

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Yuma Field Office

2555 East Gila Ridge Road

Yuma, AZ 85365-2240

Final Environmental Assessment

EA-AZ-320-2007-022

Vegetation Treatments in Limitrophe for Safety and Law Enforcement

March 2008

This page left intentionally blank

TABLE OF CONTENTS

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION	4
1.1 Introduction	4
1.2 Purpose and Need for the Proposed Action	4
1.3 Land Use Plan Conformance	5
1.4 Related EISs, EAs, and Other Relevant Documents	5
1.5 Applicable Regulatory Requirements and Required Coordination	6
2.0 ALTERNATIVES ANALYZED	7
2.1 Introduction	7
2.2 Location	7
2.3 Alternative A (Proposed Action)	8
2.4 Alternative B (Modified Action)	15
2.5 Alternative C (No Action)	17
3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT	18
3.1 Introduction	18
3.2 Land Use	18
3.3 Air Quality	18
3.4 Biological Resources	19
3.5 Cultural Resources	29
3.6 Native American Religious Concerns	31
3.7 Energy Policy	32
3.8 Environmental Justice and Socio-Economic Conditions	32
3.9 Fire Management	32
3.10 Floodplain	33
3.11 Hazardous or Solid Waste	34
3.12 Noise	34
3.13 Recreation and Visitor Services	34
3.14 Soil	34
3.15 Surface and Groundwater Quality	35
3.16 Visual Resources	35
3.17 Public Health and Safety	36
3.18 Travel Management	36
4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES	36
4.1 Introduction	36
4.2 Land Use	36
4.3 Air Quality	38
4.4 Biological Resources	38
4.5 Cultural Resources	44
4.6 Native American Religious Concerns	45
4.7 Energy Policy	46
4.8 Environmental Justice and Socio-Economic Conditions	46
4.9 Fire Management	47

4.10 Floodplain	47
4.11 Hazardous or Solid Waste	48
4.12 Noise	48
4.13 Recreation and Visitor Services	49
4.14 Soil	49
4.15 Surface and Groundwater Quality	50
4.16 Travel Management	50
4.17 Visual Resources	51
4.18 Public Health and Safety	51
4.19 Cumulative Impacts	52
5.0 LIST OF AGENCIES AND PERSONS CONSULTED	55
5.1 List of Preparers	55
5.2 List of Agencies/Tribes/Persons Contacted	56
5.3 References	57

LIST OF APPENDICES

- Appendix A: Land Use Authorization Application (SF-299)
- Appendix B: Key Land Use Plan Decisions
- Appendix C: Pesticide Use Proposals/List of BLM Approved Herbicides
- Appendix D: Best Management Practices
- Appendix E: Maps of Project Area for Alternative A and Alternative B
- Appendix F: Mitigation Steps

LIST OF ACRONYMS

ACOE	U.S. Army Corps of Engineers
AGFD	Arizona Game and Fish Department
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMTF	Border Management Task Force
Border Patrol	U.S. Border Patrol-Yuma Sector
CX	Categorical Exclusion
EA	Environmental Assessment
EO	Executive Order
FWS	U.S. Fish and Wildlife Service
USIBWC	United States Section International Boundary and Water Commission
LCR MSCP	Lower Colorado River Multi Species Conservation Plan
NHPA	National Historic Preservation Act
NIB	Northerly International Boundary
PM¹⁰	particulate matter less than 10 microns in diameter
Reclamation	U.S. Bureau of Reclamation
ROW	Right-of-way

SHPO	State Historic Preservation Officer
SIB	Southerly International Border
SWFL	southwestern willow flycatcher
VRM	Visual Resources Management
WF	wildlife
YCR	Yuma clapper rail
YFO	Yuma Field Office
YBC	yellow-billed cuckoo
USC	United States Code

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The Bureau of Land Management (BLM) Yuma Field Office (YFO) received a right-of-way (ROW) application from the U.S. Army Corps of Engineers (ACOE) acting on behalf of the U.S. Border Patrol-Yuma Sector (Border Patrol) to address the immediate threat to border security along the southernmost reach of the lower Colorado River. This river stretch, known as the Limitrophe, is comprised of 23.7 linear river miles that forms the border between the United States and Mexico and includes approximately 1,400 acres of BLM-administered public land. The YFO has prepared an environmental assessment (EA) to address the impacts this ROW application will have on resources, including riparian habitats, cultural resources, and endangered species. If authorized, this ROW will treat vegetation to increase visibility to aid Border Patrol and law enforcement agencies to protect public health and safety and mitigate the impacts.

1.2 Purpose and Need for the Proposed Action

The Yuma County Sheriff's Office, U.S. Border Patrol – Yuma Sector (Border Patrol), and Cocopah Indian Tribe have characterized the Limitrophe as extremely dangerous due to rising levels of criminal activity including human and drug smuggling. This includes violent criminal acts such as assault, rape, and murder in the Limitrophe. These crimes target both Mexican and American citizens and have caused a great deal of human suffering. Law enforcement officials in the above agencies and in BLM are put at higher risk from ambushes or sniper attack due to the dense cover provided by vegetation in this highly dangerous area. Additionally, firefighters are unable to effectively respond to wildfires due to safety concerns. The vegetation treatments proposed will remove cover to expose high-crime areas and help to protect law enforcement officials, illegal immigrants, recreation enthusiasts, firefighters, and the general public.

The Limitrophe reach of the lower Colorado River also has high value riparian habitats composed of cottonwood and willow trees in mesic sites and mesquite and salt cedar in more xeric sites. These vegetation communities provide habitat for numerous resident and migratory birds, including the endangered southwestern willow flycatcher, and other wildlife species. Wetland areas provide habitat for endangered species such as the Yuma clapper rail.

This EA will evaluate a request from the ACOE, acting on behalf of the Border Patrol, to alleviate the public health and safety threat through vegetation treatments in this area. This would be authorized through a ROW grant on public lands which would allow treatments under specific prescriptions for a period of 10 years. The United States Section International Boundary and Water Commission (USIBWC), U.S. Bureau of Reclamation (Reclamation), and Yuma County Sheriff's Office are also partners. As BLM must ultimately approve the right-of-way grant, BLM is the lead Federal agency for this action (Appendix A, Land Use Authorization Application).

The project would span 23.7 miles of riparian land along the lower Colorado River. Vegetation treatments would mainly remove non-native invasive salt cedar (*Tamarix* spp.), but would also treat native species such as saltbush (*Atriplex* spp.), arrowweed (*Pluchea sericea*), and creosote (*Larrea tridentata*). Native cottonwood (*Populus fremontii*), willow (*Salix gooddingii*), and mesquite (*Prosopis* spp.) would be pruned to accommodate a clear line of sight. The vegetation treatments will help to protect law enforcement officials, the general public, recreation enthusiasts, and illegal immigrants.

The proposed action calls for treating vegetation to create an enforcement zone and mitigating the impacts of vegetation treatment to provide for lost wildlife habitat values. The vegetation treatments would be maintained through mechanical re-treatment and/or with herbicides to maintain the enforcement zone over the 10-year period. To mitigate for lost habitat value, the proponent (Border Patrol) would be responsible for implementing mitigation. This EA will provide the framework for the mitigation including the goals, criteria, prescriptions, and potential localities.

1.3 Land Use Plan Conformance

The proposed action and the required mitigation are in conformance with the *Yuma District Resource Management Plan* and Environmental Impact Statement, and Record of Decision, as amended (February 1987). Appendix B contains key Land Use Plan Decisions.

1.4 Related EISs, EAs, and Other Relevant Documents

- Final Yuma District Resource Management Plan and Environmental Impact Statement, as amended; BLM Arizona, 1987
- Title 43 of the Code of Federal Regulations, Subpart 2800
- Federal Land Policy and Management Act of 1976, as amended (43 United States Code 1701, et seq.)
- Colorado River Floodway Protection Act of 1986, Public Law 99-450
- Executive Order 11988 on Floodplain Management
- BLM Riparian 2000 Initiative
- Technical References for Proper Functioning Condition
- Colorado River Floodplain Management Ordinance

- Vegetation Treatments for Thirteen Western States, Environmental Impact Statement, 1991
- Programmatic Riparian Herbicide Treatment Environmental Assessment (EA) (EA AZ-320-2005-0026)
- Native Vegetation Planting in Riparian Zones (EA-AZ-050-2004-0035)
- South Limitrophe Hazardous Fuels Reduction Project Categorical Exclusion (CX) (CX-AZ-320-2006-0036)
- Hazardous Fuel Reduction and Emergency Safety Hazard Removal (CX-AZ-320-2005-0012)
- Hazardous Fuel Reduction and Emergency Safety Hazard Removal – supplemental to CX AZ-320-2005 -012 (CX-AZ-320-2005-0024)
- North Limitrophe Fuel Breaks (CX-AZ-320-2005-0042)
- Environmental Assessment, for the Lower Colorado River, Drop 2 Storage Reservoir Project, Imperial County, California, June 2007
- Lower Colorado River Multi-Species Conservation Program and Habitat Conservation Plan (LCR MSCP) U.S. Bureau of Reclamation , 2004
- BLM YFO Visual Resource Management (VRM) Guidance for National Environmental Policy Act Documents, May 2007

1.5 Applicable Regulatory Requirements and Required Coordination

This EA requires YFO to comply with regulatory requirements and coordinate with agencies or entities as listed in the following discussion.

Land ownership in the Limitrophe is primarily Cocopah Tribal land or public land. Private land, Reclamation-withdrawn and acquired land, USIBWC, accretion land, and State Land are also present. The International Boundary with Mexico follows the center riverbed of the lower Colorado River when it was delineated in 1973. Several withdrawals, right-of-way grants, agriculture leases, and other land-use authorizations exist in the Limitrophe. In order to discern public land ownership, a Master Title Plat search was performed preliminary to starting this EA. Prior to implementation, BLM would notify adjacent land owners, right-of-way holders, and other potentially affected parties.

Due to the presence of species protected under the Endangered Species Act which could be affected if the proposed action is implemented, a formal Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) will be necessary. YFO has prepared a Biological Assessment so that the FWS can prepare a Biological Opinion in order to comply with Section 7 (a) 2 of the Endangered Species Act.

To ensure compliance with Section 106 of the National Historic Preservation Act (NHPA), BLM will meet its obligations as outlined in the State Protocol Agreement between the BLM Arizona State Director and the Arizona State Historic Preservation Officer (SHPO). In addition,

consultation and coordination with interested Native American tribes and groups will be conducted.

The Federal Water Pollution Control Act and subsequent amendments, collectively known as the Clean Water Act (33 USC§1251 et seq.), and Executive Order (EO) 11990 were enacted by Congress to restore and maintain the chemical, physical, and biological integrity of waters of the United States. The proponent would be responsible for coordinating the project with the ACOE Regulatory Branch. The ACOE would provide guidance and permits related to project implementation due to proximity to the river, wetlands, floodplain management, and Clean Water Act restrictions.

Any use of herbicides would follow guidance in the BLM 13 Western States Environmental Impact Statement and subsequent updates. Pesticide applications would be performed in a manner consistent with Environmental Protection Agency labeling and require a BLM-approved Pesticide Use Proposal. This EA also incorporates by reference the BLM Programmatic Riparian Herbicide Treatment EA (EA AZ-320-2005-0026).

Coordination with agencies (Reclamation, USIBWC, AGFD, Border Patrol, ACOE) and other stakeholders (Cocopah Indian Tribe, Quechan Tribe, Yuma County Sheriff's Office) has been ongoing through meetings of the Border Management Task Force (BMTF) and other stakeholder meetings. The AGFD has the jurisdiction and responsibility for managing wildlife in the state of Arizona through Arizona Revised Statute Title 17 and BLM will coordinate with the AGFD in accordance with the 1987 Master Memorandum of Understanding.

If issued, the ROW (BLM case number AZA 34173) would grant the Border Patrol the approval to create an enforcement zone through vegetation treatments and mitigate the impacts. Border Patrol would be responsible to adhere to this EA concerning implementation, maintenance and mitigation. Border Patrol would fund and ensure implementation the proposed action. The BLM will be responsible to ensure that the Border Patrol comply with the proposed action including the mitigation.

2.0 ALTERNATIVES ANALYZED

2.1 Introduction

This chapter describes the alternatives analyzed regarding vegetation treatments in the Limitrophe to provide safety zones for the public, firefighters, law enforcement, Border Patrol, and victims of criminal activity. It also describes the mitigation requirements needed to comply with the current Yuma Field Office land use plan.

2.2 Location

The public lands and lands withdrawn to the Department of State (managed by USIBWC) that would be affected by the vegetation treatment contain approximately 1,392 acres and are described as follows:

Limitrophe (i.e. that portion of the Colorado River from the Northerly International Boundary near Andrade, California to the Southerly International Boundary (SIB) near San Luis, Arizona).

Agricultural leases, water delivery infrastructure, roads, open water, and marshes would not be treated under any of the Alternatives.

2.3 Alternative A (Proposed Action)

The proposed action would create an enforcement zone through the application of four different vegetation treatment prescriptions in a 600-foot wide strip west of the Reclamation levee road (Appendix E). A description of the activities necessary to maintain the enforcement zone and a description of the mitigation requirements to offset the impacts to riparian habitats and endangered species such as southwestern willow flycatcher on public land are components of the proposed action.

Vegetation Treatment

Vegetative treatment would follow one of four different prescriptions described below, depending on the plant community to be treated. The vegetation types and structure types are described in Tables 16 and 17. The following practices would be applied to all four prescriptions.

- BLM would identify agency representatives familiar with the area and with knowledge of the community types to delineate the project area prior to clearing and trimming activities.
- Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
- Periodic visits by the agency representative would ensure that prescriptions are followed and performed in the appropriate community types.
- The proponent would be responsible for having a biological monitor present on-site at all times during initial treatments and follow-up maintenance work. The biological monitor will provide the BLM with monthly reports summarizing work progress and immediately notify BLM if the proponent does not comply with the proposed action.
- The proponent would notify BLM 10 days prior to implementing retreatments.
- Where vegetation to be cleared is on the levee, the method of removal would ensure that the integrity of the levee is maintained.
- Athel tamarisk (*Tamarisk aphylla*) would be left onsite with no more than 1/3 of each individual tree being pruned from the ground up to a maximum of 8 feet. For example a 24-foot tree could be pruned 8 feet up from the ground.
- Where practical, stands of arrowweed, which have traditional value for several Native American tribes, would be left onsite and avoided by project activities.
- A 10-foot wide buffer would be implemented around wetland habitats, areas within the high water line, and the edge of saturated soils.

- Plants occurring in river channels, such as bulrush (*Scirpus californicus* or *Scirpus* spp.) and cattail (*Typha* sp.), would not be treated.
- Project operations including both initial treatment and subsequent maintenance would be timed to avoid the migration, breeding, and nesting timeframe of special status species.
- Mechanical vegetation treatment and re-treatment would occur between October 1 and March 31.
- Herbicide re-treatments would occur throughout the year.

Prescription A - In areas of dense stands of salt cedar, rubber tired or tracked vehicles such as bullhog, hydro-ax, or similar equipment would be used to mechanically mulch, chip, or shred vegetation to ground level. Bulldozers or other bladed equipment would not be used. Species, such as cottonwood or mesquite, within these areas would be avoided.

Prescription B - Hand removal (hand tools or chain saw) of vegetation would occur in areas of cottonwood and willow or mixed trees and shrubs where proximity of these species prevents the use of heavy equipment. Edges of community types are included in this prescription. Vegetation would be removed to ground level and species such as cottonwood, willow, and mesquite would be left and pruned where necessary. Hand cleared vegetation would be chipped by using a portable mulcher or scattered evenly throughout the project area as directed by project monitors. Proponent would prune native trees using approved horticultural practices including using proper sanitizing techniques to prevent the potential spread of disease. No more than 1/3 of each individual tree would be pruned from ground level, up to a maximum of 8 feet. For example, on an 18-foot tall cottonwood tree, the lowest 6 feet of foliage would be pruned. Pruning would only affect those trees where increased visibility is needed to achieve safety objectives.

Prescription C - Mechanical and hand removal of vegetation would occur along levees and steep banklines. Treated vegetation would be mulched and left on site. Species such as cottonwood, willow, and mesquite identified in these areas would be treated as described in prescription B. Other native species, such as arrowweed or salt bush, would be treated as necessary to meet the purpose and need.

Prescription D - Mechanical treatment using bullhog would occur in patchy stands dominated by shrubs. Standing dead material would be mulched, and live plants would be thinned as needed to maintain visibility.

The vegetation types, acres, and vegetation treatments are presented in Table 1 and are based on a 2004 vegetation survey of the Limitrophe, which delineated both plant community and structure types (BIO-WEST 2006). To accurately reflect current conditions, recent field visits resulted in adjustments to the vegetation maps. In some locations, the treatment areas may be less than 600 feet if it meets the purpose and need.

