation to Desert NWR and other interested parties on July 11, 2005, providing issues, findings and recommendations. The team detailed proposed emergency stabilization treatments to agency administrators and staff.

Implementing emergency stabilization treatments for non-native invasive species control, and road closures should be initiated as quickly as possible by refuge staff.

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

TABLE OF CONTENTS

PLAN APPROVALS.....i
EXECUTIVE SUMMARY.....iii

PART A - FIRE INFORMATION.....1
PART B - NATURE OF PLAN, STABILIZATION OBJECTIVES.....3
PART C - TEAM ORGANIZATION AND SUPPORT, CONSULTATIONS.....5
PART D - SUMMARY TABLES OF APPROVAL AUTHORITIES9
PART E - SUMMARY OF STABILIZATION ACTIVITIES11
PART F - SPECIFICATIONS:

1, REPLACE BOUNDARY SIGNS.....13
 2, NON-NATIVE INVASIVE SPECIES CONTROL.....15
 3, ROAD CLOSURE.....17

APPENDIX I RESOURCE ASSESSMENTS

WILDLIFE RESOURCE ASSESSMENT.....19
 CULTURAL RESOURCE ASSESSMENT27
 VEGETATION RESOURCE ASSESSMENT31

APPENDIX II ENVIRONMENTAL COMPLIANCE

NEPA ENVIRONMENTAL SCREENING FORM AND CATEGORICAL EXCLUSION.....41

APPENDIX III PHOTO DOCUMENTATION

APPENDIX IV MAPS

APPENDIX V SUPPORTING DOCUMENTATION

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

PART A FIRE LOCATION AND BACKGROUND INFORMATION

Fire Name	Southern Nevada Complex, Coyote Sub-Complex	Jurisdiction	Acres
Fire Number	NV-DSR-000046	<u>Bureau of Land Mgmt.</u>	5,421 Acres
Agency Unit	US Fish & Wildlife Service	<u>Desert National Wildlife Refuge</u>	19,595 Acres
Region	California/Nevada Operations		
State	Nevada		
County(s)	Lincoln, Clark		
Ignition Date/Manner	June 22, 2005 Lightning		
Zone	Western Great Basin		
Date Contained	July 5, 2005		
Date Controlled	July 6, 2005		

PART B NATURE OF PLAN

Type of Plan (check one box below)

Initial Submission	X
Update and Revising Initial Submission	
Supplying Information For Accomplishment To Date On Work Underway	
Different Phase Of Project Plan	
Final Report (To Comply With The Closure Of The EFR Account	

EMERGENCY STABILIZATION OBJECTIVES

- Locate and stabilize severely burned conditions that pose a direct threat to human life, property, or critically important cultural and natural resources.
- Recommend post-fire emergency stabilization prescriptions that prevent irreversible loss of natural and cultural resources.
- Conduct immediate post-burn reconnaissance for fire suppression related impacts to threatened and endangered (T&E) species, and cultural sites.
- Develop monitoring specifications designed to document relative effectiveness of emergency stabilization treatments or whether additional emergency stabilization treatments are required.

BURNED AREA EMERGENCY STABILIZATION PLAN

PART C - TEAM ORGANIZATION

NATIONAL INTERAGENCY BAER TEAM MEMBERS

POSITION	TEAM MEMBER / AGENCY
Team Leader	Richard Hadley, FWS
Vegetation	Hal Luedtke, BIA
Wildlife	Ken Griggs, FWS
Cultural	Carla Burnside, FWS Dan Hall, BIA
GIS	Luther Arizana, BIA (Lead) Gerald Barnes, Passamaquoddy Tribe
IT / Documentation	Richard Inman, BIA

Resource Advisors: (Note: Resource Advisors are individuals who assisted the BAER Team with the preparation of this plan. See the consultations Section of this plan for a full list of agencies and individuals who were consulted or otherwise contributed to the development of this plan.

NAME	AFFILIATION, SPECIALTY
Dick Birger	FWS, Project Leader, Desert NWR Complex 702-515-5450
Michael Burroughs	FWS, Wildlife Biologist, Las Vegas Field Office 702-515-5242
Amy LaVoie	FWS, Deputy Assistant Field Supervisor, Las Vegas Field Office 702-515-5250
John Levis	FWS, GIS Specialist, Las Vegas Field Office 702-515-5254
Christina Lund	BLM, Botanist, Las Vegas, NV 702-515-5098
Christiana Manville	FWS, Fish and Wildlife Biologist, Las Vegas Field Office 702-515-5240
Lee Nelson	FWS, Fire Management Officer, Desert NWR Complex 702-515-5456
Shawn Whelan	BLM, Fire Captain, Las Vegas, NV 702-596-4004
Amy Sprunger-Allworth	FWS, Refuge Manager, Dersert NWR 702-879-6110

BURNED AREA EMERGENCY STABILIZATION PLAN

CONSULTATIONS

U.S. Fish and Wildlife Service

Dick Birger, Project Leader, Desert National Wildlife Refuge Complex
Lee Nelson, Fire Management Officer, Desert National Wildlife Refuge Complex
Amy La Voie, Deputy Assistant Field Supervisor, Ecological Services, Las Vegas, Nevada
Michael Burroughs, Wildlife Biologist, Ecological Services, Las Vegas, Nevada
Christiana Manville, Fish and Wildlife Biologist, Ecological Services, Las Vegas, Nevada
John Levi, GIS Coordinator, Desert National Wildlife Refuge Complex

Bureau of Land Management

Christina Lund, Botanist, Las Vegas Field Office, Las Vegas, Nevada
Shawn Whelan, BLM Fire, Las Vegas Field Office, Las Vegas, Nevada

U.S. Geological Survey

Dr. David Pyke, Biological Resources Discipline, Corvallis, Oregon
Dr. Matthew L. Brooks, Research Botanist, Biological Resources Discipline
Western Ecological Research Center, Henderson, Nevada

Bechtel Corporation

W. Kent Ostler, Science Supervisor, Ecological Services, Bechtel Nevada.
Under contract with U.S. DOD, Nellis Air Force Base, Nevada

PART D - SUMMARY OF APPROVAL AUTHORITIES

U.S. FISH AND WILDLIFE SERVICE

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL (Emergency Stabilization Requests (Charged to ES)).	Cost
#1, Replace Boundary Signs	\$2,970
#2, Non-Native Invasive Species Control	11,944
#3, Road Closure	\$13,996
TOTAL	\$28,910

PART E SUMMARY OF ACTIVITIES

The SUMMARY OF ACTIVITIES table identifies emergency stabilization costs charged or proposed for funding from fire suppression rehabilitation, emergency stabilization, or rehabilitation funding sources. The total cost of the treatments excluding the costs absorbed by the fire (fire crew, labor and associated overhead) is displayed as either Fire Suppression Rehabilitation (**SR**), Emergency Stabilization (**ES**), Rehabilitation (**R**), or Agency Operations/Other (**OP/O**).

PART E – U.S. FISH AND WILDLIFE SERVICE

No.	TREATMENT SPECIFICATION	UNIT	UNIT COST	# OF UNITS	FUND SOURCE		IMPLEMENTATION METHOD	SPECIFICATION TOTAL
					SR	ES		
1	Replace Boundary Signs	Sign	\$149	20		ES	P, M	\$2,970
2	Non-Native Invasive Species Control	Miles	\$1,257	9.5		ES	P, M	\$11,944
3	Road Closure	Gate	\$6,998	2		ES	P, M	\$13,996
							TOTAL	\$28,910

BURNED AREA EMERGENCY STABILIZATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	REPLACE BOUNDARY SIGNS	JURISDICTIONS:	USFWS Desert NWR
PART E: LINE ITEM:	#1, Replace Boundary Signs	FISCAL YEAR:	2006
ESR REFERENCE #:	6.3.3.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. Provide a Brief General Description of Treatment
Replace Refuge boundary signs damaged by fire.
B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment
See Treatments Map
C. Provide and Number Detailed Design/Construction Specifications
1. Purchase signs.
2. Install signs through force account labor.
D. Describe Purpose of Treatment Specification – What Resource will be Protected
Signs are necessary for public notification of entrance onto Refuge lands. This is considered essential to protect the threatened desert tortoise and other critical natural resources.
E. Describe Treatment Effectiveness Monitoring
Inspect force account sign installation.

II. LABOR, EQUIPMENT, 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
Labor 2 laborers @ \$20/hour X 40 hours	\$1,600
TOTAL PERSONNEL SERVICE COST	\$1,600
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	COST/ITEM
GSA 4WD Truck ¼ month @ \$600/month	\$150
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	\$150
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	COST/ITEM
Signs 20 signs @ \$61/sign	\$1,220
TOTAL MATERIAL AND SUPPLY COST	\$1,220
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item)	COST/ITEM
TOTAL TRAVEL COST	

Replace Boundary Signs

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	COST /ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
2006	Sign	\$149	20	\$2,970	ES	P
TOTAL	Sign	\$149	20	\$2,970	ES	P
FUNDING SOURCES		SPECIFICATION TYPE		METHOD OF COMPLETION		
F = Fire Suppression ES/R = Emergency Stabilization/ Rehab. OP/O = Agency Operating Fund EWP = Emergency Watershed Program		ES = Emergency Stabilization R = Rehabilitation FS = Fire Suppression		P = Agency Personnel Services C = Contract EFC = Emergency Fire Contract FC = Crew Labor Assigned to Fire		

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
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
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

III. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within BAER Plan
See Wildlife and Vegetation Assessments for description of needs. See Treatments Map for sign locations.

IV. TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS Desert NWR	20 Signs	\$2,970
TOTAL COST	20 Signs	\$2,970

BURNED AREA EMERGENCY STABILIZATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	NON-NATIVE INVASIVE SPECIES CONTROL	JURISDICTIONS:	USFWS-Desert NWR
PART C: LINE ITEM:	#2, NON-NATIVE INVASIVE SPECIES CONTROL	FISCAL YEAR:	2006
ESR REFERENCE #:	8.3.2.1 Non-native Invasive Plant Detection and Control	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. Provide a Brief General Description of Treatment
Detect, control, and monitor non-native invasive species in burned areas and prevent the expansion of known populations into newly disturbed sites.
B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment
All roads on Refuge lands accessing the proximity of burn areas from Highway 93 (see Treatments Map):
C. Provide and Number Detailed Design/Construction Specifications
<ol style="list-style-type: none"> 1. Survey vector corridors during the growing season for Sahara mustard (<i>Brassica tournefortii</i>) and other weeds State listed as noxious. 2. GPS map all detections, and maintain database of species, abundance, treatment methods, and effectiveness. Include photo documentation. 3. When feasible, control non-native invasive species. Control includes removal of species using a combination of hand pulling and spot chemical application with appropriate approved herbicide(s). Prior to herbicide application complete a pesticide use plan and associated National Environmental Policy Act (NEPA) compliance in accordance with Agency guidance and Environmental Protection Agency (EPA) label directions. 4. Bag and remove all plants in seed.
D. Describe Purpose of Treatment Specification – What Resource will be Protected
Control spread of non-native invasive species into susceptible burned areas that could potentially change the native plant composition, fire ecology and ecosystem function within suitable T&E species (desert tortoise) habitat
E. Describe Treatment Effectiveness Monitoring
Spot checking of invasive non-native plant sites to ensure control methods are meeting management objectives. Survey crews will visit treated sites within one week of treatment; this is especially important to ensure treatment effectiveness where herbicides are applied. Treatment is intended to completely remove target species. Monitoring data should be used to determine the need to request subsequent rehabilitation funding for follow-up treatments after the 12 month emergency stabilization period.

II. LABOR, EQUIPMENT, 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
Project Manager: GS-11 PFT @ \$2,752/PP x 2 PP	\$5,504
Field Technicians: GS-5 Seasonal @ \$1240/PP X 2 PP X 2	\$4,960
TOTAL PERSONNEL SERVICE COST	\$10,464

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	COST/ITEM
GSA Vehicle (4WD pickup) @ \$600/month x 1 month	\$600
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	\$600

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	COST/ITEM
GPS unit (Garmin or similar)	\$200
Digital camera	\$300
Herbicide Round-up (or other suitable) 3 gallons @ \$80/gallon	\$240
Shovels 2 @ \$20 each	\$40
Herbicide Hand Sprayers 2 @ \$50 each	\$100
TOTAL MATERIAL AND SUPPLY COST	\$880

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item)	COST/ITEM
TOTAL TRAVEL COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
2006	Miles	\$1,257	9.5	\$11,944	ESR	P
TOTAL	Sites	\$1,257	9.5	\$11,944	ESR	P
FUNDING SOURCES		SPECIFICATION TYPE		METHOD OF COMPLETION		
F= Fire Suppression ESR = Emergency Stabilization & Rehab. OP/O = Agency Operating Fund EWP = Emergency Watershed Program		ES = Emergency Stabilization R = Rehabilitation FS = Fire Suppression		P = Agency Personnel Services C = Contract EFC = Emergency Fire Contract FC = Crew Labor Assigned to Fire		

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
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
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

III. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Information derived from similar work conducted in the Mojave Desert by the National Park Service. See Vegetation Assessment and Treatments Map for treatment objectives and locations.

