

**U.S. Department of the Interior
Bureau of Land Management**

ENVIRONMENTAL ASSESSMENT

DOI-BLM-AZ-C020-2011-0018-EA

Laguna Emergency Stabilization and Rehabilitation

Yuma Field Office
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Contents

1. CHAPTER 1 - INTRODUCTION.....	3
A. Project Location	3
B. Project Background	4
C. Purpose and Need for the Proposed Action	4
D. Decision to be Made.....	4
E. Scoping and Issues	4
2. CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES.....	5
A. Proposed Action (Alternative 3)	5
B. No Action Alternative (Alternative 1)	6
C. Conformance with Land Use Plan	6
D. Relationship to Statutes, Regulations, or Other Plans.....	7
3. CHAPTER 3 - AFFECTED ENVIRONMENT	8
1. Climate Change	9
2. Cultural Resources.....	9
3. Farmlands	10
4. Floodplains	10
5. Invasive and Nonnative Species	10
6. Lands & Realty.....	10
7. Migratory Birds	11
8. Public Health & Safety.....	11
9. Recreation.....	11
10. Socioeconomics	12
11. Soils	12
12. Threatened and Endangered Species	13
13. Travel Management.....	13
14. Vegetation.....	14
15. Visual Resources	14
16. Water Quality	15
17. Wetland/Riparian Zones	15
18. Wildlife.....	15
4. CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES.....	15

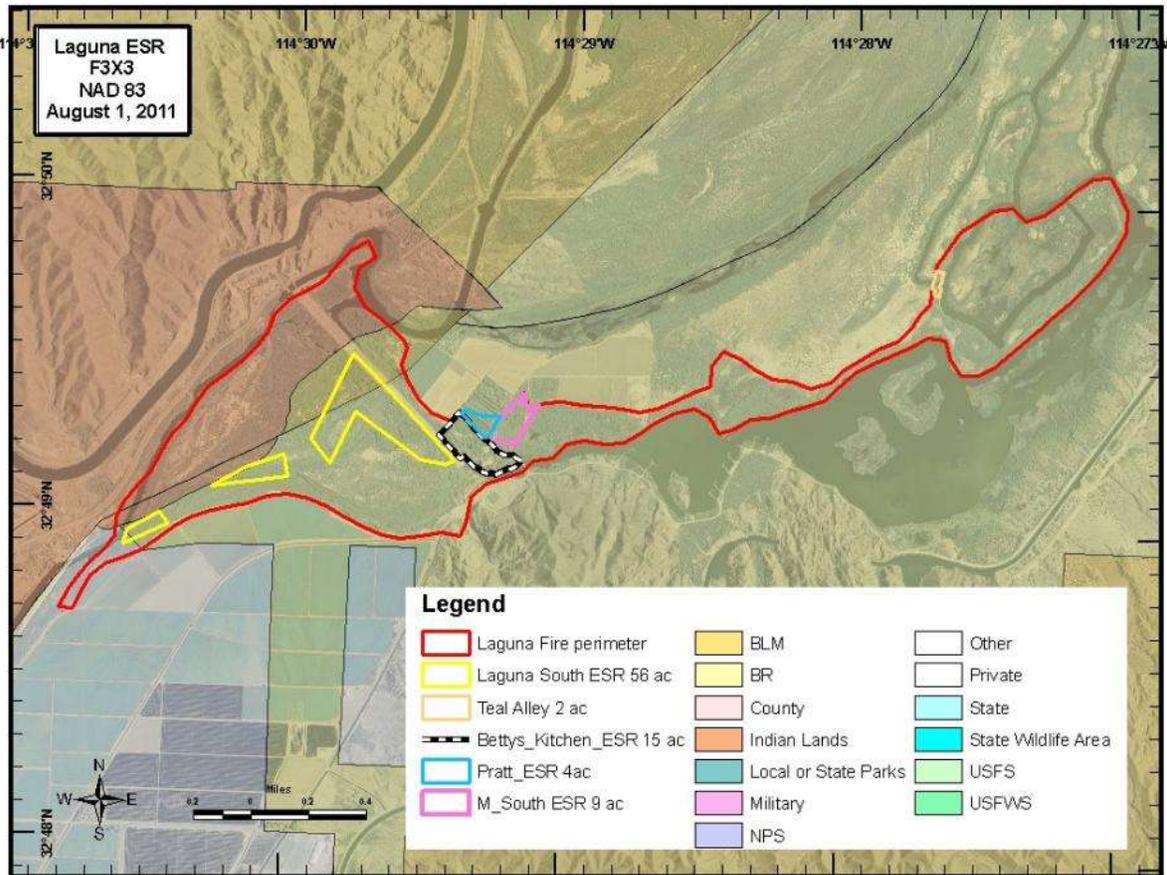
A.	Potential Direct and Indirect Effects	17
1.	Climate Change	15
2.	Cultural Resources.....	16
3.	Farmlands	16
4.	Floodplains	17
5.	Invasive and Nonnative Species	17
6.	Lands & Realty.....	17
7.	Migratory Birds	18
8.	Public Health & Safety	18
9.	Recreation.....	18
10.	Socioeconomics	19
11.	Soils	19
12.	Threatened and Endangered Species	20
13.	Travel Management.....	21
14.	Vegetation.....	21
15.	Visual Resources	22
16.	Water Quality	22
17.	Wetland/Riparian Zones	22
18.	Wildlife.....	23
B.	Mitigating Measures for the Proposed Action	24
C.	Cumulative Effects.....	24
1.	Introduction	24
2.	Past and Present Actions.....	25
CHAPTER 5 - TRIBES, INDIVIDUALS, ORGANIZATIONS OR AGENCIES CONSULTED		27
CHAPTER 6 – REFERENCES, GLOSSARY		28
Appendix A – Spill Prevention Plan		30
Appendix B – Map of Project Area		Error! Bookmark not defined.
Appendix C – Photos		32

I. INTRODUCTION

A. Project Location

The Laguna Emergency Stabilization and Rehabilitation (ESR) Project totals 86 acres and is a direct result of the Laguna Fire occurred on May 18, 2011. The project would affect the following lands: Gila and Salt River Meridian, Yuma County, Arizona, T. 7 S., R. 21 W., sec. 7 (within); sec. 18 (within). T. 7 S., R. 22 W., sec. 13 (within); sec. 14 (within); sec. 15 (within). San Bernardino Meridian, Imperial County, California, T. 15 S., R. 23 E., sec. 25 (within). The project area is located between Imperial and Laguna Dams, and below on the lower Colorado River in Yuma, Arizona, within the Mittry Lake Wildlife Area (MLWA) and across public and Arizona State lands. The MLWA is managed by the Bureau of Land Management (BLM), US Bureau of Reclamation (USBR), and Arizona Game and Fish Department (AGFD).

Map 1: Project Area Map



B. Project Background

The Laguna Fire started approximately at 1800 hours May 18, 2011. With strong winds, 25-35 mph, and gusts to 45mph, and low relative humidity and normal seasonal temperatures, the fire burned through Betty's Kitchen Wildlife and Interpretive Area (Betty's Kitchen), Pratt Nursery, Mittry South Restoration Area, and into MLWA, totaling 751 acres. Of the 751 acre fire, BLM manages 555 acres, where BIA manages 168 acres, Arizona State Lands Department manages 12 acres, and 16 acres are private.

C. Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to implement ESR treatments to rehabilitate and restore 86 acres of habitat and the recreation facilities that were lost in the Laguna Fire that started on May 18, 2011. The 86 acres include Betty's Kitchen (15 acres), Pratt Ag Lease (4 acres), Mittry South (9 acres), Teal Alley (2 acres), and 56 acres below Laguna Dam.

The Proposed Action is needed because without ESR funding and support, the wildlife habitat and recreational facilities would no longer serve the purposes for what they were intended.

D. Decision to be Made

The BLM will decide whether or not to implement the Laguna ESR project or the no action alternative.

