Marcial Fire:
Burned Area Emergency Stabilization Plan
Review and Approval

Prepared for

U.S. Fish and Wildlife Service
Southwest Region 2
500 Gold Avenue S.W.
Albuquerque, NM 87103

Prepared by

Parametrix
6739 Academy Rd. NE, Suite 350
Albuquerque, NM 87109
505-323-0050
www.parametrix.com

June 2006 | 573-4838-003 (01/01)

BURNED AREA EMERGENCY STABILIZATION PLAN REVIEW AND APPROVAL

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

MMa

Bernard Lujan, Acting Refuge Manager, Bosque del Apache NWR, Date

II. Regional Fire Management Coordinator concurrence that the plan fits the technical definition for use of Emergency Stabilization funding.

Dave Lentz, Regional Fire Management Coordinator, Region 2, USFWS Date

III. Emergency Stabilization Funding Approval (check one box below):

☐ Approved

☐ Approved with Revision (see attached)

☐ Disapproved

Dr. Benjamin N. Tuggle, Regional Director, Region 2, U.S. Fish and Wildlife Service Date

IV. Emergency Stabilization Funding Approval (check one box below):

☐ Approved

☐ Approved with Revision (see attached)

☐ Disapproved

H. Dale Hall, National Director, U.S. Fish and Wildlife Service Date

Marcial Fire

BURNED AREA EMERGENCY STABILIZATION PLAN

UNIT: BOSQUE del APACHE NATIONAL WILDLIFE REFUGE and ADJACENT LANDS

LOCATION: Socorro County, New Mexico

DATE: June 13, 2006

PREPARED BY: Parametrix, Inc.

Submitted By: _____ Date: _____

Bernard Lujan, Acting Refuge Manager
Bosque del Apache NWR

EXECUTIVE SUMMARY

Introduction

This Burned Area Emergency Stabilization (ES) Plan has been prepared in accordance with Department of the Interior and U.S. Fish and Wildlife Service (FWS) policy, Bosque del Apache National Wildlife Refuge (Refuge) Comprehensive Conservation, Habitat Management, and Fire Management Planning documents. The plan provides emergency stabilization recommendations for land burned in the Marcial Fire. The primary objectives are to:

- Prescribe cost effective post-fire stabilization measures necessary to protect human life, property, and significant natural resources.
- Stabilize burned area to prevent further degradation to affected resources.

This report is a companion report to the **Marcial Fire Burned Area Rehabilitation Plan.**. This report describes recommended emergency stabilization actions for one year following the control date of the fire (May 11, 2006 - May 10, 2007). This Plan was prepared by the Albuquerque, New Mexico office of Parametrix, Inc. Support was provided by staff from the Bosque del Apache National Wildlife Refuge, USFWS Southwest Region Fire Management, Armendaris Ranch, the Socorro Soil & Water Conservation District, New Mexico State Forestry, and the Natural Resources Conservation District.

Fire Background

The Marcial Fire ignited on May 3, 2006 near the historic town-site of San Marcial, Socorro County, New Mexico. Values immediately in danger included 4 structures, a Bureau of Reclamation storage yard, a railroad trellis, 2 railroad bridges, and Critical Habitat and established territories for the federally-endangered Southwestern willow flycatcher [WIFL] (*Empidonax trailii extimus*). Suppression actions consisted of burnout and holding with engine crews on established roads, and indirect fire-line construction with bulldozers. Containment was problematic due to limited access, heavy fuel loading; herbicide treated dead-standing tamarisk stands and associated extreme fire behavior, including spotting and flame lengths greater than 200 feet. The fire was contained on May 6 and controlled on May 11. Cooperators included more than 60 firefighters from the FWS, San Antonio (NM) Volunteer Fire Department, New Mexico State Forestry Division, Bureau of Land Management, U.S. Forest Service, and contractors. The fire burned 4,857 acres with an estimated suppression cost of $265,000.

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

The burn area is within the historic floodplain of the Rio Grande in rural Socorro County. Land ownership is a mix of public and private, with large portions managed by the Refuge, New Mexico Ranch Properties, and other land-owners. There are no human habitations and very few structures within the affected area.

The fire burned a mosaic of non-native and native floodplain forest (bosque) vegetation. Overstory vegetation at the burn site was dominated by non-native saltcedar (*Tamarix ramossissima*) with large patches of native Rio Grande cottonwood (*Populus deltoides var. wislenzii* spp.), and Goodding's willow (*Salix gooddingii*). Understory vegetation was dominated by native willows (*Salix spp.*), honey mesquite (*Prosopis glandulosa*), and native and non-native forbs and grasses.

The general area contains or is adjacent to Critical Habitat and/or known nesting areas for two federally-listed endangered species; the WIFL (USFWS 2005) and the Rio Grande silvery minnow [RGSM] (*Hybognathus amarus*) (USFWS 2003). The Refuge implements comprehensive maintenance, rehabilitation, and restoration to habitat for these species, including converting non-native saltcedar and Russian olive stands to native riparian-wetland habitat. The WIFL Critical Habitat on the Refuge is immediately adjacent to the Marcial Fire burned area and the WIFL likely utilized habitat within the burned area. The RGSM is present in the Rio Grande adjacent to the entire project area, although habitat for this species was likely not severely adversely affected.

The greatest post-fire threats to resources are:

- Increased cover of exotic species and noxious weeds within the burned area and in adjacent Critical Habitat for the WIFL (USFWS 2002). Two New Mexico Class-A noxious weeds, Russian knapweed (*Acroptilon repens*) and perennial pepperweed (*Lepidium latifolium)* are present and spreading on and off the Refuge. Other species such as camelthorn (*Alhagi pseudalhagi*) and Russian olive are also present and may invade newly exposed soils if not actively monitored and promptly treated.
- Continued extreme fire hazard within burned area and to adjacent habitat resulting from rapid exotic saltcedar (a Class C noxious weed) re-growth.

Much of the area that burned was in saltcedar-dominated habitat. This species is fire adapted and root-sprouts vigorously following burning forming impenetrable stands if not treated. Given these ecological traits saltcedar typically will crowd out native riparian and wetland vegetation that is beneficial for native wildlife. The bare, disturbed soil present over most of the burned area also provides an opportunity for invasion by several classes of exotic and noxious invasive species.

<u>The following ES activities and treatments are recommended for the Marcial Fire on the Bosque del Apache National Wildlife Refuge</u>:

- Burned Area Emergency Response Plans; Emergency Stabilization and Rehabilitation Plans (Parametrix)
- Planning, Administration, and Implementation (FWS)
- Root plow, rake, and pile salt cedar in priority areas where resprouting is prevalent.
- Burn or remove piled debris
- Herbicide treatment of exotic and noxious weeds in priority areas where resprouting and exotic species colonization is prevalent.
- Monitoring of contractors, mechanical, and herbicide treatment effectiveness

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APPENDICES

PART A - FIRE LOCATION AND BACKGROUND INFORMATION

Fire Name	Marcial Fire
Fire Number	CJ82
Region	2
County and State	Socorro County, New Mexico
Ignition Date/Cause	May 3, 2006 / Unknown
Date Contained	May 6, 2006
Date Controlled	May 11, 2006
Jurisdiction	FWS 802 acres
Other jurisdictions	Private 4,055 acres
Total Acres	4,857

PART B - NATURE OF PLAN

Type of Action: (check one box below)

X	Initial Submission
	Amendment to the Initial Submission

PART C - EMERGENCY STABILIZATION ASSESSMENT

Emergency Stabilization Objectives

- Prescribe cost effective post-fire stabilization measures necessary to protect human life, property, and significant natural resources.
- Stabilize burned area to prevent further degradation to affected resources.

PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS

I. Burned Area Emergency Response Team Members:

Position	Team Member (Agency)
Team Leader	Todd Caplan, Senior Ecologist, Parametrix, Inc
Fire Operations	Chris Wilcox, NM State FMO (FWS)
Environmental and NEPA Compliance & Planning	Nancy Baczek, Ecological Services (FWS) Gina Dello Russo, Bosque del Apache NWR (FWS)
Vegetation Specialist	Todd Caplan, Senior Ecologist, Parametrix ,Inc
Wildlife Biologist	Steve Albert, Senior Wildlife Biologist, Parametrix, Inc
GIS Specialist	Chad McKenna, GIS Specialist, Parametrix, Inc
Plan Editing	Jennifer Hyre, Technical Aid, Parametrix, Inc
Resource Advisors	Gina Dello Russo, Ecologist, Bosque del Apache NWR Mark Kaib, Fire Ecologist, U.S. Fish & Wildlife Service, Region 2 John Vradenburg, Senior Wildlife Biologist, Bosque del Apache NWR

PART E - SUMMARY OF ACTIVITIES AND COSTS

The summary of activities and cost table below identifies emergency stabilization costs charged or proposed for funding from subactivity 9142 funding sources.

