

Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Cibola National Wildlife Refuge Unit 1 LCR MSCP Conservation Area Specific Fire Management and Law Enforcement Strategy



January 2010

Lower Colorado River Multi-Species Conservation Program Steering Committee Members

Federal Participant Group

Bureau of Reclamation
U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

Arizona Participant Group

Arizona Department of Water Resources
Arizona Electric Power Cooperative, Inc.
Arizona Game and Fish Department
Arizona Power Authority
Central Arizona Water Conservation District
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City of Lake Havasu City
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City of Somerton
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Mohave Water Conservation District
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Town of Fredonia
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Unit "B" Irrigation and Drainage District
Wellton-Mohawk Irrigation and Drainage District
Yuma County Water Users' Association
Yuma Irrigation District
Yuma Mesa Irrigation and Drainage District

Other Interested Parties Participant Group

QuadState County Government Coalition
Desert Wildlife Unlimited

California Participant Group

California Department of Fish and Game
City of Needles
Coachella Valley Water District
Colorado River Board of California
Bard Water District
Imperial Irrigation District
Los Angeles Department of Water and Power
Palo Verde Irrigation District
San Diego County Water Authority
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Southern California Public Power Authority
The Metropolitan Water District of Southern California

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Colorado River Commission of Nevada
Nevada Department of Wildlife
Southern Nevada Water Authority
Colorado River Commission Power Users
Basic Water Company

Native American Participant Group

Hualapai Tribe
Colorado River Indian Tribes
The Cocopah Indian Tribe

Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.



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**Lower Colorado River
Multi-Species Conservation Program
Bureau of Reclamation
Lower Colorado Region
Boulder City, Nevada
<http://www.lcrmscp.gov>**

January 2010

EXECUTIVE SUMMARY

Fire Management and Law Enforcement Strategy Cibola NWR Unit 1

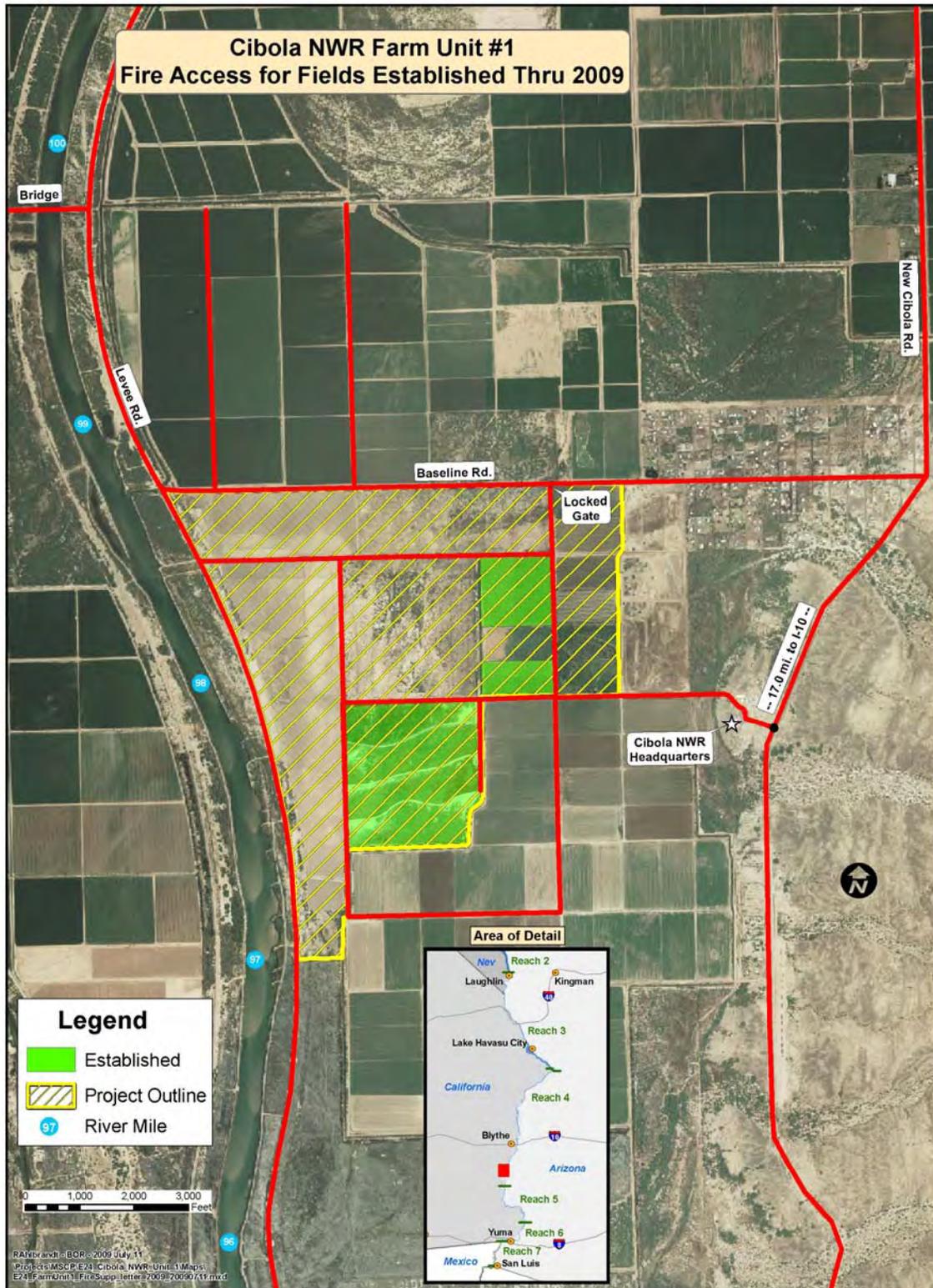
This document provides an overview of fire management and law enforcement strategies for the Cibola NWR Unit 1 Conservation Area on the Cibola National Wildlife Refuge. Law enforcement authorities and agreements are discussed, as are fuel conditions, recommended suppression responses, and safety considerations. For both law enforcement and wildland fire management, contact information for appropriate land managers and cooperators is provided. Short term and long term recommendations are provided for fire management operations.