E. Scoping and Issues

The Interdisciplinary team met eight times throughout the life of the environmental review process. The following issues and concerns were identified at the meetings and in letters and documents received by BLM or identified internally by BLM specialists:

- Invasive and Nonnative Species – prevention of the introduction and spread of invasive weeds or other unwanted exotic species
- Migratory Birds – Fire damaged migratory bird habitat
- Public Health and Safety – Stump holes and hazardous trees throughout recreational fee area
- Recreation – Closure will prevent the entrance to recreational fee area; minor facilities were damaged beyond use
- Socioeconomics – lost without project implementation
- Threatened and Endangered Species – The fire destroyed valuable migratory habitat used by the southwest willow flycatcher
- Vegetation – Hundreds of acres of native riparian habitat was destroyed
- Wildlife – Hundreds of acres of valuable habitat was destroyed

External Scoping and Partners met:

On May 26, 2011 the Laguna ESR Project was introduced to BOR, MSCP, AZGFD, FWS, Quechan Indian Tribe, and BIA at the Yuma Field Office. Erica Stewart asked for partner involvement, ideas, and participation in the upcoming project.

A letter was received from Chase Choate, Environmental Director, Quechan Tribe, offering support and concurrence with the Laguna ESR project.

A letter was received June 10, 2011, from Jennifer McCloskey, Bureau of Reclamation Area Manager, concurring with the project and implementation on withdrawn lands.

A letter was received was received on June 8, 2011, from Tab Bommarito Arizona Game and Fish Department, concurring with the Laguna ESR Project. Recommendations include planting of native species for conservation and management of threatened and endangered species, including the removal and prevention of invasive species.

On June 21, 2011, through e-mail correspondence with Erica Stewart, Leslie Fitzpatrick, USFWS, determined that the Mittry Burned Area Rehabilitation BE was sufficient for the Laguna ESR Project due to the same issues and project proximity.

II. CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

a. Proposed Action

The Proposed Action would rehabilitate the burned area within Betty's Kitchen, Pratt Nursery, Mittry South, Teal Alley, and south of Laguna Dam which would include removing hazard trees, clearing weeds, seeding and planting native species, replacing lost structures and infrastructure, improving the damaged trail, and monitoring the effects of the treatments.

Work in Betty's Kitchen would include a mastication or mechanical treatment to eliminate Tamarisk within the 15-acre footprint, focusing on the hazardous trees. The Betty's Kitchen National Recreation Trail would be restored. The interpretative sign program and recreational facilities including ramadas, benches, and signage would be replaced in the same footprint as the ones destroyed by the Laguna Fire. The entrance information stand and fee box may be moved to be of greater visibility to the public. Bridges would be placed along the trail to safely cross the water channels. Once invasive species are removed, native trees, including cottonwood, willow, mesquite, and Palo Verde, would be planted and watered through an irrigation system or the natural flow of the water through the site. Herbicide treatment with BLM-approved herbicides would be conducted on Tamarisk, *Phragmites*, and other weeds of concern. During construction and until hazard conditions are eliminated, Betty's Kitchen, totaling 15 acres, would remain closed under an emergency closure that would then continue into a temporary closure. The temporary closure for public recreation would be for two years, possibly extended up to three years. The closure does not include contractors and government employees working on the

treatment implementation, nor does it include volunteers under the supervision of government employees.

Work in Pratt Ag Lease, Mittry South, Teal Alley, and Laguna Dam South would include a mastication or mechanical treatment of hazardous trees and burned vegetation. Weed treatments would be conducted regularly to maintain the weed-free native riparian habitat that previously existed. Once invasive species are removed, native trees, including cottonwood, willow, mesquite, and palo verde, would be planted directly into the water table. Pratt Nursery and Mittry South would be flood irrigated using the YFO water right and existing channels into the project area. Herbicide treatment with BLM-approved herbicides would be conducted on Tamarisk, *Phragmites*, and other weeds of concern. These treatments would be coordinated with AGFD and the USBR as part of the MLWA.

All planted trees would be caged to prevent damage from beavers that heavily populate the areas. Herbicide application would be conducted using the basal bark or cut stump methods under the direction of a BLM-certified herbicide applicator, through the direction of an approved pesticide use proposal. Monthly photomonitoring and yearly quantitative monitoring to measure success would be conducted through 2016.

b. No Action Alternative

Under the No Action alternative, the proposed project would not occur, and the land would be overtaken by Tamarisk and *Phragmites*. This would choke out any native riparian habitat that may become established in the future and would present a greater potential for wildfire spread. In addition, the damaged facilities would be left in ruins; the outdoor classroom used by the community at Betty's Kitchen will now be a public hazard, and public recreation will be lost.

c. Conformance with Land Use Plan

The proposed action is in conformance with the *Yuma Field Office Resource Management Plan* (RMP) which was approved in January 2010.

The proposed action is in conformance with the applicable RMP because it is specifically provided for in the following RMP decision(s):

FM-012: Identify and implement post-fire stabilization and rehabilitation actions in burned areas to restore a functional landscape to meet the natural resource management objectives.

FM-020: Treat non-native invasive species that constitute significant fuel load and fire threat directly by using integrated pest management or managed through fire breaks and other tactics

FM-030: Reduce and or remove hazardous fuels in recreation sites to improve public safety in coordination with the BLM Fire Management Program

WF-038: The Colorado and Gila River WHA provides suitable habitat for aquatic and riparian species.

WF-040: The desired watershed conditions in the Colorado and Gila River Riparian WHA are enhanced through maintenance of hydrologic integrity, reduction of accelerated soil erosion and sedimentation, and protection of water quality from point and non-point-source pollutants.

VM-008: Where and when practicable, develop new riparian habitat or restore damaged, degraded, and saltcedar habitats within the Colorado and Gila River WHA for the protection and enhancement of riparian or floodplain associated species. Install facilities to protect restoration sites as needed.

d. Relationship to Statutes, Regulations, or Other Plans

Mittry Lake Hazardous Fuels Reduction and Riparian Restoration Environmental Assessment
AZ-050-2002-0002

Herbicide Application within Wildland Urban Interface, Hazardous Fuels Reduction, Recreation Sites, and Revegetation Projects in the Yuma Field Office: EA-AZ-320-2005-026

Mittry South Bermuda Grass Prescribed Fire: DOI-BLM-AZ-C020-2011-0007-EA

Betty's Kitchen Wildlife and Interpretive Area: EA-AZ-055-95-031

Mittry Lake Rehabilitation: AZ-050-2003-0039

Burned Area Emergency Rehabilitation Plan Amendment: DNA-AZ-050-2004-0026

Mittry Lake Picnic and Fish Weighing Area Ramada and Vehicle Barriers:
DNA-AZ-050-2002-015

Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States (BLM, 2007), which describes and analyzes the impacts of treatment to vegetation by method of: manual, mechanical, biological, prescribed burning, and chemical.

The U.S. Fish and Wildlife Service's (USFWS) Southwestern Willow Flycatcher Recovery Plan (USFWS, 2001).

Under the MLWA Management Plan, (AGFD, 1997) management emphasis placed on the floodplain zone includes the following directives:

1. Establish native riparian habitats to provide nesting and roosting habitat for herons, egrets, raptors, neotropical migrants, and other riparian obligate species.
2. Encourage and enhance upland vegetation to benefit small game, primarily mourning doves (*Zenaida macroura*), white-wing doves (*Zenaida asiatica*), and Gambel quail (*Callipepla gambelii*).
3. Regulate recreational use in accordance with wildlife management goals, while continuing to provide quality recreation opportunities into the future.

III - AFFECTED ENVIRONMENT

This section describes the existing conditions of the affected environment. The table below summarizes the resources and concerns reviewed for this project. Resources not present within the project study area, as well as those present and not affected, are not discussed. Those resources that have been identified by an interdisciplinary team as present and potentially affected are discussed below.