IV. TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS-Desert NWR	9.5 miles	\$11,944
TOTAL COST	9.5 miles	\$11,944

BURNED AREA EMERGENCY STABILIZATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	Road Closure	JURISDICTIONS:	USFWS
PART C: LINE ITEM:	#3, Road Closure	FISCAL YEAR:	2006
ESR REFERENCE #:	6.3.3.1 Minor Facilities	SPECIFICATION TYPE:	ES

I. WORK TO BE DONE

A. Provide a Brief General Description of Treatment
Culturally important sites within the vicinity of Wamp Spring are threatened by unauthorized visitors traveling on the road that provides access to this area. It is necessary to block this road at two key locations to prevent unauthorized visitation and possible looting/vandalism of sites. Installation of two steel pipe gates is proposed to help protect the sites.
B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment
1. Intersection of Wamp Springs service road with Mormon Well Road 2. Lower end of canyon above alluvial fan
C. Provide and Number Detailed Design/Construction Specifications
1. Excavate holes for gate posts, set post hang panel(s) from pre-attached hinges on posts, ensure that installed gates swing properly and can be easily opened and closed and locked. Install T-Posts, string, stretch and clip wire for wing fences.
D. Describe Purpose of Treatment Specification – What Resource will be Protected
Prevent unauthorized visitors from adversely impacting important cultural resources in the vicinity of Wamp Springs by eliminating vehicular access to the sites.
E. Describe Treatment Effectiveness Monitoring
FMO will monitor successful completion of gate installation, and provide documentation to BAER Plan implementation manager for inclusion in the annual accomplishment report.

II. LABOR, EQUIPMENT, 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
2 GS 9 Maintenance workers @ 24.09/hour X 24 hours X 1 fiscal year	\$1,157.
1 GS-12 Fire Management Officer @ 34.93/hour X 24 hours X 1 fiscal year	\$839.
TOTAL PERSONNEL SERVICE COST	\$1,996.

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	COST/ITEM
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	COST/ITEM
2 – 14-foot wide single-panel steel pipe gates, and wing fencing and materials @ \$6,000. X 1 Fiscal Year	\$12,000.
TOTAL MATERIAL AND SUPPLY COST	\$12,000.

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item)	COST/ITEM
TOTAL TRAVEL COST	

Road Closure

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	COST /ITEM
TOTAL CONTRACT COST	COST /ITEM

SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
2005						
2006	Gate	\$6,998	2	\$13,996.	ES	P
TOTAL						
FUNDING SOURCES F= Fire Suppression ESR = Emergency Stabilization & Rehab. OP/O = Agency Operating Fund EWP = Emergency Watershed Program		SPECIFICATION TYPE ES = Emergency Stabilization R = Rehabilitation FS = Fire Suppression		METHOD OF COMPLETION P = Agency Personnel Services C = Contract EFC = Emergency Fire Contract FC = Crew Labor Assigned to Fire		

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
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
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

III. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Cultural Resources Assessment, Appendix I.

IV. TOTAL COST BY JURSDICTION

JURISDICTION	UNITS TREATED	COST
USFWS	2	\$13,996.
TOTAL COST	2	\$13,996.

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

APPENDIX I RESOURCE ASSESSMENTS

- **WILDLIFE RESOURCE ASSESSMENT**
- **CULTURAL RESOURCE ASSESSMENT**
- **VEGETATION RESOURCE ASSESSMENT**



**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION PLAN**

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX, DESERT NWR
WILDLIFE RESOURCE ASSESSMENT**

I. OBJECTIVES

- Assess effects of the fire and suppression actions to Federally listed Threatened and Endangered species and their habitats.
- Conduct Section 7 Emergency Consultation with the U. S. Fish and Wildlife Service.
- Prescribe emergency stabilization measures and/or monitoring.
- Assess effects of proposed stabilization actions to listed species and habitats.
- Assess effects of the fire to desert bighorn sheep, their habitat, and water developments.

II. ISSUES

- One federally listed species occurs within the fire area.

III. OBSERVATIONS

A. Background

Fires within the Desert NWR Complex, which were part of the Southern Nevada Complex, burned approximately 25,284 acres between June 22, 2005 and July 6, 2005. Fires were ignited by a dry lightning storm that moved across the refuge. The Dry Rock, Middle, Dry Lake, and Forgotten fires were discovered by a citizen at 0900 on June 22, 2005. Fire personnel discovered the Coyote fire one hour later and the Refuge Fire Management Officer discovered the Lamb and Wamp fires the following day at 1100. The Dry Rock and Middle Fires burned together, as did the Lamb and Wamp fires. Fires were declared contained on July 4, 2005 and controlled July 6, 2005. Desert NWR experienced heavy rainfall during the winter of 2004-2005 resulting in abundant growth of shrubs and annual grasses. The lush vegetation allowed the fire to spread more effectively by carrying it through normally sparse patches on the landscape. The Desert NWR manages approximately 19,821 acres within the fire perimeters, while the Bureau of Land Management manages 5,463 acres.

No dozer lines were constructed to suppress the fires on Desert NWR. Fire engines remained on roads, except on the Dry Rock fire when three engines traveled around the perimeter of the fire to maintain containment and extinguish hotspots. A small amount (< ¼ mile) of fire handline was produced along the north end of the Dry Rock Fire. Fire retardant was not dropped on the fires of the Desert NWR.

Desert National Wildlife Refuge occupies approximately 1.5 million acres and consists of typical basin and range topography; a series of narrow north/south-trending mountain ranges separated by wide valleys. Elevations in the fire area range from 3,500 feet to 5,600. The regional climate is arid with an average rainfall of 4.4 inches on valley floors. Most precipitation falls from February through March and July through September. The average maximum summer temperature exceeds 100 degrees Fahrenheit during July and August. Average minimum temperatures fall below freezing only during the months of December and January.

Vegetation communities within the fire areas consisted of desert scrub, pinyon-juniper woodlands, and sparsely covered vegetated outcrops. There are numerous acres of suitable habitat for desert

tortoises within the Desert NWR. These acres also support many other species of wildlife typical of arid deserts. Three federally listed species occur within Desert NWR, with only one (desert tortoise) occurring in fire areas. Habitat improvements have been made to provide water sources for wildlife.

B. Reconnaissance Methodology and Results

Information for this assessment is based on a review of relevant literature, observations of wildlife on Desert NWR, habitat inventory information, consultation with U. S. Fish and Wildlife Service, and personal communication with Desert NWR and FWS Las Vegas Field Office management personnel. Information on the effects of the fire came from interviews with fire suppression personnel and fire area reconnaissance on July 6, 7, and 8, 2005, including helicopter flights over the fire area on July 6. To better understand the species and habitat information briefly discussed in this wildlife assessment, it is important to review the Desert NWR BAER Vegetation Assessment. This report contains more detailed descriptions of pre-fire vegetation and post fire vegetative recovery estimates.

The purpose of this assessment is to discuss the potential effects of fire, suppression actions and proposed emergency stabilization activities to federally listed species. The federally threatened desert tortoise (Mojave population) is the only listed species known to occur in the burned areas. The list of species to be addressed was developed from documents referenced in this report and input from Desert NWR Complex and FWS Las Vegas Field Office biologists and resource managers.

This assessment is not intended to definitively answer the many species effects questions that are inevitably raised during an incident such as the fires within the Desert NWR. The focus of this assessment is to determine the potential for immediate, emergency actions that may be necessary to prevent further impacts to federally listed species and their habitats occurring on Desert NWR lands. Because desert bighorn sheep (*Ovis canadensis*) protection is mandated by the enabling legislation for Desert NWR, this species is also addressed.

C. Findings

1. Biological Assessment for Federally Listed Species

Direct effects as described in this report refer to individual mortality or disturbance that results in flushing, displacement or harassment of the animal. Indirect effects refer to modification of habitat and/or prey species and possible subsequent effects to the species.

DESERT TORTOISE: The range of the desert tortoise includes the Mojave and Sonoran deserts in California, Nevada, Arizona, Utah, and Sinaloa, Mexico. The Mojave population of the desert tortoise was listed as threatened on April 2, 1990. Critical habitat for the Mojave population was designated on February 8, 1994. Within the Desert NWR, tortoises utilize flats and bajadas characterized by scattered shrubs with inter-spaced herbaceous growth. There is no designated Critical Habitat on Desert NWR, however suitable habitat is managed in the same manner.

DIRECT FIRE EFFECTS: Direct effects of fire on desert tortoise can vary depending on fire intensity, vegetation, and location of tortoises at the time of the fire. There were approximately 20,586 acres of potentially suitable habitat (less than 4,500 ft in elevation) within the fire area, of which 15,123 and 5,463 were on FWS and BLM land, respectively. Due to their lack of mobility, exposed desert tortoises within the fire area may have been overcome by flames or asphyxiated. Desert tortoises inside deep burrows would have been more protected, however asphyxiation could still cause mortality. The incident commander of the Dry Rock Fire reported four dead and 5 live tortoises within the burned area. In addition to notes taken on the condition of tortoises, a GPS coordinate was taken at each encounter location. This data was given to FWS, Las Vegas

Field Office biologists for their records and later investigation. While anecdotal, this information illustrates that the fire may have directly affected some exposed tortoises within burned areas.

INDIRECT FIRE EFFECTS: Indirect effects of fire may include a temporary loss of food plants, a shift in forage species, and a loss of perennial plants that provide thermal cover and protection from predators. Fire intensities within the perimeters of the Desert NWR Complex were low over nearly the entire area. This resulted in a mosaic of areas with low vegetation mortality (< 33% top killed) interspersed with unburned islands of habitat. Depending on their location, tortoises could make use of unburned or low mortality areas to meet their forage and cover needs. Any indirect effects resulting from the loss of vegetation will continue, though decreasing in intensity over time, as the plant community recovers. See the Vegetation Assessment for more details on post fire vegetation recovery.

DIRECT FIRE SUPPRESSION EFFECTS: Crushing of tortoises and/or burrows is one possible direct effect which could result from suppression activities, however no such incidents were reported. Fire engines remained on roads except during suppression of the Dry Rock Fire, when three engines drove around the perimeter to contain the fire and extinguish hotspots. When this occurred protective measures were employed to prevent damage to habitat and crushing of tortoises and their burrows. A spotter walked in front of the fire engine to ensure no tortoises or their burrows were in the path of the engine. They also helped guide the engine around patches of creosote and other vegetation species. There was no bulldozer line constructed on any fire within the Desert NWR Complex. Fire retardant was not used on fires on the Desert NWR. A small amount (approximately ¼ mile) of handline was cut on the north end of the Dry Lake Fire. Handline was surveyed by BAER team members for the presence of tortoises or their burrows. None were observed on or near the line. Burnout operations were not utilized as a suppression tactic on any fires within the Desert NWR Complex. It should be noted that suppression efforts followed recommendations outlined in the Desert NWR Fire Management Plan to minimize impacts to desert tortoise and their habitats.

INDIRECT FIRE SUPPRESSION EFFECTS: There appears to be no indirect effect to desert tortoises due to suppression activities. There was no bulldozer line constructed, no retardant dropped in suitable tortoise habitat, and minimal handline construction, which may have degraded tortoise habitat. Fire engines traveling off road may have crushed some vegetation that could be potentially utilized by tortoises, however the area affected is minimal when compared to the amount of habitat still available. Crushed vegetation typically recovers without rehabilitation.

POST FIRE OBSERVATIONS: Suppression crews encountered live and dead tortoises within the burned area of the Dry Rock Fire. The incident commander and resource advisor on the scene recorded notes on their condition and GPS coordinates. This data was given to the FWS Las Vegas field office biologists for further investigation. The BAER team and FWS Las Vegas biologists conducted reconnaissance within this area before GPS coordinates were available. During reconnaissance, one dead tortoise was found approximately 60 ft from an active burrow. The condition of the carapace, scorching, and remnants of charred flesh indicated this mortality was likely caused by the fire. Several other active burrows (freshly dug dirt in front, no growth of vegetation in or around entrance) were observed within the Dry Rock Fire area. One palette (a shallow day rest burrow) was found within the Forgotten Fire, however its use status was questionable.

2. Other Species of Importance

Desert NWR was established in 1936 with the goal of protecting and perpetuating desert bighorn sheep populations and their habitat. The Refuge actively manages habitat improvements to provide water sources to desert bighorn sheep. The following information is a summary of fire effects to desert bighorn sheep and their habitats based on aerial and ground reconnaissance, review of Refuge management plans and scientific articles, and interviews with Refuge and FWS

Las Vegas Field Office staff. There were approximately 14,913 acres of suitable desert bighorn sheep habitat (as described in the Desert NWR Draft CCP) within the fire area, all of which was on Desert NWR land. There appears to be no direct effects of the fire to desert bighorn sheep. No carcasses were seen during aerial or ground reconnaissance, and none were reported by fire suppression crews in the field. In addition they are highly mobile and would likely escape approaching fire fronts in the rocky cliffs and talus slopes where fuel is sparse. Indirectly, fires temporarily reduced available forage. However, within the fire perimeters burns were patchy, resulting in a mosaic of low vegetation mortality areas interspersed with unburned islands of habitat. Within these islands forage would remain available. In the long term, desert bighorn sheep will benefit from the fire as the vegetation regenerates. Young vegetation regenerating after the fire is very digestible and high in nitrogen. In addition, the reduction of shrub cover removes ambush sites that predators (e.g. mountain lions) use around water sources and along game trails.