Table 1. Vegetation types present in the Limitrophe as of 2004 vegetation treatment prescriptions by the Borderlands Management Task Force, and acres of public land affected by each treatment. The following acres were calculated using GIS.		
Vegetation Type	Vegetation Treatment Prescription	Maximum Acres Proposed to be Treated
Arrow Weed (including creosote, salt bush)	Prescription C, D	70.4
Cottonwood/Willow	Prescription B	68.2
Marsh	n/a	n/a
Open Water	n/a	n/a
Salt Cedar	Prescription A	329.9
Salt Cedar/Mesquite (determined to be 95% salt cedar, 5 % mesquite)	Prescription A, B, C	47.9
Structured Open Water	n/a	n/a
Undetermined (Undetermined includes salt cedar, creosote, salt bush, roads, and open ground)	Prescription C	44.4

Some of the proposed treatment areas lie within locations that were previously treated under four different National Environmental Policy Act documents. Due to current regrowth of up to three feet in the hazardous fuels treatment locations and expected continued growth, these areas, when overlapping with this proposed action, would need the same initial mechanical treatment and are not differentiated for this alternative. The four projects are listed below.

- CX-AZ-320-2006-0036 South Limitrophe Hazardous Fuels Reduction Project dated March 6, 2007. Approximately 257 acres in three different areas of xeric scrubby salt cedar were treated for hazardous fuels reduction and safety.
- CX-AZ-320-2005-0012 Hazardous Fuel Reduction and Emergency Safety Hazard Removal dated December 17, 2004. Approximately 200 acres were treated.
- CX-AZ-320-2005-0024 Hazardous Fuel Reduction and Emergency Safety Hazard Removal – supplemental to CX AZ-320-2005-0012 dated March 12, 2007. Approximately 200 acres were re-treated.
- CX-AZ-320-2005-0042 North Limitrophe Fuel Breaks dated January 18, 2006. Six fuel breaks of various lengths consisting of approximately 2 acres total; each fuel break measures between 30- and 90-feet wide.

Project Access - Existing access roads approved by the BLM agency representative and Colorado River levees would provide access to the work sites and provide staging areas. Access

to project sites would not cross marsh habitat, unbridged structured open water, or open water. Surface disturbance of channel banks adjacent to open water or structured open water would be avoided. Flagging and monitors would mark routes away from such areas.

Maintenance of Treatment Areas - The proponent would maintain the project site to the extent required to meet the purpose and need. Follow-up treatment could use mechanical or hand treatments, following one of the four prescriptions described above, or include using herbicides. Herbicides would not be used to maintain pruned trees. This EA incorporates BLM EA-AZ-320-2005-0026, by reference, which outlines specific procedures for herbicide applications using a variety of Integrated Pest Management techniques. The application techniques described in that EA would be followed for this project. The environmental conditions that were analyzed in this Programmatic EA are similar to those in the Limitrophe, so the scope of evaluation is adequate. Herbicide application would employ a combination of spot, cut-stump, foliar, broadcast, and hand-wipe types of treatment. Only BLM-approved Environmental Protection Agency-listed herbicides would be used, and application would follow guidelines in approved Pesticide Use Proposals. At this time, the herbicides with active ingredients of imazapyr, triclopyr, and glyphosate are being analyzed. Additional herbicide formulations would require additional National Environmental Policy Act analysis. A list of BLM-approved herbicides and Pesticide Use Proposals detailing herbicide application methods for the proposed action are found in Appendix. C.

In contrast to EA-AZ-320-2005-0026, tractor or vehicle mounted spray rigs would be permissible at any time of the year. This additional flexibility would allow for greater efficacy of spray treatments. Herbicide treatments would require the proponent to adhere to wind and temperature restrictions to reduce drift. Specifically the use of triclopyr would only be allowed to be used when daytime temperatures are not forecast to rise above 85 degrees. At this temperature, the triclopyr volatilizes and treatments have decreased success and a greater chance of causing mortality to non-target species.

Mitigation

In order to maintain conformance with the 1987 Yuma District Resource Management Plan and BLM policy, which recognizes riparian areas as priority wildlife habitat, BLM is requiring mitigation for the vegetation treatments described above. Mitigating impacts to threatened and endangered species is an additional benefit of the priority wildlife habitat mitigation.

In determining how to mitigate the impacts of the proposed action the following table taken from Chapter 13 of Anderson and Ohmart (1984) was used to evaluate the value of the treated and replacement habitats. The numbers in the second and third columns represent a rough index of the value of each habitat type to wildlife. Using these numbers allows one habitat type to be replaced by a different habitat type in an amount that equals the lost value.

Habitat Type	Average number of wildlife categories ranking in top three	Contribution by CW or HM	Trees/acre of CW or HM (0.4 ha)
CW I	17	17	146
CW II	23	23	87
CW III	26	21	83
CW IV	19	12	29
CW V	5	0	17
CW VI	6	0	2
SC I	4	0	0
SC II	8	0	0
SC III	5	0	0
SC IV	3	0	0
SC V	5	0	0
SC VI	7	0	0
SH IV	8	1	35
AW VI	1	0	0
HM III	20	20	93
HM IV	21	12	31
HM V	10	1	12
HM VI	9	0	9

Table 3 describes how mitigation acres would be calculated for each habitat type treated.

Habitat Type Treated	Mitigation Proposed
Cottonwood-willow CW I, CW II, CW III, CW IV	For every acre treated, 1 acre would be replaced with cottonwood-willow habitat types CW I through CW IV. As habitat develops, it is likely to succeed from CW VI through CW II or I over time.
Salt cedar and Salt cedar-honey mesquite	Number of acres of replacement habitat = (# acres of habitat type to be treated multiplied by the avg. # of wildlife categories ranking in top 3 for treated habitat type) divided by the contribution by CW or HM for replacement habitat type. Example: If 100 acres of SC III is removed and is replaced with CWII or HM III: (100 acres x 5) ÷ 23 = 21.7 acres of CWII or (100 acres x 5) ÷ 20 = 25 acres of HM III In this example, if 100 acres of vegetation is treated, a total of 21.7 acres of CWII or 25 acres of HMIII should be planted

The Border Patrol would be responsible for formulating a final mitigation plan under the approval and oversight of BLM, with assistance from AGFD. Appendix D identifies best management practices for revegetating riparian habitats in this region. The proponent would be responsible for implementing between 134 and 144 acres of mitigation. The quantity of the mitigation would vary depending on the amount of cottonwood-willow used to replace salt cedar. Mitigation would require planting and maintenance of target native vegetation. Ideally, replacement habitat would be a mix of these types, with as much cottonwood-willow planted as the site can support. Higher priority sites are those where wet soil conditions can be created on at least part of the site for willow flycatcher habitat.

All mitigation would occur outside of the treatment area (600 foot wide area). Mitigation within the treatment area would not meet the purpose and need for this project. Since vegetation would have to be planted at such low densities to maintain visibility it would have little benefits to wildlife. Mitigation efforts therefore would be focused within the Limitrophe outside the enforcement zone and areas outside the Limitrophe in areas deemed suitable for mitigation. The steps for accomplishing mitigation are outlined in Table 4 and discussed in detail in Appendix F. The proponent would be required to monitor the mitigation areas for a minimum of 10 years from the time of planting. Site specific mitigation plans will be designed to maximize the benefits to wildlife. If the mitigation does not meet the standards as described in a site specific mitigation plans (Step 5 in Table 4) then the proponent would be required to re-plant vegetation and the clock for the monitoring period would be extended. BLM, as the authorizing agency, would be responsible for oversight and accounting for these mitigation prescriptions.

Step	Task	Schedule
1	Identify sites, conduct site visits, prepare site reports	Within 3 months for first site; Within 12 months for all sites
2	Submit site assessments and cost estimates	Within 3 months for first site; Within 12 months for all sites
3	Submit habitat creation opportunity rating	Within 3 months for first site; Within 12 months for all sites
4	Complete environmental compliance, if necessary	Within 6 months for first site; Within 18 months for all sites
5	Submit mitigation and monitoring plan	Within 6 months for first site; within 18 months for all sites
6	Implement mitigation plan (site preparation, and planting vegetation, maintenance)	Begin within 12 months for first site; within 24 months for all sites
7	Annually monitor mitigation sites to ensure plantings are progressing to desired habitat conditions until mitigation obligation is complete	As per monitoring plan and established protocols
8	Submit annual report and work plan	September 30 annually
9	Submit final report	Within 180 days of completion of project

If the proponent does not make acceptable progress towards mitigation by meeting the timelines as listed above, or does not ensure the maintenance and stabilization of these vegetation resources, BLM would consider the grant in non-compliance and begin administrative actions to resolve the non-compliance, which could include suspension of work.

Required Stipulations

Physical Stipulations

No new roads would be authorized under this right-of-way grant. Repetitive routine administrative vehicle use would be discouraged or minimized in treatment areas. Large boulders or other means of restricting motorized access into treated areas may be used to protect habitat in fuel breaks and treatment areas following conservation measure number WF-5 in *Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management* (BLM 2004b).

All fuels, waste oils, and solvents would be collected and stored in tanks or drums and removed immediately from the site. The refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Any spill of 5 gallons or more would be contained immediately within an earthen dike, and the application of an absorbent (*e.g.*, granular, pillow, sock, *etc.*) would be used to absorb and contain the spill. Any spill of 5 gallons or more of a hazardous or regulated substance would be reported immediately to on-site environmental personnel who would notify appropriate Federal and state agencies. A Spill Prevention, Containment, and Countermeasures Plan would be in place prior to the start of construction and all personnel would be briefed on the implementation and responsibilities of this plan. All waste oil and solvents would be recycled. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Enclosed solid waste receptacles would be maintained at staging areas. Non-hazardous solid waste (trash) would be collected and deposited in the on-site receptacles. Solid waste would be collected and disposed of by a local waste disposal contractor.

Any illegal dumps discovered during clearing operations would be reported to the BLM to make a determination of whether hazardous materials are present and the appropriate site specific mitigation needed to alleviate the problem.

Biological Stipulations

The Biological Monitor would ensure compliance with the Biological Opinion.

Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists, or in dry, intermittent sections.

Herbicide application would not occur in Yuma clapper rail habitat (YCR) (marsh or adjacent open water) and drift-inhibiting agents would be used to assure that the herbicide does not enter adjacent marsh areas.

Cultural Stipulations

All historic-period water control features adjacent to project activities would be completely avoided.

To protect subsurface archaeological deposits, mitigation sites (i.e., restoration of native vegetation) would require assessment by a qualified geomorphologist to determine the likelihood of subsurface archaeological deposits. Depending on the findings of the geomorphologist, subsurface testing may be required prior to implementation of the mitigation plan. If there is a potential for intact cultural deposits beneath the floodplain to be adversely affected, the proponent must mitigate these impacts pursuant to Section 106 of the NHPA and in consultation with the BLM and the Arizona SHPO. All archaeological work would need to be completed by a qualified archaeologist who is capable of obtaining a BLM cultural resource use permit.

Any cultural and/or paleontological resource discovered by the holder, or any person working on his behalf, on public or Federal land will be immediately reported to the BLM. The holder will suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM.

If, in connection with operations under this authorization, any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (Public Law 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the holder will stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the BLM. The holder will continue to protect the immediate area of the discovery until notified by the BLM that operations may resume.

2.4 Alternative B (Modified Action)

Three locations, totaling 495 acres, would be treated as detailed in Tables 5–7. These locations have been identified as the highest priority to deter international boundary crime from the perspectives of law enforcement and Border Patrol. These locations were partially treated for hazardous fuels as detailed in CX-AZ-320-2006-0036. These areas are Treatment Areas I, II, and III (County 12 ½, Gadsden Bend, and Hunter’s Hole, respectively) and are identified in the maps for Alternative B (see Appendix E). As in Alternative A, these areas would undergo initial vegetation treatments as identified in Tables 5–7 and then be maintained by re-treatment and herbicide application as determined necessary for security and safety.

Table 5. Acreage covered by each vegetation structure and community type in Treatment Area I.			
Community Type	Prescription	Structure Type	Total Acreage by Structure
Salt Cedar	A, B, C	SC	30.2
Salt Cedar Screwbean Mesquite	A, B	SM-III	61.9
Cottonwood/Willow	B	CW	35.7
Undetermined	B, C	UD	5.0
Area I Total Area for Treatment 132.8			

Table 6. Acreage covered by each vegetation structure and community type in Treatment Area II.			
Community Type	Prescription	Structure Type	Total Acreage by Structure
Arrow Weed	A, B, C	AW	6.6
Salt Cedar	A, B, C	SC	36.0
Cottonwood/Willow	B	CW	18.3
Undetermined	B, C	UD	4.6
Area II Total Area for Treatment 65.5			

Table 7. Acreage covered by each vegetation structure and community type in Treatment Area III.			
Community Type	Prescription	Structure Type	Total Acreage by Structure
Salt Cedar	A, B, C	SC	226.7
Arrow Weed	A, B	AW	26.2
Cottonwood/Willow	B	CW	44.2
Area III Total Area for Treatment 297.1			

Table 8.
Total treatment acreage for fuel reduction areas I, II and III. .

Fuel Reduction Area	Total Acreage by Location	Treated April 2007
I	132.8	52.7
II	65.5	14.2
III	297.1	189.7
Total Acreage Treated	495.4	Total Area for Treatment 256.6

Maintenance

Alternative B would allow for maintenance of the treated areas as described in Alternative A. A combination of methods including mechanical, manual, and chemical treatments could be used according to site conditions. A list of BLM-approved herbicides and sample Pesticide Use Proposals detailing herbicide application methods for the proposed action are found in Appendix C.

Mitigation

Using the same ratios as described in Alternative A, vegetation mitigation would equal 169 acres (98 acres cottonwood/willow and 71 acres of mesquite/cottonwood/willow revegetation). Mitigation could occur within or outside the Limitrophe, as described in Alternative A, at the same prescribed densities and composition.

Required Stipulations

All physical, biological, and cultural stipulations detailed in Alternative A would also be required under Alternative B.

2.5 Alternative C (No Action)

Under Alternative C, BLM would not authorize the right-of-way to the proponent. As a result, under this alternative no vegetation would be treated. There would be no mitigation measures under this alternative.

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 Introduction

This section describes the existing conditions of the environmental components that could be affected by the Proposed Action and alternatives, if implemented. It also serves as the baseline for the comparisons within Chapter 4.

The following critical elements of the human environment are not present or would not be affected by this proposed action(s); therefore, they will not be addressed in this EA: Areas of Critical Environmental Concern, Farm Lands (Prime or Unique), Wild and Scenic Rivers, Wilderness, and Standards for Rangeland Health.

3.2 Land Use

The Limitrophe area is located approximately 8 miles west of Yuma, Arizona. The project would span portions of 23.7 miles of lower Colorado River riparian habitat along the United States and Mexico border in Yuma County, Arizona. The proposed treatment area is limited in extent by the floodplain of the lower Colorado River and the International Boundary. Appendix E show maps of the proposed treatment sites for Alternative A and Alternative B. The project area is bounded on the east side by the Reclamation levee road which protects Reclamation's bypass drain (salinity canal) and adjacent farm fields, and limits brush and dense tree development. To the north, Morelos Diversion Dam, approximately one mile south of the Northerly International Boundary (NIB), is both a physical barrier, changing and limiting aquatic habitat development, and is the northern extent of the project area. To the west, the International Boundary runs roughly down the center of the 1973 Colorado River channel (Treaty of November 23, 1970, between United States and Mexico). This boundary roughly bisects the floodplain of the Limitrophe.

3.3 Air Quality

The Limitrophe is within a non-attainment area for PM¹⁰, airborne particulate matter 10 microns or less in diameter. Primary sources of particulate matter in the Yuma Non-Attainment Area are dust from vehicular travel on improved and unimproved road surfaces and construction and farming activities on private lands. Fugitive dust is dust created by any activity that loosens soil particles. Sources of fugitive dust within the Limitrophe are predominantly a result of farming activity and vehicles. In the last 10 years, there have been many small wildland fires which also result in PM¹⁰ emissions. Existing vegetation reduces wind speeds in the area, reducing dust during high wind events. Air quality is otherwise considered good except during high wind events.

3.4 Biological Resources

3.4.1 Fish and Wildlife

This section of the Colorado River supports numerous species of wildlife (birds, mammals, fish, reptiles, and amphibians), including both resident and migratory species. Woody riparian vegetation, uplands, and, to some extent, agriculture provide habitat for common mammals such as coyote (*Canis latrans*), bobcat (*Felis rufus*), desert cottontail (*Sylvilagus audubonii*), several species of rodents and bats, striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*) (Anderson and Ohmart 1984).

The Colorado River corridor also provides important habitat for migratory birds, both upland species and waterfowl, as well as habitat for resident species. Common birds include egrets, herons, owls, Gambel's quail (*Callipepla gambelii*), white-winged dove (*Zenaida asiatica*), mourning dove (*Z. macroura*), flycatchers, and woodpeckers.