EMERGENCY STABILIZATION ACTIVITIES COST SUMMARY TABLE

Spec	Title	Unit	Unit Cost	# of Units	Work Agent	Cost
1	Saltcedar, noxious weed control-herbicide	Acre	$103.00	760 ac	FA, SC	$48,924
2	Salt Cedar control-mechanical	Acre	$750.00	549 ac	FA, SC	$329,000
3	Stabilization	Acres	$46,000	n/a	FA, SC	$46,000
4	BAER Implementation Leader	Year	$15,600	1 yr	FA	$15,600
TOTAL						**$439,524**
Work Agent: FA=Force Account, SC=Service Contract						

PART F - INDIVIDUAL SPECIFICATION – HERBICIDE TREATMENTS

TREATMENT/ACTIVITY	Herbicide Treatments	**PART E SPECIFICATION #**	1
NFPORS TREATMENT CATEGORY*	Other Treatment	**FISCAL YEAR(S) (list each year):**	2006
NFPORS TREATMENT TYPE *	Chemical	**WUI? Y / N**	
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	

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

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

Number and Describe Each Task:

A. General Description: Spot treat noxious weeds and Salt Cedar resprouts with herbicide.

B. Location/(Suitable) Sites: Floodplain areas within BDA-NWR susceptible to saltcedar root-sprouts and/or noxious weed invasion (760-acres).

C. Design/Construction Specifications:

1. Use ATV mounted herbicide sprayer tank to spot treat saltcedar resprouts and noxious weeds, such as Russian knapweed and perennial pepperweed
2. Apply appropriate herbicides to all Salt Cedar regrowth in late summer months for three growing seasons
3. Apply appropriate herbicides to all noxious weeds (Russian knapweed, Perennial pepperweed, etc.)
4. All herbicide applications will be consistent with existing noxious weed management plans (BDA-NWR 2006)

D. Purpose of Treatment Specifications: Control Salt Cedar regrowth and new invasions of noxious weeds.

E. Treatment Effectiveness Monitoring Proposed: Visual inspection following procedures specified in existing noxious weed management plans (BDA-NWR 2006)

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Two laborers GS 5 @ $14.50/hr x 515 hr/yr x 0.5 year	$7,468
TOTAL PERSONNEL SERVICE COST	$7,468
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
Two ATVs with two 12 volt, 25 gal sprayer tanks	$15,000
Gasoline for ATV's @ $3/gallon x 5/gal. tank x 1 tank/day x 2 ATV's x 90 days	$2,700
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$17,700
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
Saltcedar: Garlon 4 herbicide and Adjuvants @ ($93/gal herbicide + $6.66/gal veg, oil) x 162 gal (assumes 1 gal of 50% solution per acre) x 1 application (2006)	$16,145
Noxious Perennial Herbs: Rodeo herbicide @ $50/gal x 152 gal (assumes 1 gal of chemical per 5 acres) x 1 applications (2006)	$7,600
TOTAL MATERIALS AND SUPPLY COST	$23,745
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY06	07/01/2006	09/30/2006	F	324 ac	$151.00	Control Salt Cedar and noxious weeds	$48,924
						TOTAL	$48,924

Work Agent: F=Force Account

SOURCE OF COST ESTIMATE

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

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS	324 ac	$48,924
	TOTAL COST	$48,924

PART F - INDIVIDUAL SPECIFICATION – MECHANICAL TREATMENTS

TREATMENT/ACTIVITY NAME	Mechanical Treatment	**PART E SPECIFICATION #**	2
NFPORS TREATMENT CATEGORY*	Other Treatment	**FISCAL YEAR(S) (list each year):**	2006
NFPORS TREATMENT TYPE *	Mechanical	**WUI? Y / N**	
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	

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

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

Number and Describe Each Task:

A. General Description: Mechanically treat Salt Cedar

B. Location/(Suitable) Sites: 549 acres (previous saltcedar monoculture) on Bosque del Apache NWR

C. Design/Construction Specifications:

1. Bulldoze standing biomass into burn piles
2. Root plow, rake, and stack Salt Cedar roots into burn piles
3. Burn piles
4. Follow up with spot herbicide treatments (specification 1)

D. Purpose of Treatment Specifications: Remove live roots of Salt Cedar from burned area within Refuge boundaries

E. Treatment Effectiveness Monitoring Proposed: Visual inspection following procedures specified in existing noxious weed management plans (BDA-NWR 2006)

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
2 Wage Grade-9 heavy equipment operators @ $20.38/hr. x 480 hrs (3 mos.) and 1 WG 7 heavy equipment operator @ 16.53/hr x 480 hrs (3 mos.) .	$27,500
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
544 John Deere Front End Loader with rake and grapple attachment (see Appendix 4 Equipment Purchase Justification)	$140,000
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$140,000
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
Fuel costs @ 1000 gallons of diesel / week (estimated at $3,000 per week for 12 weeks) Maintenance and Repairs @ $25,000 per 100 acres x 502 acres (estimate includes mechanic time and parts for repairs and required equipment maintenance, in-field daily maintenance required)	$36,000 $125,500
TOTAL MATERIALS AND SUPPLY COST	$161,500
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY06	08/01/2006	09/01/2006	F	502 ac	$/ac	Remove Salt Cedar roots	$329,000
						TOTAL	$329,000

Work Agent: F=Force Account

SOURCE OF COST ESTIMATE

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

P = Personnel Services, E=Equipment, **M** = Materials/Supplies

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS	502 ac	$329,000
	TOTAL COST	$329,000

PART F - INDIVIDUAL SPECIFICATION – PLANNING

TREATMENT/ACTIVITY NAME	Planning	**PART E SPECIFICATION #**	3
NFPORS TREATMENT CATEGORY*	Stabilization and Rehabilitation Planning	**FISCAL YEAR(S) (list each year):**	2006
NFPORS TREATMENT TYPE *		**WUI? Y / N**	
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	

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

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

Number and Describe Each Task:

A. General Description: Collect information required for developing stabilization plan; creation of plan

B. Location/(Suitable) Sites: Burned area within Bosque del Apache National Wildlife Refuge

C. Design/Construction Specifications

D. Purpose of Treatment Specifications: Gather essential information required for site stabilization planning

E. Treatment Effectiveness Monitoring Proposed: n/a

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Assistance of Refuge and Regional Staff	$10,000
TOTAL PERSONNEL SERVICE COST	$10,000
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
3 Round Trips to Refuge for Service Personnel	$1,000
TOTAL TRAVEL COST	$1,000
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
Development of Emergency Stabilization and Rehabilitation Plans	$35,000
TOTAL CONTRACT COST	$35,000

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY06	05/18/2006	07/05/2006	S/F			Emergency Stabilization and Rehabilitation Planning	$46,000
						TOTAL	$46,000

Work Agent: S=Service Contract

SOURCE OF COST ESTIMATE

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

C = Contract

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS		$46,000
	TOTAL COST	$46,000

PART F - INDIVIDUAL SPECIFICATION – BAER IMPLEMENTATION LEADER

TREATMENT/ACTIVITY NAME	BAER Implementation Leader	**PART E SPECIFICATION #**	4
NFPORS TREATMENT CATEGORY*	Other Treatment	**FISCAL YEAR(S) (list each year):**	2006
NFPORS TREATMENT TYPE *		**WUI? Y / N**	
IMPACTED COMMUNITIES AT RISK		**IMPACTED T&E SPECIES**	

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

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

Number and Describe Each Task:

A. General Description: Implement BAER Plan tasks

B. Location/(Suitable) Sites: Floodplain areas within BDA-NWR (757 ac) and Armendaris Ranch (1,654 ac)

C. Design/Construction Specifications: n/a

D. Purpose of Treatment Specifications: Ensure implementation of BAER Plan

E. Treatment Effectiveness Monitoring Proposed: n/a

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS 12 @ $30/hr x 520 hr/yr x 1 yr	$15600
TOTAL PERSONNEL SERVICE COST	$15,600
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	**COST / ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL MATERIALS AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	**COST / ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY06	06/01/2006	12/31/2006	F	1 yr	$15,600	Implement BAER Plan	$15,600
						TOTAL	$15,600

Work Agent: F=Force Account

SOURCE OF COST ESTIMATE

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

P = Personnel Services

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

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

TOTAL COST BY JURISDICTION

JURISDICTION	UNITS TREATED	COST
USFWS		$15,600
	TOTAL COST	$15,600

PART G - POST-EMERGENCY STABILIZATION REQUIREMENT

The following are post-emergency stabilization, implementation, operation, maintenance, monitoring, and evaluation actions after three years from the control of the fire to ensure the effectiveness of initial investments. Estimated annual cost and funding source is indicated.

1. Monitor invasive weed control through monthly visual inspections during the growing season from 2006 through 2008 ($COST).

2. Monitor seeding effectiveness for establishing cover and reducing wind erosion. Achieve average aerial cover of seeded species of at least 25% by the third year after seeding. ($COST).