The following is a list of resources/concerns that were considered in this Environmental Assessment. Resources/concerns either not present or that would not be affected by the Proposed Action would not be addressed further in this Environmental Assessment:

PROJECT RESOURCE REVIEW			
Resources & Programs Considered	Not Present	Present and Not Affected	Present and/or Potentially Affected
Air Quality*	X		
Areas of Critical Environmental Concern	X		
Climate Change*			X
Cultural, Historic & Paleontological Resources*			X
Environmental Justice*	X		
Farmlands (Prime or Unique)	X		
Fish Habitat*	X		
Farmlands			X
Floodplains*			X
Fuels/Fire Management	X		
Grazing	X		
Invasive & Non-Native Species			X
Lands & Realty			X
Law Enforcement	X		
Migratory Birds*			X
Minerals	X		
Native American Religious Concerns*	X		
Noise	X		
Public Health & Safety			X
Rangelands and Forests*	X		
Recreation			X
Socioeconomics			X
Soils			X
Threatened or Endangered Species*			X
Travel Management			X
Vegetation			X

Visual Resources			X
Wastes (Hazardous or Solid)*	X		
Water Quality (Drinking or Groundwater)*			X
Wetlands/Riparian Zones*			X
Wild & Scenic Rivers*	X		
Wild Horses/Burros	X		
Wilderness*	X		
Wildlife			X

*Consideration Required by Law or Executive Order

A. Climate Change

The lower Colorado River Valley challenges the Mohave Desert's Death Valley as the hottest and driest place in North America. The temperature extremes range from 32 degrees F to 120 degrees F. The amount and seasonality of rainfall are defining characteristics of the Sonoran Desert. Much of the area has a bi-seasonal rainfall pattern. A brief summer rainy season and widespread winter rains deliver 3 inches of rainfall on average (Phillips, 2000). Yuma County and a small portion of the Laguna Region are considered non-attainment areas for airborne particulate matter 10 microns or less in diameter (PM₁₀). The major sources of air pollution are vehicular travel on improved and unimproved surfaces and agricultural activities. Air quality is otherwise excellent except during times of high winds (U.S. Army Yuma Proving Ground, 2001).

Climate change refers to the shifts in Earth's long-term (decades to millennia) weather patterns as a result of changes to the concentrations of greenhouse gases in Earth's atmosphere. A greenhouse gas is a gas that traps heat when emitted into Earth's atmosphere. Greenhouse gases emitted from the project area consist of truck and portable generator exhaust.

B. Cultural Resources

Two previous Class III (field inventory) cultural resource surveys were conducted within part of the current proposed project area (Betty's Kitchen, Pratt Ag Lease). These surveys did not identify any cultural resources within the project area, but they did note two cultural resource sites adjacent to the project area. The Laguna Dam (called AZ 050-1429 in the reports) and a small historic period adobe cabin (called AZ 050-1430 in the reports) were identified adjacent to the project area. It should be noted that the adobe cabin was destroyed in the course of the fire that precipitated the proposed action and it is no longer present.

The BLM evaluated the area called Mittry South in February of 2011 and found that, because previous natural ground disturbance (periodic flooding) had modified the surface so extensively, the likelihood of finding cultural properties was negligible and human activity within the last 50 years had created a new land surface to such an extent as to eradicate locatable traces of cultural properties.

The BLM conducted a Class III survey of the remaining project area in August 2011, and similarly found that previous natural ground disturbance (periodic flooding) had modified the surface so extensively that the likelihood of finding cultural properties was negligible. Multiple transects of the project area confirmed this determination as no cultural resources were identified.

C. Farmlands

Pratt Nursery was 12 acres of an agricultural lease that has been converted to cottonwood and willow migratory habitat. This area is flood irrigated and is intended as prime riparian habitat for the candidate and endangered species that migrate through the area: Southwestern Willow Flycatcher (SWFL) and yellow-billed cuckoo. The remaining acreage of farmland, approximately 48 acres, did not burn in the Laguna Fire.

D. Floodplains

Floodplains are strips of flat land adjacent to the channel subject to flooding. The proposed project area is within the 100-year-floodplain of the Colorado River. Although flooding is rare, past floods have been associated with rapid snowmelt in the upper portions of the Colorado River watershed. These floodplains once harbored rich native vegetation but is currently dominated by non-native tamarisk.

E. Invasive and Nonnative Species

Tamarisk is a non-native species of tree that dominates a large portion of the Colorado River corridor in the southwest Arizona. Mittry South was historically dominated by Tamarisk but in 2003, the BLM mechanically removed 80 acres of Tamarisk. Since this time, efforts have been made to stop Tamarisk re-establishment.

Quagga Mussel is a non-native freshwater mussel present in the Colorado River. Quagga Mussel has been documented in the Lower Colorado River, but not in the area covered in this EA.

Phragmites is a native invasive that dominates the lower Colorado River corridor. This is due to the creation of the dams on the Colorado River and the lack of flooding. Phragmites is a native reed that grows in riparian habitats across the U.S. This reed is present in Mittry South, Betty's Kitchen, and south of Laguna Dam and has been managed similarly to Tamarisk, including yearly mechanical and chemical treatments.

F. Lands & Realty

The MLWA is managed under a Cooperative Agreement between the AGFD and the USBR Contract # 14-06-300-22833, signed on February 1, 1972. The proposed project is partially on "Reclamation Lands," ---those lands acquired or withdrawn for reclamation purposes under reclamation law. Additional uses of these lands by the public are provided for in the Yuma RMP, approved by the Arizona State Director in January 2010. By specific Department of the Interior directive, Departmental Manual (DM) 613 defines administration and responsibilities of the plan. According to DM 613, the BLM Yuma Field Office (formerly the Lower Colorado River Land Use Office and Yuma District Office) is assigned full responsibility for recreation and wildlife,

among other responsibilities, on reclamation withdrawn lands. For the MLWA, AGFD has primary responsibility for wildlife management.

In San Bernardino Meridian, Imperial County, California, T. 15 S., R. 23 E., sec. 25 (within), there is unidentified land ownership totaling 10 acres. After additional research, it is believed to belong to the Arizona State Land Department. A right of entry was obtained in August 2011.

G. Migratory Birds

This area is used as a migratory bird corridor for neo-tropical, migratory, and game birds. Historically, Pratt Nursery has provided nesting habitat for multiple species, including the yellow billed cuckoo. Mittry South was added to the native habitat at Mittry Lake in 2006. All areas of the Laguna Fire were used as migratory or resident habitat. The focal dates of all migratory bird use are from September through April each year.

H. Public Health & Safety

With limited resources available during the fire, and life and property as the priority, homes were protected on the north and west flank of the fire, limiting the resources for habitat and recreation area protection. As a result, Betty's Kitchen, Pratt nursery, and Mittry South restoration area were lost or significantly damaged in the fire. With high winds, erosion, and root system deterioration, and to limit the amount of risk to the public, 7000 hazard trees were identified within the 86 acres mentioned above. With red flag warnings and fire weather watches to date are more this year so far than in previous years, the identified hazard trees present an increased risk to the public. Due to recent and expected wind events, the trees determined as hazardous, risk falling over on personnel and the public.

If herbicides are used, all applicable guidelines must be followed in the use of these products. Herbicide labels contain signal words. A signal word must appear on labels to show how toxic the pesticide is. The signals words used are: "danger," "poison," "warning," or "caution." A Pesticide Use Proposal and Spill Contingency Plan can be found in the appendices. Garlon 4 is listed with a "warning" label and is harmful if swallowed, inhaled, or absorbed through skin. Arsenal is listed with a "caution" label. Compared to Garlon 3A, Garlon 4 is safer to human health with a "caution" rather than a hazardous "warning," because it does not cause eye injury. Garlon is listed as a non-restricted herbicide. Rodeo/Aquamaster, glyphosate, is listed with a "caution" label for slight toxicity according to the EPA. According to the Dow AgroSciences technical data sheet, Garlon 4 has low oral toxicity and is non-irritating to the skin and eyes. Triclopyr, the active ingredient in Garlon, and glyphosate, the active ingredient in Rodeo/Aquamaster, are not considered to be carcinogenic or mutagenic. Applicators must be licensed and apply chemicals according to labeled restrictions.

I. Recreation

The proposed project area is in the City of Yuma geographical area. The year-round use for recreation is high in this area. During the period from October to April, the primary users of the area are winter visitors and local residents camping, hunting, fishing, and enjoying scenic views.

During the period from May until October, the primary users are water sport enthusiasts (Levitt, 1998). The primary recreational activity at MLWA is fishing. Other recreational activities include camping, boating, bird watching, photography, and hunting. Hunting is primarily for waterfowl but quail, doves, and other game species are also taken. Data from the BLM Recreation Management Information System indicates that the MLWA experiences approximately 11,500 recreation use visits annually, totaling approximately 134,000 visitor-hours. Most of the project area has good public access and includes multiple access points for sport fishing. Contributions to the general area's view shed do affect visual resources that enhance the quality of recreational opportunities. Because of the area's proximity to the City of Yuma and the Yuma Proving Ground, it is popular throughout the year. The rock jetties at the south end of the lake were constructed by USBR. The Betty's Kitchen National Recreation Trail and Betty's Kitchen Watchable Wildlife Area are also a draw to the area.