No natural springs were located within the fire perimeters. Three man-made habitat improvements were located just outside the perimeters of the Dry Lake (2) and Forgotten (1) fires (see Wildlife map for locations). Due to the remote locations, inaccessible terrain, and time constraints the BAER Team members were unable to assess the condition of these guzzlers. Concrete aprons and troughs would probably not be affected by the fire, as it burned at a low intensity in these locations. However, if these habitat improvements contained plastic or PVC components, damage may have occurred. Several other guzzlers were observed during aerial reconnaissance and appeared to be unaffected by the fires.

SOUTHERN NEVADA COMPLEX, COYOTE SUB-COMPLEX, DESERT NWR SPECIES LIST

A species list was obtained from the U. S. Fish and Wildlife Service, Las Vegas Field Office, on July 6, 2005. The species list was reviewed by Dick Birger, Project Leader for Desert NWR Complex, on July 8, 2005 for accuracy, and to determine which species or Critical Habitats may occur within the fire area. The list was also reviewed on July 8, 2005, by Michael Burroughs and Christiana Manville, FWS Biologists, to finalize the species to address, discuss those that are not addressed, and why. The following federally listed species occur, or have habitat within the fire area, or were potentially affected by fire suppression actions:

SPECIES	SCIENTIFIC NAME	LISTING STATUS
Desert tortoise (Mojave population)	<i>Gopherus agassizii</i>	FT

The following species were identified by the FWS as potentially occurring within or near Desert National Wildlife Refuge. Through post fire reconnaissance and consultation with local experts, it was determined that these species and/or their Critical Habitat were not affected by the fire (no habitat within or adjacent to the fire area and/or inventories prior to the fire determined absence), or expected to be affected by potential post-fire flooding.

SPECIES	SCIENTIFIC NAME	LISTING STATUS	REASON FOR NOT ADDRESSING SPECIES IN THIS REPORT
Pahrump poolfish	<i>Empetrichthys latos</i>	FE	No habitat within fire area
Bald eagle	<i>Haliaeetus leucocephalus</i>	FT	Rare migrant; No habitat within fire area

FE = Federally Endangered

FT = Federally Threatened

IV. RECOMMENDATIONS

A. Fire Suppression Rehabilitation: none

B. Emergency Stabilization

1. **Management:** none
2. **Monitoring:** none

C. Rehabilitation

1. **Management:** none
2. **Monitoring:** none

D. Management Recommendations (non-specification related)

1. It was determined that exposed (i.e. outside of burrows) desert tortoises within burned areas were likely to be effected by the fire. Furthermore, the fires may have temporarily removed vegetation used for cover and forage. Emergency stabilization efforts described in this BAER report are not expected to adversely affect the desert tortoise. Recommendations proposed in the BAER Vegetation Assessment (e.g monitoring of invasive weed), will help to mitigate negative fire effects to desert tortoises. The determinations documented in this report should be reassessed, and consultation conducted as needed, if stabilization measures or vegetation management activities are proposed after July 8, 2005. If non-emergency vegetation management activities are proposed for long-term rehabilitation and restoration of the fire area, another Biological Assessment should be prepared.
2. Emergency consultation was completed on July 11, 2005. Desert NWR Complex staff should provide a copy of the consultation documentation to the U. S. Fish and Wildlife Service, Las Vegas Field Office.
3. Loss of vegetation may lead to an increase in invasive species within burned areas (see BAER Vegetation Assessment). Invasive species may not provide desert tortoise with the nutrition they need to sustain them over extended periods (Oftedal 2005). Monitoring should be conducted to determine desert tortoise foraging patterns within burned areas and across the Refuge as a whole. In addition, damaged Refuge boundary signs should be replaced to inform the public of entry onto Refuge lands and facilitate awareness of its protected status. This may help to reduce disturbance to desert tortoise.
4. Post fire monitoring should be initiated to determine desert bighorn sheep population abundance and distribution in and around burned areas. This monitoring should be conducted to document any short-term adverse effects and long-term habitat benefits of the fire. As annual grasses and forbs begin to regenerate, bighorn sheep use of these areas should be described.
5. Damage to the aprons, storage basins, and water conveyance structures of man-made wildlife habitat improvements should be assessed to determine the effects to wildlife that utilize them. If it is found that the infrastructure is damaged, repair or replacement should be initiated at the Refuges' discretion.

DETERMINATIONS OF EFFECT TO THREATENED SPECIES

DESERT TORTOISE

FIRE EFFECTS: Exposed desert tortoises within burned areas were likely to be directly affected by the fire. Desert tortoise forage and cover plants may have been temporarily removed within the fire perimeters, however vegetation mortality was low.

SUPPRESSION ACTION EFFECTS: There was minimal suppression activity in desert tortoise habitat, therefore it was determined to have no effect.

PROPOSED EMERGENCY STABILIZATION ACTION EFFECTS: There were no suppression rehabilitation actions taken in desert tortoise habitat, therefore, there was no effect to desert tortoise or their habitat. All emergency stabilization treatments will be implemented outside of desert tortoise habitat; therefore there will be no effect to desert tortoise or their habitat.

SUPPRESSION AND EMERGENCY STABILIZATION MEASURES (detailed information documented in Specifications, Part F)

SUPPRESSION REHABILITATION ACTIONS
No suppression rehabilitation was conducted

BURN AREA EMERGENCY STABILIZATION TREATMENTS
Replace boundary signs
Noxious weed monitoring/control
Road closures on Wamp Springs Rd.

V. CONSULTATIONS

NAME, AGENCY, TITLE	TELEPHONE
Dick Birger, FWS, Project Leader, Desert NWR Complex	702-515-5450
Michael Burroughs, FWS, Wildlife Biologist, Las Vegas Field Office	702-515-5242
Amy LaVoie, FWS, Deputy Assistant Field Supervisor, Las Vegas Field Office	702-515-5250
John Levis, FWS, GIS Specialist, Las Vegas Field Office	702-515-5254
Christina Lund, BLM, Botanist, Las Vegas, NV	702-515-5098
Christiana Manville, FWS, Fish and Wildlife Biologist, Las Vegas Field Office	702-515-5240
Lee Nelson, FWS, Fire Management Officer, Desert NWR Complex	702-515-5456
Shawn Whelan, BLM, Fire Captain, Las Vegas, NV	702-596-4004

VI. REFERENCES

- Bleich, V.C., J.D. Wehausen, and S.A. Holl, Desert-dwelling Mountain Sheep: Conservation Implications of a Naturally Fragmented Distribution. 1990. *Conservation Biology* 4:383-390.
- Esque, T.C., C.R. Schwalbe, L.A. DeFalco, R.B. Duncan, and T.J. Hughes. Effects of Desert Wildfires on Desert Tortoise (*Gopherus agassizii*) and Other Small Vertebrates. 2003. *The Southwestern Naturalist* 48:103-111.
- Oftedal, O.T. Fast plants, slow tortoises: How nutrition could constrain the recovery of the desert tortoise. 13th Annual Meeting and Symposium of the Desert Tortoise Council. 2005.
- Southern Nevada Complex, Final Fire Narrative, NV-LVD-000042, July 7, 2005.
- U.S. Fish and Wildlife Service, Desert Tortoise (Mojave Population) Recovery Plan. 1994.
- U.S. Fish and Wildlife Service, Proposed Desert Wildlife Management Areas for Recovery of the Mojave Population of the Desert Tortoise. 2001.
- U.S. Fish and Wildlife Service, Desert National Wildlife Refuge Complex Fire Management Plan. 2004.
- U.S. Fish and Wildlife Service, Comprehensive Conservation Plan (Draft).

VII. ATTACHMENTS

- U. S. FWS Species list dated July 6, 2005 for the Southern Nevada Complex, Coyote Sub-Complex, Desert NWR, in Clark and Lincoln Counties Nevada.
- Fire perimeters, desert tortoise habitat, desert bighorn sheep habitat, and habitat improvements map
- Emergency consultation documentation on file at the Desert NWR Complex office.

Kenneth Griggs, USFWS, San Luis NWR Complex, 209-826-3508

BURNED AREA EMERGENCY STABILIZATION PLAN

SOUTHERN NEVADA COMPLEX COYOTE SUB-COMPLEX DESERT NWR

CULTURAL RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess damages to known historic and prehistoric cultural resources as the result of fire behavior.
- Assess potential risks to known/documented cultural resources as the result of the fire (e.g. erosion, flooding, and exposure to looting and/or vandalism).

II. ISSUES

- Identify known/documented resources that have been subject to direct or indirect effects of fire.
- Identify emergency stabilization and/or protection needs for cultural resources within the fire.

III. OBSERVATIONS

A. Background

Prehistoric Resources

Very little prehistoric research has been conducted within the area of the Coyote Sub-Complex Fires. Most cultural resource inventory has been conducted in the pinon juniper vegetation zone, around dry lakes in the northern portion of the refuge and on portions of the refuge managed by Nellis Air Force Base as a bombing range. Sites within the refuge can be delineated into four periods.

The earliest documented sites fall within the Archaic Period (7000 BC to AD 500), which is defined by hunting and gathering adaptations. This period is represented on the refuge primarily by the presence of projectile points. The Saratoga Springs Period (AD 500-1200) on the refuge represents a continuation of hunting and gathering activities and it is during this time period that the bow and arrow become widely used. During the Shoshonean or Numic Period (AD 1200-1600) brown ware pottery becomes a common artifact at sites and there is a heavier dependence upon pine nut. The final period represented on the refuge is the Protohistoric Period (AD 1600-1826) and is defined by contact with Euro-Americans.

Historic Resources

Historic resources within the refuge are limited to sites associated with ranching or transportation routes. Very little historic research has been conducted along the east side of the refuge, especially within the area of Coyote Sub-Complex fires, however ranching activities were probably conducted in the area prior to establishment of the refuge.

B. Reconnaissance Methodology and Results

Team Archaeologists attended an orientation meeting on July 6 at the Desert National Wildlife Refuge Complex Office. A flight over the five fires was used later that day to view identified survey areas and to define the extent of the fires. Agave roasting pits were noticed within the Lamb fire.

Team Archaeologists spent July 7 visiting two (Forgotten and Dry Lake) of the five fires in the Coyote Complex. The Lamb and Coyote Fires were not accessible by road, and the previous day's flight showed that there were no water sources within these burns and the geology was not conducive to rock shelters. The Dry Rock Fire is located on the lower edge of an alluvial fan and sites are not typically found in these areas because of lack of water and limited resources. The Forgotten Fire is located on alluvium and does not extend to the base of the adjacent slopes. No known cultural resources occur within the fire and none were found. The Dry Lake Fire is in a combination of alluvium, washes, and hill slopes.

C. Findings

Prehistoric Sites

Two agave roasting pits are documented within the Lamb Fire and five others were noted during the over flight of the fire by Team Archaeologists. Agave roasting pits are circular features comprised of fire-cracked and whitened limestone. They vary in size, but on average are six to ten feet in diameter. The pits were used to roast various foods including agave hearts and desert tortoise.

Prehistoric sites are not known within any of the other complex fires and undocumented sites were not located during reconnaissance surveys in the Forgotten and Dry Lake Fires.

Additional Risks

Impacts to cultural resources by the public have long been recognized by land management agencies in the desert. A 1980 report published by the BLM (Lyneis et al. 1980) compiled data collected from agencies concerning impacts to cultural resources. Three impacts discussed in this document have a high probability of occurring at historic and prehistoric sites within the fire perimeters. The first impact is surface collection of artifacts, which reduces "archaeologists' capacity for placing these sites in their proper chronological period" (Lyneis et al 1980:8). The second impact is pothunting, which is the uncontrolled digging for prehistoric and historic artifacts for "personal gain" (ibid). The final impact described in the report is damage to cultural resources by off-road-vehicles (ORV). "Direct damage occurred to many surface sites which were driven over by ORV's. Much of this happened without the recreationist being aware of the damage...In addition to these effects from recreational use of ORVs, the widespread availability of them as transportation has enabled collectors and pothunters to reach areas of the desert that had previously been of limited access" (Lyneis et al. 1980:14).

Inaccessibility, lack of roads into three of the fires, and a proposed wilderness area prohibits off-road-vehicle use.

IV. RECOMMENDATIONS

A. Emergency Stabilization – Fire Suppression Repair

Fire suppression activities did not impact prehistoric or historic sites.

B. Emergency Stabilization

3 Road Closure

Culturally important sites within the vicinity of Wamp Spring Canyon are threatened by

unauthorized access on the road leading to area. It is necessary to block the road at the intersection of Mormon Well Road and at the base of the canyon east of the area to restrict access to a portion of Wamp Springs Canyon which has burned in the Coyote Fire.

C. Rehabilitation

No rehabilitation treatments are anticipated.

D. Management Recommendations – Non-Specification Related

In the Desert National Wildlife Refuge Complex Comprehensive Conservation Plan and Environmental Impact Statement (EIS), it is recommended that local capabilities be developed for the management of cultural resources. Due to the vast number of documented and undocumented sites, known incidences of looting and vandalism, public and tribal interests and concerns, and requirements under federal regulations that address cultural resources issues, it is recommended that the objectives set forth in the EIS be met and that a full-time, permanent archeologist position be created and filled. Care should be taken in the funding of this position so that the position will manage cultural resources in both Lincoln and Clark Counties.

In anticipation of future fire events within the Desert National Wildlife Refuge Complex (DNWRC) it is recommended that proactive measures be taken to reduce fuel loading at those cultural resources locations that are known to be particularly sensitive to the direct effects of fire. Specifically, it is recommended that fuels reduction actions be taken at historic sites, where wood components are at high risk from direct fire effects (e.g. Mormon Well Corral, Hidden Forest Cabin, and Sawmill Canyon), and at rock art sites where panels may be at risk from sooting and/or spalling caused by increased flame lengths produced by burning vegetation growing against or adjacent to the sites.