3. Monitor Southwestern willow flycatcher populations within 1 mile of fire perimeter. ($COST).

PART H – CONSULTATIONS/CONTACT INFORMATION

Bernard Lujan, Acting Refuge Manager
U.S. Fish and Wildlife Service
Bosque del Apache National Wildlife Refuge
P.O. Box 1246
Socorro, NM 87801
505-835-1828

Gina Dello Russo, Ecologist
U.S. Fish and Wildlife Service
Bosque del Apache National Wildlife Refuge
P.O. Box 1246
Socorro, NM 87801
505-835-1828

John Vradenburg, Senior Wildlife Biologist
U.S. Fish and Wildlife Service
Bosque del Apache National Wildlife Refuge
P.O. Box 1246
Socorro, NM 87801
505-835-1828

Colin Lee, Wildlife Biologist
U.S. Fish and Wildlife Service
Bosque del Apache National Wildlife Refuge
P.O. Box 1246
Socorro, NM 87801
505-835-1828

Mark Kaib
Fire Ecologist
U.S. Fish & Wildlife Service, Region 2
500 Gold Street
Albuquerque, NM 87103

Thomas Waddell, Manager
New Mexico Ranch Properties, Inc.
Turner Enterprises
HC 32, Box 191
Truth or Consequences, NM 87901
505-894-6782

Nyleen Troxel Stowe
Daryl Reasner (Contractor)
Director of Special Projects
Socorro SWCD
103 Neel Ave.
Socorro, NM 87801
(505) 835-1710 x 101

Douglas Boykin
Southwest Division Forester
New Mexico State Forestry Division
PO Box 1948
Santa Fe, NM 87504

APPENDIX I

BURNED AREA ASSESSMENT REPORT
MARCIAL FIRE (21550-9141-CF3G)

Prepared by Parametrix
May 15-19, 2006

I. Objectives

The objectives of this burned area assessment are:

- Report background information on the fire, including the cause, fuels, and impacts to infrastructure and cultural resources.
- Create an accurate map of the area affected by the fire.
- Discuss the site history and land use.
- Determine the fire's impacts to vegetation, wildlife and other natural resources, including rare, Threatened, and Endangered species.
- Compile site characteristics pertinent to emergency stabilization and rehabilitation treatments.
- Provide specific recommendations for emergency stabilization, monitoring, and management of natural resources at the site.
- Estimate costs associated with the recommended specifications.

II. Background Information and Site Description

1. Fire History and Marcial Fire Background

The Marcial Fire was not the first fire to have occurred in the area (Boykin, pers. comm.).

- In 1992 a fire occurred on Easter Sunday that burned approximately 350 acres west of the Elmendorf Drain. This was a fairly complete burn that consumed mostly saltcedar.
- In March, 1994 a fire above San Marcial and Road 178 consumed approximately 300 acres of mixed vegetation (mostly saltcedar).
- In 1997, approximately 2,000 acres of saltcedar and other vegetation burned in the northern portion of the Armendaris Ranch. This fire was similar to the Marcial Fire, although it did not burn 100% "clean" and there was considerable dead standing vegetation remaining.
- In 2005 a fire north of the LFCC channel near Tiffany burned approximately 20 acres.

The Marcial Fire was reported at 7:15 p.m. on May 3, 2006 near the historic town-site of San Marcial (Figure 1). First responding fire units from San Antonio Volunteer Fire Department and FWS arrived on scene at 7:40. The Fire Management Officer from the FWS assumed command of the fire and additional resources were ordered through the New Mexico State Forestry Division. Values immediately in danger included: 4 structures, a Bureau of Reclamation storage yard containing miscellaneous equipment, a railroad trellis, 2 railroad bridges, and Critical Habitat for the Southwestern willow flycatcher. Initial Suppression actions consisted of burnout and holding operations using fire engine crews along established roads and fire line construction at the head of the fire with bulldozers.

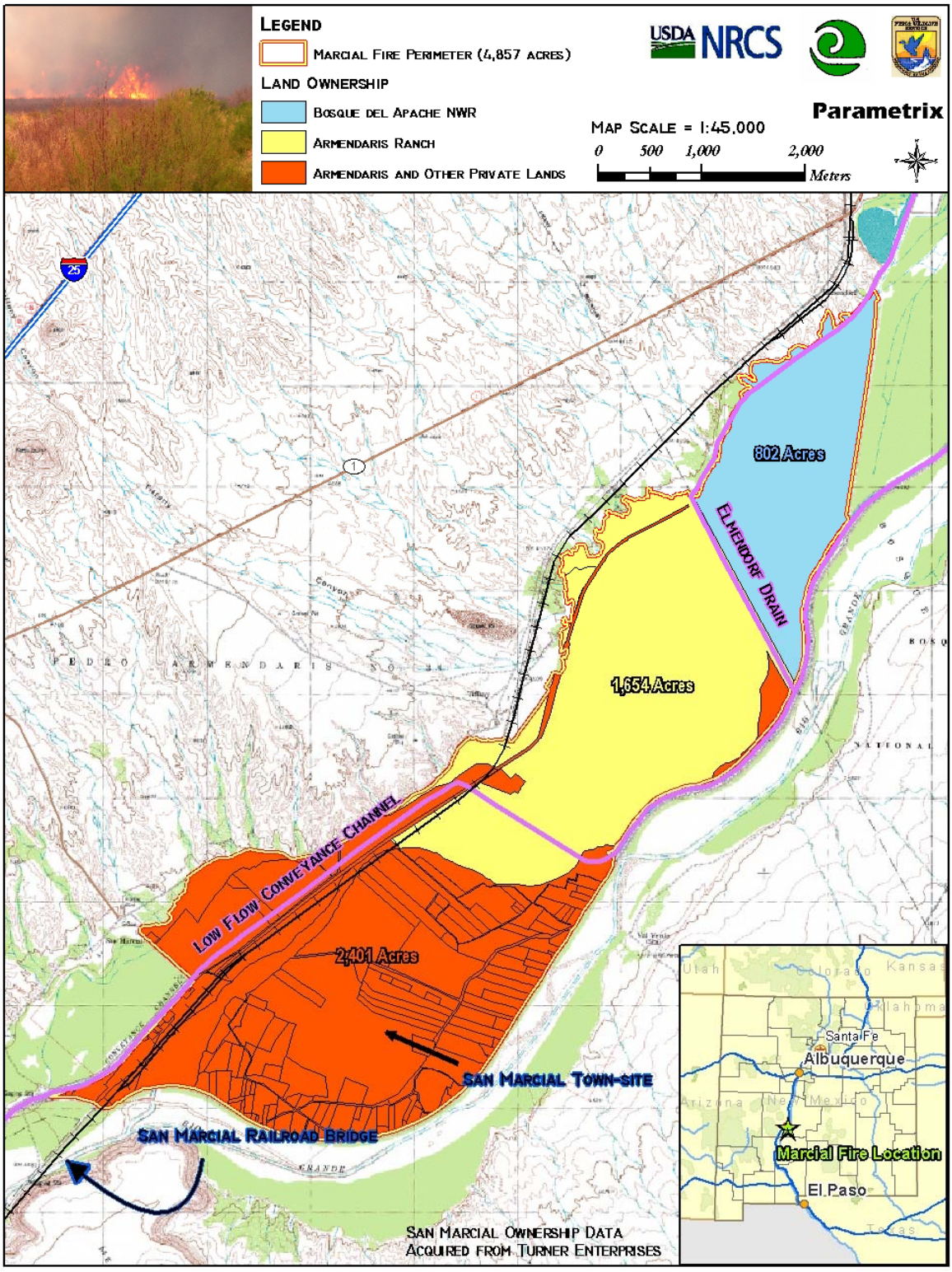

Figure 1. Land ownership within the fire area.

Containment of the fire proved problematic due to extreme fire behavior, including profuse spotting and flame lengths greater than 200 feet. Fire fighters attempted to stop the head of the fire at a previously established fuel break on the southern boundary of Bosque del Apache National Wildlife Refuge. The fuel break was initially successful in halting the fire spread, but due to severe spotting of the fire ahead of the main body, the fire jumped the fire line. The fuel break was successful in reducing the fire's intensity and slowing the fire at the head, which ultimately allowed a successful burnout operation that stopped the fire. Containment was achieved on May 6, 2006 at 6:00 p.m. Fire Crews secured the fire perimeter and mopped up until the fire was fully controlled on May 11. Personnel assisting in fire suppression included 60 firefighters from the FWS, San Antonio Volunteer Fire Department, New Mexico State Forestry Division, Bureau of Land Management, U.S. Forest Service and Contract resources. Equipment used included 16 fire engines, 2 water tenders, 2 bulldozers, and 1 heavy helicopter. The fire burned 4,857 acres with a estimated suppression cost of $265,000.

2. Site Description

The project area lies within the historic floodplain of the Middle Rio Grande in central New Mexico. Temperatures at the Refuge range from an average low of 55.6 in January to an average high of 96.2 in July. Precipitation averages 8.9 inches of rain and 4.8 inches of snow per year, with the majority coming during December and January storms and July – September monsoons.