Reptiles and amphibians are represented by several species of lizards, snakes, toads, and frogs, many of which are native to the area. Most of these use upland and riparian areas, but the amphibians require water for reproduction. Four native fish inhabit the Lower Colorado River including striped mullet (*Mugil cephalus*), machete (*Elops affinis*), razorback sucker (*Xyrauchen texanus*), and bonytail (*Gila elegans*), along with at least 23 non-native fish species introduced into the river in California (LCR MSCP 2004).

Two native fish (striped mullet and machete) are known to occur within the project area. Several species of non-native sport fish are likely using open water and fringe wetlands for hunting, cover, and rearing. Sport fishing opportunities are present within and in the vicinity of the project area. Non-native sport fish that may be present include largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), sunfish (*Lepomis* sp.), channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictis olivaris*), striped bass (*Morone saxatilis*), and tilapia (*Tilapia nilotica*) (AGFD 2006).

3.4.2 Threatened and Endangered Species

Federally listed threatened or endangered wildlife species potentially occurring within the Limitrophe were identified using information from the FWS. A total of six Federally-listed candidate, threatened, or endangered species were identified and include the following: brown pelican (*Pelecanus occidentalis*), razorback sucker (*Xyrauchen texanus*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), and yellow-billed cuckoo (*Coccyzus americanus*). The bald eagle (*Haliaeetus leucocephalus*) is no longer Federally-listed, but remains protected under the Bald and Golden Eagle Protection Act (Eagle Act) and is included in this section.

Federally listed species and bald eagles were examined to assess the probability of encountering them in the proposed action area and to determine if further study was warranted. Based on this review, the bald eagle, southwestern willow flycatcher, yellow-billed cuckoo, and Yuma clapper rail were identified as potentially occurring within the proposed action area.

Razorback sucker and Sonoran pronghorn do not occur in the area of the proposed action and would not be affected. The brown pelican has been known to occur in the vicinity of the proposed action, but only as a rare transient and is more likely to be found in backwaters and impoundments than river habitats. The proposed action would not affect the brown pelican because the dry river bottom, small pools, and small flowing water habitat that is adjacent to the proposed project is not this species' preferred habitat.

The bald eagle occurs in North America from the Gulf of Mexico to the Arctic. This large bird of prey is usually associated with aquatic ecosystems, occurring near estuaries, large lakes, reservoirs, major rivers, and seacoasts. These areas must have an adequate prey base and perching areas to serve as habitat. Bald eagles are both predators and scavengers, feeding on fish, birds, rabbits, and small mammals. Selection of perches depends on function and includes cliffs, ridge tops, large snags, and trees in sheltered sites (for roosts) near water or other foraging areas (for hunting) or near nest sites (for sentry purposes). Wintering areas are usually near open water with good perch sites and night roosts (FWS 1982).

Bald eagles declined from historical numbers because of population declines of major prey species, killing, loss of nesting habitat, and use of DDT. Protection of bald eagles began with the passage of the Eagle Act of 1940. Bald eagles south of the 40th parallel were listed as endangered on March 11, 1967. The ban on use of DDT and other persistent organochlorines, habitat protection, and other recovery efforts have resulted in an increase in the bald eagle population and an expansion of their range. The bald eagle in the lower 48 states was reclassified as threatened on July 12, 1995, and delisted on July 9, 2007. The Eagle Act prohibits the take, possession, sale, purchase, barter, offer to sell, purchase, or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C 668(a); 50 CFR 22). "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb" a bald or golden eagle. The term "disturb" under the Eagle Act was recently defined by a final rule published in the Federal Register on June 5, 2007 (72 Fed. Reg. 31332). "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior..

There are 23.7 river miles of marginally suitable foraging and patches of potential roosting habitat for wintering birds on 161 acres scattered through the Limitrophe. Bald eagles may occur within the action area as a rare to uncommon winter visitor. Lone subadult birds make up most of the bald eagle sightings between January and February (Rosenberg et al. 1991). Sightings have occurred at Cibola National Wildlife Refuge and Imperial National Wildlife Refuge (Rosenberg et al. 1991), and two adults and one lone mature adult were spotted at Imperial Dam on December 21, 1996 (Piest 2006a). The nearest breeding areas occur near Lake Pleasant, Alamo Lake, or near Lake Havasu, all more than 100 miles distant. Winter bald eagle surveys in 2006 yielded a total of one subadult in the one route representing Yuma and La Paz Counties combined (Jacobsen et al. 2006). This is comparable to wintering results in recent years and corroborates the very small contribution the lower Colorado River makes for wintering bald

eagles. The Limitrophe is not included along the route because it is unprofitable in terms of yielding birds.

The southwestern willow flycatcher (SWFL) is a small grayish-green passerine bird. The SWFL was listed as endangered without critical habitat in February 1995 and critical habitat was designated in July 1997. In May 2001, the 10th Circuit Court of Appeals set aside the critical habitat designation and instructed the FWS to issue new critical habitat. In October 2004, the FWS re-proposed designation of critical habitat. A final ruling was issued in October 2005. A final recovery plan was completed in August 2002. Threats to the SWFL include loss, fragmentation and modification of breeding habitat, loss of wintering habitat, and brood parasitism by the brown-headed cowbird (Sogge, et al. 1997; McCarthey, et al. 1998).

Up to 2,882 acres of habitat that could be used by SWFL during migration occur in the Limitrophe. A much smaller acreage, closer to the 265 acres of cottonwood-willow habitat, or even less, may be marginally suitable for nesting. A significant record of survey and use data for the SWFL exists for the proposed project area. According to the most recent surveys done under contract to Reclamation, SWFL migrate through the area (Koronkiewicz 2004). The closest survey points in the Limitrophe proximal to the project area are Hunters’ Hole, Gadsden, and Gadsden Bend. All three areas were surveyed in 2003, 2004, and 2005 and mapped as “surveyed/occupied, historically occupied” (see orthophoto titled Gadsden in Appendix C of Koronkiewicz 2004). Individual SWFL detected during the 2003, 2004, and 2005 surveys were determined to be migratory. No nesting sites were detected. Surveys in 2006 are consistent with the previous findings (McLeod et al. 2007). No nesting sites were detected at the four sites surveyed in 2006: Morelos Dam, Gadsden, Gadsden Bend, and Hunters’ Hole. This represents the most accurate data available.

Tables 9–13 present data collected for migratory SWFL detections for the project areas that have been compiled by Arizona Game and Fish Department, and summarized by Jim Rorabaugh, FWS.

Table 9. Migratory SWFL detections for County 11th to 12th Streets compiled by AGFD and summarized by Jim Rorabaugh, Supervisory Fish and Wildlife Biologist, FWS, Arizona Ecological Services and modified with 2006 data, where applicable.			
Year	Survey Status	Number SWFL Detected by Date	Breeding?
2006	No Surveys	No Data	No Data
2005	No Surveys	No Data	No Data
2004	No Surveys	No Data	No Data
2003	Surveyed	1 (May 31)	No
2002	Surveyed	0	No
2001	Surveyed	1 (May 23)	No
2000	Surveyed	2 (May 30)	No

Table 10.
Migratory SWFL detections for County 12th to 13th Streets compiled by AGFD and summarized by Jim Rorabaugh, Supervisory Fish and Wildlife Biologist, FWS, Arizona Ecological Services and modified with 2006 data, where applicable.

Year	Survey Status	Number SWFL Detected by Date	Breeding?
2006	No Surveys	No Data	No Data
2005	No Surveys	No Data	No Data
2004	No Surveys	No Data	No Data
2003	Surveyed	2 (May 31)	No
2002	Surveyed	1 (May 29)	No
2001	Surveyed	4 (May 23)	No
2000	Surveyed	1 (May 30)	No

Table 11.
Migratory SWFL detections for Gadsden Bend compiled by AGFD and summarized by Jim Rorabaugh, Supervisory Fish and Wildlife Biologist, FWS, Arizona Ecological Services and modified with 2006 data, where applicable.

Year	Survey Status	Number SWFL Detected by Date	Breeding?
2006	Surveyed	4, 4, 4, 2, 3, 1 (May 15 – June 15)	No
2005	Surveyed	6, 2, 2, 1, 1 ,3, 2, 3 (May 17- June 17)	No
2004	Surveyed	8, 8, 1, 2, 1, 1 (May 18 - July23)	One bird detected 23 July could have been an early south-bound migrant or a breeding bird.
2003	Surveyed	9, 8, 4, 4, 2 (May 18 - June 17)	No
2002	Surveyed	2, 6, 5, 4, 2 (May 20 - June 19)	No
2001	Surveyed	1, 3, 5, 5, 3 (May 21 - June 15)	No
2000	No Surveys	No Data	No Data

Table 12. Migratory SWFL detections for Gadsden Pond compiled by AGFD and summarized by Jim Rorabaugh, Supervisory Fish and Wildlife Biologist, FWS, Arizona Ecological Services and modified with 2006 data, where applicable.			
Year	Survey Status	Number SWFL Detected by Date	Breeding?
2006	Surveyed	9, 19, 7, 2, 11, 2 (May 15 – June 15)	No
2005	Surveyed	7, 7, 1, 2, 2 (May 17- June 12)	No
2004	Surveyed	4, 22, 3 (May 18 – June 9)	No
2003	Surveyed	25, 2, 3 (May 19 - June 16)	No
2002	No Surveys	No Data	No Data
2001	No Surveys	No Data	No Data
2000	Surveyed	6, 3, 2, 3, 5 (May 22 - June 6)	No

Table 13. Migratory southwestern willow flycatcher detections for Hunter's Hole compiled by AGFD and summarized by Jim Rorabaugh, Supervisory Fish and Wildlife Biologist, FWS, Arizona Ecological Services and modified with 2006 data, where applicable.			
	Survey Status	Number SWFL Detected by Date	Breeding?
2006	Surveyed	10, 11, 1, 26, 1 (May 13 – June 15)	No
2005	Surveyed	6, 2, 1, 2, 1 (May 18- June 17)	No
2004	Surveyed	5, 37, 4 (May 18 – June 9)	No
2003	Surveyed	16, 1, 8, 2, 1, 2 (May 18 - June 16)	No
2002	No Surveys	2, 4, 4, 2 (May 20 - June 12)	No Data
2001	No Surveys	4, 5, 5, 3 (May 22 - June 15)	No Data
2000	Surveyed	2, 2, 3, 2 (May 23-June 14)	No

All three areas, particularly Hunters' Hole and Gadsden Bend/Pond, support substantial numbers of migrating flycatchers (up to 37 per count/site) from about mid-May to mid-June. Survey results after that time are generally negative, suggesting the birds do not stay to breed but are rather using the river corridor to migrate to their breeding grounds elsewhere. An exception was

a willow flycatcher detected on July 23, 2004, at Gadsden Bend, which may have been a breeding bird or could have been a late spring or early fall migrant. Koronkiewicz (pers. comm.) document more migrating willow flycatchers (identification only to species) being detected in the Gadsden-Hunters hole area in May-June, 2007, with 38 detections on June 3 at Hunters Hole. Brown-headed cowbirds occur all along the Limitrophe, are detected at SWFL survey sites (McLeod 2007), and their numbers are subsidized by agricultural areas on both sides of the border. As no nesting SWFL are known from the Limitrophe, brood parasitism is not known, but could become a problem if birds attempted to breed there.

The yellow-billed cuckoo (YBC) was petitioned for Federal listing as a Distinct Vertebrate Population Segment west of the crest of the Rocky Mountains; and the FWS determined the petition was warranted, but further action was precluded by higher priority listing actions on July 25, 2001 (66 FR 38611). YBC in the western United States is limited to narrow, and often widely separated, riparian cottonwood-willow galleries. YBC use mature stands of cottonwood and willow along the Lower Colorado River Valley and, to a lesser extent, also use a mix of cottonwoods, willows, and mesquite (Rosenberg et al. 1991). Foraging YBC may use smaller mesquite and salt cedar (Rosenberg et al. 1991). The loss, degradation, and fragmentation of riparian habitat have been identified as the primary factors causing YBC declines in the western states.

In Arizona, several important patch characteristics for YBC breeding habitat were identified, including size of patch (40+ ha), minimum width (> 200 m), height (> 5 m), vegetation type (dense willow/cottonwood riparian), dense canopy cover (>50%), and proximity to surface water (Corman and Magill 2000).

Patch size is one of the more significant factors influencing YBC occupancy (LCR MSCP 2004). Laymon and Halterman (1989) concluded that sites greater than 80 ha in extent and wider than 600 m were optimal, sites 41-80 ha in extent and wider than 200 m were suitable, sites 20-40 ha in extent and 100-200 m in width were marginal, and sites less than 15 ha in extent and less than 100 m in width were unsuitable. In California, away from the Colorado River, cuckoos occupied 9.5% of 21 sites that were 20 to 40 ha in extent, 58.8% of 17 sites that were 41 to 80 ha in extent, and 100% of 7 sites greater than 80 ha in extent. The trend towards increased occupancy with increased patch size is significant ($t = 3.63$, $p < 0.001$) (Laymon and Halterman 1989).

Of the trees making up a majority of the Limitrophe, YBC have nested in willow, cottonwood, screwbean mesquite, and salt cedar. Nesting and foraging areas have a high foliage density.

Nesting may take place in late May and finish in August, depending on the season (LCR MSCP 2004). Nest building may take 2-4 days (Hamilton and Hamilton 1965). However, a transmittered cuckoo on the San Pedro River was observed building a nest in an afternoon, with incubation beginning the next morning (Halterman 2002). One brood of two to three young is raised per season. Cuckoos will occasionally double-brood in western populations if abundant food resources exist, even though the breeding season is 1-3 months shorter than in the east (Hamilton and Hamilton 1965, Hughes 1999).

During the nest-building and egg-laying stages, cuckoos can be very sensitive to human disturbance (LCR MSCP 2004). Four of twenty-three nests found on the Bill Williams River between 1993 and 2001 were abandoned, with three of these likely due to nest searching efforts (Haltermann 2001).

Gadsden Bend and Hunter's Hole are two localities known to harbor YBCs (LCR MSCP 2007); and there are probably others if they meet the patch size and cover, and foliage volume requirements. During BLM surveys for the SWFL in 2005, one YBC was observed at Morelos Diversion Dam. Coincidentally, the cuckoo was located in the same area indicated on the AGFD Heritage Database in 1999. No nesting behavior was detected. A Northern Arizona University team surveyed for YBC in the Limitrophe in 2005 (Johnson M.J. et. al, 2006). The results for the project areas are as follows:

- One detection at Hunters' Hole,
- Detections in the first through fourth breeding surveys 200 meters south of the project area at County 12 ¾ St.

The Yuma clapper rail (YCR) was listed as an endangered species on March 11, 1967, one of three clapper rail subspecies listed as endangered species. Critical habitat has not been designated. Current threats include loss of wetland habitat from river channelization and flood control projects and large fluctuations of water levels, which affect habitat and prey availability. Contaminant research along the lower Colorado River has introduced concerns over selenium (King and others, 1993). Although elevated selenium levels have not been documented in clapper rails, selenium levels have been found in crayfish and other food items that could interfere in clapper rail reproduction.

The YCR is the only clapper rail to breed in freshwater marshes. Their year-round habitat requirements include a mosaic of variable-aged stands of emergent vegetation interspersed with open-water shallow pools. Breeding habitat is characterized by dense vegetation near water's edge. Nests are placed in these sites or, if available, on high sites within marshes; e.g. where banks are slightly higher than adjacent marshes (Zeiner *et. al.* 1990). Breeding takes place from May through July.

The YCR is found in wetlands along the lower Colorado River from Bullhead City, Arizona, south to the Colorado River Delta in Baja California. It is also found in wetlands along the Gila River, Salt River, and Picacho Reservoir in Arizona and in the vicinity of the Salton Sea, Imperial County, California.

There are 54 acres of marsh habitat that could be used by this species in the Limitrophe. A significant record of survey and use data for the YCR exists for the proposed project area. Table 13 shows survey results starting in 1979 for Hunters' Hole and continued on a rotational basis to the present date (Piest 2006b).

Table 14.
Yuma clapper rail survey data for Limitrophe collected by AGFD (Piest 2006b).

Year	Hunters Hole	Other	Total
1979	nd	nd	nd
1980	nd	nd	nd
1981	3	0	3
1982	11	0	11
1983	1	4	5
1984	3	0	3
1985	6	0	6
1986	nd	nd	nd
1987	nd	nd	nd
1988	nd	nd	nd
1989	3	0	3
1990	2	0	2
1991	1	6	7
1992	2	25	27
1993	5	8	13
1994	3	0	3
1995	3	1	4
1996	5	12	17
1997	4	2	6
1998	nd	nd	nd
1999	0	0	0
2000	nd	nd	nd
2001	nd	nd	nd
2002	3	0	3
2003	nd	nd	nd
2004	nd	nd	nd
2005	0	9	9
2006	0	0	0

Large flood events occurred in 1983 and 1993 which changed the location of the river between the levees in the Limitrophe. Survey results show that habitat is readily colonized in this area post flood disturbance establishment. Surveys in 2002 showed that the Hunter’s Hole area is still used by YCR. In 2005, AGFD surveyed between County 10th Street to Gadsden and found nine rails. There were no rails at Hunter’s Hole that year. Currently the Limitrophe has a variable capacity to support YCR habitat. The only water that enters the system is either unaccounted for or excess water that cannot be captured by the United States or Mexico. High water demand is dictating strict controls on the flows and releases by both countries; therefore, conditions in the Limitrophe are less than desirable for the expansion of YCR habitat.