Three critical points should be emphasized in the arena of fire management.

1. The greatest threat to the LCR MSCP habitat units at the Cibola National Wildlife Refuge is wildfire. Given the potential fuel conditions, extreme weather conditions (e.g. red flag days), and an ignition, wildfire could sweep through the habitat units before initial attack resources could even arrive at the Refuge. Several recommendations are made for fuels management which would reduce the potential for wildfire of this intensity.
2. With less severe burning conditions, initial attack resources may arrive in time to conduct suppression activities. The second greatest threat to the LCR MSCP habitat units is the damage which might be inflicted unintentionally by the activity of suppression resources. Several recommendations are made, some of which are common industry standards, to reduce the potential adverse impact of suppression operations.
3. Given the probable short duration of fires in the LCR MSCP conservation areas, the most effective means of ensuring consideration of stakeholder concerns and constraints in fire suppression operations is to convey those concerns and recommended constraints to the land managing agency, USFWS, and subsequently to fire management and law enforcement first responders.



VICINITY MAP—CIBOLA NWR UNIT 1 CONSERVATION AREA



CIBOLA NWR UNIT 1 CONSERVATION AREA – LCR MSCP HABITAT AREA

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1.0 INTRODUCTION

The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) is a multi-stakeholder, federal and non-federal partnership responding to the need to balance the use of Lower Colorado River (LCR) water resources and the conservation of native species and their habitats in compliance with the Endangered Species Act. The LCR MSCP is a long-term (50-year) plan to conserve at least 26 species along the LCR from Lake Mead to the southerly International Boundary with Mexico through the implementation of a Habitat Conservation Plan (HCP). Most covered species are State and/or federally-listed special status species. The Bureau of Reclamation (Reclamation) is the entity responsible for implementing the LCR MSCP over the 50-year term of the program.

According to the LCR MSCP Final Habitat Conservation Plan (HCP, December 2004), this document supports conservation measure CMM1: “Reduce risk of loss of created habitat to wild-fire”. The intent is for Conservation Areas to identify protection measures to supplement the fire management plan(s) and directive(s) of affected local, State, Tribal, and federal agencies. The Conservation Areas will also supplement existing management plans with information that supports the containment of wildfire and facilitates rapid response to suppress fires (ref: HCP, Section 5.6.3).