Soils in the area are dominated by the Anthony-Gila soil complex, which covers approximately 84% of the site (Figure 2). The Anthony-Gila complex is a mixture of fine sand, fine sandy loam, silty loam, and clay loam, the latter two especially on the surface. These soils were formed by relatively recent Rio Grande river alluvium. In general, these soils are moderately to strongly saline, deep and well-drained, and subject to drought and wind erosion. They are present on very shallow slopes (generally <1%) with slow runoff. Permeability is most rapid in the top 2 inches (2.0-20.0 inches per hour) and more moderate below this (0.6 - 6.0 inches per hour) (Natural Resources Conservation Service 1988). Other soils include Riverwash (approximately 5%) and Arizo-Riverwash (4%), the remnant of former river channels; Armijo Clay (2%); Typic Ustifluvents (2%); Belen Clay (1%); and Nickel-Caliza (1%). With the exception of the upland Nickel Caliza soil along the western perimeter of the burn, these soils were formed by relatively recent river alluvium, and demonstrate a variety of textures, permeabilities, salinities, and other characteristics.

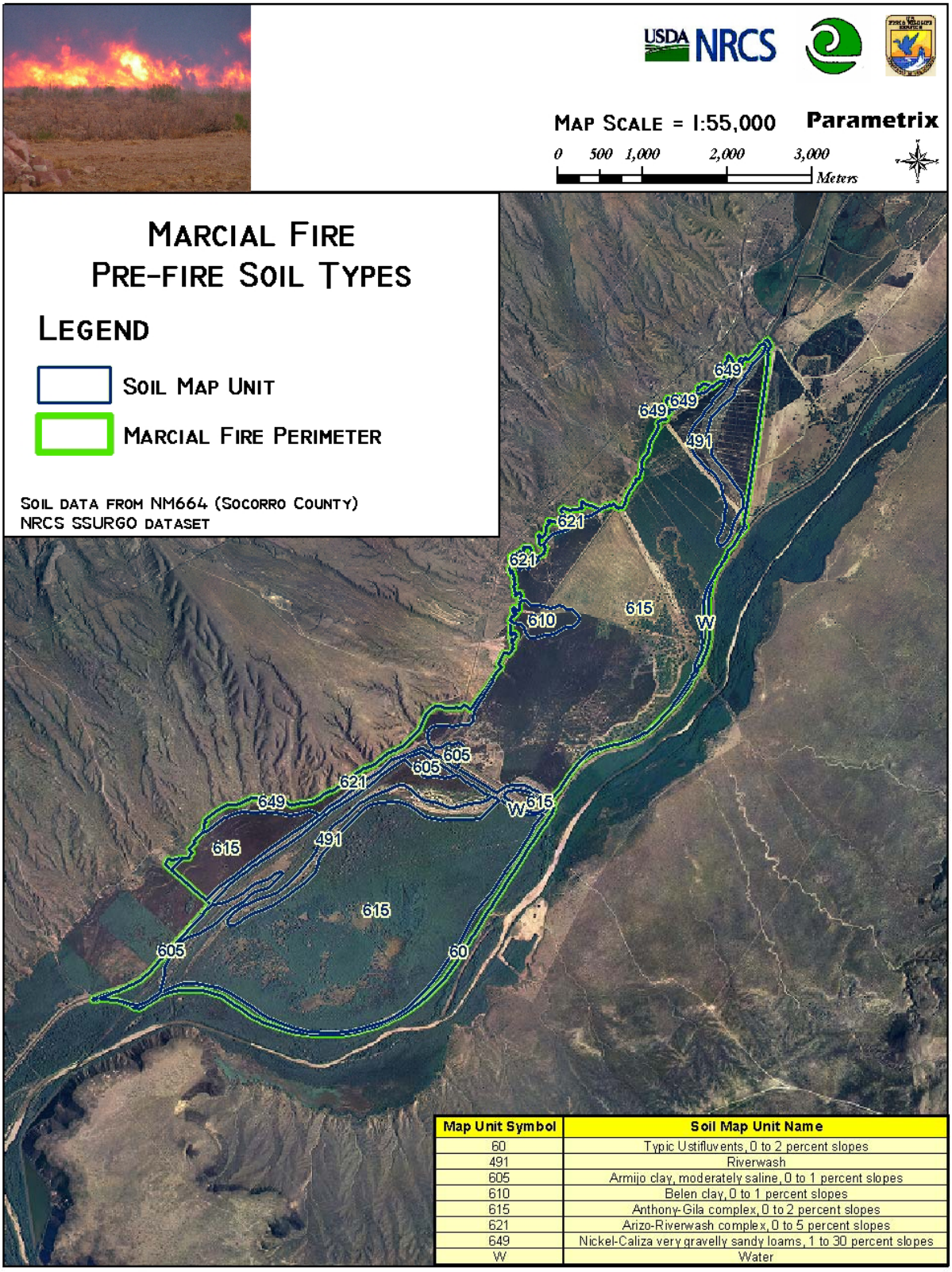

Figure 2. Soils within the burn area.

The Rio Grande and its diverse riparian-wetland habitats is one of the most important migratory corridors for birds in North America. However, flood control and channelization along the Rio Grande since the early part of the 20th century have greatly altered the river and its habitats. Elephant Butte Dam, 27 river-miles downstream of the burn site, was constructed between 1911-1916. By the time the dam was completed, the river reach near the burn area had begun to aggrade sediment, slowing water delivery. The 68-mile Low Flow Conveyance Channel (LFCC), which bisects the burn area, was constructed between 1951 and 1959 to deliver water more efficiently to the Reservoir.

The Rio Grande has continued to aggrade through this reach to the point where the basin elevation over much of the Marcial Fire area is approximately 10-12 feet lower than the adjacent river bed. Though overbank flooding is restricted by levees, rising groundwater may occur at or near the surface in some locations during high river flows.

Prior to the fire, the site was dominated by 15-25 foot saltcedar interspersed with mixed stands of native Rio Grande cottonwood and Gooding's willow. Understory included coyote willow (*Salix exigua*), four-wing saltbush (*Atriplex canescens*), honey mesquite, and native and non-native forbs and grasses (Figure 3, Table 1).

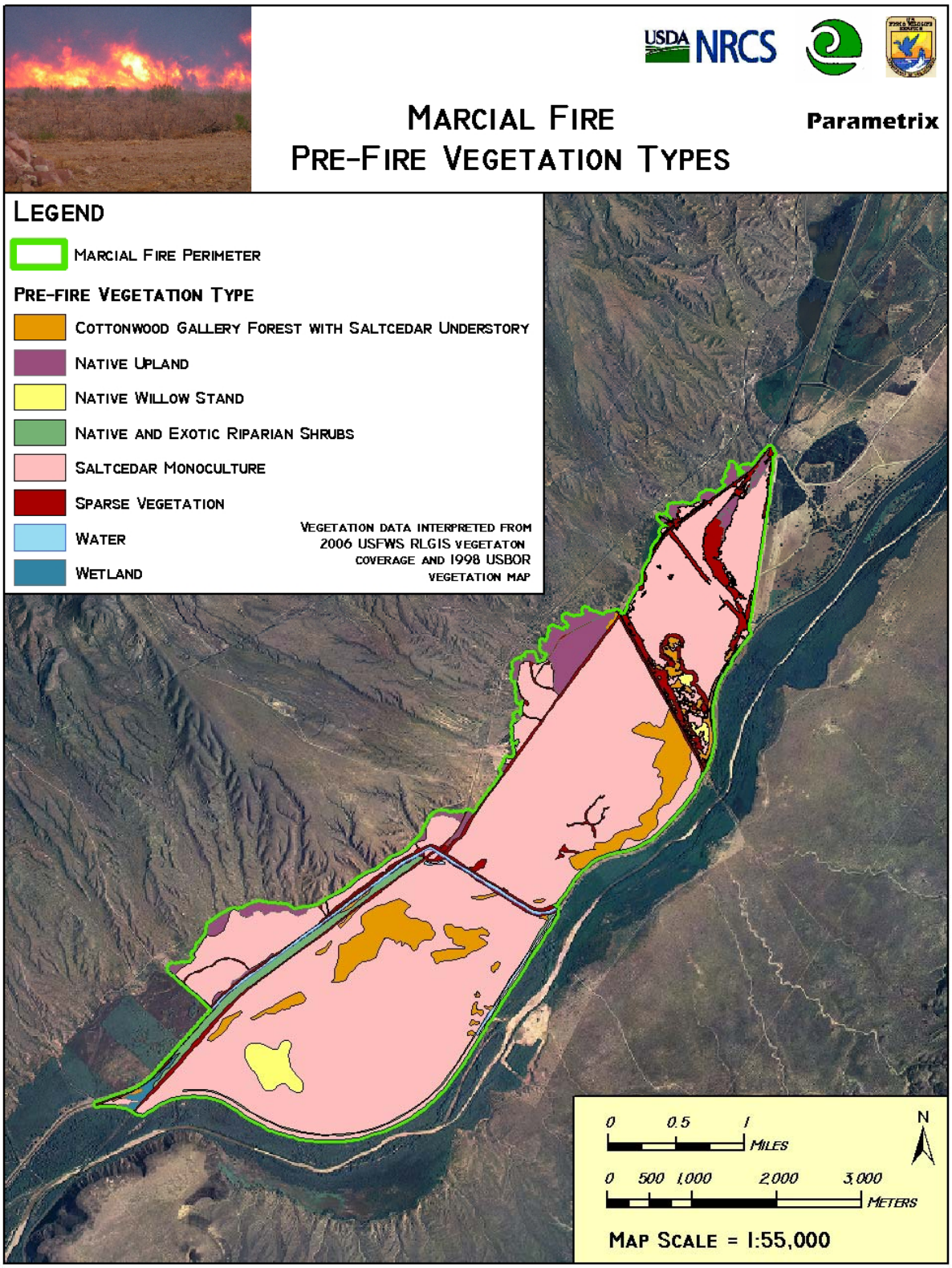

Figure 3. Pre-fire Vegetation Types

Most of the standing vegetation was consumed by the fire, but aggressive vegetative reproduction (via root-sprouting) is expected in large portions of the area.