Specific localities for nine survey points where Lin Piest heard YCR in 2005 are listed in Table 15. None of these areas were near the project area. The stops were between County 15th and 18th Streets on the river. Survey data from FWS indicates no habitat was present at Hunters’ Hole in 2006.

Table 15. Specific survey data for a total of nine Yuma clapper rail detections in the Limitrophe in 2005 outside of project area compiled by AGFD.	
Survey Stop	Survey Field Note
82	1 bird on May 27
106	1 pair on May 26
121	2 individuals on April 26
125	2 pairs on April 26

Data compiled by FWS between 1995 and 2005 shows that the Limitrophe YCRs comprised between 0% and 2% of all the rails detected in the United States during those years. Years of higher flows may tend to coincide with greater contributions to the rail population as the Limitrophe is normally a dry reach and the rail is dependent on aquatic habitat. The nearest likely source population of these birds is the Laguna Division, north of Yuma, which typically supports one to two times more detectable birds than the Limitrophe.

3.4.3 Migratory Birds

With the exception of domestic pigeons, house sparrows, and European starlings, all birds in the proposed action vicinity are protected under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712). The Migratory Bird Treaty Act states it is unlawful to take, kill, or possess migratory birds that are listed under its protection. Biological field reviews identified no nests within the proposed project area. Most of the proposed project area is adjacent to disturbed agricultural areas or heavily impacted by illegal human activity and not conducive to nesting birds.

3.4.4 Vegetation and Wetlands/Riparian Zones

A 2004 vegetation survey of the Limitrophe delineated plant community and structure types. The types present in the project area are: Agriculture, Arrowweed, Cottonwood/Willow, Marsh, Open Water, Salt Cedar, Salt Cedar/Mesquite, Structured Open Water, and Undetermined. These vegetation types are described in Table 16. The acres and locations of the vegetation types are displayed in the maps in Appendix E. Table 17 describes the various structure types that occur within the vegetation types with Type I being the more mature structure type. To accurately reflect current conditions, recent field visits resulted in adjustments to the maps. Field visits performed in 2007 revealed a diverse mix of species within the proposed project area including cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), coyote willow (*Salix exigua*), seep willow (*Baccharis emoryi*), honey mesquite (*Prosopis glandulosa* var. *torreyana*) and screwbean mesquite (*Prosopis pubescens*) and common reed (*Phragmites australis*). On drier sites are found a variety of growth forms including shrubs, grasses, and forbs such as arrowweed (*Pluchea sericea*), quailbush (*Atriplex lentiformis*), salt bush (*Atriplex canescens*), and creosote (*Larrea tridentata*).

Habitat type	Description
Cottonwood-willow (CW)	<i>Salix gooddingii</i> and <i>Populus fremontii</i> (the latter in extremely low densities), constituting at least 10% of total trees.
Salt cedar-honey mesquite (SH)	<i>Prosopis glandulosa</i> constituting at least 10% total trees: rarely found constituting greater than 40% of total trees.
Salt cedar habitat (SC)	<i>Tamarix chinensis</i> constituting 80 - 100% of total trees
Arrowweed (AW)	<i>Tessaria sericea</i> constituting 90 -100% of total vegetation in area

Structure Type	Criteria
I	45% of stand in overstory (>15 ft); 30% in intermediate story (2-15 ft); 10% in understory (< 2 ft).
II	60% of stand in overstory (>15 ft); 30% in intermediate story (2-15 ft); 10% in understory (< 2 ft).
III	25% of stand in overstory (> 15 ft); 50% in intermediate story (2-15 ft); 25% in understory (< 2 ft).
IV	15% of stand in overstory (> 15 ft); 45% in intermediate story (2-15 ft); 40% in understory (< 2 ft).
V	5% of stand in overstory (>15 ft); 35% in intermediate story (2-15 ft); 60% in understory (< 2 ft).

Most of the vegetation within the levees in the Limitrophe is within the riparian zone of the Colorado River. Riparian zones throughout the southwest are valuable stopover habitat for migratory birds, as well as a host of mammals and reptiles. Water quality and fisheries are dependent upon the health of the adjoining riparian zone.

BLM recognizes riparian plant communities as priority wildlife habitat, suitable for protection and enhancement. In accordance with Riparian 2000, a BLM initiative for riparian lands in the west, the BLM will strive to maintain the riparian zones in Properly Functioning Condition (PFC). The condition of the riparian area is determined using a standardized checklist which characterizes such factors as vegetative complexity; stream channel morphology, and sediment capture ability. A Properly Functioning Condition assessment was completed in 2002 at three locations within the Limitrophe. These areas were determined to be “functional - at risk”.

3.4.5 Non-Native Invasive Species

The project area is dominated by the non-native, invasive salt cedar. Salt cedar currently compromises a majority of riparian corridors in the Southwestern United States. Although salt cedar does provide habitat for a number of species, its dense growth and resinous outer cambium make it a prolific fire hazard. Salt cedar effectively out-competes native species such as cottonwood, willow, and mesquite by monopolizing available groundwater and increasing the surface salinity of soils through fallen leaf litter. Salt cedar is also fire adapted and resprouts vigorously after wildfire. In contrast, native riparian species are not fire adapted and often suffer significant mortality following wildfire.

Other invasive plants within the project area include Sahara mustard (*Brassica tournefortii*), puncture vine (*Tribulus terrestris*), and Russian thistle (*Salsola* spp.). These plants are found at other locations throughout the field office and often thrive in disturbed, loose sandy soils. Giant salvinia (*Salvinia molesta*), a Federally listed noxious weed, is present within the open-water habitat of the proposed project area. This plant grows prolifically in slow moving, nutrient-rich waters and has been known to completely cover entire water bodies.

3.5 Cultural Resources

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires Federal agencies to take into account the effects of their undertakings on cultural resources. While the National Environmental Policy Act requires Federal agencies to consider the impacts of proposed actions on all cultural resources, under NHPA only effects to significant cultural resources need to be considered and mitigated. Significant cultural resources include those that are eligible for or listed on the National Register of Historic Places.

The Areas of Potential Effects (APEs) for cultural resources under the different project alternatives and strategies for the Class I and III cultural resource surveys were established in coordination with the Arizona SHPO.

APE for the Alternatives

The APEs for Alternatives A and B include the proposed treatment areas plus any immediately adjacent terraces, since these areas with higher elevations are generally above flood events and have a greater potential for intact cultural resources. There is only one terrace, consisting of approximately 80 acres, that is located in the Limitrophe on the east side of the Colorado River. This terrace is within the vegetation treatment areas for Alternative A and adjacent to the treatment areas for Alternative B. The APE for each alternative is defined as follows:

- Alternative A: The 561 acres of public lands that would be treated, which includes the 80-acre terrace area.
- Alternative B: The 495 acres of public lands that would be treated, plus the 80-acre terrace area that is adjacent to the treatment areas.
- Alternative C: There is no APE for this alternative, since there would be no potential for effects on cultural resources.

Class I (Literature Search) Cultural Resources Survey

A Class I inventory was completed to identify all previously documented cultural resource surveys and sites within one mile of the proposed project alternatives. Fourteen archeological surveys have been previously conducted in the vicinity of the project APEs. A survey in 1998 by Statistical Research, Inc., inventoried the 80-acre terrace area and identified three archaeological sites on the terrace (Table 18). All three sites were determined ineligible to the NRHP with Arizona SHPO concurrence in 1998.

Table 18. <u>Previously recorded cultural resource sites inside the APEs for Alternatives A and B.</u>			
SITE NUMBER	SITE TYPE	REFERENCE	ELIGIBILITY DETERMINATION
AZ X:6:91(ASM)	Historic artifact scatter with bottle glass, metal, and Flow blue decorated ceramics.	Sterner 1998.	Not eligible to the National Register.
AZ X:6:92(ASM)	Historic artifact scatter with mostly flaked metal, container glass, and earthenware sherds.	Sterner 1998.	Not eligible to the National Register.
AZ X:6:93(ASM)	Historic artifact scatter with glass, coal, slag, and metal. Possible prehistoric lithic flake.	Sterner 1998.	Not eligible to the National Register.

Other than the three cultural sites identified inside the APEs for Alternatives A and B, previous investigations have resulted in the identification of 22 cultural sites located within a mile of the project APEs. Eleven of the twenty-two sites are associated with historic water control features such as canals, checks, turnouts, wasteways, and bridges. Most of these features were recorded as part of Reclamation's documentation of the historic Yuma Project (Pfaff et. al. 1992), and are either considered eligible to the NRHP or were not evaluated. In addition, there are six sites that consist of the remains of historic structures and associated features, one historic artifact scatter with possible prehistoric artifacts, the historic Yuma Valley Railroad, a "folk art" site with cactus and rock gardens and various stone figures, a prehistoric rock art site on a pediment of Pilot Knob, and one site location without associated site forms.

Class III (Pedestrian) Cultural Resources Survey

There were no new Class III pedestrian surveys conducted for the proposed action or action alternatives, since the 80-acre terrace was previously surveyed to modern standards in 1998 and the remainder of the project area is in low floodplain, where any cultural deposits have likely been scoured away or deeply buried during flooding episodes.

3.6 Native American Religious Concerns

The lower Colorado River has been a vital source of water and sustenance within a dry desert climate throughout history. Indigenous peoples used to plant their crops in the river floodplain and camp on the adjacent river terraces. There are extensive remnants of these campsites at higher elevations, where past flood events have not impacted their traces. In addition, the river corridor is known for its associated intaglio features, rock art, and extensive trail networks. Many of these features are considered traditionally important or sacred to Native Americans. The Limitrophe of the Colorado River continues to be important to today's Native Americans for traditional uses, such as tribal education, gathering, hunting, and fishing; collection of mesquite wood for funerary and construction purposes; collection of willow for basket materials; possible collection of clay used for pottery making; and collection of river rocks.

The BLM coordinates and consults with Native American tribes pursuant to the following authorities: American Indian Religious Freedom Act of 1978; NHPA; Native American Graves Protection and Repatriation Act of 1990, Executive Order 13007, "Indian Sacred Sites" (May 24, 1996); Presidential Memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments"; and Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" (November 9, 2000). For this proposed action, project input has been sought from 15 Native American tribes and groups with an interest in the project area. Coordination and consultation with the tribes to date has consisted of a project introduction letter dated April 23, 2007, telephone calls, meetings, additional written correspondence, and field trips. Copies of the EA and archaeological report for this project were sent to the tribes on October 19, 2007. All tribal input received has been considered and incorporated into this EA as appropriate.

3.7 Energy Policy

The Limitrophe and the surrounding area contain no features related to energy development, production, supply, or distribution. Salt cedar and other woody biomass may be used to produce energy in the future.

3.8 Environmental Justice and Socio-Economic Conditions

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving Federal assistance on the basis of race, color, national origin, age, sex, or disability. Executive Order (EO) 12898 on Environmental Justice directs that programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations.

The agriculture industry is the primary economic generator for residents in the Limitrophe. Table 19 identifies the general demographic profile the San Luis, Somerton, and Yuma communities relative to Yuma County and relative to the entire State of Arizona. The table provides an overview of the existing environment. Review of the socioeconomic conditions is in accordance with EO 12898.

Location	Total Population	Ethnic Composition (%)			Individuals Below Poverty Level (%)	Agriculture Industry (%)
		White, Non-Hispanic	Hispanic	Other		
Arizona	5,130,632	63.8	25.3	10.9	13.9	1.5
Yuma County	160,026	44.3	50.5	5.2	19.2	8.8
Yuma	77,515	47.5	45.7	6.8	14.7	3.9
Somerton	7,266	3.9	95.2	0.9	26.6	22.0
San Luis	15,322	7.0	89.1	3.9	35.8	24.4

Source: US Census Bureau 2000

3.9 Fire Management

The Limitrophe is within the lower Colorado River South Fire Management Unit (BLM 2004). Because the lower Colorado River vegetation community is not a fire-dependent ecosystem, “non-wildland fire use” is the allocation for this fire management unit. This means fires are suppressed. Humans are the predominant cause of unplanned fires in this fire management unit. Between 1984 and 2003 the average number of fires per year was 21.6 with 812 acres burned.

Fire season can start as early as mid-February and last until mid-October. Spring rains from February through April significantly contribute to the severity of the summer fire season. The fire management unit supports two major fuel complexes: grass with shrubs and riparian. Fire behavior can range from extreme in the grass fuel types when there have been enough spring rains and the herbaceous growth is heavy. Rates of spread could exceed 360 chains per hour (one chain equals 66 ft) with flame lengths over 10 feet. Fire behavior in the riparian area would also exhibit extreme fire behavior with rates of spread exceeding 240 chains per hour with flame lengths of 30 feet.

The Lower Colorado River South Fire Management Unit has goals and objectives specifically to reduce wildland fire hazard around identified cultural sites, private property, and recreational facilities by applying mechanical (hazardous) fuel reduction and prescribed fire where applicable. Wildfire suppression strategy would be the use of Appropriate Management Response to prevent wildland fires from spreading to private land, cultural resources, or improvements on BLM lands and other agencies' lands. Appropriate Management Response is used to manage all fires in accordance with management objectives based on current conditions and fire location. All fires occurring at a Fire Intensity Level 1-3 will be suppressed at less than 5 acres 90 percent of the time. All fires occurring at Fire Intensity Level 4-6 will be suppressed at less than 50 acres 75 percent of the time.

3.10 Floodplain

The YFO is subject to occasional high intensity summer and fall rainstorms which can lead to flash flooding. The greatest hazard from these thunderstorms occurs in the usually dry washes, particularly those where human activities have modified the natural drainage system. The Colorado River is also subject to flooding throughout the winter and spring season from rapid snowmelt in the upper Colorado River Watershed. The major flood control structures on the lower Colorado River are the Glen Canyon and Hoover Dams. The two major water storage levels in these reservoirs are regulated in association with the small reservoirs to provide flood protection, year-round water use, and hydro-electric power. In combination with these storage facilities, Reclamation and ACOE have developed extensive levee systems along many parts of the river to ensure safe passage of water during periods of high flow.

The base floodplain is an area expected to be inundated by floodwaters on the average of once in 100 years. Flood insurance rate maps prepared by the Federal Emergency Management Agency are generally accepted as the best delineations of base floodplains. The Colorado River Floodway Protection Act, Public Law 99-450, was signed into law on October 8, 1986. The Act calls for the establishment of a Federally declared floodway from Davis Dam to the Southerly International Boundary between the United States and Mexico. As required by the Act, Reclamation has developed maps that show the floodway boundaries. In accordance with Section 5 of the Act, these floodway maps shall have the same force and effect as if included in the Act. BLM adheres to the stipulations listed in the Act when it allows development in the floodway.

Historically the Gila River floods on average every ten years with the last major event occurring in 1993. There are considerably fewer flood control features on the Gila River than the Colorado River. Flood events would be more likely as a result of Gila River floods.

3.11 Hazardous or Solid Waste

There are no known hazardous or solid wastes sites along or near the project area. Additionally, there are no landfills (municipal or non-municipal) along or near the project area. Illegal dump sites for hazardous materials or household goods (including miscellaneous trash discarded by undocumented aliens entering the country) may be discovered during the proposed clearing operations. Hazardous materials anticipated to be used during construction of the project are small volumes of petroleum hydrocarbons and their derivatives (e.g., fuels, oils, lubricants, and solvents) required to operate the equipment used in the proposed clearing activities. These materials are those routinely associated with the operation and maintenance of heavy equipment or other support vehicles, including gasoline, diesel fuels, and hydraulic fluids. The hazardous materials used for this proposed project would be contained within vessels engineered for safe storage. Areas for refueling of equipment would be chosen so as to prevent any accidental fuel leakage from contaminating surface water, groundwater, or soils.

3.12 Noise

Noise that currently exists in the area generally comes from nearby farming equipment, Border Patrol activities, and vehicle travel along existing roads and levees along the Colorado River. There are no residences in the general vicinity of the area that qualify as noise receptors. There are no other sensitive noise receptors, such as schools or hospitals, along the area.

3.13 Recreation and Visitor Services

The Limitrophe has historically been a popular location for dove hunters. Dove hunting makes the Yuma area a regional destination and significantly contributes to the local economy for the duration of the season. Recreational fishing of the river and backwaters has also historically occurred in the Limitrophe. The riparian habitat within the Limitrophe also has the potential to provide the public with wildlife viewing opportunities, especially of migratory birds.