The purpose of the Conservation Area Specific Fire and Law Enforcement Strategy is to provide information that will contribute to protection of the functions and values of created covered species habitats over the term of the LCR MSCP. Further, the strategy identifies and describes local law and wildland fire contacts, roles and responsibilities, infrastructure, and techniques and measures for the specific area. The specific strategy will provide information regarding law enforcement jurisdictions, generally accepted fire management practices, and operational recommendations that would support the management efforts of the USFWS and associated jurisdictional authorities involved with the Cibola NWR Unit 1 Conservation Area.

1.1 Location, Reach, and Ownership

The Cibola NWR Unit 1 Conservation Area is located in Reach 4, 0.5 mile east of river mile 97, Arizona. The USFWS is the landowner.

1.2 Project Description, Purpose, and Status

In addition to existing restoration and research projects in Unit 1 by USFWS, Reclamation partnered with the land owner starting in 1999 to plant 34 acres, 18 acres, and four additional 20-acre plots along with two agricultural fields. LCR MSCP Work Task E24 incorporates these projects and additional land to comprise the single conservation area of approximately 900 acres.

The purpose of this project is habitat creation, primarily of cottonwood-willow cover type for the southwestern willow flycatcher, but also to create a mosaic of native habitats such as riparian, wetland, and marsh.

2.0 LAW ENFORCEMENT AUTHORITIES, STRATEGIES, AND CONTACT INFORMATION

2.1 Authorities

Reclamation Lands: Real property administered by the Secretary, acting through the Commissioner of Reclamation, including acquired and withdrawn land and water surface areas under the jurisdiction of the Bureau of Reclamation (16 USC 4601-32(1)).

Reclamation Projects: Any water supply or water delivery project constructed or administered by the Bureau of Reclamation under the Federal Reclamation laws, and Acts supplementary thereto and amendatory thereof (16 USC 4601 § 32(1)).

Law Enforcement Authority at Bureau of Reclamation of 2001: Public Law 107-69, 115 Stat. 593: P.L. 107-69 amended the Reclamation Recreation Management Act of 1992 in order to provide for the security of dams, facilities, and resources under the jurisdiction of Reclamation.

Activities Associated with Enforcing Federal Law: Enforcement of federal law on Reclamation lands and water bodies is governed by P.L. 107-69, Law Enforcement Authority at Bureau of Reclamation Facilities, and 43 CFR Part 422, Law Enforcement Authority at Bureau of Reclamation Projects. The Reclamation Law Enforcement Administrator and Regional Special Agent will be involved in determining when additional law enforcement resources are necessary to enforce federal laws on lands or water bodies under Reclamation jurisdiction. An interagency agreement between the Bureaus in the Department of the Interior provides for cross designation of Department law enforcement officers to provide law enforcement and investigative support in areas under their responsibility or control. Reclamation may enter into additional agreements to more fully detail the scope, objectives, and the range of responsibilities. Reclamation's Regional Special Agent and Regional Security Officer will be involved in planning and implementation of contracts, interagency agreements, and cooperative agreements for law enforcement services. The Law Enforcement Administrator is the Reclamation official authorized to enter into agreements that allow law enforcement personnel of any other federal agency with law enforcement authority (with the exception of the Department of Defense) or law enforcement personnel of any State or local government, including an Indian tribe, when deemed economical and in the public interest, through cooperative agreement or contract, to act as law enforcement officers to enforce federal laws and regulations within a Reclamation project or on Reclamation lands, with such enforcement powers as may be so assigned to them by the Secretary of the Interior. The length of term for these law enforcement agreements is limited to three (3) years. Generally, the closest available resource will be requested.