IV. CONSULTATIONS

Tribal and SHPO consultations were not conducted as cultural resources were not affected by the fire and there are no emergency stabilization treatments that require Section 106 compliance.

VI. REFERENCES

Lyneis, Margaret M., David L. Weide, and Elizabeth vonTill Warren
"Impacts: Damage to Cultural Resources in the California Desert" Cultural Resource Publications Anthropology-History, Bureau of Land Management, California Desert District, 1980.

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"Desert National Wildlife Refuge Complex, Comprehensive Plans and Environmental Impact Statement Cultural Resources Overview, Draft Report" Copy on File Desert National Wildlife Refuge Complex Office, Las Vegas, 2004.

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

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

VEGETATION RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess and evaluate fire impacts to vegetative resources, and determine treatment and monitoring needs, supported by specifications, to aid in vegetative recovery.
- Evaluate the potential for invasive plant species to encroach into native plant communities within the fire area, and determine treatment and monitoring needs to mitigate encroachment.
- Determine effects of fire on federally listed threatened and endangered (T&E) and sensitive species. Determine rehabilitation and monitoring needs to mitigate unacceptable impacts to these species.

II. ISSUES

- Short and long-term effects of the fire on plant communities and vegetative resources including T & E plant species.
- Potential for invasion of impacted lands by non-native invasive plant species.

III. OBSERVATIONS

This report addresses known and potential impacts to vegetative resources by wildland fires on U. S. Fish and Wildlife Service (USFWS) Desert National Wildlife Refuge (NWR) lands within the Southern Nevada Complex, Coyote Sub-Complex. The Coyote Sub-Complex consists of the following fires: Lamb, Coyote-Wamp, Dry Rock-Middle, Forgotten, and Dry Lake (see Fire Narrative, Southern Nevada Complex).

Findings and recommendations contained in this assessment are based upon information obtained from personal interviews and meetings with staff from the Desert NWR Complex, USFWS Las Vegas Ecological Services (ES) Office, Bureau of Land Management Las Vegas Field Office, from literature reviews, and from field reconnaissance of the fire area.

A. Background

The Southern Nevada Complex Fires started on June 22, 2005 from multiple lightning strikes. The fires spread rapidly through an unusually dense and continuous herbaceous fuel component, resulting from over 400 percent of normal rainfall from January through April 2005.

Management Direction

Resource management direction for the Desert NWR is contained in the following documents: Wildland Fire Management Plan; Refuge Management Plan; Desert Tortoise Recovery Plan, Mojave Population; and Bighorn Sheep Management Plan. The Refuge Management Plan and Bighorn Sheep Management Plan reportedly date from the 1960s and 1970s, respectively. Neither plan was available for review. The Desert Tortoise Recovery Plan includes the following management recommendation for disturbed areas, considered pertinent to these fires, which occurred within the Desert Wildlife Management Area:

“Surface disturbance in the Desert Wildlife Management Area should be restored to pre-disturbance conditions (defined as the topography, soils, and native vegetation that exist in adjacent undisturbed or relatively undisturbed areas). This includes such actions as closing

access to non-designated roads and restoring non-designated roadbeds to their pre-disturbance state.”

A Comprehensive Conservation Plan (CCP) for the Refuge is in the process of being prepared.

Vegetation Communities

The fires burned through eleven distinct vegetation classes mapped for the Desert NWR by the Department of Defense (Levis, personal communication). For analysis purposes these classes were grouped into four general vegetation types roughly corresponding to those described by Bradley and Deacon (1967), and referenced in the Refuge Wildland Fire Management Plan (FMP).

Desert Scrub

On the valley floors and lower bajadas below 4,200 feet, the creosote bush (*Larrea divaricata*) community predominates with white bursage (*Franseria dumosa*). Other plants occurring in this community include indigo bush (*Dalea fremontii*), Ephedra (*Ephedra* sp.), purple sage (*Salvia dorrii*), and turpentine broom (*Thamnosma montana*). Yuccas, especially the Mohave yucca (*Yucca schidigera*), are also present. Cholla (*Opuntia* sp.) and other cactus are common. Common forbs and grasses include big galleta (*Hilaria rigida*), desert needlegrass (*Stipa speciosa*), and filaree (*Erodium cicutarium*). Exotic brome grasses (cheat grass, *Bromus tectorum*, and red brome, *Bromus madritensis*) are common. This type consists of the following vegetation classes: S020 North American Warm Desert Wash, S021 North American Warm Desert Pavement, S022 North American Warm Desert Playa, S069 Sonora-Mojave Creosote Bush-White Bursage Desert Scrub.

Mid Elevation Mixed Desert Scrub

The blackbrush (*Coleogyne ramosissima*) community predominates on the upper bajadas and lower slopes between 4,200 and 6,000 feet. A variety of other shrubs also occur including many of those present in the lower creosote bush community. Yuccas, especially the Joshua tree (*Yucca brevifolia*) are numerous in many localities. Cacti are common, most notably cottontop barrel cactus (*Echinocactus polycephalus*), prickly pear (*Opuntia echinocarpa*), and various cholla species (*Opuntia* sp.). A variety of shrubs are more common along the washes than in the surrounding desert. These include cheese bush (*Hymenoclea salsola*), snakeweeds (*Gutierrezia* sp.) and bladder sage (*Salazaria mexicana*). Exotic bromes are abundant throughout the type, particularly in washes. The mid elevation mixed desert scrub type consists of the following vegetation classes: S054 Inter-Mountain Basins Big Sagebrush Shrubland, S060 Mojave Mid-Elevation Mixed Desert Scrub, S070 Sonora-Mojave Mixed Salt Desert Scrub, S071 Inter-Mountain Basins Montane Sagebrush Steppe, S079 Inter-Mountain Basins Semi-Desert Shrub Steppe.

Pinyon-Juniper Woodland

The pinyon-juniper (*Pinus monophylla* and *Juniperus osteosperma*) community is most prevalent on slopes between 6,000 and 7,500 feet. Pinyon-juniper woodland is often displaced by mountain mahogany (*Cercocarpus* sp.) on the driest, southern exposures. Sagebrush (*Artemisia* sp.) is dominant in some transitional zones between the mid elevation mixed desert scrub and woodland vegetative types. A number of large shrubs are quite common along the upper washes and cliff bases. These include cliff rose (*Cowania mexicana*), apache plume (*Fallugia paradoxa*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and desert peach (*Prunus fasciculata*). Cheat grass is common. The pinyon-juniper woodland type corresponds to vegetation class S040 Great Basin Pinyon-Juniper Woodland.

Sparse-Rock Outcrop

Consists of bare rock with sparse cover of shrubs and/or trees. Vegetation distribution is irregular, occurring primarily in gaps between rock outcrops. Consists principally of pinyon-juniper woodland, but may also include mid elevation mixed desert scrub vegetation at lower

elevations and on southern aspects. This vegetation type corresponds to vegetation class S016 North American Warm Desert Bedrock Cliff and Outcrop.

Table 1 indicates the acreage within each fire by vegetation type.

Table 1. Acres by Vegetation Type

Fire	Desert Scrub	Mid Elev. Mixed Desert Scrub	Pinyon-Juniper Woodland	Sparse-Rock Outcrop	Total
Lamb	1,337	4,354	105	680	6,476
Coyote-Wamp	180	4,082	6	168	4,436
Forgotten	2,420	2,180	0	426	5,026
Dry Rock-Middle	141	86	0	0	227
Dry Lake	1,321	2,037	0	72	3,430
Total	5,399	12,739	111	1,346	19,595

Non-Native Invasive Species

Although many non-native invasive plants are widespread throughout this sub-region of the state, only a few have reported occurrence in or around the subject fire areas. Cheat grass and red brome are widespread naturalized exotics that have significantly altered native plant communities throughout the region. They are abundant throughout the burned areas. Red brome is more common at the lower elevations, while cheat grass predominates on the upper slopes. No other non-native invasive species have been observed in the burned areas.

Tamarisk had been previously reported along a wash to the north of the Coyote-Wamp Fire, however, this could not be verified, and after reviewing the area it is believed this was a misidentification of rabbitbrush (*Chrysothamnus penniculatus*). Sahara mustard (*Brassica tournefortii*) is a robust, fast growing, drought tolerant winter annual. It is not currently listed as noxious, but is expected to be in the near future (Lund, personal communication). The recent spread of this species throughout low elevation shrublands has caused concern over introduction of a significant new fuel type in the desert bioregion (Brooks and Minnich). It is present along the Highway 93 right of way, near the intersection with Interstate 15, and is progressively spreading through the region, primarily along road corridors (Lund, personal communication). Traffic using open roads accessing the burned areas may serve as vectors for invasion of burned areas by this and other exotic species.

Threatened, Endangered and Sensitive Plants

A T&E species list was obtained from the USFWS, Las Vegas Field Office on July 6, 2005. The process for review and determination of critical habitats is documented in the Wildlife Resources Assessment of this plan. No federally listed threatened or endangered plant species were identified for the subject fire areas. The Nevada Natural Heritage Program maintains a spatial database of sensitive plant species recognized by the State of Nevada. This database was overlaid with the mapped fire perimeter. By this method it was determined a single documented occurrence of remote rabbitbrush (*Chrysothamnus eremobius*), a State category 1 endemic, exists near the western boundary of the Lamb Fire, however this species is not listed as protected by the State. The Refuge has no policy providing for the protection of this or similar status species. There are no known occurrences of State listed protected plants within the fire areas.

Livestock and Range Resources

According to Desert NWR Complex staff, no livestock, range improvements, feral horses or burros occur on the Refuge (Birger, personal communication).

B. Reconnaissance Methodology and Results

An initial briefing was conducted with the Desert NWR Complex Project Leader and selected natural resource and fire management staff to identify issues and provide focus for site evaluations. Las Vegas Ecological Services (ES) staff also attended the briefing. Individual consultations were conducted with various natural resource specialists from the Desert NWR Complex, Las Vegas ES, and Bureau of Land Management (BLM) Las Vegas Field Office. Additionally, information derived from consultations on the recent nearby Hackberry BAER Incident were applied, as appropriate, to this assessment.

Various databases and maps were researched to guide and focus field reconnaissance. A satellite image of the fires was used to correct fire perimeter maps initially developed by the Incident Management Team(s). A burned area reflectance classification (BARC) map was produced to quantify burn severity. Vegetation classification maps were provided by the Las Vegas ES Geographic Information System (GIS) Specialist. Threatened, endangered and sensitive species data was derived from the State of Nevada Natural Heritage Program database. Local exotic plant locations were determined from the BLM Las Vegas Field Office weed database.

A helicopter reconnaissance was conducted on July 6, 2005 to provide an overview of fire distribution and effects. On July 7 and 8 field reconnaissance was conducted of accessible areas including the northern edge of the Coyote-Wamp Fire, the eastern half of the Dry Rock-Middle Fire, and the northern edge of the Dry Lake Fire. Numerous photos were taken of burned and adjacent unburned vegetation, both from the ground and air. Additionally, a 1 year old burn immediately south of the Lamb Fire was reviewed from the air, and an approximately 3 year old burn to the east of the Coyote-Wamp Fire was reviewed on the ground to ascertain post fire effects for purposes of comparison.

C. Findings

Vegetation Effects

Within the desert scrub, and on drier sites of the mid elevation mixed desert scrub, the fires spread primarily in the fine, flashy fuels. Most shrubs in these areas experienced various degrees of scorch, and torching was limited to small groups of shrubs. Complete top kill of shrubs occurred almost exclusively in mid elevation washes and at the heads of canyons where shrub densities were sufficient to support running crown fire. Fire energy dissipated at upper

elevations in the pinyon-juniper woodland and sparse-rock outcrop types, presumably due to the occurrence of natural fuelbreaks, and higher live fuel moistures, estimated at around 150 percent (Fire Narrative).

Based on field observations and comparisons with the BARC image, it was determined burn severity can be considered a close approximation of vegetation mortality for these vegetation types. The vegetation mortality values displayed in table 2 were developed using the BARC mapping.

Table 2. Burn Severity By Vegetation Type (Percent of Area)

Fire	Vegetation Type	Unburned	Low Mortality	Moderate Mortality
Lamb	Desert Scrub	37	63	0
	Mid Elevation Mixed Desert Scrub	15	82	3
	Pinyon-Juniper Woodland	17	51	32
	Sparse-Rock Outcrop	35	59	6
Coyote/Wamp	Desert Scrub	7	92	1
	Mid Elevation Mixed Desert Scrub	16	83	1
	Pinyon-Juniper Woodland	50	50	0
	Sparse-Rock Outcrop	65	35	0
Dry Rock-Middle	Desert Scrub	16	84	0
	Mid Elevation Mixed Desert Scrub	13	87	0

Forgotten	Desert Scrub	24	76	0
	Mid Elevation Mixed Desert Scrub	25	75	0
	Sparse-Rock Outcrop	85	15	0
Dry Lake	Desert Scrub	3	97	0
	Mid Elevation Mixed Desert Scrub	10	90	0
	Sparse-Rock Outcrop	61	39	0

For the most part, vegetation effects of these fires can be described as sporadic top kill, which is expected to stimulate resprouting of shrubs and increasing grass cover over the short term until shrubs eventually reoccupy the sites. Complete vegetation mortality was almost exclusively limited to the upper elevations of the Lamb Fire. Table 3 provides a general description of fire response for dominant species (adapted from Brooks and Minnich).