Due to the public health and safety concerns from the variety of illegal activities taking place, the BLM does not recommend that the public recreate in the Limitrophe. As such, the Yuma Field Office is not actively managing or planning for recreational activities within the Limitrophe. The AGFD published a public warning during the 2006 dove hunt to advise the public about public safety concerns due to increased criminal activity in the area. All of the public's recreational opportunities within the Limitrophe are severely limited due to its dangerous conditions.

3.14 Soils

The Limitrophe is primarily located on a soils complex consisting of very fine sandy loams to silt, loamy sands, and silt loams. These soils are formed in recent mixed alluvium and are well

drained with moderate to rapid permeability and variable water capacity. There are some areas with sandy soils with rapid permeability and low water capacity. When disturbed, these soils are highly susceptible to wind erosion.

3.15 Surface and Groundwater Quality

The Limitrophe of the lower Colorado River no longer follows historic flow regimes that occurred before the development and control of the river. Water occurs in the Limitrophe through several different methods. First, water can flow past Morelos Diversion Dam under three circumstances: (1) as a result of canceled water orders that Mexico is unable to divert at Morelos Diversion Dam; (2) during a Gila River flood, and (3) during flood control releases along the mainstem Colorado River. Second, water accumulates in the Limitrophe as a result of subsurface agricultural drainage from the U.S and Mexico proximate to the Limitrophe. This amount of water varies according to the cropping in the Yuma and Mexicali Valley and the amount of water being removed from the aquifer by agricultural drainage and production wells. A small amount of water seeps through and underneath Morelos Diversion Dam on a more or less continual basis. These flows are estimated to be in the range of 40 to 60 cubic feet per second (Gould 2006).

Where geology permits, water in an aquifer will flow underground by the force of gravity from areas of higher elevation to lower elevations. Where this underground water intersects the land surface, it emerges as a spring or seep or within a stream channel as groundwater discharge. As a general rule, where the water table in the aquifer is at or above the level of the stream channel, gravity will cause groundwater to emerge in the stream channel, increasing flow. Streams that receive groundwater discharge are gaining streams. If the water table is below the level of the stream, water from the stream will infiltrate into the streambed and lose water. Streams that lose water to the aquifer are losing streams. In an arid environment, it is not unusual for a river to have alternating gaining and losing stream reaches (SI report).

Surface runoff from storms currently drains into the lower Colorado River. The river water is high in sodium and calcium, and conductivity ranges from 1,100 to 1,700 S/cm (microseimens). These water quality levels are somewhat constant. Groundwater in the area is typically sodium chloride or sodium fluoride (salt) rich. The groundwater near the lower Colorado River has high sulfate concentrations but still meets primary and secondary Federal drinking water standards, except for fluoride.

3.16 Visual Resources

Section 102(a)(8) of Federal Land Policy and Management Act mandates the BLM to manage the public lands in a manner that will protect the quality of the visual and scenic values of the landscape. Section 505 (a) requires that “Each right-of-way shall contain terms and conditions which will . . . minimize damage to the scenic and esthetic values . . .” In response to this mandate, the BLM has developed the Visual Resource Management (VRM) System. The scenic values of all BLM-administered lands are inventoried and allocated into VRM Classes between I and IV. VRM Class I lands aim to preserve the existing nature of the landscape, and VRM Class IV lands allow for major modifications to the landscape.

The most recent inventory of visual resource values for the YFO was completed in 2005. VRM policy outlined in BLM Handbook H-8410-1 allows the YFO to use the 2005 inventory as “interim” VRM Classes until its on-going RMP revision is finalized. The proposed project would occur in a VRM Class III area. The objective of projects on VRM Class III lands is to partially retain the existing character of the landscape and that the level of change to the characteristic landscape should be *moderate*.

The Limitrophe’s landscape can be primarily characterized by the curving line of the lower Colorado River and the green or brown colors (depending on the season) of the salt cedar and other riparian vegetation.

3.17 Public Health and Safety

Undocumented immigrant traffic, smuggling, transient populations, illegal dumping, rampant litter, abandoned vehicles, and diversionary fires are all currently putting public health and safety at risk within the Limitrophe. The Border Patrol and Yuma County Sheriff’s Office noted heightened gang activity along this stretch as well as with murders, rapes and armed robbery. Neighboring tribal lands have reported an increase in criminal activity near the river resulting in loss of safe access to tribal lands along this portion of the river.

3.18 Travel Management

The public primarily accesses the Limitrophe by the river levee and agricultural roads. However, the river levee roads are maintained and managed by Reclamation, which has not designated any of these roads as open to public use. The dense vegetation precludes recreational access to most of the Limitrophe where roads and trails are not maintained. Due to the public health and safety concerns, the Yuma Field Office does not actively manage or plan for motorized or non-motorized trails within the Limitrophe.

4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

4.1 Introduction

This chapter assesses potential environmental consequences associated with direct, indirect, and cumulative effects of the Alternative A (Proposed Action), Alternative B (Modified Action), and Alternative C (No Action).

4.2 Land Use

4.2.1 Alternative A

The primary impacts to land use associated with the proposed clearing would occur from its effect on existing authorized land uses such as agriculture, the potential affect on proposed future

uses (i.e. The Department of Homeland Security's proposal to fence additional sections of the border), and its impact on illegal dumping in the project area.

There are both private farm lands and public land leased for agricultural purposes dispersed throughout the project area. Alternative A would have impacts on lands used for agricultural purposes in the affected area. Short-term impacts would be potential conflicts between heavy equipment used in the clearing process and farm equipment caused by the limited access to some areas. Long term impacts to agriculture would be positive as the number of undocumented aliens traversing the area would be lessened lowering the amount of debris discarded in agricultural fields which can sometimes damage farm equipment. In addition, the number of undocumented aliens traveling through the cultivated fields would be lower which would lessen crop loss to the farmers.

Future maintenance of the cleared areas could affect agricultural land in the area if herbicides being used to maintain the cleared areas drifted onto an adjacent crop. This potential impact would be mitigated by limiting the methods used for application and types of herbicides used as described in Section 1.6 of this document. Alternative A would also improve the farmers' ability to work their lands and leases as it would improve the safety for them and their workers by lowering the amount of illegal traffic in the area for both undocumented aliens and illicit drugs. Also, it would be anticipated that by lessening the illegal activity in the area damage and theft of farm equipment would be less thus having a positive effect on the farmers to work their lands and leases.

Actions under Alternative A would have a positive and complimentary affect on varying proposals by the Department on Homeland Security to provide additional security in the project area to either increase the amount of physical fencing along the border or an electronic virtual fencing system if either are approved and constructed in the future.

Actions under Alternative A would also have a positive effect on the land and authorized uses in the area by limiting the ability of individuals to illegally dump both hazardous and solid waste in the area due to the lack of physical cover to hide their illegal activity caused by the clearing action.

4.2.2 Alternative B (Modified Action)

Alternative B would have similar impacts as Alternative A, except that the positive impacts on land uses would be slightly less due to the approximately 66 fewer acres that would be cleared.

4.2.3 Alternative C (No Action)

Under Alternative C no additional vegetation treatments would take place and it would have several potential negative impacts. Alternative C would negatively impact land use in the area by not limiting the illegal traffic in both undocumented aliens and illegal drugs. Smuggling of both undocumented aliens and illegal drugs presents a number of problems for land uses in the area such as worker safety concerns which can affect production, damage to and theft of farm equipment caused by those entering the country illegally and damage to crops and equipment caused by such illegal traffic.

4.3 Air Quality

4.3.1 Alternative A

Under this alternative, PM¹⁰ emissions from the project area would slightly increase as a result of mechanical vegetative treatments. To mitigate for these emissions, mechanical treatments would cease when wind speeds at the site exceed 20 miles per hour. After treatments have been completed, air quality would not decrease, and would possibly improve as a result of the deposition of a mulch layer on top of the soils. In the long term, the organic material would be mixed into the soil, further reducing potential for emissions. Native vegetation would continue to act as windbreaks in specific areas of the Limitrophe.

4.3.2 Alternative B (Modified Action)

Under this alternative, impacts would be the same as in Alternative A.

4.3.3 Alternative C (No Action)

Under this alternative, the impacts of not performing vegetative treatments would be the same as currently occurring and may increase PM¹⁰ emissions in the long term. Much of the non-native vegetation became established following high flows in 1993. These stands of salt cedar are becoming decadent due to lack of ground water in many places above the channel. As these die out, there would be a lessened wind break during high wind events.

4.4 Biological Resources

4.4.1 Fish and Wildlife

4.4.1.1 Alternative A

Vegetative treatment and maintenance activities would have localized, short-term impacts on wildlife habitat resulting in minor impacts to wildlife populations. Direct impacts would typically occur when species come in contact with equipment and crews, disrupting wildlife activities resulting in momentary displacement. Indirect effects from treatment activities would continue to occur at present level of intensity. Alternative A would decrease the availability of suitable vegetation for doves and other bird species to forage and nest. These effects include disturbance of fish and wildlife through treatment of 561 acres. These effects would be mitigated through replacement of habitat within the local area and through avoidance of 831 acres of similar habitat within BLM managed lands in the Limitrophe. There is an additional 2,143 acres of non-BLM managed land within the Limitrophe that may or may not receive similar treatments. This alternative is expected to result in a decrease of border crossings and criminal activity and therefore, decreased disturbance to fish and wildlife from criminal activity.

4.4.1.2 Alternative B (Modified Action)

This alternative would similarly have effects on fish and wildlife as Alternative A. A smaller project footprint of 495 acres would be treated and maintained. Replacement of habitat and avoidance of 897 acres of BLM managed Limitrophe habitat would lessen the impacts for this alternative. This alternative is expected to result in a decrease of border crossings and criminal activity and therefore, decreased disturbance to fish and wildlife from border crossings and criminal activity.

4.4.1.3 Alternative C (No Action)

Under this alternative existing vegetation treatments would be maintained. Fish and wildlife would continue to use the available habitat. Border crossings and criminal activity would continue to disturb wildlife.

4.4.2 Threatened and Endangered Species

4.4.2.1 Alternative A

Bald eagle

Direct effects could include survey and design teams marking the treatment areas and flushing of roosting eagles or heavy equipment or manual laborers flushing eagles during treatment or maintenance activities. Whether such treatment activities would actually flush eagles over a one-to five-day period at any particular treatment location during the life of the project is uncertain, but within the realm of possibility. Because cottonwoods and willows included in treatment areas would only be pruned, those few cottonwoods suitable for roosting/perching would remain.

Because cottonwoods and willows would remain in treatment areas, cottonwood trees suitable for roosting/perching would continue to be recruited into the population at long intervals or at restoration areas as long as periodic high flows occur and ground water remains shallow enough for roots to reach. Treatments would reduce the incidence of fire which would be beneficial to cottonwood trees and keep them available for eagles. Additionally, treatments would reduce the salt cedar which would make more water available to cottonwoods and willows.

Fuels treatment projects undertaken in 2005 and April 2007 would be maintained under this project and would have the same effects as the proposed vegetation treatments for human health and safety. The acreages and locations have been included in the project description. Law enforcement actions would be more easily undertaken and possibly fewer actions would be needed due to the exposed nature of the treatment areas. Law enforcement activities would probably be less likely to disturb any roosting bald eagles.

Due to the lack of bald eagles using the area, lack of nesting activities, the nature of the vegetation treatments manipulating non-habitat, and the limited timeframe of any particular treatment, no incidental take of bald eagles is expected. Flushing of an eagle from a roost, should it occur, would not likely be repeated, and therefore, would be within the normal realm of reaction these birds have to temporary disturbance, and not enough to constitute take. Essential breeding, feeding, and sheltering behavior is not expected to be affected by the project activity.

Southwestern willow flycatcher (SWFL)

Direct effects would be limited to habitat impacts because treatments and maintenance would be timed to avoid the migration, breeding and nesting timeframe of SWFL. Of the 2,882 acres of migratory SWFL habitat 446 acres would be treated and would become or remain, unsuitable for SWFL use. 85% of SWFL migratory habitat on 2,436 acres in the Action Area would remain untreated. Unquantified and uncharacterized amounts of migratory habitat would also be

available in the Mexican part of the floodplain. Revegetation activities would replace up to 135 acres of cottonwood-willow habitat, a portion of which, would be suitable for SWFL nesting.

Indirect effects include a likely decline in the incidence of fire in the Limitrophe and the threat to SWFL mortality from fires during breeding season would diminish by an unquantifiable degree. A lower fire frequency and lower acreage of burned habitat would mean more of the 2,436 acres of habitat would remain for migrant birds over the long term. With a reduction of woody structure and cover, and an increase in habitat “edge effect,” brown-headed cowbirds could increase in numbers or increase use of treated areas juxtaposed to SWFL habitat. These factors could increase potential for brood parasitism if birds were to actually attempt nesting. Increased open areas and habitat edges in the area could expose migrant SWFL to additional predation, particularly from raptors specializing passerine prey. Additionally, treatments would reduce the salt cedar phreatophytes which would make more water available to the remaining salt cedars and willows in the area.

Fuels treatment projects undertaken in 2005 and April 2007 would be maintained under this project and would have the same effects as maintenance of the proposed vegetation treatments for human health and safety. The acreages and treatment prescriptions have been included in the project description. Law enforcement actions would be more easily undertaken and possibly fewer actions would be needed due to the exposed nature of the treatment areas. Law enforcement activities would probably be less likely to disturb any roosting or nesting SWFL because they would be less likely to be used by SWFL.

Yellow-billed cuckoo (YBC)

There are 327 acres of cottonwood-willow and salt cedar-mesquite habitat in the Limitrophe area; and 116 acres would be treated, leaving approximately 211 acres (65%), or less, potentially suitable as breeding habitat. The 116 treated acres would become unsuitable for YBC breeding. Mitigation measures could yield 68 acres of habitat potentially suitable for YBC breeding.

Use of the Limitrophe by migrant YBC in subsequent years could be curtailed somewhat as habitat patch sizes decrease and habitat edge increases making habitats upstream of the Limitrophe more appealing in terms of tree density, canopy cover, foliage volume, and patch size. YBC that attempt nesting may have increased chance of brood parasitism by brown-headed cowbirds as cowbirds have a greater chance at finding nests with increased habitat edge effect.

Removal of scrub salt cedar trees and arrow weed in the treatment areas would reduce fire frequency and allow remaining habitat to reach greater maturity, density, and stature between fire events, making such habitat more suitable for YBC. Potentially, removal of the phreatophyte salt cedar could increase some surface moisture to an unknown degree, making some habitat areas more suitable for breeding success.

Fuels treatment projects undertaken in 2005 and April 2007 would be maintained under this project and would have the same effects as maintenance of the proposed vegetation treatments for human health and safety. The acreages have been included in the project description. Law enforcement actions would be more easily undertaken and possibly fewer actions would be needed due to the exposed nature of the treatment areas. Law enforcement activities would

probably be less likely to disturb any roosting or nesting YBC in treated cottonwood-willow areas because they would be less likely to be used by YBC.

Yuma clapper rail (YCR)

Habitat used by YCR would be avoided and buffered as no marsh vegetation nor moist soil around the marsh would be treated, even if they occur as inclusions within mapped treatment areas (Appendix E). There is a limited amount of YCR habitat in the action area and project activities would avoid these habitats. Initial mechanical treatments and mechanical maintenance, including pruning/trimming, are expected to have even less opportunity for adverse effects since this activity would be done outside the breeding season and the moist soil buffer would distance the treatments from YCR habitat to some degree. Effects to individuals during the breeding season could be from herbicidal maintenance treatment activities or mitigation revegetation adjacent to marsh habitat in the form of short-term disruption of breeding or feeding activities.

Incidence of fire in the Limitrophe is likely to decline and the threat to YCR mortality and nest failure from fires during breeding season would diminish by an unquantifiable degree. In time, avian, reptilian, and mammalian predators will likely experience population adjustments due to the change in woody plant cover, structure, and habitat edges from the project. With a reduction of woody structure and cover, predators such as northern harriers, coyotes, and Harris hawks could increase in numbers or use of treated areas juxtaposed to YCR habitat and increase potential for some predation. Conversely, reduction in structure and cover could result in declines of some predators such as skunk, raccoon, great horned owl, and kingsnake, thus reducing the potential for predation on YCRs. Though floods are infrequent in the Limitrophe, the proposed treatments would remove some of the channel and floodplain "roughness" that is a factor in slowing stream velocity and thus ameliorating flood flows. A loss in roughness can be assumed to increase velocity and the effects on channel morphology (Mutz 2000) and, thus, more vegetation loss. The last large floods in this area, in 1983 and 1993 changed the character of the Limitrophe channel and YCRs recolonized within a few years of each event in concordance with resurgence of the disturbed vegetation. The degree to which the treatments would alter channel morphology that could affect YCRs is unknown and not determinable within our temporal and fiscal constraints.