Table 1. Pre-fire Vegetation, by land owner

Owner	Vegetation	Appx. Acres
Bosque del Apache	Cottonwood Gallery Forest w Saltcedar Understory	46
	Native Upland	38
	Native Willow Stand	14
	Saltcedar Monoculture	549
	Sparse Vegetation	151
	Water	4
	Subtotal	***802***
Armendaris (Main Block)	Cottonwood Gallery Forest w Saltcedar Understory	127
	Native and Exotic Riparian Shrubs	0
	Native Upland	108
	Saltcedar Monoculture	1,326
	Sparse Vegetation	82
	Water	11
	Subtotal	***1,654***
Armendaris Plus Other Private	Cottonwood Gallery Forest w Saltcedar Understory	210
	Native and Exotic Riparian Shrubs	98
	Native Upland	44
	Native Willow Stand	64
	Saltcedar Monoculture	1,856
	Sparse Vegetation	79
	Water	36
	Wetland	15
	Subtotal	***2,402***
Grand Total		**4,857**

3. Land Use and Management

The fire-affected area is nearly surrounded by levees, canals, and berms associated with Rio Grande flood control (near the eastern boundary of the burn), the Low Flow Conveyance Channel (LFCC), the Elmendorf irrigation drain, and the Santa Fe railroad (near the western boundary of the burn). The Elmendorf drain within the burned area serves as the effective dividing line between the southern boundary of the Refuge and the northern boundary of Armendaris Ranch. This drain flows southeast into the LFCC where the Bureau of Reclamation stages pumping operations to supplemental water to the Rio Grande to sustain the federally Endangered RGSM during low river flows.

The northern extent of the Marcial Fire occurred within southern boundary of the Refuge. Bosque del Apache was established in 1939 primarily as a refuge and breeding ground for migratory birds, and is one of the most important migratory stopovers along the Central Flyway. It is used annually by tens of thousands of snow geese, Canada geese, and other waterfowl, and thousands of sandhill cranes. In total, more than 340 species of birds and numerous species of mammals, reptiles, and amphibians are also found on the Refuge.

The 360,000 acre Armendaris Ranch, owned and managed by Turner Enterprises, is located in the central portion of the burn and is part of the southern portion of the Marcial Fire perimeter. The property is managed for bison ranching, hunting, scientific research and conservation. The property within the burn is primarily managed for wildlife. As many as 154 other land owners have property within the perimeter of the burn adjacent to the Ranch. These are mostly small property owners who are the heirs of land-owners from the historic town-site of San Marcial. The fire affected parcels ranging from <0.1 acres to approximately 325 acres in this area).

Because of the changes that have occurred in the Rio Grande ecosystem over the past century and the negative effect these have had for native wildlife (including Endangered species), considerable resources have been focused on restoring native riparian and wetland communities in the Middle Rio Grande Bosque. Both the Refuge and the Armendaris Ranch have programs of saltcedar (and other non-native plant) removal with conversion back to native riparian and wetland communities. The Refuge focuses considerable effort in monitoring and restoring habitat for the federally Endangered WIFL and RGSM.

Due to the recurring saltcedar fires in the area, approximately half of the saltcedar acreage occupying the burned area received aerial herbicide treatments prior to the fire (Figure 4). Saltcedar on the Refuge (582-acres) received aerial herbicide treatments in August 2005. Saltcedar occupying Armendaris Ranch lands between the Elmendorf drain and the LFCC (1,358-acres) received aerial treatments in 2003 and 2004. Saltcedar occupying the private lands southwest of the LFCC received no aerial herbicide treatments before the fire

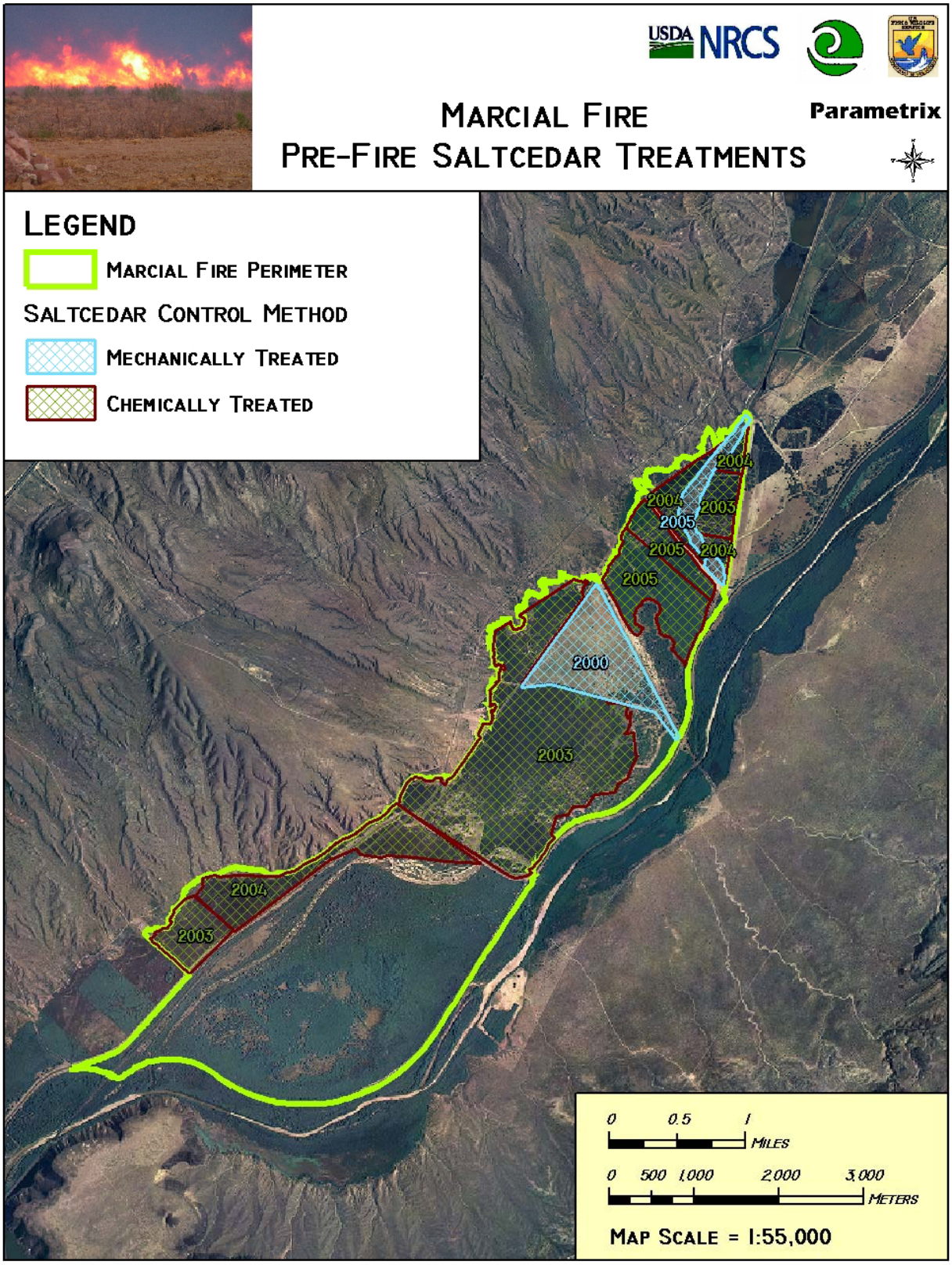

Figure 4. Pre-fire vegetation treatments.

Table 2. Summary of pre-fire saltcedar treatments

Land Owner	Year	Treatment	Acres
Armendaris	2000	Mechanical	284
	2003	Herbicide	977
	2004	Herbicide	97
Armendaris Total			**1,358**
Bosque del Apache	2003	Herbicide	78
	2004	Herbicide	108
	2005	Herbicide	316
	2005	Mechanical	80
Bosque del Apache Total			**582**
Armendaris and Other Private Lands	2000	Mechanical	5
	2003	Herbicide	172
	2004	Herbicide	178
Other Private Total			**355**
Grand Total			**2,294**

5. Impacts to Natural, Cultural and Historic Resources

Impacts to Vegetation and Wildlife Habitat

The Marcial Fire consumed considerable acreage of current or potential high-quality wildlife habitat. Prior to the Marcial Fire, both the Refuge and the Armendaris Ranch were working towards restoring wildlife habitat over much of the area. Some of this habitat was expected to benefit the federally-Endangered WIFL. Consumption of saltcedar was variable. Most large stands were nearly completely consumed while in other areas saltcedar was either scorched but remained standing, or partially burned with green foliage remaining (Photo #1).