Table 3. Fire Responses of Dominant Species

Life Form	Species	Survival	Response
Perennial Grass	Galleta grass, Indian ricegrass, desert needlegrass, fountain grass	Top Killed	Fire Stimulates Sprouting
Annual Grass	red brome, Mediterranean grass, cheat grass, six-week fescue	Killed	Low Severity Burn Stimulates Germination From Buried Seed and Adjacent Areas
Cacti	Barrel cactus, prickly pear, cholla	Larger Specimens Generally Survive, With Exception of Cholla	Limited Sprouting
Yucca	Mojave yucca, banana yucca, Joshua tree	Top Killed	Fire Stimulates Sprouting
Fire Adapted Shrub	Catclaw acacia, smoke tree, desert willow, creosote bush,	Top Killed	Fire Stimulates Sprouting, and Buried Seed Germination for

	fourwing saltbush, ephedra, cheesebush, rubber rabbitbrush, spiny hopsage, antelope bitterbrush		Some Species
Other Shrub	Shadscale, blackbrush, brittlebrush, white bursage, snakeweed, cliffrose	Killed	No Sprouting
Woodland Trees	Pinyon pine, Utah juniper	Killed	No Sprouting

The following is a general description of fire response by vegetation type. Information is derived primarily from the Fire Effects Information System (FEIS) database.

Desert scrub

Many shrubs and cacti in this type are adapted to survive low intensity fire. Although creosote bush is often top killed by fire, plants can reoccupy sites rapidly through basal sprouting and seedling germination. Likewise, Ephedra is often top killed but can resprout vigorously. Yucca is well adapted to survive fire, and damaged or top killed specimens can sprout from roots or the base of the stem. White bur sage and cholla are readily killed. Based on observations of past burns in this type, total shrub cover will be reduced initially, but will become reestablished over a period of a decade or so. Grass cover, particularly exotic annuals, can be expected to increase substantially over the short term.

Mid Elevation Mixed Desert Scrub

Joshua tree, because of its height and thick stem protection, is resistant to fire damage. If damaged or killed, it can sprout aggressively from stem or roots. Most other shrubs in this type can reestablish burned sites aggressively. Blackbrush stands, however, are substantially decreased or eliminated by fire. It rarely sprouts following fire and does not aggressively return to burned sites. This type experienced the greatest effect on native vegetation. Shrub cover will be decreased substantially over the short term, particularly in those areas within washes or head canyons that experienced sustained crown fire. Exotic bromes will increase substantially, and shrubs will become reestablished in low burn severity areas over a period of a decade or so.

Pinyon-Juniper Woodland and Sparse-Rock Outcrop

These types burned in a mosaic pattern. Woodland trees were killed in the relatively small areas that experienced crown fire. These areas will quickly be reoccupied by grasses and the few sprouting shrubs. Reestablishment of woodland trees will occur very slowly as a result of seed dispersal from adjacent surviving stands.

Invasive Species

Traffic entering Refuge lands via four-wheel-drive roads from Highway 93 could certainly serve as vectors for the spread of invasive exotic weeds, most notably Sahara mustard. The spread of this species may be arrested by early detection and aggressive control measures within and adjacent to burned areas.

On July 7 an interagency meeting was held at the BLM Las Vegas District office to discuss emergency stabilization options for fires on the Las Vegas and Ely Districts. The use of Plateau herbicide in concert with aerial seeding was addressed as a possible control measure for exotic annual grasses. Dr. David Pyke (personal communication) stated that the use of Plateau may be lethal to other annuals on which the Desert Tortoise depends, and any use in the Mojave desert should be considered on an experimental basis only. Mr. W. Kent Ostler discussed the recent Air Force Fire on Department of Energy (DOE) lands. This fire burned only about a month previous,

in vegetation similar to the Desert NWR Complex Fires. The DOE has decided against further treatment of this burned area because substantial perennial grass and shrub sprouting has already occurred. The use of pregerminant herbicides for control of exotic annual grasses was not considered, since it would be ineffective after the first year or two, in his opinion.

IV. RECOMMENDATIONS

A. Emergency Stabilization

Non-Native Invasive Species Control

Approximately 9.5 miles of four-wheel-drive roads accessing the lower portions of the Coyote, Forgotten, and Dry Lake Fires should be monitored for Sahara Mustard and other suspected non-native invasive species. Once detected, control measures, including hand pulling and spot herbicide application, should be undertaken immediately. The replacement of fire-damaged Refuge boundary signs, and placement of gates (on the Wamp Springs Service Road and the lower Wamp Springs Road at the Mouth of Wamp Springs Canyon) will mitigate concerns in these areas (see Cultural Resources Assessment for treatment description). The locations of non-native invasive species monitoring and control is depicted on the Treatments Map.

For the reasons stated under Findings, no control measures are proposed for exotic annual grasses.

B. Management Recommendations (non-specification)

Encourage the BLM Las Vegas District to conduct similar non-native invasive species control detection and control treatments on access roads through adjacent BLM lands.

Continue to work with the research community in exploring viable alternative means of controlling exotic grasses which have altered fire regimes and other ecosystem function.

V. CONSULTATIONS

The following individuals were consulted for information necessary for preparation of this assessment.

Name, title, and agency	Telephone
Lee Nelson, Fire Management Officer, Desert NWR Complex	(702) 515-5456
Amy Sprunger-Allworth, Refuge Manager, Desert NWR	(702) 879-6110
Dick Birger, Project Leader, Desert NWR Complex	(702) 515-5450
Amy LaVoie, Deputy Assistant Field Supervisor, Las Vegas ES	(702) 515-5250
Christiana Manville, Fish and Wildlife Biologist, Las Vegas ES	(702) 515-5240
Christina Lund, Botanist, BLM Las Vegas District	(702) 515-5098
John Levis, GIS Specialist, Las Vegas ES	(702) 515-5254

VI. REFERENCES

- Bradley, W. and J. Deacon. 1967. *The Biotic Communities of Southern Nevada*. Nevada State Museum Anthropological Papers 13.
- Brooks, M. L. and R. A. Minnich. Fire in the Southeastern Deserts Bioregion. Chp 16 in: Sugihara, N. G., J. W. van Wagendonk, J. Fites-Kaufman, K. E. Shaffer, and A. E. Thode (eds.). *Fire in California Ecosystems*. University of California Press, Berkeley.
- Desert Tortoise Recovery Plan, Mojave Population. On file at Desert NWR Complex Office.
- FEIS (Fire Effects Information System). <http://www.fs.fed.us/database/feis/index.html>. 2004.
- Fire Narrative. Southern Nevada Complex. NV-LVD-000042. On file at Desert NWR Complex Office.
- Lund, C. Personal communication. July 6-8, 2005. BLM Las Field Office.
- Ostler, W. K. Personal communication. July 7, 2005. Science Supervisor. Ecological Services Bechtel Nevada. Nellis Air Force Base, NV. (702) 295-0393
- Pyke, D. Personal communication. USGS Biological Resources Discipline. Corvallis, OR. (541) 750-7334
- Thomas, K., T. Keeler-Wolf, J. Franklin, and P. Stine. Mojave Desert Ecosystem Program: Central Mojave Vegetation Database. Final Report Prepared for: Mojave Desert Ecosystem Program. U.S. Department of the Interior, U.S. Geological Survey, Western Ecological Branch Center and Southwest Biological Science Center. 2005.
- Wildland Fire Management Plan, Desert NWR Complex. On file at Desert NWR Complex Office.

Hal Luedtke Forester BIA Southwest Regional Office (505) 553-3303

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

APPENDIX II COMPLIANCE

- **NEPA Environmental Screening Form and Categorical Exclusion**



**INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION PLAN
SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE
Clark and Lincoln Counties, Nevada
Environmental Compliance Considerations and Documentation**

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

All projects proposed in the Southern Nevada Complex, Coyote Sub-Complex, Desert National Wildlife Refuge Fires (DNWR Fires) Burned Area Emergency Stabilization Plan that are prescribed, funded, or implemented by Federal agencies on Federal, State, or private lands are subject to compliance with the *National Environmental Policy Act* (NEPA) in accordance with the guidelines provided by the *Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508)*. This Appendix documents the Burned Area Emergency Response (BAER) Team consideration of NEPA compliance requirements for prescribed emergency stabilization and monitoring actions described in this plan for areas affected by the DNWR Fire in Clark and Lincoln Counties, Nevada.

This plan identifies specific emergency stabilization and monitoring actions designed to mitigate damages to resources that result of the DNWR Fires.

This plan has been developed by an Interagency Burned Area Emergency Response (BAER) Team comprised of representatives from the U.S. Fish and Wildlife Service (USFWS), Bureau of Indian Affairs (BIA) and Passamaquody Tribe. The Team consulted with numerous other agencies, organizations, and individuals with subject matter expertise applicable to the proposed treatments (see consultation section below).

Agency Specific Guidance: This NEPA documentation has been developed in accordance with the following agency specific guidelines.

U.S. Fish and Wildlife Service: Emergency stabilization, actions will comply with U.S. Fish and Wildlife Service, NEPA Guidelines, Part 516 (DM 6, Appendix 1).

B. RELATED PLANS AND CUMULATIVE IMPACTS ANALYSIS

Desert Tortoise (Mojave Population) Recovery Plan. 1994. United States Fish and Wildlife Service

Desert National Wildlife Refuge Complex Comprehensive Conservation Plan and Environmental Impact Statement. Draft, May 2005

Cultural Resources Programmatic Agreement between the United States Fish and Wildlife Service and the Nevada State Historic Preservation Office. 1998.

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 nonfederal. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The emergency stabilization treatments for the DNWR Fires burned area, as proposed in this 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 management and recovery plans

and associated environmental compliance documents of the U.S. Fish and Wildlife Service, and categorical exclusions listed below.

No direct or indirect unavoidable adverse impacts to the biological or physical environment would result from the implementation of this DNWR Fires Burned Area Emergency Stabilization Plan. The implementation of emergency noxious weed control and native planting treatments proposed in the plan would not result in any adverse effect on the natural and cultural resources of the burned area. Conversely, implementation of the plan would be expected to result in a cumulatively beneficial effect by reducing the potential for unauthorized travel within the DNWR, looting and/or vandalism of significant cultural resources, and noxious weed invasion; and ensuring the recovery of native habitats within the burned area.

C. APPLICABLE LAWS AND EXECUTIVE ORDERS

This section documents consideration given to the requirements of specific environmental laws in the development of the DNWR Fires Burned Area Emergency Stabilization 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 DNWR Burned Area Emergency Stabilization Plan.

1. **National Historic Preservation Act (NHPA).** The BAER Team Cultural Resources Specialist has determined that emergency stabilization treatments will not cause an adverse effect to significant cultural resources within the DNWR Fire burned area.
2. **Executive Order 12372, Intergovernmental Review.** Coordination and consultation is ongoing with affected Tribes, Federal, and local agencies. A copy of the plan will be disseminated to all affected agencies and funding is provided by the plan to facilitate completion of tribal consultations.
3. **Executive Order 12892, Federal actions to address Environmental Justice in Minority and Low-Income Populations.** All Federal actions must address and identify, as appropriate, disproportionately high and adverse human health or low-income populations, and Indian Tribes in the United States. The BAER Team has determined that the actions proposed in this plan will result in no adverse human health or environmental effects for minority or low-income populations and Indian Tribes.
4. **Endangered Species Act.** The BAER Team wildlife biologist and vegetation specialist have consulted with the U.S. Fish and Wildlife Service regarding actions proposed in this plan and potential affects on Federally listed species and have determined that there is no effect. Individual agencies are responsible for continued consultations during plan implementation as site specific treatments are developed.
5. **Wilderness Act.** Actions proposed in this plan will not impact designated or proposed wilderness.

D. APPLICABLE AND RELEVANT CATEGORICAL EXCLUSIONS

All treatment actions proposed in this plan are Categorically Excluded from further environmental analysis as provided for in the Department of the Interior Manual Part 516 DM6, Appendix 1. All applicable and relevant Agency Categorical Exclusions are listed below. Categorical Exclusion decisions were made with consideration given to the results of required emergency consultations completed by the BAER Team and documented in Section E below.

Applicable U.S. Fish and Wildlife Service Categorical Exclusions

(1) Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources which involve negligible animal mortality or habitat destruction, no introduction of contaminants, or no introduction of organisms not indigenous to the affected ecosystem.

(3) The construction of new, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, instream, or native habitats, which result in no or only minor changes in the use of the affected local area. The following are examples of activities that may be included.

- i. The installation of fences.
- ii. The construction of small water control structures.
- iii. The planting of seeds or seedlings and other minor revegetation actions.
- iv. The construction of small berms or dikes.
- v. The development of limited access for routine maintenance and management purposes.