Fuels treatment projects undertaken in 2005 and April 2007 would be maintained under this project and would have the same effects as maintenance of the proposed vegetation treatments for human health and safety. The acreages and treatment prescriptions have been included in the project description. Law enforcement actions would be more easily undertaken and possibly fewer actions would be needed due to the exposed nature of the treatment areas, lowering the chance that YCRs could be disturbed from breeding, feeding, or sheltering activities.

4.4.2.2 Alternative B (Modified Action)

This alternative would similarly have effects on threatened and endangered species as Alternative A. A smaller project footprint of 495 acres would be treated and maintained. Mitigation and avoidance of 897 acres of BLM managed Limitrophe habitat would lessen the impacts for this alternative. This alternative is expected to result in a decrease of criminal activity and therefore, decreased disturbance to threatened and endangered species from criminal activity.

4.4.2.3. Alternative C (No Action)

Under this alternative no future vegetation treatments would occur in the Limitrophe for public health and safety. Fuels treatment projects undertaken in 2005 and April 2007 would be maintained under this project and would have the same effects as maintenance of the proposed vegetation treatments for human health and safety. The acreages have been included in the project description. Threatened and endangered species would continue to use the available habitat. Border crossings and criminal activity would continue to disturb threatened and endangered species.

4.4.3 Migratory Birds

4.4.3.1 Alternative A

Pursuant to EO 13186, the proposed action was reviewed and a determination was made that it would not result in the intentional take of any migratory bird species of concern, nor would the proposed action result in the unintentional take likely to have measurable negative effect on migratory bird populations, including species of concern and priority habitats. A viable migratory corridor would be maintained by avoiding treatment to habitat.

4.4.3.2 Alternative B (Modified Action)

This alternative would similarly have effects on migratory birds as Alternative A. A smaller project footprint would lessen the impacts for this alternative. This alternative is expected to result in a decrease of criminal activity and therefore, decreased disturbance to migratory birds from border crossings and criminal activity.

4.4.3.3. Alternative C (No Action)

Under this alternative existing vegetation treatments would be maintained in the Limitrophe. Migratory birds would continue to use the available habitat. Border crossings and criminal activity would continue to disturb migratory birds.

4.4.4 Vegetation and Wetlands/Riparian Zones

4.4.4.1 Alternative A

Under this alternative, approximately 561 acres of vegetation would be treated. The effect of the proposed action would be that 561 acres of public lands are thinned or cleared of dead, tree, and large shrub stature vegetation. Smaller annuals, saltbush, and early seral species may naturally re-establish and stabilize the project area once treatments have been completed. All vegetative treatments would be maintained through mechanical, manual, and herbicidal means on an as needed basis for public health and safety. It is anticipated that a large amount of the vegetative clearing would be long-term and may be permanent. Replacement of approximately 134 to 144 acres would be required as mitigation for the proposed project.

Mitigation would be performed within or outside the Limitrophe. This would mitigate some of the lost vegetation resources, or help to improve the regional vegetative resources along other stretches of the Colorado River. Wetlands would be minimally affected by Alternative A due to increased access provided by the vegetative clearing. The functionality of the riparian zone

would be negatively affected if initial treatments are maintained throughout time and all mitigation occurs outside the Limitrophe. Functions including sediment capture, groundwater recharge and values such as plant density, cover and species diversity would be dramatically altered. The preferred alternative would likely alter the riparian zone and down grade it to a PFC rating of non-functioning or functioning at risk.

Out of the 561 acres that would be treated under Alternative A, approximately 422 acres of treatment would be focused on dry stands of salt cedar and salt cedar mixed with native mesquite or saltbush. These vegetative types are common in riparian zones along the Colorado and Gila Rivers and supply important riparian stopover habitat for neotropical migratory birds and other resident wildlife. The proposed action would additionally allow the pruning of 68 acres of native trees such as cottonwood and willow. This pruning would be done following standards as developed by the Tree Care Industry Association. Following these standards would ensure the health and survivorship of native trees that require pruning for public health and safety. The pruned trees would have less structural diversity and connectivity with the soil resources. This lack of interface may decrease the habitat value of these pruned trees. Other native vegetation including annuals, saltbush species, arrow weed, and creosote would be negatively impacted (crushed and/or killed) by the clearing and maintenance practices.

4.4.4.2 Alternative B (Modified Action)

Alternative B would allow for the treatment of approximately 495 acres of vegetation. About half of the treatments (256 acres) would actually be re-treatment of salt cedar that was cleared under a hazardous fuels project CX-AZ-320-2006-0036. Approximately 98 acres of cottonwood/willow habitat that were not previously treated would be pruned using the same protocol as in Alternative A. Treatment of 354 acres of salt cedar and salt cedar mixed with mesquite would be treated. As in Alternative A, these areas would receive maintenance as required for public health and safety. It is likely that these vegetation treatments would denude 354 acres of public lands of tree and shrub stature vegetation. These treatments are anticipated to be long term and may be permanent.

The impacts would be decreased by revegetation efforts outlined in the mitigation section. As in alternative A, this mitigation would help alleviate the impacts on the immediate project area or elsewhere within the lower Colorado River. The functionality of the riparian corridor would be secured through the avoidance of 897 acres of BLM managed lands in the Limitrophe (see maps for Alternative B, Appendix E).

4.4.4.3 Alternative C (No Action)

Under this alternative, existing vegetative treatments would be maintained but no additional vegetation treatments would occur. If funding allows, areas that have already been treated mechanically would be re-treated. If not treated, trees and shrubs in these areas would resprout and salt cedar would re-establish throughout the project site at these locations. Border security, public health and safety, and law enforcement operations would not be accommodated. Fire potential would remain high and fire enforcement would remain difficult due to safety concerns. Pockets of high-value willow and cottonwood would remain at risk due to wildfire potential. The riparian zone and wetlands would continue to be degraded by trash dumping, arson, and vehicle damage across undesignated areas.

4.4.5 Non-Native Invasive Species

4.4.5.1 Alternative A

Under Alternative A, 422 acres of non-native salt cedar vegetation (including salt cedar/mesquite and mixed undetermined vegetation containing salt cedar) comprised mostly of non-native invasive salt cedar would be treated by mechanical and chemical means. Salt cedar would be reduced throughout the project area. This would lessen the fire hazard and reduce soil salinity. Soil disturbance and presence of heavy equipment and other vehicles would make the area more susceptible to establishment of other invasive plants such as Russian thistle, brassica, and puncturevine. Best management practices including vehicle and equipment washing, monitoring, and rapid response would help to mitigate this potential.

4.4.5.2 Alternative B (Modified Action)

Under Alternative B, 365 acres of non-native invasive salt cedar (including salt cedar mesquite and mixed undetermined vegetation containing salt cedar) would be treated by mechanical and chemical means. Salt cedar would be reduced throughout the project area. This would lessen the fire hazard and reduce soil salinity. Soil disturbance and presence of heavy equipment and other vehicles would make the area more susceptible to establishment of other invasive plants such as Russian thistle, brassica, and puncturevine. Best management practices including vehicle and equipment washing, monitoring, and rapid response would help to mitigate this potential.

4.4.5.3 Alternative C (No Action)

In Alternative C, non-native salt cedar would continue to dominate the riparian zone in untreated portions of the Limitrophe. It would continue to out-compete native vegetation resources for available groundwater, light, and nutrients. Migratory birds would continue to use this shrubby salt cedar as stop-over habitat. It would provide cover for illegal activity, continue to pose a fire risk, and threaten the safety of the public and law enforcement.

4.5 Cultural Resources

4.5.1 Alternative A

The vegetation treatments under Alternative A would have no adverse impacts on significant historic properties, as defined by the NHPA, since no significant sites are located on the ground surface of the project APE. Since the vegetation treatments would only disturb at most the top few centimeters of soil, any cultural resources beneath the floodplain deposits would not be impacted. However, there is a potential for subsurface archaeological deposits to be impacted by mitigation (i.e., restoration of native vegetation). As stipulated in this EA, these potential impacts would need to be avoided by following the cultural stipulations outlined under the proposed action. Any mitigation would need site-specific NHPA Section 106 compliance prior to implementation.

The three cultural resource sites identified inside the APE for Alternative A were determined ineligible to the National Register of Historic Places by Reclamation with SHPO concurrence in 1998. Under Alternative A, these three historic artifact scatters would likely be impacted by the proposed vegetation treatments and/or implementation of any project mitigation.

Sensitive cultural resources, such as intaglios and other subtle desert pavement features, can be damaged or destroyed as a result of actions connected with border crossings and illegal activities in the Limitrophe. A reduction in these activities would help to protect cultural resources in the project area vicinity.

4.5.2 Alternative B (Modified Action)

The implementation of Alternative B would have no direct impacts on significant cultural resources. There is some potential for inadvertent impacts from project activities to the three NRHP-ineligible cultural resource sites that are located on the terrace in the vicinity of the project area.

Since the vegetation treatments would only disturb at most the top few centimeters of soil, any cultural resources beneath the floodplain deposits would not be impacted. However, there is a potential for subsurface archaeological deposits to be impacted by project mitigation (i.e., replanting of native vegetation). As stipulated in this EA, these potential impacts would need to be avoided by following the cultural stipulations outlined under the modified action. Any mitigation would need site-specific NHPA Section 106 compliance prior to implementation.

4.5.2 Alternative C (No Action)

The no action alternative would have no direct impacts on cultural resources. However, cultural resources in the vicinity of the International Boundary would continue to be impacted by actions connected with criminal activity.

4.6 Native American Religious Concerns

4.6.1 Alternative A

A reduction in border crossings and criminal activity along the International Boundary would provide a safer environment for traditional use of the Limitrophe. Under this alternative 561 acres of vegetation treatments could shift border crossings and criminal activity to adjacent tribal lands. The two tribal reservations that would be most affected by this shift are the Cocopah Indian Tribe and the Fort Yuma Quechan Tribe. The Border Patrol is currently coordinating with these two tribes to plan similar vegetation treatments on their reservation lands and to mitigate any potential impacts.

With the implementation of Alternative A, some of the characteristics that make this corridor significant to Native American tribes, such as riparian vegetation and wildlife habitat values, would be affected. The removal or treatment of large areas of vegetation would moderately change the current visual setting of the Limitrophe.

The vegetation treatments would attempt to avoid arrowweed to the extent practical, since this type of vegetation is of traditional importance to the tribes. However, meeting the purpose and need of the proposed action would require that some plants may be treated to allow for a clear line of sight for law enforcement. Native cottonwoods, willows, and mesquites, which are also of importance to the tribes, would be trimmed but not removed.

4.6.2 Alternative B (Modified Action)

Treating the vegetation on 495 acres would result in fewer impacts to the integrity of setting in the Limitrophe than Alternative A, since less vegetation would be removed. There would be more border crossings and criminal activity under this alternative, which would continue to affect traditional use of the area.

4.6.3 Alternative C (No Action)

Representatives from Native American tribes have expressed a concern over the safety issues and high crime rates that exist along the International Boundary. Alternative C would not address that concern.

4.7 Energy Policy

4.7.1 Alternative A

In accordance with EOs 13211 and 13212, the proposed action was evaluated for its potential impact to energy resources. Implementation of Alternative A would have no direct or indirect adverse impact on energy development production, supply, and/or distribution. A Statement of Adverse Energy Effects/Impact is not necessary and would not be prepared.

4.7.2 Alternative B (Modified Action)

In accordance with EOs 13211 and 13212, the proposed action was evaluated for its potential impact to energy resources. Implementation of Alternative B would have no direct or indirect adverse impact on energy development production, supply, and/or distribution. A Statement of Adverse Energy Effects/Impact is not necessary and would not be prepared.

4.7.3 Alternative C (No Action)

Under this alternative, no direct or indirect adverse impact on energy development production, supply, and/or distribution would occur. A Statement of Adverse Energy Effects/Impact is not necessary and would not be prepared.

4.8 Environmental Justice and Socio-Economic Conditions

4.8.1 Alternative A

Implementation of Alternative A would not disproportionately affect the minority and impoverished population in the area. There is the likelihood of lost income during dove hunting season due to degradation and loss of suitable nesting habitat. Revegetation efforts would help to mitigate this loss.

4.8.2 Alternative B (Modified Action)

Implementation of Alternative B would not disproportionately affect the minority and impoverished population in the area. There is the likelihood of lost income during dove hunting season due to degradation and loss of nesting habitat. Revegetation efforts would help to mitigate this loss.

4.8.3 Alternative C (No Action)

Implementation of Alternative C would not disproportionately affect the minority and poverty population in the area. Under this Alternative, illegal activity including drug trafficking and illegal alien smuggling would continue. Illegal aliens would continue to be raped, robbed, and targeted for crimes while they are attempting to cross through this area. Safety concerns would continue to deter the public from using this area as a recreation site. The public would not be able to safely fish or hunt in the project area due to fear of violence.

4.9 Fire Management

4.9.1 Alternative A

Implementation of this alternative would reduce the number and intensity of wildfires within the area due to the reduction of ground and ladder fuels. It will also increase fire fighter safety when suppressing wildfires in this area.

4.9.2 Alternative B (Modified Action)

Implementation of this alternative would reduce the number and intensity of wildfires within the three project areas. There would continue to be wildfires in the untreated areas resulting in loss of valuable cottonwood/willow habitat.

4.9.3 Alternative C (No Action)

Under this alternative the BLM would continue to have a large number of devastating wildfires each year. There would be a continued loss of vegetation resources including valuable cottonwood/willow habitat.

4.10 Floodplain

4.10.1 Alternative A

The proposed action would not impact the integrity of the lower Colorado River floodplain. Under Alternative A, the BLM would ensure that the action complies with the Executive Order 11988 on Floodplain Management, the Colorado River Floodway Protection Act of 1986, Public Law 99-450 and subsequent ordinances.

4.10.2 Alternative B (Modified Action)

Alternative B would not impact the integrity of the lower Colorado River floodplain. Under Alternative B, the BLM would ensure that the action complies with the EO 11988 on Floodplain Management, the Colorado River Floodway Protection Act of 1986, Public Law 99-450 and subsequent ordinances.

4.10.3 Alternative C (No Action)

The no-action alternative would not impact the integrity of the lower Colorado River floodplain.

4.11 Hazardous or Solid Waste

4.11.1 Alternative A

The potential of contamination from small quantities of hazardous materials and solid waste exists from the proposed action if approved. Mitigation actions found in the stipulations section are designed to limit the potential impact of hazardous materials or solid waste and would be implemented.

The proposed vegetation clearing activities would potentially have a positive effect with regard to hazardous and solid waste by limiting vegetative cover often used to hide illegal dumping activities. It would also lessen the impact on the land caused by the disposal of personal property (e.g. clothing and water jugs) by undocumented aliens entering the United States by decreasing the number of individuals using the area due to the improved ability of the Border Patrol to manage the international border in this area.

4.11.2 Alternative B (Modified Action)

The impacts from implementation of Alternative B would be less effective with regard to hazardous or solid waste than implementing Alternative A; since only a portion of the Limitrophe would undergo vegetative treatments, the most likely result would be that the existing illegal activities would shift to other areas where the dense vegetation remains including the potential for illegal dumping of both hazardous and solid waste.

4.11.3 Alternative C (No Action)

Impacts under this Alternative would be the continued use of the area for illegal border crossing by undocumented aliens and the associated disposal of personal property by those individuals. The lands would also continue to be more susceptible to illegal dumping of both hazardous and solid waste due to the cover provided by the current vegetation, the difficulties of managing the land due to safety issues related to illegal trafficking in undocumented aliens and drugs.

4.12 Noise

4.12.1 Alternative A

The operation of heavy equipment to implement the proposed project would cause several months of noise disturbance in the vicinity where work is occurring. This could affect neighboring landholders, the recreating public, law enforcement officials, and Mexican landholders. Periods of increased noise would also occur during mitigation revegetation and herbicide applications.

4.12.2 Alternative B (Modified Action)

The operation of heavy equipment to implement the proposed project would cause several months of noise disturbance in the vicinity where work is occurring. This could affect neighboring landholders, the recreating public, law enforcement officials, and Mexican landholders. Periods of increased noise would also occur during mitigation revegetation and herbicide applications.

4.12.3 Alternative C (No Action)

In the no-action alternative, current noise levels including noise from patrol cars and Border Patrol aircraft would continue at the present levels.

4.13 Recreation and Visitor Services

4.13.1 Alternative A

Implementation of Alternative A has the potential to improve border security and law enforcement capabilities within the Limitrophe. Drastic, long-term reductions of border crossings and illegal activities are the only way that the BLM would consider managing and planning for recreational opportunities within the Limitrophe. The removal of riparian vegetation would most likely reduce dove hunting and bird watching opportunities within the Limitrophe.

4.13.2 Alternative B (Modified Action)

Under Alternative B, less vegetative cover would be removed than Alternative A, which would likely reduce the overall effectiveness in improving law enforcement capabilities within the Limitrophe. Therefore, it would be less likely that the BLM would consider managing and planning for recreational opportunities within the Limitrophe. Compared to Alternative A, there would be fewer impacts to dove hunting and bird watching opportunities under Alternative B.