J. Socioeconomics

Due to safety concerns, the Betty's Kitchen and surrounding area would be closed to the public until project treatments are implemented. Prior to the Laguna Fire, this area was visited by the public on a daily basis. The area traditionally provided an appropriate setting to conduct environmental education events for local schools and youth groups. Several events for the annual Yuma Nature and Birding Festival were also conducted in this area. This is one of the many recreation sites that are visited by winter visitors who make contributions to the area's economy.

K. Soils

The proposed project area is on a floodplain characterized by alluvial soils which are nearly level, well-drained, clay soils having periodic inclusions of more gravelly, well-drained soils. The area was surveyed between 1972 and 1977 (Soil Conservation Service, 1980). Three soil types are present: Holtville clay, Indio silt loam, and Salorthids. Dredge spoil from the Colorado River also exists on portions of the site and adjacent lands. The USBR deposited dredged material during dredging operations at Laguna Dam on portions of the proposed project area.

Holtville clay, present at Betty's Kitchen and a portion of the Pratt Nursery, is suitable for irrigated crops and wildlife habitat. According to the survey, this soil is good for open land wildlife habitat and poor for wetland habitat because of the clay content of the soils.

Indio silt loam is also present at the Pratt agricultural lease and extends into the proposed project area. This soil is moderately permeable and is used for many types of crops. If irrigated, this soil has good potential for open land wildlife habitat and poor potential for wetland wildlife habitat.

The majority of the proposed project area is mapped as Salorthids. These soils are deep, poorly drained, and strongly saline and contain floodplain soils from the Gila and Colorado Rivers. Preliminary soil testing within the proposed project area revealed high salinity levels. With proper site preparation, including engineering, leveling, ditching, leaching, deep irrigation, and soil amendments, the soil would be suitable for native riparian and floodplain tree planting (McDermott, personal communication, 2001).

L. Threatened and Endangered Species

Federally listed threatened/endangered species and state-listed special status species occur in the proposed project area. They are the endangered Southwest Willow Flycatcher (SWFL), and candidate western yellow-billed cuckoo. A Biological Evaluation was sent to the USFWS concerning the Federally listed species and added to the final project file upon completion.

Southwestern Willow Flycatcher

SWFL is one of five subspecies of willow flycatchers that occur in North America. This small, insectivorous songbird spends its winters in Central America and migrates to North America to breed. During migration, SWFL may use a variety of vegetation, which may include Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), seep willow (*Baccharis glutinosa*), understory tamarisk (*Tamarix ramosissima*), monotypic tamarisk stands, saltbush (*Atriplex spp.*), irrigation ditches, and agricultural fields (Finch and others, 2000). During breeding season, SWFL prefers to nest in dense forest stands of early, successional cottonwood and willow habitat along still or slow-moving watercourses. In addition, they nest in mature stands of tamarisk. Potential migration and breeding habitat may be found within 2 miles of the proposed project. Migrating and potentially breeding SWFLs have been detected during surveys of these areas (McKernan, 1997 and McKernan and Braden, 1998, 1999, 2001a, 2001b, 2002). Birds were assumed to be potential breeders because they were detected after June 10 when SWFL breeding activities usually start. However, no direct evidence of SWFL breeding was found despite repeated visits. The proposed project area currently has no breeding habitat and only poor-quality migration habitat due to the fire.

Western Yellow-Billed Cuckoo

USFWS has recently listed western yellow-billed cuckoo (WYBC) as a candidate under the Endangered Species Act. Populations of WYBC have dropped precipitously. For example, over 15,000 pairs once occurred in California fewer than 100 years ago, but now California has fewer than 30 pairs (Hughes, 1999). Habitat loss and fragmentation in the west has contributed to their rapid decline (Laymon and Halterman, 1989; Hughes, 1999). In the Sonoran Desert, WYBC occur in mature cottonwood-willow and dense mesquite (Rosenberg and others, 1991; Hughes, 1999) but rarely occurs in tamarisk. In the lower Colorado River Valley, Hunter and others (1988) found only 2.4 percent of the WYBC population occurred in tamarisk, relative to native habitat such as cottonwood-willow (68.3 percent), honey mesquite (19.5 percent), and screwbean mesquite (9.8 percent). Cottonwood and willow forests are critical to attracting nesting WYBC. An observer in July 1985 recorded a potentially breeding WYBC within 100 meters of the pre-burned area.

M. Travel Management

The area covered by proposed project is within the Greater Yuma Travel Management Area as delineated by the Yuma RMP. Vehicle access is limited to inventoried routes that the Yuma RMP established as the preliminary YFO Transportation System. Vehicle routes in the project

area include a road that provides access to the Betty's Kitchen National Recreation Trail and Watchable Wildlife Viewing Area and continues to a dirt boat ramp northeast of Betty's Kitchen. The Laguna Dam road is adjacent to the south of the proposed project area.

To protect persons, property, public lands, and resources, the BLM may institute additional closures or restrictions at any time (43 CFR 8364). Throughout implementation of the proposed project, required closures or restrictions would be posted.

N. Vegetation

The proposed project area is located within the Lower Colorado Valley Subdivision of the Sonoran Desert. This is the most arid and largest region of the Sonoran Desert. Uplands are chiefly vegetated with creosote bush (*Larrea tridentata*) in plant communities containing a variety of other species. Facultative and obligate riparian trees and shrubs characterize uncultivated floodplains.

Surrounding the proposed project area, the dominant vegetation is the nonnative tamarisk or native invasive *Phragmites*. Several site visits, along with aerial and infrared photographs, document this finding. Arrowweed, quailbush, cottonwood, and multiple willow species are also present. Tamarisk range in size, age, class, and density. Few athel tamarisk (*Tamarix aphylla*) occur adjacent to the proposed project area. Several openings also contain litter from dead tamarisk. The habitat of MLWA was described using Braun-Blanquet releve' method as follows: *Salix goodingii* 15 percent, *Salix exigua* 20 percent, *Tamarix chinensis* 50 percent, *Populus fremontii* 0 percent, and *Typha* spp. 15 percent (McKernan, June 2000).

The burned area consists of: cottonwood/willow, mesquite bosque, and other associated lower Colorado River basin vegetation community types. These plant communities are arranged in a gradation pattern across the burned landscape defined by the soil moisture gradient communities based upon elevation above the river basin, soil characteristics, and groundwater availability.

Vegetation communities were severely impacted by this fire. High temperatures, low relative humidity, and sustained record drought conditions resulted in severe fire effects to vegetation. Agency and partner agency personnel and other publics expressed concerns regarding impacts to native vegetation as a result of the fire. Native vegetation is high quality wildlife habitat.

O. Visual Resources

The public land along the lower Colorado River is classified as a Visual Resources Management (VRM) Class II area. Within a Class II VRM, changes from the natural environment may be visible but should not attract attention. A Visual Contrast Rating Worksheet is found in Appendix H (BLM Form 8400-4 1985). The visual character of Mitty Lake was altered appreciably as result of the wildfire. Charred and resprouting vegetation now covers 1,313 acres of this wildlife area. The loss of approximately 250 acres of cottonwood, willow, mesquite, and other native vegetation detracts from the area's visual diversity and quality. Native vegetation significantly affects the diversity of color, texture, and form that contribute to the area's visual resource values.

The area around Mittry Lake has been identified as VRM Class II, which means that change in the basic elements of the landscape (form, line, color, or texture) caused by a management activity should not be evident in the characteristic landscape.

The main signs of human activity in the area include the presence of the Gila Main Gravity Canal, the existence of small disturbances resulting from mining in the Laguna Mountains, the USBR Rock Quarry, the Mittry Lake Road, and presence of the rock jetties.

P. Water Quality

Surface runoff from storm events is drained into the Colorado and Gila rivers. The U.S. Geological Survey (USGS) regularly collects Colorado River water samples at Imperial Dam. The river water is high in sodium and calcium and conductivity ranges from 1,100 to 1,700 S/cm (micrseimens). Water quality in these areas is somewhat consistent. The groundwater near the Colorado River has high sulfate concentrations, but still meets primary and secondary Federal drinking standards, except for fluoride (DOD, U.S. Army Yuma Proving Ground 2001.)