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

E. CONSULTATIONS

U.S. Fish and Wildlife Service

Dick Birger, Project Leader, Desert National Wildlife Refuge Complex
Lee Nelson, Fire Management Officer, Desert National Wildlife Refuge Complex
Amy La Voie, Deputy Assistant Field Supervisor, Ecological Services, Las Vegas, Nevada
Michael Burroughs, Wildlife Biologist, Ecological Services, Las Vegas, Nevada
Christiana Manville, Fish and Wildlife Biologist, Ecological Services, Las Vegas, Nevada
John Levi, GIS Coordinator, Desert National Wildlife Refuge Complex

Bureau of Land Management

Christina Lund, Botanist, Las Vegas Field Office, Las Vegas, Nevada
Shawn Whelan, BLM Fire, Las Vegas Field Office, Las Vegas, Nevada

U.S. Geological Survey

Dr. David Pyke, Biological Resources Discipline, Corvallis, Oregon
Dr. Matthew L. Brooks, Research Botanist, Biological Resources Discipline
Western Ecological Research Center, Henderson, Nevada

Bechtel Corporation

W. Kent Ostler, Science Supervisor, Ecological Services, Bechtel Nevada.
Under contract with U.S. DOD, Nellis Air Force Base, Nevada

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

DNWR Fires Burned Area Emergency Stabilization Plan

NEPA CHECKLIST: Based on 516 DM 6, Appendix 1, if any of the following exceptions applies, the BAER Plan cannot be categorically Excluded and an Environmental Assessment (EA) is required.

(Yes) (No)

- Adversely affects Public Health and Safety.
- Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
- Has highly controversial environmental effects.
- Has highly uncertain environmental effects or involve unique or unknown environmental risks.
- Establishes a precedent resulting in significant environmental effects.
- Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
- Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
- Adversely Affects a species listed or proposed to be listed as Threatened or Endangered.
- Threatens 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

- None
- Ground disturbance will occur and an archeological survey, required under Section 106 of the NHPA will be prepared. A report will be prepared as specified by the BAER Plan.

A NHPA Clearance Form:

- Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the DNWR Fires BAER Plan. The Nevada SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).
- Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

BURNED AREA EMERGENCY STABILIZATION PLAN

**SOUTHERN NEVADA COMPLEX
COYOTE SUB-COMPLEX
DESERT NATIONAL WILDLIFE REFUGE**

APPENDIX III PHOTO DOCUMENTATION

- **CULTURAL RESOURCE ISSUES**
- **WILDLIFE RESOURCE ISSUES**
- **VEGETATION RESOURCE ISSUES**



Cultural Resource Issues



Lamb Fire Agave Roasting Pits



Dry Lake Burn Area



Agave Roasting Pits

Wildlife Resource Issues



A Burned Over Desert Tortoise Burrow



A Burned Over Tortoise Burrow Associated with Creosote



A Desert Tortoise Mortality Resulting from Fire



Western Whiptail Lizard in Burned Area

Vegetation Resource Issues



Burned Yucca in Desert Scrub



Exotic Brome Grass



Light Burn in Desert Scrub



Partially Burned wash with Rabbitbrush



Three-Year Old Burn in Desert Scrub



Unburned Joshua Tree-Creosote Bush

BURNED AREA EMERGENCY STABILIZATION PLAN

SOUTHERN NEVADA COMPLEX COYOTE SUB-COMPLEX DESERT NATIONAL WILDLIFE REFUGE

APPENDIX IV MAPS

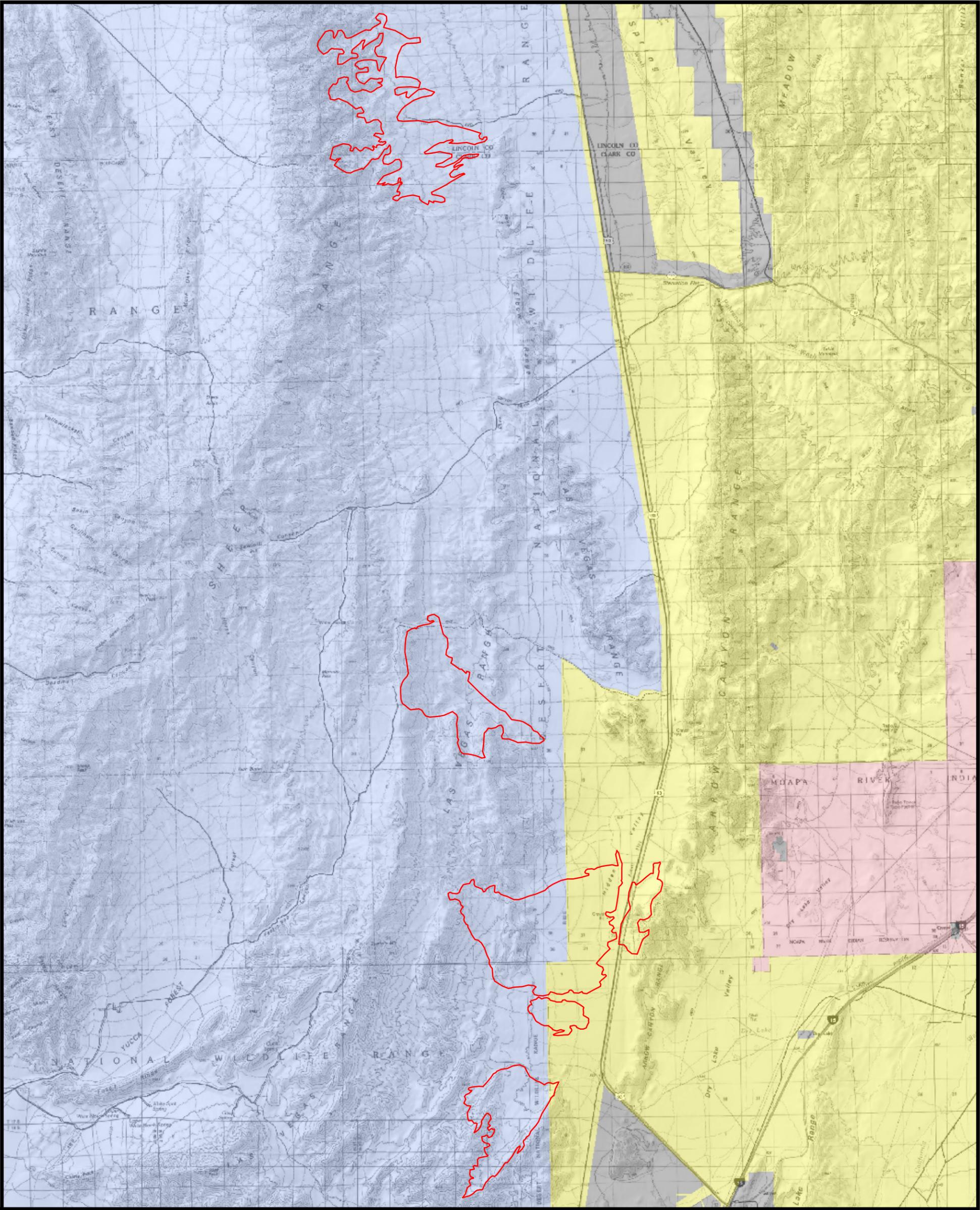
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- **PRE-FIRE IMAGE**
- **POST-FIRE IMAGE**
- **BURN SEVERITY**
- **PRE-FIRE VEGETATION**
- **VEGETATION MORTALITY**
- **TREATMENTS**
- **WILDLIFE**



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Land Status



Land Status

- Bureau of Land Management
- Fish and Wildlife Service
- Bureau of Indian Affairs
- Private
- Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



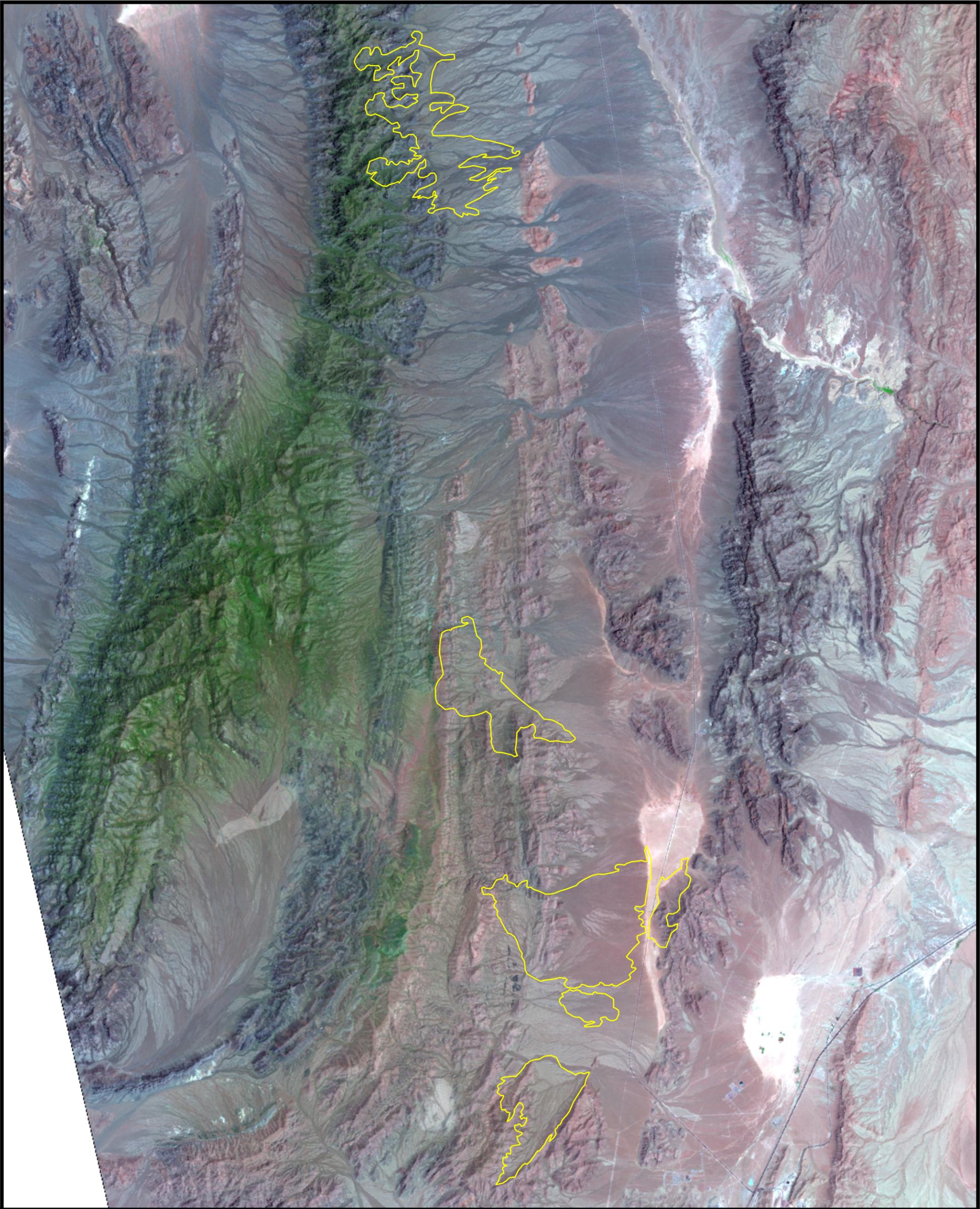
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Pre Fire Image



 Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



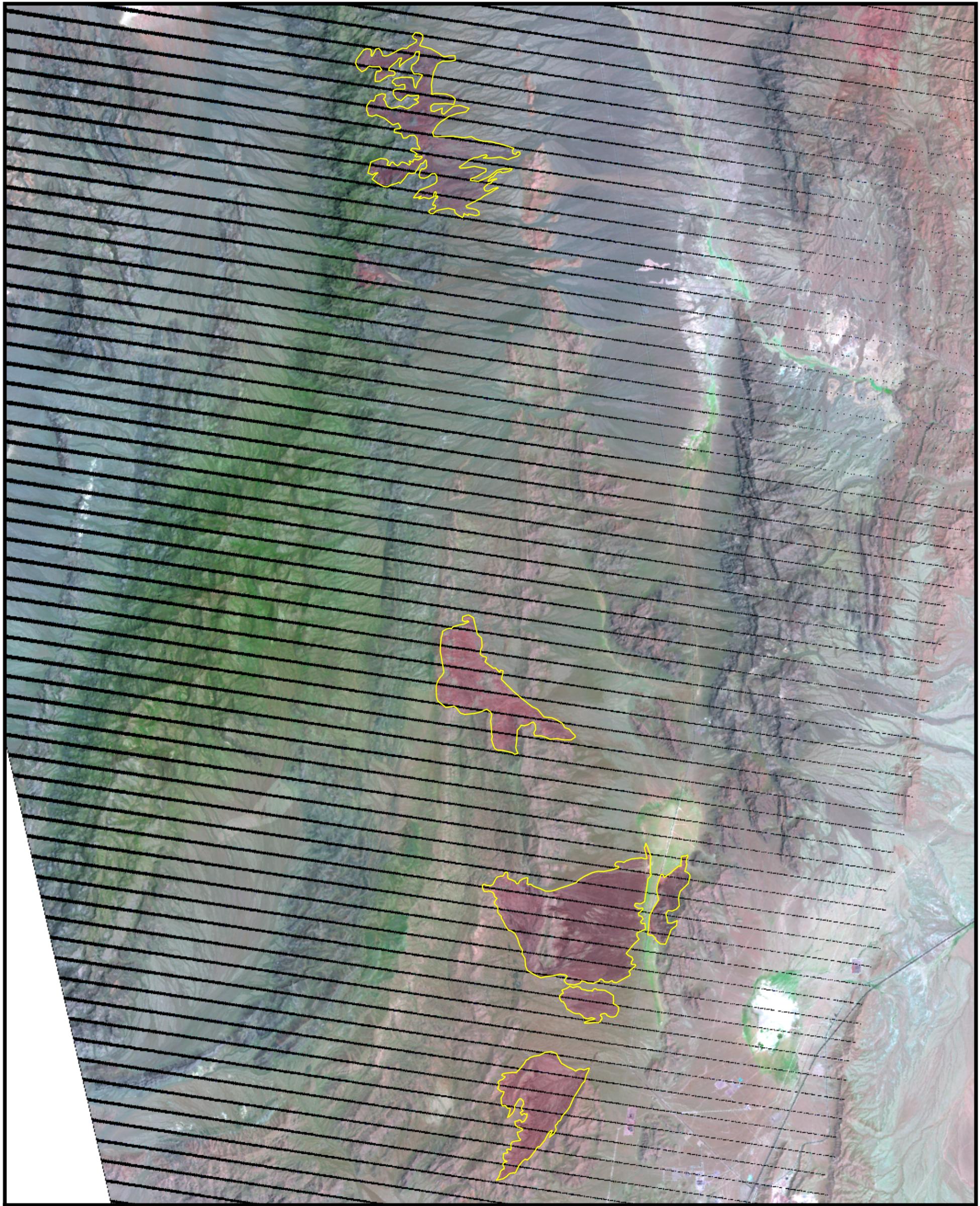
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Post Fire Image