Photo 1. The fire contained a mosaic of fully and partially consumed habitat, largely depending on land treatments prior to the fire. Areas in this photo that appear to be bare fields are actually saltcedar stands that were fully consumed by fire.

Saltcedar is expected to aggressively recolonize the Marcial Fire area. Stands south of the LFCC that did not receive pre-fire herbicide treatments are expected to achieve pre-fire heights and canopy cover in 5-10 years. Although stands north of the LFCC had been sprayed by herbicides prior to the fire, disturbance sooner than 3-years following treatment (such as that which occurred as a result of the fire) will result in sub-optimal control (Taylor & McDaniel 1998, McDaniel and Taylor 2003).

Impacts to Threatened and Endangered Wildlife

Although comprehensive surveys had not been conducted over the entire burn area, several Threatened, Endangered, and rare wildlife and plant species were known to be present in or very near the burn (Appendices III and IV).

The species of greatest concern is the federally-Endangered **Southwestern willow flycatcher**. At least 34 nests and/or pair territories (and numerous single birds) have been recorded within a mile of the burn perimeter since 1994. An additional 37 nests and/or pairs have been recorded within 5 miles of the burn perimeter over the same period. Although no known active nests were burned in the fire, WIFLs have been detected in the past in areas that were burned. In addition, several areas of what has been classified as "highly suitable habitat" were damaged.

Critical Habitat has been designated for the WIFL and encompasses this portion of the middle Rio Grande (Figure 5). The Refuge was excluded from the Critical Habitat designation because it would have prevented them from saltcedar management activities.

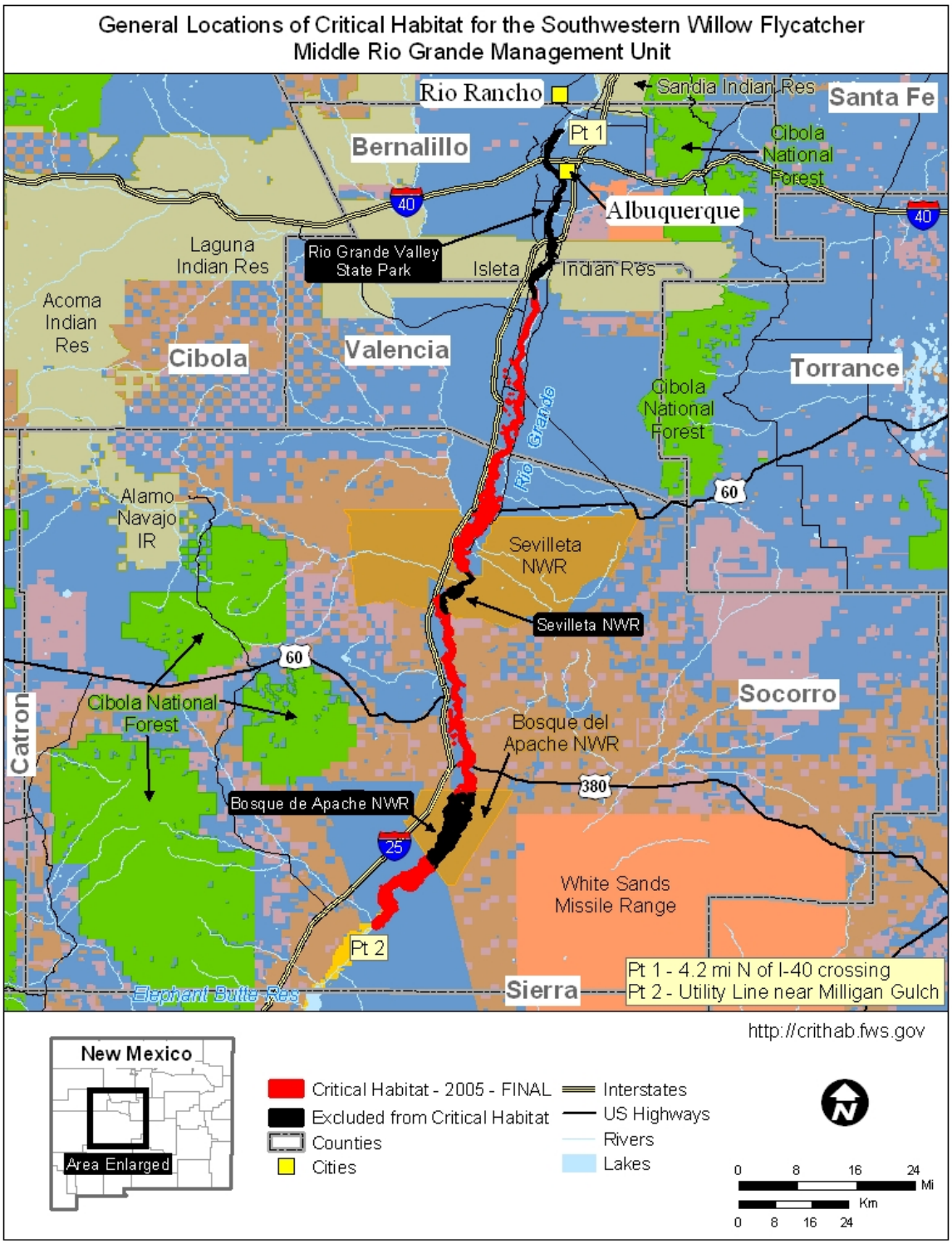

Figure 5. Critical Habitat for the Southwestern willow flycatcher in the Middle Rio Grande.

Another federally-Endangered species, the **Rio Grande silvery minnow**, is present in the Rio Grande near the burn area. Although the fire did not burn to the banks of the River, there was some concern that ash could be transported to the river during monsoon rain events. A section of RGSM habitat in the Rio Grande near the burn is kept watered via pumping from the LFCC. Although the perimeter of the burn is several hundred meters from this habitat on the river, the pump intake is only 50 meters away. However, there is very little chance that ash will affect this area used by the RGSM for three reasons: (1) The fire surrounding the LFCC burned so hot that there was relatively little ash; (2) The slope at the site is nearly flat and sheet and rill erosion is unlikely; and (3) the LFCC and the burned area are surrounded by berms that would prevent lateral transport of ash into the LFCC during rain events.

The **bald eagle** (*Haliaeetus leucocephalus*) (federally Threatened) is also present along the Rio Grande through this reach. However, by the time the fire began, the birds had migrated north. Because bald eagles spend most of their time along the river corridor, the fire is not expected to have significant negative impacts to this species or its habitat. Any stabilization or rehabilitation of the site, especially it involves improvement of riparian habitat, will benefit this species.

Impacts from Weed Invasion

Several Class A, B, C noxious weeds are present in Socorro County and spreading in areas surrounding the burn site (Figure 6).[1] With the surface vegetation greatly denuded after the fire, the bare, disturbed soil presents opportunity for encroachment by several noxious weed species. Given the flammability of some prevalent species (particularly saltcedar) and the danger that weeds pose to hinder habitat restoration, weed control is an essential factor in emergency site stabilization. Special attention should be focused on the species listed below.

[1] Class A weeds are non-native species with limited distribution. A high priority is placed on preventing new infestations and eliminating existing infestations. Class B weeds are non-native species that are presently limited to portions of the County and have been designated for control in areas where they are not yet widespread. Class C weeds are non-native species that are widespread and which long-term programs are necessary to control. Currently, Socorro County recognizes 28 Class A, 5 Class B, and 3 Class C weeds.