Activities Associated with Enforcing State and Local Law: In most instances, responsibilities for enforcing State and local laws are the responsibility of the recreation managing partner and are addressed in the long-term management agreement. However, if Reclamation and its managing partner determine that additional resources are necessary to enforce State and local laws on Reclamation lands or water bodies, Reclamation will request those services from State, county, or local law enforcement agencies. In both instances, Reclamation's Regional Special Agent will be involved in planning and implementation of any contracts or agreements. Any such contracts or

agreements shall also be coordinated with the Regional Security Officer to ensure efficiency and consistency with contracts and agreements that have been made with the same entity for security of Reclamation facilities. These types of law enforcement contracts and agreements will be limited to not more than five years and may require some type of financial commitment by Reclamation or its partner. If additional law enforcement resources are necessary, Reclamation may assist in providing funding. Procurement contracts are the only instruments that can transfer funds to a State, county, or local law enforcement agency.

2.2 Jurisdiction and Agreements in Effect

U.S. Fish and Wildlife Service Refuge System: Pursuant to the Department of the Interior (DOI) Interagency Agreement for the Cross Designation of DOI Law Enforcement Officers, dated July, 2007, and through other approved operating agreements between the USFWS and Reclamation, Reclamation law enforcement authority may specify USFWS-designated enforcement officers (Refuge Officers and Special Agents) to conduct routine law enforcement and to perform investigations and response as required and appropriate on Reclamation lands and projects. Additionally, USFWS special agents and refuge officers have existing authority to enforce federal and State regulations on refuge lands. Refuge officers have proprietary jurisdiction on refuges in Arizona. In addition, local law enforcement agreements are in place with BLM, NPS and Reclamation.

2.3 Local Law Enforcement Contact Information

Cibola National Wildlife Refuge Unit 1:

- Location: Cibola, Arizona (15 miles south of Blythe, California), LCR MSCP Reach 4
- Land Manager: Mike Oldham, Refuge Manager, 928-857-3253 x103, mike_oldham@fws.gov
- Land Owner: U.S. Fish and Wildlife Service
- Law Enforcement Contact: Dale Enlow, Lake Havasu, AZ, 928-680-0414
- 24-Hour Dispatch Operation: 1-800-637-9152. No Refuge Officer on site.

Additional Law Enforcement Assistance:

- Arizona Game and Fish Department, Courtney Fitzgerald, 928-814-9500
- La Paz County Sheriff's Office, 928-669-6141
- Bureau of Land Management (BLM), Rubin Conde, District Ranger, Yuma, Arizona, 928-317-3257
- Bureau of Reclamation, Tom Lobkowicz, Special Agent, 702-293-8052 (o), 702-249-0292 (c), tlobkowicz@usbr.gov
- U.S. Fish and Wildlife Service, Refuge System, Dale Enlow, Lake Havasu City, Arizona; 928-680-0414

(Pursuant to the Department of the Interior (DOI) Interagency Agreement for the Cross Designation of DOI Law Enforcement Officers, dated July, 2007, and through approved Operating Agreements, BOR law enforcement authority to specify BLM or NPS designated enforcement officers (Rangers and Special Agents) to conduct routine law enforcement and perform investigations and response as required and appropriate on Rec-

lamation lands and projects. DOI cross designation of law enforcement authority allows BLM and NPS law enforcement officers to enforce rules and regulations on other DOI managed lands.)

2.4 Applicable Legal Documents, Rules and Regulations:

- 16 USC 431-433
- 16 USC 470
- 16 USC 4601
- 43 USC 373b [P.L. 107-69]
- DM 413
- 50 CFR [USFWS]
- 43 CFR 422-423 [BOR]
- 43 CFR [BLM]
- AZ Revised Statutes Title 17 (Game & Fish)

3.0 EXISTING HABITAT AND WILDLAND FIRE RISK

3.1 Existing Habitat

The Cibola National Wildlife consists of nearly 17,000 acres; only about 950 acres are designated for the LCR MSCP conservation area. These 950 acres are divided into smaller parcels known as Area #1 (about 193 acres), Area #2 (Hippy Fire, 338 acres), Area #3 (Baseline 90, 107 acres), Area #4 (North 160, 158 acres), and Area #5 (Crane Roost, 154 acres). The intent of management on these areas is to not only provide suitable habitat for southwest willow flycatcher and other sensitive species, but to provide opportunities for research on various aspects of the habitats and their establishment.