Q. Wetland/Riparian Zones

The proposed project area is within a riparian area associated with the Colorado River. Currently the riparian zone is dominated by monotypic non-native vegetation. Southwestern riparian ecosystems are one of the most critically endangered habitats in North America (USFWS, 2001).

R. Wildlife

There is a large diversity and abundance of wildlife in the project area. The SWFL, an endangered species, uses the proposed area and existing cottonwood and willow habitat as migratory habitat. Wildlife the project and surrounding area include: Great Egret: *Ardea alba*; winter population of bald eagle: *Haliaeetus leucocephalus*; Least Bittern: *Lxobrychus exilis*; Loggerhead shrike: *Lanius ludovicianus*; Western yellow bat: *Lasiurus xanthinus*; California leaf-nosed bat: *Macrotus californicus*; Pocketed free-tailed bat: *Nyctinomops femorosaccus*; mule deer (*Odocoileus hemionus*); Yuma Hispid Cotton rat: *Sigmodon hispidus eremicus*, and other rattlesnakes.

IV. ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences of those resources/concerns identified in Chapter 3 as present and/or potentially affected. Resources not present within the project study area, as well as those present and not affected, are not discussed.

A. Climate Change

1. Effects of Proposed Action.

The hazardous tree removal would cause short-term effects to air quality by

producing small amounts of dust. However, the affects would be temporary. The proposed action would contribute to levels of PM₁₀ for a limited duration of a few hours. The use of gasoline or diesel-powered heavy machinery during all phases of the proposed action would produce carbon monoxide emissions. If vegetative debris is chipped / mulched, the only impacts to air quality would be the result of gas-powered equipment. Fine ash and soil would become airborne within the project area. This area would then be subject to wind erosion until the mulching would be constructed on the site. The negative effects to air quality would only be during the short time of the project implementation. The proposed action would contribute to levels of PM₁₀ for a limited duration. However, the alteration of the vegetation community in the Mittry Lake area to a more fire-resistant regime would decrease the potential for wildfire in the future, reducing the potential threats to air quality and eventually climate change in the form of smoke and particulate emissions.

Irrigation: Water would assist in stabilizing soil and minimize erosion or displacement. Water would also provide for the planted native trees that would reduce greenhouse gasses.

Herbicide Application: If herbicides were used, small amounts of herbicide would be released into the atmosphere at the point of the spray nozzle. Triclopyr and glyphosate both photodegrade rapidly and persistence is short.

2. Effects of No Action.

Climate change would not be affected if the proposed project does not take place. Air quality would be affected during times of high winds. Exposed soils and ash from the fire would become airborne, increasing PM₁₀ levels. These exposed soils would be an air quality detriment until the tamarisk resprouted and stabilized the soils.

B. Cultural Resources

1. Effects of Proposed Action

The proposed action would not impact any known cultural resources within the project area, nor would the proposed action impact the Laguna Dam, as planting activities and clearing would be restricted to areas both above and below the dam footings.

2. Effects of No Action

No cultural resources would be impacted as the result of the No Action Alternative.

C. Farmlands

1. Effects of Proposed Action

The proposed action would replace the SWFL habitat that was destroyed in the fire and recreate the section of the nursery that was lost. This would create a second seral stage of vegetation that would create multistory habitat for hundreds of neo-tropical birds. The reestablished flood irrigation of the site would improve

the existing habitat and mature grove of native cottonwood and willow trees.

2. Effects of No Action

The no action alternative would allow the encroachment of Tamarisk and Phragmites into the native tree nursery.

D. Floodplains

1. Effects of Proposed Action

The proposed vegetation restoration effort is not expected to change the functionality of the floodplain of the Colorado River or to interfere with potential flood flows. Mechanical treatments, planting and caging, seeding, irrigation, soil analysis, herbicide application, and fertilization/soil amendment activities have little to no effect on floodplain functionality. In areas immediately adjacent to open water, Rodeo/Aquamaster would be used instead of Garlon. The proposed action would comply with Section 7 of the Colorado River Floodway Protection Act, Public Law 99-450 (October 8, 1986).

2. Effects of No Action

Potential flood flows would be unimpeded as a result of the No Action Alternative.

E. Invasive and Nonnative Species

1. Effects of Proposed Action

Effects of the proposed action include the avoidance of establishing Phragmites, along with prevention of additional Tamarisk infestations. Quagga muscle and giant salvinia would also be addressed under invasive species awareness during project implementation. If and when excavation of channels within Betty's Kitchen is implemented, separate NEPA would be required with engineering review. At no time would existing channels create pools of water that create prime mosquito habitat.

2. Effects of No Action

Under the No Action alternative, the project area would be covered with the invasive *Phragmites* and non- native Tamarisk.

F. Lands & Realty

1. Effects of Proposed Action

There would be no change in land status.

2. Effects of No Action

There would be no change in land status.

G. Migratory Birds

1. Effects of Proposed Action

The proposed action would recreate the habitat lost in the Laguna Fire and provide native tree stands that would encourage continued use.

Mechanical: In the short term, native habitat would be reduced but long-term effects include better migratory bird habitat.

Herbicide: Short term effects include temporary displacement of birds but would not have any long-term effects.

2. Effects of No Action

The No Action alternative would allow for non-native vegetative species to dominate the project area. This may provide for SWFL and white-winged dove species. There is no effect resulting from herbicide application under the No Action alternative.

H. Public Health & Safety

1. Effects of Proposed Action

Mechanical: For short periods of time, airborne particulate matter may affect air quality. It is unlikely that detrimental effects to human health would be seen due to particulate matter. Contractors would be required to follow OSHA regulations, minimizing hazard. The Betty's Kitchen area would be closed to the public during reconstruction of the project area.

Herbicide Application: Triclopyr, Imazapyr, and Glyphosate fall into the "slight" toxicity category and carry a "caution" warning label. They are harmful if swallowed, inhaled, or absorbed through skin. Applicators must be licensed and apply chemicals according to label instructions. Herbicides would be applied to the project area under strict restrictions and guidelines. The effects to human health would be limited because of precautions taken in accordance with herbicide labels and approved Pesticide Use Proposal. Planting and caging, seeding, irrigation, soil analysis, and monitoring would have negligible effect on human health and safety.

2. Effects of No Action

Human health and safety would be greatly affected from the remaining hazardous trees throughout the project area. Unless hazard trees are removed, the recreation area would need to remain closed to the public.

I. Recreation

1. Effects of Proposed Action

Mechanical: During several stages of the proposed action the project area may be closed off and access restricted. No new public routes or trails would result from proposed actions. Further planning in order to manage recreation use may be necessary. Betty's Kitchen would remain closed through the emergency closure and would be continued into the temporary closure until there are no additional human life and safety risks evident.

Planting and Caging: Following the restoration effort, recreation such as bird watching and wildlife viewing could increase. Implementation of planting and caging would be conducted through the use of community volunteers.

Interpretive Signage: Impacts related to sign placement would not have as great an impact on the site as the other proposed actions. Signage would provide environmental education to visitors. The site location would be coordinated with recreation, law enforcement, and other specialists. Seeding, irrigation, soil analysis, herbicide application, and fertilization/soil amendments would have negligible impacts to recreation in the MLWA.

Herbicide: During the proposed herbicide applications, the project area would be closed off and access restricted. Within 24 hours following the herbicide application, there would no longer be any possible human health hazards from herbicides and recreational access would be re-opened unless a temporary closure is in effect.

2. Effects of No Action

Mittry Lake would continue in its current recreation patterns. Opportunities for passive recreation opportunities would not be enhanced.

J.Socioeconomics

1. Effects of Proposed Action

Resource values to support traditional public uses that included a variety of recreation and environmental education opportunities and local economic support would be restored.

2. Effects of No Action

It is likely that invasive species would become established in the site and there would be a loss of potential resource values that could enhance diverse recreation and environmental education opportunities or help to support ecotourism that is important for the local economy.

K. Soils

1. Effects of Proposed Action.

Surface soils over the entire proposed project area would be disturbed through mechanical and chemical treatments. However, there would be no long-term effect on the soils. As soil conditions improve, the project area would be planted with native vegetation. This would occur throughout the next 3 years. An herbicide spill Prevention Plan would be in place to mitigate any contamination to the soils.