4.13.3 Alternative C (No Action)

Under Alternative C, no new actions would be taken to address public health and safety concerns within the Limitrophe. Hunters, fishermen and women, and bird watchers would continue to be unable to visit the Limitrophe due to the prevalent dangers, or would continue to risk their safety to participate in these activities.

4.14 Soil

4.14.1 Alternative A

Under this alternative, there would be some soil disturbance during mechanical treatment. However, following treatment, the surface would be protected by the mulched vegetation. This addition of organic matter would tend to improve soil stability and structure over time. During heavy winds and in the event of floods there would be a increased potential for erosion of surface soils and loss of soil resources.

4.14.2 Alternative B (Modified Action)

Under this alternative, impacts would be the same as for Alternative A

4.14.3 Alternative C (No Action)

Under this alternative, there would be no benefits from added organic material as in Alternative A and B. There would be no changes to soils. Disturbances would continue as they are currently.

4.15 Surface and Groundwater Quality

4.15.1 Alternative A

Under Alternative A, 561 acres of vegetation would be treated, of which approximately 422 acres would be cleared of vegetation. It is likely that heavy windstorms would continue to persist in the desert southwest and that soils within the project area may become air born and dropped into the adjacent lower Colorado River. Therefore under Alternative A, the turbidity and sedimentation of the surface water resources would increase. After heavy rains, sufficient vegetation to capture storm energy and preclude runoff may not be present throughout the project site. This would likely add to sedimentation. Treatment of large acreages of salt cedar may decrease the demand on local groundwater, making more groundwater available to the native plants within the project site.

4.15.2 Alternative B (Modified Action)

Under Alternative B, 495 acres of vegetation would be treated, of which approximately 354 would be cleared. It is likely that heavy windstorms would continue to persist in the desert southwest and that soils within the project area may become air born and dropped into the adjacent lower Colorado River. Therefore under Alternative B, the turbidity and sedimentation of the surface water resources would increase. After heavy rains, sufficient vegetation to capture storm energy and preclude runoff would not be present throughout the project site. This would likely add to sedimentation, but less than in Alternative A. Treatment of large acreages of salt cedar may increase the demand on local groundwater, making more groundwater available to the native plants within the project site

4.15.3 Alternative C (No Action)

Under this alternative there would be no impact to surface water resources. Groundwater resources would continue to be depleted by non-native invasive salt cedar.

4.16 Travel Management

4.16.1 Alternative A

The treatment of 561 acres of vegetation proposed under Alternative A would create additional motorized and non-motorized access (primarily by Border Patrol and law enforcement activities) to lands that are currently inaccessible due to the dense vegetation. Because motorized and non-motorized trails are not actively managed or planned for within the Limitrophe, there would be no impacts to the BLM's management of travel under Alternative A.

4.16.2 Alternative B (Modified Action)

Because portions of the 495 acres proposed for vegetative treatments under Alternative B have already been completed, implementation of this Alternative would create far less additional motorized and non-motorized access than Alternative A. Because motorized and non-motorized trails are not actively managed or planned for within the Limitrophe, there would be no impacts to the BLM's management of travel under Alternative B.

4.16.3 Alternative C (No Action)

Implementation of Alternative C would not create any additional motorized or non-motorized access within the Limitrophe. Because motorized and non-motorized trails are not actively managed or planned for within the Limitrophe, there would be no impacts to the BLM's management of travel under Alternative C.

4.17 Visual Resources

4.17.1 Alternative A

Implementation of Alternative A would cause a moderate level of change to the Limitrophe's characteristic landscape. The undulating line of the lower Colorado River would not change from implementing Alternative A. Because portions of the area have been previously treated, the re-treatment of the same areas would not cause high changes to the landscape. The selective thinning of vegetation proposed under Prescriptions B, C, and D would limit the changes to the area's color and texture by allowing high quality stands of native vegetation to remain. Changes to the landscape's color and texture would be most pronounced in areas that would be treated under Prescription A, where large portions of the existing vegetation would be removed

4.17.2 Alternative B (Modified Action)

Implementation of Alternative B would cause a low level of change to the Limitrophe's characteristic landscape. The undulating line of the lower Colorado River would not change from implementing Alternative B. Because portions of the 495 acres proposed for treatment under Alternative B have been previously treated, the re-treatment of the same areas would not cause many changes to the area's landscape.

4.17.3 Alternative C (No Action)

Implementation of Alternative C would cause no changes to the Limitrophe's characteristic landscape.

4.18 Public Health and Safety

4.18.1 Alternative A

Implementation of Alternative A would treat the most acreage of vegetation that is currently used for cover by undocumented aliens and criminals; and therefore, would have the highest potential to improve public health and safety within the Limitrophe. The vegetative treatments proposed under Alternative A would reduce the existing risks of ambushes and sniper attacks and improve law enforcement agents' visibility in the area, allowing them to more effectively identify and disrupt illegal activities. The safety of law enforcement officials, illegal immigrants, firefighters, and the recreating and general public could be improved from implementing Alternative A. On the other hand, Alternative A would require the increased presence of BLM workers and contractors in the Limitrophe, putting them more at risk during project implementation.

4.18.2 Alternative B

Implementation of Alternative B would be less effective in improving public health and safety than implementing Alternative A. Because only a portion of the Limitrophe would undergo vegetative treatments, the most likely result would be that the existing illegal activities would

shift to other areas where the dense vegetation remains. The safety of law enforcement officials, illegal immigrants, firefighters, and the recreating and general public would continue to be put at risk in these untreated areas. During project implementation and monitoring the lives and safety of BLM and contractors may be at risk due to the requirement of increased field presence in the Limitrophe.

4.18.3 Alternative C

Implementing Alternative C would not attempt to rectify any of the existing public health and safety concerns in the Limitrophe.

4.19 Cumulative Impacts

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7) Several projects involving border protection infrastructure, water diversion, vegetation treatment, fire protection and riparian restoration are currently occurring or are planned for the lower Colorado River. The cumulative impacts of these current or planned projects will be addressed in this section.

Draft Supplemental EA for the Installation of Permanent Security Lighting and a Border Infrastructure System

The Border Patrol assessed the installation of pre-manufactured bridges, trimming, and maintenance of trees for 3 camera lanes, placement of security lighting along the Salinity Canal extending 1.5 miles from the international border northward, 1.5 miles of pedestrian (20 ft.) fence to parallel the lights and to re-clear 199 acres of vegetation to create an enforcement zone between the San Luis Port-of -Entry and the Colorado River.

This project in conjunction with the Proposed Action has the potential to affect large quantities of wildlife and migratory birds which use the Limitrophe. Use of high-power lighting may confuse birds during migration and alter their course. Portions of the riparian corridor are being avoided, leaving connectivity throughout the project area. This avoidance along with the required mitigation (preferably within the Limitrophe) would minimize many of the cumulative impacts of these projects.

Border Patrol Pedestrian Fence Project

Currently Border Patrol is proposing an additional 3.7 miles of pedestrian fence extending from 1.5 miles north of the SIB to County Road 18 (near Gadsden Bend). The Draft Environmental Assessment for this project was released in January 2008. The fence is expected to be completed by the end of December 2008.

Vegetation Treatment on Non-BLM Lands within the Limitrophe

The Border Patrol and ACOE are proposing to perform the same types of vegetation treatments described in this EA on lands not managed by the BLM. The areas include lands within the Cocopah and Quechan reservations and other private lands. The area under consideration would

be approximately 600 acres. Habitat replacement and mitigation would mimic the measures implemented described in this EA. At this time BLM has received preliminary maps showing proposed treatment areas.

Border Patrol Proposed Vehicle Fence

The Border Patrol is planning to construct approximately 13.5 miles of vehicle fence parallel to the Colorado River between Morelos Diversion Dam and Gadsden in conjunction with the vegetation treatments proposed on non-BLM lands. This fence is proposed to be placed adjacent to proposed vegetation treatment areas. The vehicle fence is typically constructed of 4-6 foot high posts placed 4 feet apart with a cable, rail or some other type of cross member. It is anticipated that construction would begin sometime in 2008.

Hunters Hole Restoration

Reclamation, AGFD and BLM are currently working with the Yuma Heritage Area to develop a restoration project at Hunters Hole. A concept plan has been developed which would accommodate habitat restoration and border security. Project components include the installation of a high-volume pump which would deliver groundwater into a pilot channel. The pilot channel would be excavated for about 2 miles including the existing Hunters Hole riparian area. Typical project components would be the excavation of channel, the creation of marsh and backwaters, the planting of cottonwood, willow, and mesquite and potentially some day use recreational improvements.

San Luis Fire (Hunters Hole) Rehabilitation Project

On October 26, 2007 a 68-acre fire, of which 58-acres were on BLM lands, burned in the area called Hunters Hole. The BLM is currently preparing a Categorical Exclusion to rehabilitate the BLM portion of area through mechanically treating invasive plant species to reduce their re-establishment and the planting of native vegetation.

Bureau of Reclamation, Drop 2 Reservoir

The Reclamation Drop 2 project would consist of various actions and facilities needed to store presently non-storable flows in the lower Colorado River system and to enhance beneficial use of Colorado River water within the United States. Capture of water at the proposed reservoir would ultimately reduce releases from Hoover Dam and save on average 72,000 acre-feet per year of Colorado River water. Operation of the Drop 2 Storage Reservoir would result in previously non-storable flows being captured rather than flowing from Imperial Dam to Morelos Dam. Based on Reclamations analysis, a worst case scenario would be that during non-flood flow periods the Drop 2 Reservoir could decrease mean daily flows passing Morelos Diversion Dam by as much as 1,800 cfs. A reduction in flow of this maximum size would be expected to occur only rarely. Results from model simulations indicate that various reaches in the Limitrophe could experience maximum declines in groundwater elevations ranging from 0.2 to 0.6 feet due to predicted reductions in flow passing Morelos Diversion Dam as a result of Drop 2 Reservoir operations. These changes in groundwater could affect the riparian communities and the associated wildlife that are dependent on lower Colorado River flows and groundwater.

There could be several negative effects to vegetation and wildlife as a result of the cumulative impacts of the Drop 2 Reservoir and the Proposed Action. The Proposed Action is largely

mitigated through avoidance of wetland habitat and minimization of treatment within the linear riparian strips adjacent to the river. The BLM would also require the proponent to implement mitigation, focused to the extent practicable, within the Limitrophe. These mitigation efforts could be hampered by changes in groundwater and surface flows would degrade wetland habitat and stifle any mitigation revegetation. These effects would have negative consequences for wildlife including threatened and endangered species and migratory birds within the Limitrophe.

Gila River Restoration Project

Reclamation is proposing a project to provide flood protection to Federal project features and adjacent lands along a 9-mile reach of the Gila River just upstream from the Colorado River confluence. The need for the project is to provide sufficient channel capacity to carry the upstream flow while conserving and enhancing native habitat. This project is still in the early planning phases with implementation scheduled to begin in 2010.

BLM Hazardous Fuels Program

The BLM currently manages fire and hazardous fuels within the Limitrophe. These projects help to reduce the likelihood of catastrophic fires and secure the facilities and property within this reach. A number of projects including fire breaks, herbicide upkeep and fuels reduction areas have been implemented within the Limitrophe. These projects total 20 acres collectively and have been implemented over the last 5 years.

The cumulative impacts of the Proposed Action coupled with the BLM hazardous fuels program include reduced fire risk throughout the Limitrophe, improved visibility and fire fighting capability throughout the zone and large portions of BLM lands in the Limitrophe cleared of vegetation.

Multi-Species Conservation Program

LCR MSCP is an effort to improve the habitat conditions for a number of listed and special status species throughout the lower Colorado River. Reclamation along with water and energy authorities have been given the requirement of creating approximately 8,132 acres of various types of habitat over the next 48 years. This includes an array of habitats from Yuma to Davis dam. The Limitrophe is not currently the focus for any of these treatments due to safety concerns. The LCR MSCP will therefore seek to improve habitat conditions regionally, but not contribute to improvement of conditions in the Limitrophe.

Yuma East Wetlands Restoration

The City of Yuma and the Yuma Heritage Area have a large riparian restoration and recreation project along the Yuma Waterfront called the Yuma East and Yuma West Wetlands. These projects have transformed former salt cedar thickets and degraded backwaters into a series of parks, public access points and trails, themed gardens, native tree forests and functioning wetlands. This project is several miles upstream of the Limitrophe. Although this project is still under construction, initial findings suggest that the water diversions, vegetation treatments and invasive plant control have benefited many species of native wildlife. The Yuma East Wetlands provides regional benefits, providing alternative stop over habitat for migratory birds, but no benefit within the Limitrophe.

Lower Colorado River Boundary and Capacity Preservation Project

The International Boundary and Water Commission is developing a binational plan to preserve the boundary, channel and carrying capacity of the Lower Colorado River between the Northerly International Boundary and Southerly International Boundary. An Environmental Impact Statement is presently underway which would identify various alternatives and their related impacts for this project. The original design would accomplish the carrying capacity of 140,000 cubic feet per second in the floodway bound by levees in the United States and Mexico. Channel excavation and brush clearing as well as other activities are being evaluated.

The cumulative impacts of the Boundary and Capacity Preservation Project in conjunction with the Proposed Action are considerable. Most of the work proposed by the International Boundary and Water Commission would be within the main river corridor. This corridor consists of the avoidance habitat which is not being considered for treatment under the Proposed Action. If both the Proposed Action and the Boundary and Capacity Preservation Project are implemented, the Limitrophe would contain only sparse vegetation communities. Patches of vegetation would remain in the uplands as a result of the Proposed Action and disturbed vegetation communities would comprise the wetland/riparian corridor.

5.0 LIST OF AGENCIES AND PERSONS CONSULTED

5.1 List of Preparers

Name	Agency/Title	Project Responsibility
Aaron Curtis	BLM, Outdoor Recreation Planner	Recreation, Travel Management, Visual Resources, and Public Health & Safety
Francisca Mueller	BLM, Realty Specialist	Land Use, and Socio-Economic Conditions
Sandra Arnold	BLM, Archeologist	Cultural Resources and Native American Religious Concerns
Jeffrey Young	BLM, Wildlife Biologist	Biological Resources, Fish and Wildlife, Special Status Species, and Threatened and Endangered Species
Karen Reichhardt	BLM, Team Lead for Resources	Botanical, Energy Policy, and Environmental Justice,
Roger Oyler	BLM, Rangeland Management Specialist	Air Quality, Soils, and Wild and Free Roaming Burros
Jennifer Green	BLM, Natural Resource Specialist	Non-native Invasive Species, Surface and Groundwater Quality, Vegetation, and Wetlands/Riparian Zones
Stephen Fusilier	BLM, Team Lead Lands and Minerals	Hazardous or Solid Waste
Dave Daniels	BLM, YFO P&EC	Fire and Team Lead
Jack Johnson	BLM, GIS Specialist	Geographic Information Systems

EXTERNAL BLM REVIEWERS		
Name	Agency/Title	Project Responsibility
Ted Cordery	BLM, Arizona State Office T&E Species Program Lead	Biological Resources, Fish and Wildlife, Special Status Species, and Threatened and Endangered Species
Bill Harris	BLM, Arizona State Office Hazardous Materials State Coordinator	Hazardous or Solid Waste

5.2 List of Agencies/Tribes/Persons Contacted

Lesley Fitzpatrick and Erin Fernandez, U. S. Fish and Wildlife Service, Arizona Ecological Services Field Office
 Russ Engle, Arizona Game and Fish Department
 Ak-Chin Indian Community
 Chemehuevi Indian Tribe
 Cocopah Tribe
 Colorado River Indian Tribes
 Fort Mojave Indian Tribe
 Fort Yuma Quechan Tribe
 Gila River Indian Community
 Hia-Ced O'odham
 Hopi Tribe
 Hualapai Tribe
 Pueblo of Zuni
 Salt River Pima-Maricopa Indian Community
 Tohono O'odham Nation
 Yavapai-Apache Nation
 Yavapai-Prescott Indian Tribe
 John Fountain, Tim York, United States Border Patrol, Yuma Sector
 Mark Doles, United States Army Corps of Engineers, Fort Worth Texas
 Ed Virden, Cindy Hoeft, United States Bureau of Reclamation, Yuma Area Office
 Ralph Ogden, Eben Bratcher, David McBride, Yuma County Sheriffs Office

5.3 References

Anderson, B.W., and R.D. Ohmart

- 1984 A vegetation management study for the enhancement of wildlife along the lower Colorado River. Final report. Boulder City, NV: Bureau of Reclamation, Lower Colorado Region.

Arizona Game and Fish Department

- 2006 Species available in the waters within Southwestern Arizona.
http://www.gf.state.az.us/h_f/where_fish_southwest.shtml. Accessed June 14, 2007.