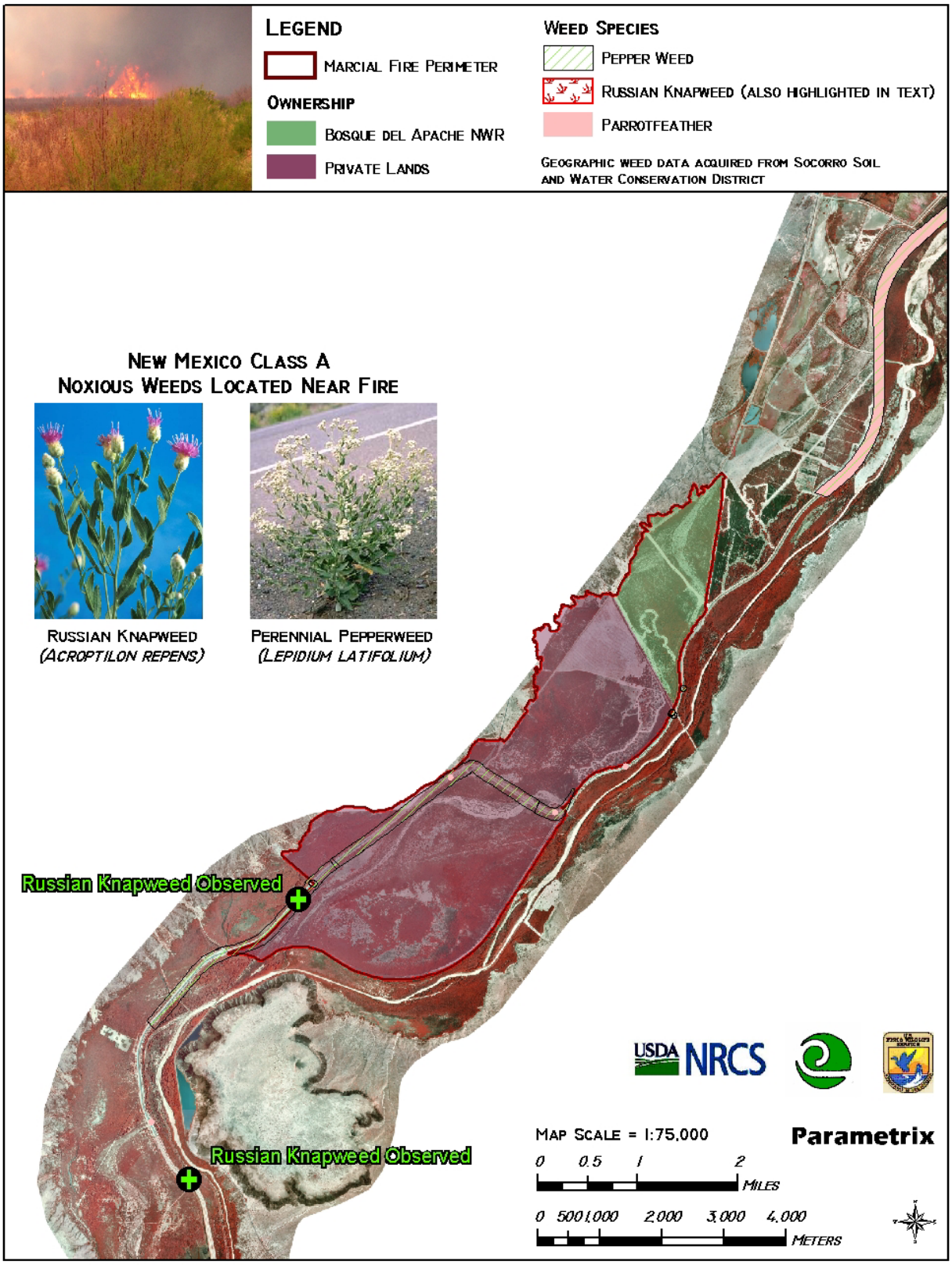

Figure 6. Noxious weed distribution in and around the burn site.

Saltcedar is a N.M. Class C noxious weed introduced from Asia in the early part of the last century and has invaded many riparian and wetland areas in the Southwest. It thrives in disturbed areas, eventually crowding out native vegetation. It responds to cutting or burning by vigorously re-sprouting. It also aggressively colonizes new areas by wind and water transported seed. It has been shown to provide lower value for most native wildlife (Ellis 1993), and transpires large amounts of groundwater (Cleverly et al. 2002). More importantly for the purposes of this report, saltcedar is more fire prone than native species (Sogge et al. 1997). If left uncontrolled, saltcedar will recolonize the burned area and, within a few years, present another severe fire hazard. Approximately 77% of the area that burned during this fire was saltcedar-dominated. The same was true of the previous fires noted in the Fire History Section above. Saltcedar has been targeted for management by the Socorro County Integrated Weed Management Plan and the Bosque del Apache Integrated Pest Management Plan (U.S. Fish and Wildlife Service 2006), and is a central management focus of the Refuge.

Russian Knapweed, a N.M. Class A Weed, is a member of the Sunflower family native to Eurasia. It was introduced into North American in about 1898 and grows in a variety of soil types. Recent spread of seed can be attributed to several means including hay bales, vehicles, irrigation infrastructure, farm equipment, humans, and animals. Russian knapweed is difficult to control because it spreads by long underground roots, and it produces a chemical that inhibits other nearby plant species (allelopathy). If left uncontrolled, Russian knapweed forms dense stands, displacing native plants. Control should be aimed at stressing the plant to deplete nutrients in the root system. Russian knapweed has been targeted for eradication in Socorro County and at Bosque del Apache (U.S. Fish and Wildlife Service 2006).

Perennial Pepperweed is a N.M. Class A Weed introduced from southeastern Europe and Asia that generally establishes in floodplains, irrigation structures, pastures, wetlands, and riparian areas. Populations form dense monocultures that are easily spread by root fragments and seed. Roots can grow to more than 10’ and store large amounts of energy. Perennial pepperweed has been targeted for management by the Socorro County Integrated Weed Management Plan and the Bosque del Apache Integrated Pest Management Plan (U.S. Fish and Wildlife Service 2006).

Other weeds of concern include the Class A camelthorn and Class C Russian olive (*Elaeagnus angustifolia*).

Cultural and Historic Resources

The remains of the town-site of San Marcial is one of the very few known cultural or historical resources within the perimeter of the fire. The Rio Grande flood of 1866 wiped out the community, but it was rebuilt and, when the Santa Fe Railroad arrived in the 1880's, the communities of New San Marcial and Midway were established nearby. By the 1920's, the three communities together had become the second largest community in Socorro County. In 1929 the Rio Grande River flooded the communities again and this time they were not rebuilt. Subsequently the whole area was flooded to create Lake San Marcial, and only a few ruins and the cemetery remain today. Most of the historic remains of the area are buried under river sediment and were likely not harmed by the fire.

III. Summary Recommendations for Emergency Stabilization

We anticipate aggressive root-sprouting by saltcedar in areas that have not had previous herbicide treatment and at least three years of rest. In addition, without treatment, all areas are in danger of encroachment by noxious weeds. For management and jurisdictional purposes, we have divided the burn area into three sections.

Treatment recommendations (Figure 7) are based on a variety of factors, including: land ownership, the ability of the land-owner to implement and monitor treatments, cost, land management before the fire, and future land management goals for the property.

Bosque del Apache National Wildlife Refuge

- Mechanical removal (root plowing, raking, and stacking) of above-ground saltcedar and below-ground root mass will occur only on the Refuge.
- 100 acres of land near the southern boundary of the refuge will be seed with native grasses to reduce wind erosion and reduce the threat of weed encroachment. Seed will be drilled, and area will crimped with straw mulch. Due to low natural precipitation, this area will need to be irrigated with a temporary portable irrigation system.
- Herbicide treatments and noxious weed monitoring will occur for 3 years beginning in the summer of 2006.
- Protocols for early detection will follow noxious weed management plans of Refuge and the Socorro Soil and Water Conservation District.

Armendaris Ranch

- Because the Armendaris Ranch does not have the ability to irrigate any area that might be revegetated, no mechanical treatments will be implemented.
- Spot treatments of saltcedar root sprouts and noxious weeds using herbicides identified in the Specification Sheets.

Armendaris Ranch and Other Private Lands

No treatments occur in this area for several reasons. Relatively little pre-fire habitat management occurred on these lands and they will likely undergo aggressive re-sprouting from saltcedar. The land ownership is diverse (there are 154 separately-owned blocks of property) and the property boundaries have not been fully delineated or even legally settled (Waddell, pers. comm.). These factors lead us to believe that it will be extremely difficult to coordinate management activities and maintain the site if it stabilized and restored.

Figure 7. Follow up treatments recommended for burn site.

IV. References

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APPENDIX II
ENVIRONMENTAL COMPLIANCE

Federal, State, and Private Lands Environmental Compliance Responsibilities

All projects proposed in the Marcial Emergency Response 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 40 CFR 1500-1508, and Department of the Interior and FWS regulations. This Appendix documents the Burned Area Emergency Response team considerations of NEPA compliance requirements for prescribed rehabilitation and monitoring actions described in this plan for all jurisdictions affected by the Marcial Emergency Response Plan.

Related Plans and Cumulative Impact Analysis

The Marcial Emergency Response Plan was reviewed and it was determined that actions proposed within the boundary of the Fire are consistent with the management objectives of the Refuge and the Armendaris Ranch, including management of and impact to the following resources:

- Biological Resources
- Air Quality
- Water Quality
- Wetland Preservation and Enhancement
- Compatibility and Service Policy on Recreational Uses
- Cultural Resources
- Socioeconomics

Cumulative Impact Analysis

Cumulative impacts are the environmental impacts resulting from the a proposed action when added to other past, present, and reasonably foreseeable future actions, both Federal and non-Federal. Cumulative impacts can result from individually minor but collectively significant actions.

The emergency stabilization treatments for areas affected by Marcial Fire, as proposed in the Marcial Emergency Response Plan, do not result in an intensity of impact that would cumulatively constitute a significant impact on the quality of the environment. The treatments are consistent with the above jurisdictional management plans and associated environmental compliance documents and categorical exclusions listed below.

Applicable and Relevant Categorical Exclusions

The individual actions proposed in this plan for the Marcial Fire burned area are Categorically Excluded from further environmental analysis as provided for in the Department of Interior and FWS categorical exclusions. All applicable and relevant Department and Agency Categorical Exclusions are listed below. Categorical Exclusion decisions were made with consideration given to the results of required emergency consultations completed by the Burned area emergency response team and documented below.

Applicable Department of Interior Categorical Exclusions
516 DM 2 App; 2, 1.6
516 DM 6 App. 7.4 L (3)

Applicable FWS Categorical Exclusions
516 DM 6 App. 1.4 B (1)
516 DM 6 App. 1.4 B (3) iii
516 DM 6 App. 1.4 B (5)

Statement of Compliance for the Marcial Fire Burned Area Rehabilitation Plan.