2. Effect of No Action.

No soil would be disturbed as a result of this alternative. Tamarisk, *Phragmites*, and weeds would continue to invade the project area. Soils would be likely to increase in salinity as the result of tamarisk dominance.

L. Threatened and Endangered Species

1. Effects of Proposed Action

The proposed action would attempt to increase the habitat quality for wildlife, including threatened and endangered species in the proposed project area. Direct effects, as described in this report, refer to mortality or disturbance, which results in flushing, displacement, or harassment of the animal. Indirect effects refer to modification of habitat. Since it is highly unlikely brown pelicans are present in the project area and there would be no impact on the aquatic system, there would be no effects to brown pelicans from any treatment activities. There would be some impacts of the proposed action common to all affected species. The rehabilitation treatments within this proposed action include activities that may result in the temporary dispersal of avian species as these activities are taking place. However, because sufficient habitat exists within a short distance from the project area for all these species and implementation of mechanized treatments would occur outside of SWFL and YCR breeding seasons, these effects would be insignificant. All species of wildlife in the area would benefit from the reduction in the danger of future wildfires as a result of reducing hazardous fuels. Mechanical treatments, planting, seeding, and herbicide activities would preclude future tamarisk growth, which could become habitat for SWFL, through direct removal and shading. Preventing tamarisk growth may affect migrating flycatchers, which can use tamarisk stands not normally preferred for breeding. However, the effects are insignificant to migrating SWFLs because there are relatively large amounts of available tamarisk habitat nearby. In a 3-mile radius around the center of the burn, there are approximately 5,096 acres of tamarisk habitat or tamarisk-mix available for stopover habitat. Therefore, the 86 acres in which tamarisk is to be excluded is relatively small in comparison to the available stopover habitat nearby.

Planting and Caging: Planted cottonwoods and willows could serve as perching sites for wintering eagles when they are mature. Long-term rehabilitation of cottonwood and willow early successional forest would benefit SWFL and WYBC because it is preferred habit.

Herbicide Application: Garlon 4 is in the low toxicity category and “caution” hazard notification. According to DowElanco’s Chemical data sheet, Garlon 4 has low oral toxicity and is nonirritating to skin and eyes, as judged by tests on rabbits (Neil, 1990). Glyphosate (Rodeo/Aquamaster) toxicity field studies have been extensive. Glyphosate has been found not to affect reproduction, growth, or survival of deer mice (Ritchie et. al, Sullivan, 1988). Similarly, glyphosate was found to have low toxicity to birds (McComb et. al., 1990). Based on test results submitted to the EPA from both herbicide manufacturers, both herbicides, when properly applied, pose minimum risks to the wildlife species which occur in the area. The rapid decomposition would limit any effects on wildlife. Herbicide application may occur both within and outside of SWFL and WYBC breeding seasons. However, since those applications occurring within these breeding seasons would be implemented using non-mechanized means the effects would be no more than typical recreation in the area.

Irrigation: Irrigation would promote plant growth, resulting in a faster recovery of the burn site. This would benefit all species that use upland vegetation.

2. Effects of No Action

Cottonwood and willow habitat lost in the fire would most likely be replaced by tamarisk monoculture. Threatened and endangered species numbers could continue to decline as the quality of riparian habitat decreases. Tamarisk has resprouted and would continue to dominate the project area excluding recruitment of native species. Native species would provide better quality habitat for SWFL and WYBC. Tamarisk would continue to pose a fire threat to the MLWA. Resprouting tamarisk could become potential SWFL habitat.

M. Travel Management

1. Effects of Proposed Action

Restrictions and closures would be temporary as needed to protect people and resources

2. Effects of No Action

Excluding temporary restrictions and closures would expose people to hazards that resulted from the Laguna Fire and restoration resources would not receive needed temporary protection.

N. Vegetation

1. Effects of Proposed Action

Mechanical: Non-native vegetation in the proposed project area would be disturbed or removed. If any live cottonwood, willow, or mesquite were discovered during proposed project operations, this vegetation would be avoided when possible. Agency personnel would survey the project area and flag these species to minimize disturbance during the proposed rehabilitation project. Native understory vegetation such as arrowweed and quailbush would be disturbed but is likely to regenerate in time due to seed and vegetative dispersal.

Planting and Caging: Planting native riparian vegetation would augment the structural complexity of habitat and generally enhance ecological diversity (USFWS, 2001). Tamarisk reestablishment would be inhibited by competition from planted vegetation. The new plant community would become more fire resistant.

Irrigation: Native and non-native species alike would benefit highly from a source of water independent of the hydrologic functioning of Mittry Lake. Rehabilitation and revegetation projects in the past two decades have found that irrigation is key to producing healthy riparian vegetation (USBR, 1998).

Herbicide Application: Specific targeting of tamarisk would decrease the amounts of this highly competitive plant. The reduction in competition would increase the probability of the establishment of native trees, such as cottonwood and willow. All vegetation types would benefit from fertilization. Soil amendments would help to decrease salts and other harmful soil chemicals that may harm the growth rates of cottonwood and willow trees. Unwanted non-native vegetation such as tamarisk in the general vicinity would be removed from the site on a periodic basis for the next several years.

2. Effects of No Action.

Tamarisk and weeds would continue to invade the project area, jeopardizing the success of the project. Existing vegetation would continue to increase in height and density.

Tamarisk would exclude recruitment of native species. Seed and pollen from the Tamarisk in and around the proposed project area would continue to infect and degrade cottonwood-willow habitat elsewhere. Nonnative vegetation communities would continue to persist and expand. Hazardous fuels would accumulate, further increasing the possibility of wildfire. Quality habitat in Betty's Kitchen, Pratt Nursery, and native-planted Mittry South would remain vulnerable to the threat of wildfire.

O. Visual Resources

1. Effects of Proposed Action

Mechanical: Visual resources would temporarily be altered due to the proposed action. Heavy equipment and/or hand crews would cut and mulch much of the burned vegetation.

Planting and Caging: The disturbance would be mitigated by revegetation and development of native canopy. Dense thickets of cottonwood and willow would be planted in suitable areas, increasing the habitat value and the color, texture, and form that significantly affect the aesthetic character of Mittry Lake. These plantings would rehabilitate this portion of the lower Colorado River to a typical riparian zone before the encroachment of tamarisk.

Interpretive Signage: Interpretive signage would follow VRM guidelines. Existing sign/kiosk designs used for the Field Office blend in with the area's character and would not detract from visual resource values.

2. Effects of No Action

There would be no change to visual resources in the proposed project area. The tamarisk and marsh vegetation would eventually regenerate from the fire. Native vegetation would not be as likely to regenerate. The permanent loss of native vegetation would detract from the diversity of color, texture, and form and lessen the quality of the area's visual resource values.

P. Water Quality

1. Effects of Proposed Action

Herbicides may enter surface water bodies during treatment through accidental direct application, through drift, or after treatment through surface or subsurface runoff. To pollute the water, they must be present in the water at concentrations high enough to impair water quality at a point of use. Surface water would be protected by adhering to a 10-foot buffer when using herbicides not approved for aquatic use. To minimize drift, herbicides would only be applied when wind speeds are less than 10 miles per hour.

2. Effects of No Action

Surface water would not be affected as result of this alternative. Ground water would be likely to further recede due to the high use from tamarisk.

Q. Wetland/Riparian Zones

1. Effects of Proposed Action

The proposed prescribed fire would have no immediate effect on the quality of the riparian zone. Eventual restoration of the site would promote riparian landscape complexity.

Mechanical: The proposed eradication/control effort is expected to improve the quality of the riparian zone.

Planting and Caging, Seeding: Rehabilitation would promote riparian landscape complexity.

Herbicide Application: Herbicides and fertilizer would be used in accordance with labeled restrictions so they do not degrade the wetland and riparian areas of Mittry Lake and the Colorado River. The proposed herbicide applications are expected to protect current and future riparian restorations, wildlife habitat, and reduce fire hazard within WUI and HFR project areas. Removal of tamarisk resprouts would lower the risk of wildfire events, thus allowing for maintenance of the native riparian habitat that is being created. Herbicides would be used in a restricted manner that would not allow them to enter the surface water of the Colorado River.