 Fire Perimeter



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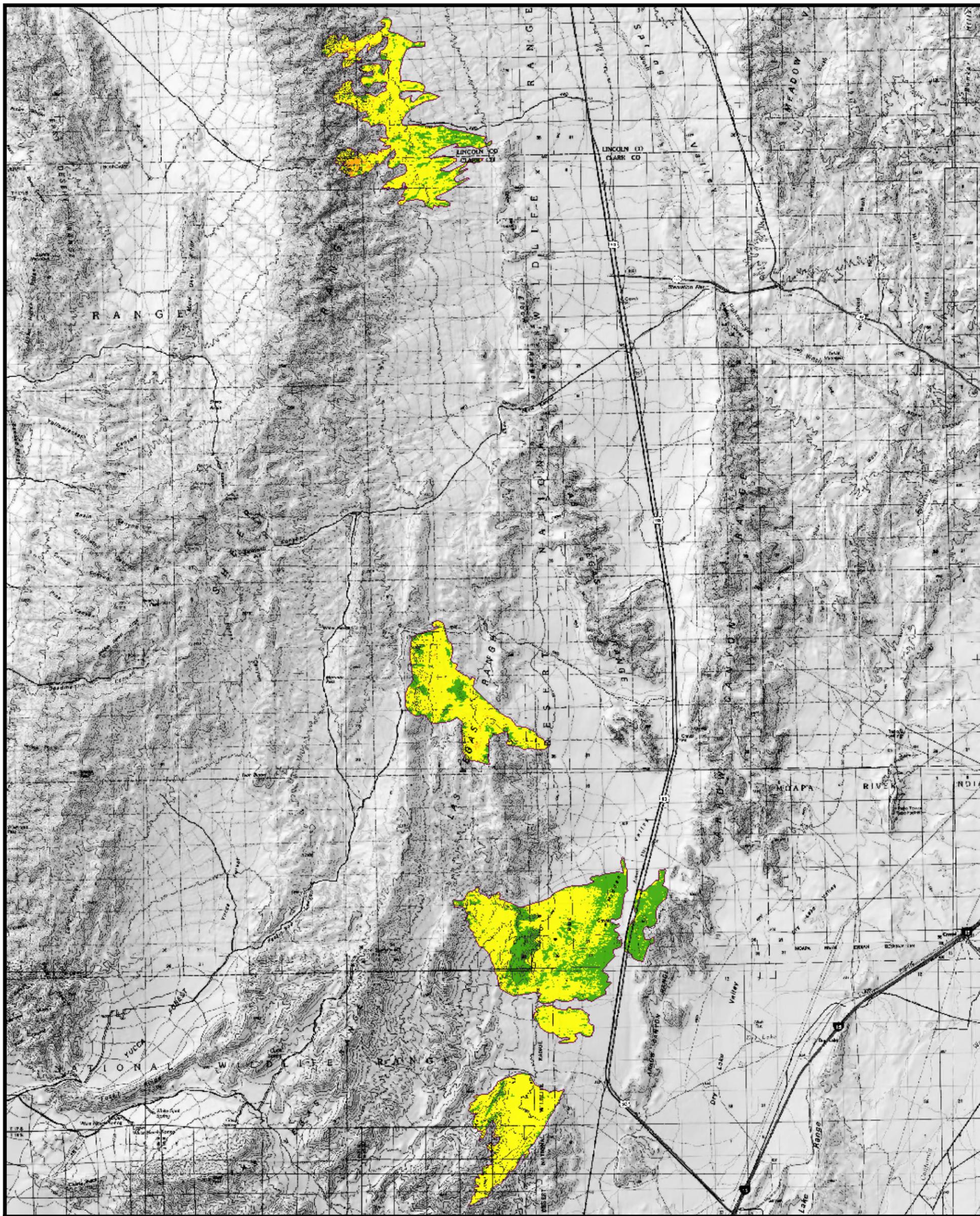
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Burn Severity



Burn Severity

- Unburned or Very Low
- Low
- Moderate
- Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



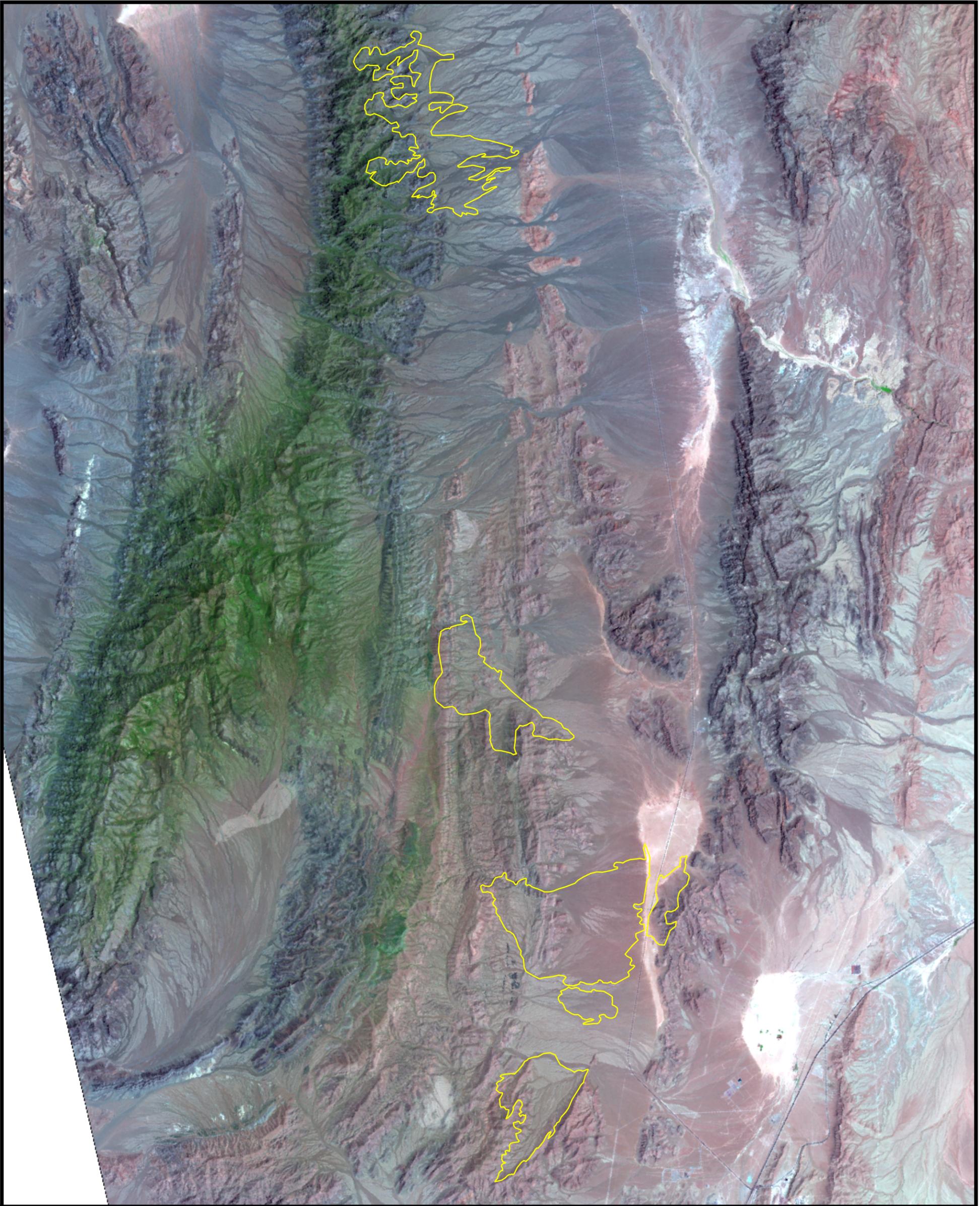
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Pre Fire Image



 Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



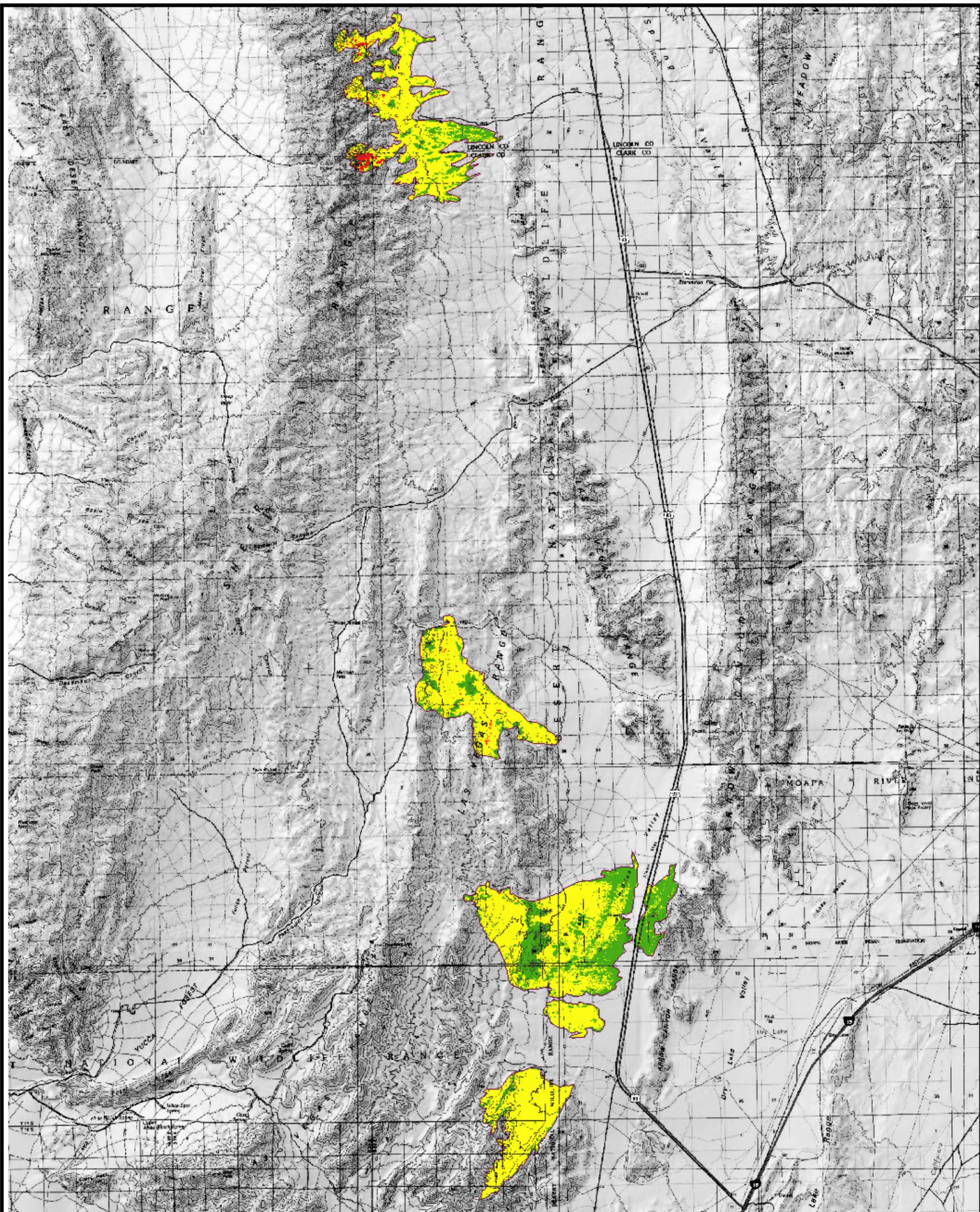
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

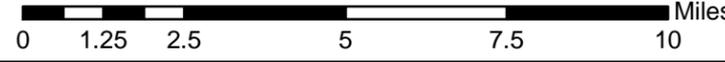
Vegetation Mortality



- Vegetation Mortality**
- Unburned or Very Low
 - Moderate
 - High
 - Fire Perimeter