In Area #1 FWS and Reclamation established 36 acres of cottonwood-willow and mesquite (Nature Trail) in 1999. An additional 19 acres of cottonwood-willow were planted in 2002. Six approximately 20-acre fields were set aside for research and development projects. These include a cottonwood genetics study (approximately 40 acres), a mass transplanting demonstration (20 acres), and a seed feasibility study (20 acres). The two remaining parcels are in agricultural production. The remaining land in Area #1 is inundated and identified as the loafing pond.

In sequence these areas are being cleared and leveled, then planted to a cover crop of grass for three years to condition the soil prior to planting trees. The function of this cover crop is to remove alkali to make the area more suitable for riparian trees.

3.2 Wildland Fire Hazard/Risk

The 13 Northern Forest Fire Laboratory (NFFL) Fuel Models (FM) were developed in the early 1980s to predict fire behavior during the peak of the fire season when wildfires pose greater control problems. The Standard (40) Fuel Models were developed in 2005 to improve the accuracy of fire behavior predictions outside of the severe period of the fire season, such as prescribed fire

and fire use applications. Both are stylized mathematical models which consider characteristics such as fuel load, bulk density, fuel particle size, heat content, and moisture of extinction. Both assume homogeneous fuel beds and, when combined with weather and topographic inputs, yield fire behavior predictions for surface fires.

Neither the 13 NFFL Fuel Models nor the Standard (40) Fire Behavior Fuel Models developed by the Rocky Mountain Research Station closely fit these artificial created habitats. However, the habitat units at Cibola NWR Unit 1 can be described as a mixture of NFFL Fuel Models 2 and 8. Fuel Model 2 is a tree overstory with herbaceous understory. NFFL Fuel Model 8 describes cottonwood stands consisting of larger trees where the herbaceous understory has been largely shaded out and replaced by leaf litter. Though the plantings have some appearances of shrub fuel models, they contain a substantial live fuel component; Fuel Model 6, a shrub model, may be the closest model. In the context of the Rocky Mountain models, GR2 (a grass model) or GS2 (grass-shrub model) would best fit those units with a robust grass/forb understory; TL6 (timber litter model) would seem to fit cottonwood-willow stands with understories consisting primarily of hardwood leaf litter.

Adjacent fuels which could constitute a hazard to the habitat areas are tamarisk stands. These are best described by shrub models NFFL FM6 or Standard FM SH5. Intense wildfire in these stands could result in fire spotting into the habitat areas.

Local firefighter experience may have identified other fire behavior models or appropriate modifications of standard models which better predict wildfire behavior in these riparian fuels. If so, it would be prudent to give preference to these local adaptations over stylized fuel models.

The cottonwood genetics plot would be considered a Fuel Model 2, though it has such relatively low tree density that the understory will probably not be shaded out in the short term (until trees mature). Cottonwoods in the Nature Trail area are dense enough that they have already shaded out most of the live herbaceous understories; leaf litter is the primary ground fuel. The 2002 cottonwood planting, though the trees are becoming larger, does not have sufficient stem density to shade out the entire live herbaceous understory. That understory appears to be comprised of both leaf litter and grass. In the mass transplanting and seed feasibility plots, cottonwood stem density is quite high. Portions of these plots may even be best described right now as brush models. Live herbaceous understory is mainly confined to the perimeter of these plot plantings.

Fire would spread readily through the plots with robust fine fuel understories such as the cottonwood genetics and the “existing cottonwoods” plots. Fire would likely exhibit low flame lengths and low rates of spread in cottonwood leaf litter.

Values at risk include the plantings and refuge facilities. Water is readily available. Several roads and fuel breaks separate the plots, though there are 20- to 40-acre plots with continuous fine fuels (cottonwood genetics and “existing cottonwoods”) which, if ignited, would likely consume the entire plot very rapidly, with substantial if not complete tree mortality. More than with any other LCR MSCP habitat areas, reduction of fine fuels would significantly reduce the probability and consequences of wildfire.

There is no fire history within the plantings. Most of the fires in the local area are human-caused. The potential for fire spread into the plantings from adjacent areas is very low due to the near absence of combustible fuels on immediately adjacent areas. Potential ignition sources include spotting from fires in tamarisk stands or point ignitions from lightning, fireworks, or discarded smoking materials.