Irrigation: Supplemental irrigation would help to increase amounts of wetland vegetation

2. Effects of No Action

No Action would have no immediate effect on the riparian zone, only the planned native vegetation would instead be invasive vegetation including Tamarisk and phragmites. Tamarisk would continue to dominate the riparian corridor, increase soil salinity, and further lower the water table. Wildlife forage would continue to be of poor value. Numbers and diversity would not be likely to change. Fire hazard would continue to pose a greater threat because tamarisk resprouts would have to be annually cut mechanically.

R. Wildlife

1. Effects of Proposed Action

Mechanical: Wildlife in the general vicinity would be disturbed from the operation of heavy equipment during the operation period. While removing tamarisk and decadent vegetation, heavy equipment could crush, bury, or kill smaller, less mobile animals such as rodents, lizards, or snakes. The mesquite-bosque protection swaths would be cleared completely, therefore, reducing the value of these areas to wildlife in the short term. The tamarisk and remnant cottonwood-willow areas would also undergo prolonged disturbance from heavy machinery, impacting wildlife using the decadent and resprouting tamarisk.

Planting and Caging: Despite the short-term negative impacts to wildlife in the proposed project area, wildlife should benefit in the long term after successfully planting the project area to promote establishment of native cottonwood, willow, mesquite, and other native vegetation. If proposed native revegetation efforts fail, tamarisk should re-establish in the proposed project area and animals from surrounding tamarisk habitat should repopulate the proposed project area to levels similar to those before treatment. Thus, the only consequences of failure would be limited to short-term effects. In

conclusion, negative, short-term effects (potentially killing and displacing individuals) would be overshadowed by positive, long-term effects (increased wildlife abundance and diversity). Risk of irreversible effects of proposed actions is low because wildlife abundance and diversity should return to pre-treatment levels if revegetation efforts fail.

Herbicide Application: Wildlife in the general vicinity would be disturbed from periodic herbicide application for the next several years. Garlon 4 is in the low toxicity category and “caution” hazard notification. According to DowElanco’s Chemical data sheet, Garlon 4 has low oral toxicity and is nonirritating to skin and eyes, as judged by tests on rabbits (Neil, 1990). Glyphosate (Rodeo/Aquamaster) toxicity field studies have been extensive. Glyphosate has been found not to affect reproduction, growth, or survival of deer mice (Ritchie et. al, Sullivan, 1988). Similarly, glyphosate was found to have low toxicity to birds (McComb et. al., 1990). Based on test results submitted to the EPA from both herbicide manufacturers, both herbicides, when properly applied, pose minimal risk to the wildlife species which occur in the area. The rapid decomposition would limit any effects on wildlife.

Irrigation: Irrigation would promote plant growth, resulting in a faster recovery of the burn site. This would benefit all species that use upland vegetation.

2. Effects of No Action

Besides failing to support high diversity and abundance of wildlife, allowing tamarisk to exist in the proposed project area has far-reaching effects beyond the borders of the proposed project area. Tamarisk in the proposed project area would continue to pose a fire hazard to existing wildlife habitat nearby (Pratt Nursery and Betty’s Kitchen). Cohan and others (1977) found some neotropical migratory bird species avoided monotypic stands of tamarisk during migration. Existing conditions would likely contribute to the decline of those migratory bird species that depend on cottonwood-willow habitat during migration. Migrating birds forced to occupy low-quality habitat reduce their body mass and increase their length of stay at stopover sites (Russell and others, 1994). Because high-quality stopover sites are a critical link between breeding and wintering grounds, high-quality stopover habitat could have population-level implications to birds (Russell and others, 1994).

e. Mitigating Measures for the Proposed Action

All actions proposed in this EA would occur before May 1 or after October 1 to avoid SWFL and WYBC nesting and migration periods.

f. Cumulative Effects

A. Introduction

Cumulative effects are the impacts on the environment that may result from the incremental effect of the Proposed Action or No Action alternative in combination with other past, present, and reasonably foreseeable future actions on BLM-administered lands, as well on those lands under other jurisdictions that are adjacent to or within BLM boundaries. Cumulative effects must

consider the likely impact of the Proposed Action or No Action alternative when combined with these additional actions. This section describes the cumulative effects of those resources/concerns identified in Chapter 3 as present and/or potentially affected.

This document analyzed cumulative effects on wildlife, habitat, and recreation for the immediate geographic scope of the MWLA within a 5-year planning horizon. Additionally, consideration was given to the larger lower Colorado River ecosystem. The following bullets summarize actions which would cumulatively impact the wildlife area.

- Riparian rehabilitation proposed in this project would increase the number and diversity of wildlife along the lower Colorado River.
- Removal of dense tamarisk stands could accomplish hazardous fuels reduction, thereby improving the overall health of the land.
- Removal of tamarisk could eventually lead to a decrease in salinity of the soil and allow for unassisted native plant regeneration.

Several other projects may occur within a 5-mile radius of the proposed project. The cumulative impacts of these projects in addition to the proposed action are discussed below.

B. Past and Present Actions

A. Mittry Marsh Burn

During March 2003, a Federal and state project was conducted at the far northern end of MLWA located at T. 6 S., R. 31 W., sec. 31. This project removed decadent cattail marsh through aerial ignition and controlled burning within a created fireline. The purpose was to enhance habitat conditions for the Yuma clapper rail. Displacement of wildlife due to temporary alteration of habitat may have occurred during the same time frame. The University of Arizona designed a study to document the effect of prescribed fire on wildlife habitat. The researchers were unable to complete the study because control sites were destroyed by the wildfire.

B. Laguna Enhancement

USBR, responsible for management of the surface waters in the project area, proposes to increase the Laguna Reservoir capacity to about 1,500 acre-feet by dredging the old river channel. This additional reservoir capacity would permit a return to normal flushing operations in the Laguna Dam sluiceway. The exact date of these operations has not yet been set, but this proposed project is not likely to affect the proposed project area. The greater volume of water within the old river channel or reservoir would not affect the depth to ground water. This depth is determined by the operational range of the water surface elevation behind the dam and the leakage from the Gila Main Gravity Canal. The only anticipated change may be a slight increase in ground water quality due to the increased water storage bank to draw from. It is uncertain what hydroponic results may occur through implementation of the Laguna Enhancement in connection with the proposed action.

C. Multi-Species Conservation Plan

As human populations increase, the demand for water and energy resources would intensify. These resource demands continually come into conflict with habitat preservation. The Lower Colorado River Multi-Species Conservation Plan (LCR MSCP) is a partnership of Federal, state, Tribal, and other public and private stakeholders with an interest in managing the water and

related resources of the lower Colorado River basin. The program would work toward the recovery of listed species through habitat and species conservation and attempt to reduce the likelihood of additional species listing under the Endangered Species Act. The LCR MSCP strategy involves intensive riparian restoration on Federal, state, Tribal and private lands along the lower Colorado River. The proposed project is in a locale identified by the LCR MSCP as a tier one option. This locale is a high priority under the draft MSCP plan for the same reasons outlined in this EA. Performing rehabilitation on riparian habitat invaded by Tamarisk, a hazardous fuel, could have positive cumulative effects for the lower Colorado River ecosystem. Successes and failures could be documented and provide LCR MSCP planners with useful information. A pro-active stance is necessary to aid in species recovery and creates better regional habitat conditions. The proposed project would support the goals of the LCR MSCP.

D. Pratt Restoration Site

The Pratt Restoration Site, also known as the Pratt Nursery, is located just upstream from Laguna Dam, in Yuma County, Arizona. The 58.75-acre area is under a BLM agricultural lease and has been farmed for at least 50 years by the lessee. In 1999, the lessee relinquished 12 acres and a team of Federal and local interests cleared a 12-acre section of the agricultural field and planted cottonwood and willow. This 12-acre field has since been flood-irrigated to sustain the planted vegetation. Habitat planted with rooted stock at the Pratt site grew into tall, dense stands of cottonwood and willow with a nearly closed canopy by the end of the growing season (USBR, 1998). The Pratt Nursery has been very successful in improving the habitat diversity of the MLWA. The proposed project would strive to build on that success, increasing the localized habitat structure.