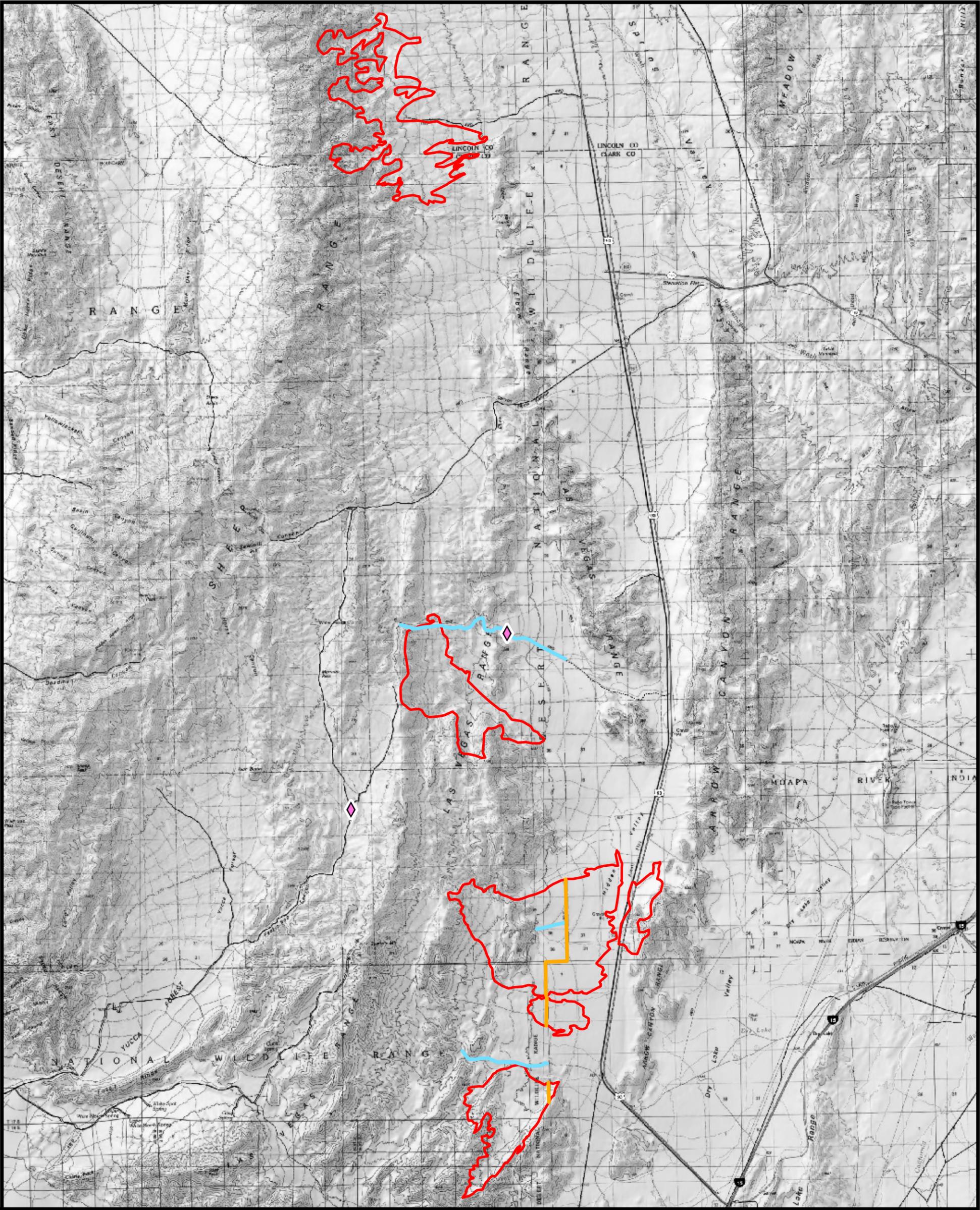
The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

Treatments



-  Gates
-  Boundary Signs Replacement
-  Invasive Plant Species Control
-  Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



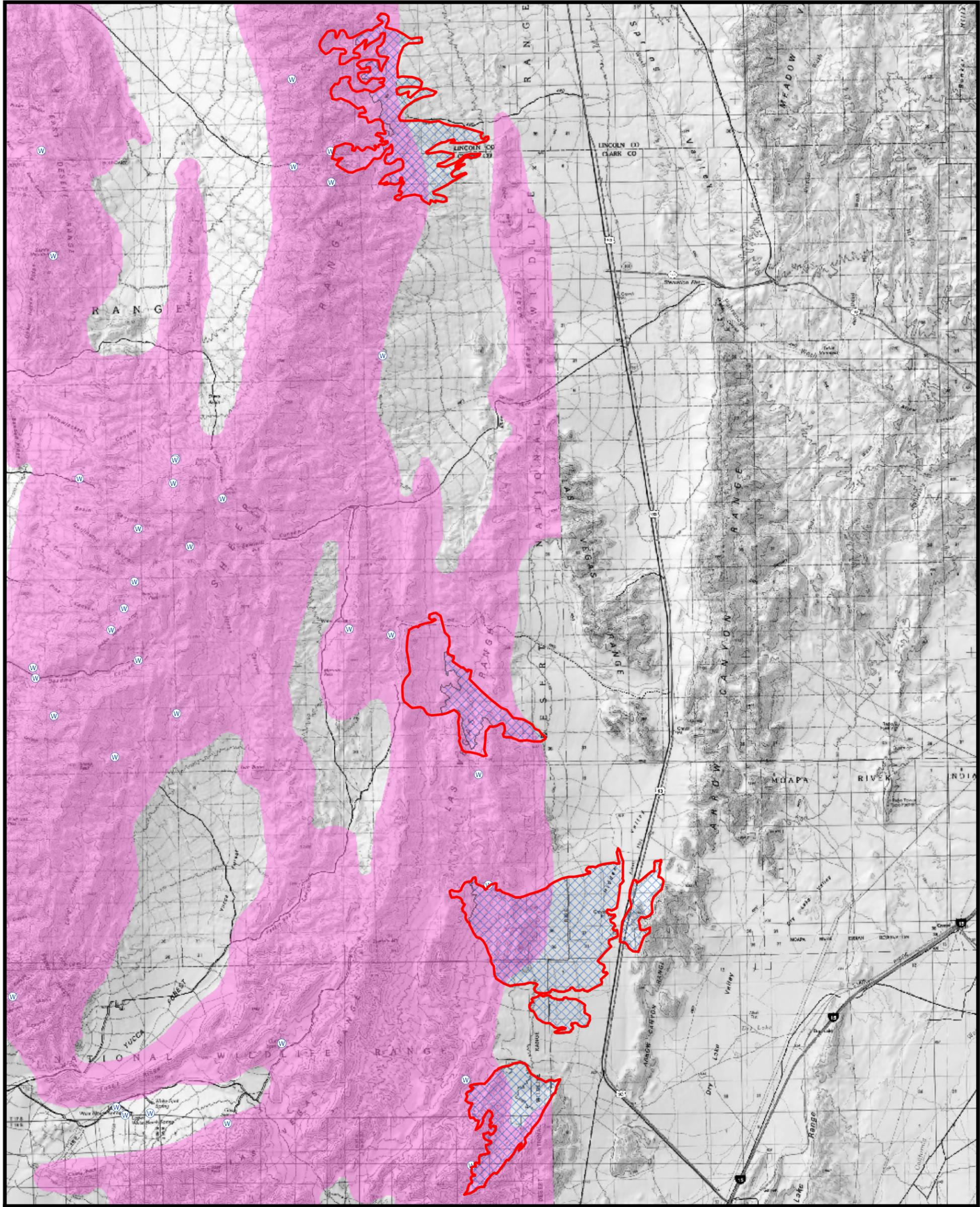
Locational Map



Southern Nevada Complex - Coyote Sub-Complex

Desert National Wildlife Refuge

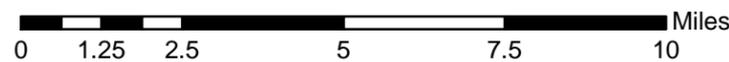
Wildlife



-  Water Sources
-  Suitable Bighorn Sheep Habitat
-  Suitable Tortoise Habitat
-  Fire Perimeter



The data represented in this map were gathered from multiple sources, which may vary in accuracy, scale and date. This is for display purposes only.



Locational Map



BURNED AREA EMERGENCY STABILIZATION PLAN

SOUTHERN NEVADA COMPLEX COYOTE SUB-COMPLEX DESERT NATIONAL WILDLIFE REFUGE

APPENDIX V SUPPORTING DOCUMENTATION

- Desert National Wildlife Refuge Delegation of Authority to BAER Team
- Initial NPS Briefing Issues and Concerns
- Federally Listed Species List



MEMORANDUM

To: Richard Hadley, Burned Area Emergency Response Team Leader

From: Richard Birger, Desert National Wildlife Refuge Complex

Subject: Delegation of Authority, Burned Area Emergency Stabilization and Rehabilitation

You are hereby delegated authority and responsibility to establish an Emergency Stabilization Plan outlining emergency treatment measures and standards necessary to mitigate fire damage resulting from the fires that burned on the Southern Nevada Complex. You will also identify and direct mitigation measures that are immediate in nature and that should be completed by the suppression organization. All emergency stabilization activities will be conducted within the framework of provisions contained within Part 620: Department of Interior Manual Chapter 3; U.S. Fish & Wildlife Service policy and sound resource management practices.

Your primary responsibility is to organize and direct your assigned resources to establish and complete emergency stabilization measures to protect the resources of Desert National Wildlife Refuge from further damage and start the process of recovery. You are to work in cooperation with the refuge and complex staff, which is in charge of incident suppression and you will coordinate your activities with Incident Commander. I am also directing the IMT Incident Commander, through copy of this delegation, to assist you and your team in the rapid assessment and implementation of emergency stabilization measures to protect the lives, property and critical natural and cultural resources of Desert National Wildlife Refuge. This assistance from the IMT will include aerial reconnaissance assistance, ordering of supplies, materials, equipment, and personnel, and implementation of treatments where feasible to complete your task. You are accountable to me, or in my absence, my designated representative.

Amy Sprunger-Allsworth will represent me as Line Officer when I am unavailable. Lee Nelson is designated as principle fiscal oversight and business management contact for the Agency.

Project Leader, Desert NWRC

Date

July 6, 2005 Initial BAER Team Briefing Southern Nevada Complex

Las Vegas, NV Fish & Wildlife Service Desert National Wildlife Refuge

Richard Hadley, Nat. BAER Team Leader:

- **Call-out criteria for incident/BAER Team mobilization**
- **Endangered Species, life & property, Resources at Risk, Cultural Resources, etc.**
- **7-days from containment to produce plan.**
- **Coordination with Ecological Services, BLM, etc.**
- **Review concepts of Rehabilitation.**
- **Joint Fire Science funding may be available, among other sources.**

Issues:

- **Fire effects on Desert Tortoise**
- **Damage to boundary and other signing**
- **Invasive and noxious weeds**
- **Impacts to known Cultural Resource Sites**
- **Potential for increased looting of cultural sites**
- **Fire effects to Bighorn sheep habitat**
- **Retardant effects**

Needs from Agency:

- **Fire management plan and other resource management plans**
- **WFSA**
- **209's and other suppression team data**
- **GIS data layers (Veg, Tortoise, Bighorn, Cultural, Roads, etc.)**
- **Tortoise Restoration Plan**



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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July 6, 2005
File No. 1-5-05-SP-506

To: Project Leader, Desert National Wildlife Refuge Complex, Las Vegas, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Species List for the 2005 fire season on the Desert National Wildlife Refuge, in Clark and Lincoln Counties, Nevada

In response to your July 6, 2005, request the following federally listed species may occur in the Desert National Wildlife Refuge (DNWR):

- Pahrump poolfish (*Empetrichthys latos*), endangered
- Desert tortoise (*Gopherus agassizii*) (Mojave population), threatened
- Bald eagle (*Haliaeetus leucocephalus*), threatened
- Yellow-billed cuckoo (*Coccyzus americanus*) (Western U.S. DPS), candidate

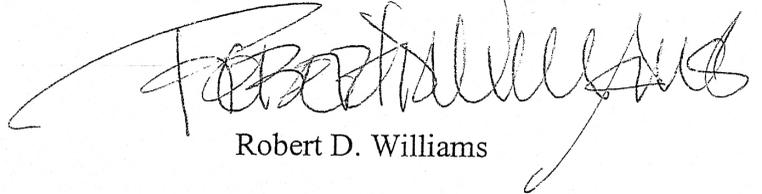
To assist you in your assessment of effects to listed species, we have provided the location of each species in the DNWR. The desert tortoise is widely distributed on the DNWR below 1,280 meters (4,200 feet) in elevation, in association with Mojave Desert scrub. The Pahrump poolfish occurs in a concrete refugium at the Corn Creek Field Station. The bald eagle is a rare migrant through the area. The yellow-billed cuckoo has been detected in habitat at the Corn Creek Field Station.

This list fulfills the requirement of the Fish and Wildlife Service to provide information on listed species pursuant to section 7(c) of the Endangered Species Act of 1973, as amended (Act), for projects that are authorized, funded, or carried out by a Federal agency. The yellow-billed cuckoo is a candidate species that receives no legal protection under the Act, but could be proposed for listing in the near future. Consideration of candidate species during project planning may assist species conservation efforts and may prevent the need for future listing actions.

Project Leader

File No. 1-5-05-SP-506

Please reference File No. 1-5-05-SP-506 in future correspondence concerning this species list. If you have any questions regarding this correspondence or require additional information, please contact Christiana Manville in our Southern Nevada Field Office at (702) 515-5230.

A handwritten signature in black ink, appearing to read "Robert D. Williams". The signature is stylized with a large, sweeping initial "R" and a long, trailing flourish extending to the right.

Robert D. Williams