BIO-WEST

- 2006 2004 Lower Colorado Region Vegetation Type Mapping, Backwaters Delineation, Orthophotography, and GIS Development. Prepared for U.S. Bureau of Reclamation, Boulder City, Nevada.

Bureau of Land Management

- 1987 *Yuma Resource Management Plan*. US Department of the Interior, Bureau of Land Management, Yuma Field Office.
- 2004 *Yuma/Lake Havasu Zone Fire Management Plan*. US Department of the Interior, Bureau of Land Management, Yuma and Lake Havasu Field Offices.
- 2004b *Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management* (September 2004). US Department of the Interior, Bureau of Land Management, Arizona State Office

Corman, T.E., and R.T. Magill

- 2000 *Western yellow-billed cuckoo in Arizona: 1998 and 1999 survey report*. Nongame and Endangered Wildlife Program Technical Report 150. Arizona Game and Fish Department, Phoenix, Arizona.

Gould, G.

- 2006 Personal communication to Karen Reichhardt about water occurrence in the Limitrophe Division. U.S. Bureau of Reclamation, Boulder City, Nevada.

Halterman, M.

- 2001 Population status of the yellow-billed cuckoo at the Bill Williams River NWR and Alamo dam, Arizona and southern Nevada: Summer 2000. Prepared for: Bureau of Reclamation, Lower Colorado Regional Office, Boulder City, NV.
- 2002 Surveys and life history studies of the yellow-billed cuckoo: summer 2001. Prepared for: Bureau of Reclamation, Lower Colorado Regional Office, Boulder City, NV.

Hamilton, W.J. III and M. E. Hamilton

- 1965 Breeding characteristics of the yellow-billed cuckoo in Arizona. Proceedings of the California Academy of Sciences, 4th Series, 32: 405-432.

- Hughes, J.M.
 1999 Yellow-billed cuckoo (*Coccyzus americanus*). In *The Birds of North America*, No. 418 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Jacobson, K.V., K.M. McCarty, and J.T. Driscoll
 2006 Arizona bald eagle management program 2006 summary report. Nongame and Endangered Wildlife Program Technical Report 239. Arizona Game and Fish Department, Phoenix, Arizona.
- Johnson, M. J., J. A. Holmes, R. Weber, and M. S. Dionne
 2006 *Yellow-billed cuckoo distribution, abundance and habitat use along the lower Colorado and Gila Rivers in La Paz and Yuma Counties, 2005*. Report submitted to Arizona Game and Fish Heritage Program, Bureau of Land Management, Bureau of Reclamation and Northern Arizona University. 112 pp.
- King, K. A., D. L. Baker, W. O. Kepner, and C. L. Martinez
 1993 Contaminants in sediment and fish from national wildlife refuges on the Colorado River, Arizona. U.S. Fish and Wildlife Service, Region 2, Contaminants Program. Unpublished report. 24 pp.
- Koronkiewicz, T.J., M.A. McLeod, B.T. Brown, and S.W. Carothers
 2004 *Southwestern Willow Flycatcher surveys, demography, and ecology along the lower Colorado River and tributaries, 2005*. Annual report submitted to U.S. Bureau of Reclamation, Boulder City, NV by SWCA Environmental Consultants, Flagstaff, AZ. 176 pp.
- Laymon, S.A. and M.D. Halterman
 1989 A proposed habitat management plan for Yellow-billed Cuckoos in California. USDA Forest Service Gen. Tech. Rep. PSW-110 p 272-277.
- Lower Colorado River Multi-Species Conservation Program (LCR MSCP)
 2004 Lower Colorado River Multi-Species Conservation Program, Volume I: Programmatic Environmental Impact Statement/Environmental Impact Report. December 17. Sacramento, CA.
- McCarthy T.D., C.E. Paradzick, J.W. Rourke, M.W. Sumner, and R.F. Davidson
 1998 *Arizona Partners in Flight, Southwestern Willow Flycatcher Survey: 1997 Survey and Nest Monitoring Report*. Arizona Game and Fish Department Technical Report. Nongame Branch, Phoenix.
- McLeod, M.A., T.J. Koronkiewicz, B.T. Brown, and S.W. Carothers
 2007 *Southwestern Willow Flycatcher surveys, demography, and ecology along the Lower Colorado River and tributaries, 2006*. Annual report submitted to U.S. Bureau of Reclamation, Boulder City, NV by SWCA Environmental Consultants, Flagstaff, AZ. 194 pp.

- Mutz, M.
2000 *Influences of Woody Debris on Flow Patterns and Channel Morphology in a Low Energy, Sand-Bed Stream Reach*. International Review of Hydrobiology. 85(1):107-121.
- Piest, L.
2006a Bald eagle sitings in Yuma Field Office. Arizona Game and Fish Department Region IV.

2006b Report of marsh bird surveys conducted by Arizona Game and Fish Department, Region 4, 2006. Arizona Game and Fish Department unpublished report. 12 pp.
- Pfaff, C., R. L. Queen, and D. Clark
1992 *The Historic Yuma Project*. Bureau of Reclamation, Denver, Colorado. Revised 1999.
- Rosenberg, K.V., R.D. Ohmart, W.C. Hunter, and B.W. Anderson
1991 *Birds of the Lower Colorado River valley*. University of Arizona Press, Tucson. 416 pp.
- Sogge, M.K., R. Marshall, S. Sferra, and T. Tibbitts
1997 *A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol*. National Park Service. Technical Report NPS/NAUCPRS/NRTR-97/12.
- U.S. Department of the Interior, Bureau of Reclamation, Lower Colorado River Region
2006 <http://www.usbr.gov/LC/lcrmscp/index.html>. Accessed September 2006.
- U.S. Department of the Interior, Bureau of Reclamation, Lower Colorado River Region, Boulder Canyon Operations Office
2001 River Mile Index for the Lower Colorado River
- U.S. Fish and Wildlife Service
1982 *Bald eagle recovery plan (southwestern population)*. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 65pp.
- US Census Bureau
2000 <http://censtats.census.gov/data/AZ/1600463470.pdf>. Accessed June 2007.
- Zeiner, D. C., W. F. Laudenslayer and K. E. Meyer
1990 California's Wildlife Volume II: Birds. State of California Department of Fish and Game.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Yuma Field Office
2555 East Gila Ridge Road
Yuma, AZ 85365
www.az.blm.gov

**Decision Record
for
EA-AZ-320-2007-022
Vegetation Treatments in Limitrophe for Safety and Law Enforcement**

Decision

It is my decision to authorize a right-of-way grant (AZA 34173) for vegetation treatments within the Limitrophe. The right-of-way will be approved under the authority of Title V of the Federal Land Policy and Management Act, as amended, for a 10-year period with the right to renew. The vegetation treatments will provide the U.S. Border Patrol-Yuma Sector (Border Patrol) a 600 foot wide safety zone for effective international border interdiction activities. The right-of-way will affect the following public lands:

Gila and Salt River Meridian, Yuma County, Arizona

T. 8 S., R. 24 W.,
sec. 28, lots 4, 13, 14, 15, 16, 17,
SW $\frac{1}{4}$ SE $\frac{1}{4}$;
sec. 32, lot 1;
sec. 33, lot 7.

T. 9 S., R. 24 W.,
sec. 5, lots 11, 12, 13, 14;
sec. 7, lot 6;
sec. 8, lots 3, 6, 9, 10;
sec. 18, lots 14, 15, 16, 17.

T. 10 S., R. 25 W.,
sec. 14, lots 7, 10, 11, 12;
sec. 23, lots 6, 7, 8, 9, 11, 12, E $\frac{1}{2}$ SW $\frac{1}{4}$,
W $\frac{1}{2}$ SE $\frac{1}{4}$;
sec. 26, lots 5, 6;
sec. 27, lots 2, SE $\frac{1}{4}$ SE $\frac{1}{4}$;
sec. 34, lots 6, 8, and 9;
sec. 35, lots 4, 5, and 6.

T. 11 S., R. 25 W.,
sec. 3, lots 3, 9, 10, 11, 12, 13, and 15, S $\frac{1}{2}$ SE $\frac{1}{4}$;
sec. 10, lot 3.

DISCLAIMER: The site right-of-way lies within portions of the lots and aliquot parts identified above.

Rationale for Decision

The rationale for my decision can be supported with the *Vegetation Treatments in Limitrophe for Safety and Law Enforcement Environmental Assessment* (EA-AZ-320-2007-022) and the Finding of No Significant Impact. This decision is in conformance with the Yuma District Resource Management Plan, as amended and its Record of Decision (BLM, May 1986 & February 1987).

The Environmental Assessment analyzes the proposed action along with a range of alternatives including no action and a modified action. It is my decision to select the proposed action as the preferred alternative because it accomplishes the purpose and need and addresses environmental effects that result from implementing the proposed action. The preferred alternative will allow Border Patrol to treat 70.4 acres of arrow weed, 68.2 acres of cottonwood/willow, 329.9 acres of saltcedar, 47.9 acres of mixed saltcedar/mesquite, and 44.4 acres of undetermined vegetation. Vegetation treatments will follow the prescriptions described in the proposed action for each vegetative type. Impacts that could occur as a result of the project were analyzed in the environmental assessment and mitigation is required in order to offset impacts to the affected environment. This decision record lists management and mitigation considerations that are required.

Stipulations

The following Terms and Conditions from the right-of-way grant shall be applied:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued pursuant to the authority of paragraph (1)(a) for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) A., B., and C. dated February 29, 2008, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall conduct all activities associated with the construction, operation and termination of the right-of-way within the authorized limits of the right-of-way.
- h. The holder shall contact the authorized officer at least 10 days prior to the anticipated start of construction and/or any surface disturbing activities. The authorized officer may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way, shall also attend this conference to review the stipulations of the grant including the plan(s) of development.
- i. Ninety (90) days prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.
- j. No signs or advertising devices shall be placed on the premises or on adjacent public lands, except those posted by or at the direction of the authorized officer.
- k. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.
- l. If in connection with operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the holder shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the authorized officer. The holder shall continue to protect the immediate area of the discovery until notified by the authorized officer that operations may resume.
- m. In the event of an unanticipated discovery of cultural resources, all work will cease in the area of the discovery and the BLM Authorized Officer shall be

notified immediately. Procedures outlined in the implementing regulations for the National Historic Preservation Act of 1966, as amended (see 36 CFR 800.13, Post Review Discoveries), will be followed. Pursuant to these regulations, all tribes consulted for this project will be notified of an unanticipated discovery within 48 hours of the discovery. Work may not resume until written authorization to proceed is issued by the BLM.

n. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

o. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

p. The holder shall survey and clearly mark the centerline and/or exterior limits of the right-of-way, as determined by the authorized officer.

q. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

r. There is reserved to the United States, its successors and assigns, the prior right to use any of the land herein described to construct, reconstruct, operate, and maintain dams, dikes, levees, reservoirs, canals, wasteways, laterals, ditches, drainage works, flood channels, telephone and telegraph lines, fiber-optic cables, electric transmission lines, roadways, and appurtenant irrigation structures, without any payment made by the United States, or its successors and assigns, for such right, with the agreement on the part of the applicant that if the construction or reconstruction of any or all of such dams, dikes, levees, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, fiber-optic cables, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands should be made more expensive by reason of the existence of improvements or workings of the applicant thereon, such additional expense is to be estimated by the Secretary of the Interior,

whose estimate is to be final and binding upon the parties hereto, and that within thirty days after demand is made upon the applicant for payment of such sums, the applicant will make payment thereof to the United States, or its successors and assigns, constructing or reconstructing such dams, dikes, levees, reservoirs, canals, wasteways, laterals, ditches, telephone and telegraph lines, fiber-optic cables, electric transmission lines, roadways, or appurtenant irrigation structures across, over, or upon said lands. There is also reserved to the United States the right of its officers, agents, employees, licensees, and permittees, at all proper times and places freely to have ingress to, passage over, and egress from all of said lands for the purpose of exercising, enforcing, and protecting the rights reserved herein.

Applicant further agrees that the United States, its officers, agents, employees, and assigns, shall not be liable for any damage to the improvements or works of the applicant resulting from the construction, reconstruction, operation, or maintenance of any of the works hereinabove enumerated.

- s. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).
- t. The holder shall thoroughly power wash and remove all vegetative material and soil before transporting equipment to the construction site to help minimize the threat of spreading noxious and invasive weeds. This includes trucks, trailers, and all other machinery.

Management and Mitigation Considerations

Management and mitigation considerations are listed in the *Plan of Development and Mitigation for the Vegetation Treatments in Limitrophe for Safety and Law Enforcement* as an attachment to the *Right-of-Way Grant AZA 34173*.

Monitoring

Monitoring of the project will be performed by the BLM in accordance to the approved Environmental Assessment EA-AZ-320-2007-002 and the proponent's plan of development in the right of way grant. Monitoring will be accomplished by the Yuma Field Office Resources Lands and Minerals branch.

The Proposed Action will have no effect on the President's Energy Policy and a Statement of Adverse Energy Impact is not required.

4. 8. 07
Lr

James T. Shoaff
Field Manager
Yuma Field Office

3. March 2008
Date



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Yuma Field Office
2555 East Gila Ridge Road
Yuma, AZ 85365
www.az.blm.gov

FINDING OF NO SIGNIFICANT IMPACT

For

EA-AZ-320-2007-022

Vegetation Treatments in Limitrophe for Safety and Law Enforcement

The Bureau of Land Management (BLM), Yuma Field Office, has analyzed a proposal for a right-of-way (ROW) application from the U.S. Army Corps of Engineers (ACOE) acting on behalf of the U.S. Border Patrol-Yuma Sector (Border Patrol). This proposal (Alternative A), as well as Alternative B, and the No Action Alternative (Alternative C), are described in the attached Environmental Assessment (EA) No. EA-AZ-320-2007-022. The ROW responds to requests to address the immediate threat to border security along the southernmost reach of the lower Colorado River. The ROW will treat vegetation to increase visibility to aid Border Patrol and law enforcement agencies to protect public health and safety and mitigate the impacts. The ROW would allow the following activities: mechanical clearing, mulching, grubbing, planting/caging, pruning, seeding, irrigation, herbicide application and other mitigation measures. The EA addresses the impacts this ROW application will have on resources, including riparian habitats, cultural resources, and endangered species.

The EA is tiered to and in conformance with the *Yuma District Resource Management Plan*, as amended and its *Record of Decision* (BLM, May 1986 & February 1987) and the *Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States*. The *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* have been incorporated, as amended by the *Statewide Plan Amendment of Land Use Plans in Arizona (1997)*. Any of the above referenced documents may be reviewed at the Yuma Field Office during normal business hours.

The EA incorporates by reference the following: 1) Programmatic Riparian Herbicide Treatment Environmental Assessment (EA) (EA AZ-320-2005-0026); 2) Native Vegetation Planting in Riparian Zones (EA-AZ-050-2004-0035); 3) South Limitrophe Hazardous Fuels Reduction Project Categorical Exclusion (CX) (CX-AZ-320-2006-0036); 4) Hazardous Fuel Reduction and Emergency Safety Hazard Removal (CX-AZ-320-2005-0012); 5) Hazardous Fuel Reduction and Emergency Safety Hazard Removal – supplemental to CX AZ-320-2005-012 (CX-AZ-320-2005-0024); and 6) North Limitrophe Fuel Breaks (CX-AZ-320-2005-0042)

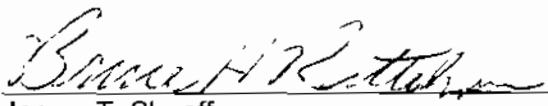
The proposed action has been designed to reduce adverse effects to the endangered Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and candidate yellow-billed cuckoo (*Coccyzus americanus*). The BLM has formally consulted with the U.S. Fish and Wildlife Service to ensure that the proposed action would not jeopardize the continued existence of the species listed under the Endangered

Species Act. A biological opinion dated February 29, 2008 (consultation number 22410-2008-F-0195) determined that this project is not likely to jeopardize the continued existence of the Yuma clapper rail or the southwestern willow flycatcher.

The design features identified for the proposed action would assure that no significant adverse impacts would occur to the human environment for the following critical elements: Air Quality, Areas of Critical Environmental Concern, Cultural Resources, Environmental Justice, Farm Lands (Prime or Unique), Floodplain, Hazardous or Solid Waste, Land Health Standards, Native American Religious Concerns, Migratory Birds, Non-Native Invasive Species, Threatened or Endangered Species, Water Quality (Surface or Ground), Wetlands/Riparian Zones, Wild and Scenic Rivers, Wilderness.

The proposed action does not significantly affect energy supply, distribution, and/or use and therefore a Statement of Adverse Energy Impact is not required.

On the basis of the information contained in the EA, and all other information available to me as is summarized above, it is my determination that the Proposed Action does not constitute a major Federal Action affecting the quality of the human environment. Therefore, an Environmental Impact Statement is unnecessary and will not be prepared.

*Acting
for*

James T. Shoaff
Field Manager
Yuma Field Office

3 MARCH 2008
Date