4.0 FIRE MANAGEMENT

4.1 Fire management goals and objectives:

- Safeguard public and firefighter safety.
- Utilize a variety of fuels management strategies, including prescribed fire and non-fire treatments, to achieve management objectives.
- Avoid unacceptable effects of wildland fire and suppression.
- Work closely with surrounding fire agencies to implement the fire management strategy.

4.2 Suppression Response

The Fish and Wildlife Service (who is the cooperating land management agency) will provide an appropriate management response on all wildfires that occur within the Cibola NWR Unit 1. The full range of suppression strategies is available to managers provided that selected options do not compromise firefighter and public safety, cost-effectiveness, benefits, and values to be protected.

The suppression strategy on Cibola NWR Unit 1 would usually be to minimize fire size. That strategy may utilize a range of tactics including direct attack, parallel attack, and indirect attack with handcrews, engines, aircraft, and/or heavy equipment. Burning out fire lines, enhancing a defensible boundary, backfiring from strategic barriers, using existing natural barriers or constructed barriers, cold-trailing, flooding of fields, and other activities may accompany the more standard tactics. An initial action may be simply monitoring fire behavior while deciding which tactics would be most effective. All of these actions are employed with the intention of safely suppressing the wildfire with minimal overall costs and damage to resources.

4.3 Interagency Cooperation

Federal and State agencies in Arizona have entered into Wildland Fire Management Joint Powers Master Agreements whereby they agreed to work cooperatively to improve efficiency by facilitating the coordination and exchange of personnel, equipment, supplies, services, and funds among the agencies for management of wildland fires, presidential declared emergencies and disasters, or other emergencies under the Federal Emergency Management Agency's authority. The state of Arizona has agreements in place with the federal agencies. These agreements are located on the SWA Web site at:

http://gacc.nifc.gov/swcc/administrative/incident_business/incident_business.htm.

Chapter 40—Cooperation—of the Southwest Area Mobilization Guide can be found on the Internet at:

http://gacc.nifc.gov/swcc/dispatch_logistics/dispatch/mobguide_non_secure/pdf_files/2009/MOB%2009%20Chapter%2040.pdf.

4.4 Local Wildland Fire Resources

U.S. Fish and Wildlife Service

The USFWS has primary responsibility for all land management actions on the refuge, including wildland fire management. The Engine Module that is responsible for initial attack fire suppression operations on refuge lands is stationed in Yuma, Arizona, and consists of an engine foreman and three firefighters. Transfer of command from initial attack resources to the engine foreman, who is ICT3 qualified, would occur as soon as possible after ICT3 arrives on the scene.

The engine foreman is supervised by a Zone FMO for the USFWS stationed at Buenos Aires National Wildlife Refuge, Sasabe, Arizona (520-823-4292). Generally, the Zone FMO is dispatched to all fires occurring on the refuge that exceed the suppression capability of local forces to suppress.

The USFWS is developing a fire management plan for all the refuges located on the Lower Colorado River. The plan is expected to be released in 2009. The plan will contain more detailed information about all elements of wildland fire management within each refuge.

The USFWS fire suppression resources are linked to the 911 system. The non-emergency number for the USFWS in Yuma is 928-783-3371. Other contact information is as follows:

Land Manager: Mike Oldham, Refuge Manager, 928-857-3253 x103,
mike_oldham@fws.gov

Fire: Butch Wilson, USFWS FMO based at the Buenos Aires Refuge; Tucson, AZ; 520-823-4292 x101 (o), 520-349-1095 (c); butch_c_wilson@fws.gov

Russ Babiak (USFWS Prescribed Fire Specialist based at the Buenos Aires Refuge, Tucson, AZ; 520-823-4292x102, russ_babiak@fws.gov

Arizona Interagency Dispatch Center

The Arizona Interagency Dispatch Center (AIDC) is located in Phoenix, Arizona. As the name implies, AIDC is an interagency dispatch center managed by the Arizona State Forest Service. AIDC is the focal point for mobilizing firefighting resources among units within the dispatch area responsibility, coordinating incoming resources into the dispatch area, dispatching resources mobilized out of the dispatch area, and collecting and disseminating fire intelligence information within dispatch area and with the Southwest Coordination Center in Albuquerque, New Mexico.