This section documents consideration given to the requirements of specific environmental laws in the development of the Marcial Emergency Response 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 Marcial Emergency Response Plan:

- National Historic Preservation Art (NHPA)
- Executive Order ll988. Flood plain Management.
- Executive Order 11990. Protection of Wetlands
- Executive Order 12372. Intergovernmental Review
- Executive Order 12892. Federal Actions to Address Environmental Justice in Minority and Low-income Populations
- Endangered Species Act
- Secretarial Order 3127. Federal Contaminated
- Clean Water Act
- Clean Air Act

NEPA Checklist

If any of the following exception applies, the Burned Area Emergency Response Plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes) (No)
( ) ( ) Adversely affect Public Health and Safety
( ) ( ) Adversely affect historic or cultural resources, wilderness, wild and scenic rivers aquifers, prime farmlands, wetlands, floodplains, ecologically important areas, or natural landmarks.
( ) ( ) Have highly controversial environmental effects.
( ) ( ) Have highly uncertain environmental effects or involve unique or unknown environmental risks.
( ) ( ) Establish a precedent resulting in significant environmental effects.
( ) ( ) Relates to other actions with individually insignificant but cumulatively significant environmental effects.
( ) ( ) Adversely effects properties listed or eligible for listing in the National Register of Historic Places
( ) ( ) Adversely affect a species listed or proposed to be listed as Threatened or Endangered.
( ) ( ) Threaten to violate any laws or requirements imposed for the "protection of the environment" such as Executive Order 1-1-988 (Floodplain Management) or Executive Order 1-1-990 (Protection of Wetlands).

National Historic Preservation Act

Ground Disturbance:
( ) None
( ) Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the Burned Area Emergency Response Plan.

NHPA Clearance Form:
( ) Is required because the project may have affected a site that is eligible or on the national register. The clearance form is attached. SHPO has been consulted under Section 106.
( ) Is not required because the Burned Area Emergency Response Plan has no potential to affect cultural resources (initial of cultural resource specialist).

Other Requirements

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

I have reviewed the proposals in the Marcial Emergency Response Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effect. Therefore it is categorically excluded from further NEPA review and documentation. Burned area emergency response team technical specialists have completed necessary coordination and consultation to insure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State and local environment review requirements.

Burned Area Emergency Response Team Environmental Protection Specialist Date

Project Leader Date

APPENDIX III
Threatened, Endangered Possibly Present Near the Burn Area

Species	Federal Status	NM State Status	Present During…	Potential Numbers in Vicinity of Fire*	Affected by Fire?
Southwestern Willow Flycatcher	Endangered w/ Proposed Critical Habitat	Endangered	Migration, Breeding	10-20 pairs	Yes
Interior Least Tern	Endangered	Endangered	Migration	10 migrants	No
Bald Eagle	Threatened	Threatened	Migration, Wintering	30 migrants, wintering	Yes
Mountain Plover	Proposed Endangered	Endangered	Migration	10 migrants	No
Rio Grande Silvery Minnow	Endangered w/ Proposed Critical Habitat	Endangered	Breeding	unknown	No
Yellow-billed cuckoo	Candidate	Sensitive	Breeding	5 pairs	Unlikely
Neotropic Cormorant		Threatened	Migration, Breeding	10-20 pair	No
Peregrine Falcon	De-listed	Threatened	Migration	5 migrants	No
Bell's Vireo		Threatened	Migration, Breeding	30 migrants, 5 pair breeding	Unlikely
Gray Vireo		Threatened	Migration, Breeding	20 migrants, 3 pair breeding	Unlikely
NM Meadow Jumping Mouse		Threatened	Breeding	unknown	No

**Potential numbers are based on approximate numbers of animals that have been recorded in the vicinity of the fire*

APPENDIX IV
Rare Plants of Socorro County and Their Possible Impacts from the Fire

Scientific name	Habitat	Federal Status	State Status	Affected by Fire?
Amsonia fugatei	Limy conglomerate ridges and associated outwash slopes in Chihuahuan desert scrub; 5,000-5,900 ft.	Species of Concern	Species of Concern	No
Cirsium wrightii	Wet, alkaline soils in spring seeps and marshy edges of streams and ponds; 3,450-8,500 ft.	Species of Concern	Species of Concern	No
Dalea scariosa	Open sandy clay banks and bluffs, often along roadsides, at about 4,750-4,900 ft.	Species of Concern	Species of Concern	Possibly
Draba mogollonica	Cool, moist northern slopes of mountains, ravines and canyons on volcanic rocks and soil in montane forests; 5,000-9,000 ft.	Species of Concern	Species of Concern	No
Draba standleyi	Igneous rock faces, bases of overhanging cliffs, clefts of porphyritic and andesitic rocks and soil; 5,500-6,500 ft.	Species of Concern	Species of Concern	No
Ephedra coryi	On limestone, in dry sandy soils, and on dunes; below 5,000 ft.	Species of Concern	Species of Concern	No
Erigeron scopulinus	Crevices in cliff faces of rhyolitic rock in lower montane coniferous forest; 6,000-9,000 ft.	Species of Concern	Species of Concern	No
Helianthus paradoxus	Saturated saline soils of desert wetlands. Usually associated with desert springs or wetlands; 3,300-6,600 ft. Requires saturated soils.	Threatened	Endangered	Possibly
Hymenoxys brachyactis	Dry sites with coarse soils in piñon-juniper woodland and lower montane coniferous forest; 6,900-8,200 ft.	Species of Concern	Species of Concern	No
Opuntia arenaria	Sandy areas, esp. sand dunes in open Chihuahuan desert scrub, often w/ honey mesquite and a sparse grasses; 3,800-4,300 ft.	Species of Concern	Endangered	No
Panicum mohavense	Limestone terraces and cliffs in Great Basin desert scrub in Arizona and piñon-juniper woodland in New Mexico; 1,300-2,400 ft.	Species of Concern	Species of Concern	No
Penstemon deaveri	Slopes and rocky areas from ponderosa pine forest to above timberline (in Arizona); 6,500-11,280 ft.	Species of Concern	Species of Concern	No
Penstemon pseudoparvus	Open ponderosa pine or spruce-fir forests and high montane meadows; 9,000-10,000 ft.	Species of Concern	Species of Concern	No
Perityle staurophylla var. homoflora	Crevices in limestone cliffs, usually on protected north and east exposures at about 6,400-7,000 ft.	Species of Concern	Species of Concern	No
Silene plankii	Igneous cliffs and rocky outcrops; 5,000-9,200 ft.	Species of Concern	Species of Concern	No
Silene wrightii	Cliffs and rocky outcrops in Rocky Mountain montane and subalpine conifer forests; about 6,800-8,000 ft.	Species of Concern	Species of Concern	No
Talinum brachypodium	Calcareous silt/clay soils on limestone or travertine; fine silty sand on calcareous sandstones; open p-j woodland or Chihuahuan scrub.	Species of Concern	Species of Concern	No

APPENDIX V
Seeding Calculations

Species	Local Cultivars	Common Name	Season	Adapted To Coarse Textured Soils	Salinity Tolerance	Seeds/ Sq. Ft.	PLS. Pounds/ Acre	Approx. Cost Per PLS/Pound	Estimated Per Acre Cost	Comments
Achnatherum hymenoides	Paloma	indian ricegrass	cool	Yes	Low	5	1.54	$ 7.50	$ 11.59	
Atriplex canescens	Rincon	4-wing saltbush	perennial	Yes	High	1	0.84	$ 8.00	$ 6.70	polyploid species, be sure to get the right ploid for soil texture
Bouteloua curtipendulum	Vaughn, Niner	side oats grama	warm	Yes	Medium	2	0.46	$ 6.50	$ 2.96	
Bouteloua gracilis	Lovington, Hachita, Alma	blue grama	warm	Yes	Medium	2	0.11	$ 16.50	$ 1.74	
Elymus canadensis		canada wildrye	cool	Yes	Medium	2	0.76	$ 9.00	$ 6.82	
Pleuraphis jamesii	Viva	galleta	warm	Yes	Medium	2	0.51	$ 32.00	$ 16.40	
Puccinellia parishii		Parish's alkali grass	cool	Yes	High	2	0.07			
Schizachyrium scoporium	Pastura	little bluestem	warm	Yes	None	2	0.34	$ 7.75	$ 2.60	
Sorghastrum nutans	Llano	indiangrass	warm	Yes	Medium	2	0.73			
Sporobolus airoides	Salado	alkalai sacaton	warm	Yes	High	2	0.06	$ 8.00	$ 0.51	
Sporobolus cryptandrus		sand dropseed	warm	Yes	Medium	5	0.04	$ 9.00	$ 0.37	
Sporobolus flexulosa		mesa dropseed	warm	Yes	None	2	0.03			
Triticum elongatus (sterile cover crop)		Regreen		Yes	Yes	5	217,800	15.56	$ 4.00	
TOTAL						**29**	**5.48**		**$ 53.69**	
ACRES TO SEED									**100**	
									$ 5,369.21	