E. Betty's Kitchen

Betty's Kitchen Wildlife and Interpretive Area is located along the lower Colorado River near Yuma, Arizona. It is home to a Watchable Wildlife Interpretive Area and a National Recreation Trail. This 10-acre parcel of USBR-withdrawn land is currently under BLM jurisdiction. Betty's Kitchen has outstanding natural and historic features and provides universally accessible wildlife viewing opportunities (BLM, 1995). Past restoration projects have increased the vegetative diversity of Betty's Kitchen, including many birds, reptiles, and mammals. The ESR project expands on the nature viewing opportunities currently provided by Betty's Kitchen. The effects of the proposed action would increase recreational opportunities for Yuma residents and tourists.

F. Mittry South

Mittry South totals 80 acres. The biomass utilized during the initial clearing was sent to an electrical plant in Imperial, California, for use as an alternative fuel source. Of the 80 acres cleared, 37 were planted in cottonwood and willow habitat for the endangered SWFL, the candidate WYBC, and other neo-tropical birds. There were 9 acres devastated by the wildfire. The remaining 52 acres are currently being used as moist soil units in partnership with AGFD until the soil salinity is reduced enough to convert the acres to cottonwood and willow riparian habitat. This area is heavily used by the public during the hunting season and for access to the old Colorado River channel for recreational purposes including hunting, fishing, and kayaking.

The MLWA is leased by USBR to AGFD and co-managed by the BLM. Approximately 240 acres of prime marsh habitat within the MLWA were lost in the fire. The marsh is home to the

endangered Yuma clapper rail and California listed black rail. Anticipated erosion is extensive throughout this area of the fire due to the loss of vegetation and other bank stabilization. This area is also used excessively by the public for recreational purposes. Bird watching, fishing, hunting, boating, and camping, among other activities, are conducted regularly within this area.

CHAPTER 5 - TRIBES, INDIVIDUALS, ORGANIZATIONS OR AGENCIES CONSULTED

US Bureau of Reclamation

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CHAPTER 6 – REFERENCES

VII. REFERENCES

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Appendix A – Spill Prevention Plan & Pesticide Use Proposals

SPILL PREVENTION PLAN

When handled, prepared, and used as directed, triclopyr (Garlon4, Garlon 3A, Pathfinder II) imazapyr (Arsenal, Stalker), and glyphosate (Roundup, Reward, Rodeo, Aquamaster) have little potential to cause environmental concerns or personal injury. Measures such as the use of proper protective clothing, understanding the nature and chemical properties of the herbicide, and knowledge of appropriate first-aid procedures are fundamental to applying herbicides in a safe manner. Applicators will be certified or directly supervised by certified applicators. **READ THE LABEL!**

- A. **HERBICIDE STORAGE** - Pesticides should be stored in fire resistant, metal storage cabinets in a predesignated area that is also fire resistant. The area chosen should be kept dry, cool, and have an exhaust fan for proper ventilation. Furthermore, the area should be secured with a lock and posted with warning signs. Bottles of pesticide should have the date written on the label as they were received and each time they were used prior to final disposal.
- B. **TRANSPORT** - Intact containers of herbicide should be transported in a cushioned, leak proof box with a securable lid. The box should be firmly secured to the non-wooden open bed of a pickup truck or utility trailer. Pesticides are not to be transported in the truck cab or inside a passenger car. The load should be checked periodically en route to the treatment site.
- C. **MIXING and APPLICATION** - Have the appropriate tools on hand and dike the area where mixing is to take place. Also have the appropriate absorbents ready, should they be needed. Leave as little skin area exposed as possible, so wear the proper protective gear such as a hardhat with a clear plastic faceguard/eyewear, a long-sleeve shirt and long pants or disposable lightweight coveralls, and rubber boots and rubber gloves. Graduated cylinders of various capacities (up to 1L should be adequate), funnels, and containers to hold the resultant herbicide, carrier mix, and dispensers are essential items as well.
- D. **SPILLS** - If an incident should occur resulting in a spill on an individual(s), on soil, or in water, the following procedures should be followed in each case:
 1. **Body contact spill** - contaminated clothing should be removed and copious amounts of water poured on the affected area(s) for 10-15 minutes. Transport to a predetermined hospital or clinic if the herbicide has been ingested or inhaled.
 2. **Soil spill** - contaminated soil should be shoveled into a leakproof container or be spread on heavy plastic sheets. However, every attempt should be made to prevent the herbicide from spreading over the soil surface (diking, adsorbents, absorbents, etc.). Contaminated soil should be disposed of as hazardous material.
 3. **Spill in water** - According to trade literature, residue levels of water decline very rapidly and their reduction is due to the uptake by the weeds and adsorption to suspended soil particles in the

water or on the bottom mud. In the case of spill, dilution would be rapid. Spill control materials such as Habsorb, WYK, Haz-Mat Pig, Wolf Absorbent Socks, and Polysorb Oil Absorbent Fabric, are available to speed up containment and cleanup. For example, since Garlon and Roundup emulsify in water but separate quickly, small Polysorb Oil Absorbent Fabric booms could be used to absorb and contain the herbicide. Whatever the case, the appropriate material should be on hand depending on the body of water involved. The used materials can then be containerized and disposed of. The county and state water quality departments should be contacted immediately. In each of the above cases, the Field Office Manager and hazardous materials program coordinator are to be notified immediately. Safety equipment and emergency telephone numbers of appropriate agencies should be on hand as well. In every instance, incident reports are to be completed and filed.

Appendix B – Photos





Technical Review:

Supplemental Authorities /Other Resources or Concerns	May Be Affected		If May affect / Mitigations Assigned	Signature Name/Title	Date
	Yes	No			
Air Quality		X		Name	
Areas of Critical Environmental Concern		X		Name	
Cultural Resources/ Paleontological Resources	X			Tom Jones	
Environmental Justice		X		Erica Stewart	
Farm Lands (Prime or Unique)	X			John Hall	
Floodplain	X			John Hall	
Fuels / Fire Management	X			Lalo Heredia Name	
Public Health and Safety	X			Lalo Heredia Name	
Invasive & Non-Native Species	X			John Hall	
Lands/Realty	X			Art Lopez	
Law Enforcement	X			Ruben Conde	
Migratory Birds	X			Erica Stewart	
Public Affairs	X			Lori Cook	

Technical Review:

Supplemental Authorities /Other Resources or Concerns	May Be Affected		If May affect / Mitigations Assigned	Signature Name/Title	Date
	Yes	No			
Native American Religious Concerns	X				
				<i>Tom Jones</i>	
Operations	X				
				<i>Lalo Heredia</i>	
Public Health and Safety	X				
				<i>Lalo Heredia</i>	
Rangeland		X			
				<i>Name</i>	
Recreation	X				
				<i>Ron Morfin</i>	
Socio-economics	X				
				<i>Ron Morfin</i>	
Soils	X				
				<i>John Hall</i>	
Threatened or Endangered Species	X				
				<i>Erica Stewart</i>	
Travel Management	X				
				<i>Ron Morfin</i>	
Vegetation	X				
				<i>Erica Stewart</i>	
Visual Resources Management	X				
				<i>Ron Morfin</i>	
Wastes, Hazardous or Solid	X				
				<i>Name</i>	
Water Quality, Drinking or Ground	X				
				<i>John Hall</i>	
Wetlands/Riparian Zones	X				
				<i>Erica Stewart</i>	

Technical Review:

Supplemental Authorities /Other Resources or Concerns	May Be Affected		If May affect / Mitigations Assigned	Signature Name/Title	Date
	Yes	No			
Wild and Scenic Rivers		X		<i>Name</i>	
Wild Horses/ Burros		X		<i>Name</i>	
Wilderness & WSA		X		<i>Name</i>	
Wildlife	X			<i>Erica Stewart</i>	

Compliance and assignment of responsibility (Type Program or Employee):

___ Lalo Heredia Fire/Fuels & ESR Program _____

Monitoring and assignment of responsibility: (Type Program or Employee):

___ Lalo Heredia Fire/Fuels & ESR Program _____

Review:

Prepared by: _____ Date _____
 Erica Stewart
 Project Lead

Reviewed by: _____ Date _____
 David Daniels
 Planning and Environmental Coordinator

Reviewed by: _____ Date _____
 Karen Reichhardt
 Assistant Field Manager

Reviewed by: _____ Date _____

 Field Manager