An interagency agreement is in place that states that the closest available forces will be dispatched to a wildland fire. The AIDC processes all requests for air resources and other fire suppression forces, including Incident Management Teams, for the Lower Colorado River.

AIDC is linked to the 911 system. The non emergency number for AIDC is 800-309-7081.

Imperial County Fire Department

The Imperial County Fire Department provides fire and emergency medical services to the residents of Imperial County, California, and is the designated primary responder for wildland fires occurring in their response area. An agreement between CALFIRE and Ehrenberg Fire Department permits the Imperial County Fire Department to respond to fires occurring in Arizona. Generally, Imperial County Fire Department suppression resources, along with CALFIRE/Riverside County Fire Department, are the first responders and will remain on duty until relieved or released. The Imperial County Fire Department is linked to the 911 system. The non-emergency number for the Palo Verde, California, station is 760-854-3314.

CALFIRE/Riverside County Fire Department

The CALFIRE/Riverside County Fire Department provides fire and emergency medical services to the residents of Riverside County, California, and is the designated primary responder for wildland fires occurring in their response area. An agreement between CALFIRE and Ehrenberg Fire Department permits the Riverside County Fire Department to respond to fires occurring in Arizona. Generally, the CALFIRE/Riverside County Fire Department suppression resources are among the first responders and will remain on duty until relieved or released. CALFIRE/Riverside County Fire Department are linked to the 911 system. The non-emergency number for the Ripley, California, station is 760-921-7826. The non-emergency number for Blythe Station 43 is 760-921-7822.

Ehrenberg Fire Department

The Ehrenberg Fire Department provides fire and emergency medical services to the residents of Ehrenberg, Arizona, and portions of southern La Paz County, Arizona. Many of the firefighters within the department meet NWCG training and fitness standards and have been issued red cards. Although the department is considered to be a primary responder, their response time to the conservation area is at least 30 minutes. The Ehrenberg Fire Department is linked to the 911 system. The non-emergency number for the Ehrenberg station is 928-923-8033.

Department of the Interior Agencies

Firefighters assigned to the Bureau of Land Management's River Fire Zone located in Yuma, Arizona, are responsible for fire management activities on BLM-administered lands in Yuma County, Arizona, and portions of California. The River Fire Zone is linked to the 911 system. The non-emergency number for the BLM is 928-505-1200.

The Bureau of Indian Affairs maintains a fire suppression force at Fort Yuma, which is dispatched through AIDC. The Fire Duty Officer can be contacted at 928-782-1202.

The BIA Fort Yuma and Colorado River Agencies and the BLM Yuma District have a Memorandum of Understanding that establishes how they will cooperatively work within the zone.

USFWS firefighters assigned to Imperial National Wildlife Refuge headquarters located in Yuma, Arizona, are responsible for fire management activities on USFWS-administered lands along the Lower Colorado River in Arizona and California and Kofa National Wildlife Refuge in Arizona. The USFWS fire suppression resources are linked to the 911 system. The non-emergency number for the USFWS is 928-783-3371.

Generally, the BLM and BIA suppression forces are secondary responders.

4.5 Suppression Constraints Specific to Cibola NWR Unit 1 Conservation Area

Suppression constraints would include the following:

- Avoid using retardants within 300 feet of open water.
- Avoid using heavy equipment within the plantings (heavy equipment may do more damage than surface fires).
- Minimum impact suppression tactics (MIST) will apply, whereby the environmental impacts of emergency fire management methods will be no greater than necessary to meet fire management objectives.

5.0 FIREFIGHTER AND PUBLIC SAFETY

5.1 Safety Considerations

Climatic conditions, such as low humidity, high temperatures, and warm, dry winds can combine with heavy dry fuels to produce high intensity wildfires that spread rapidly and are difficult to suppress. Due care and caution must be exercised at all times when taking suppression action on a wildfire within or threatening the Cibola NWR Unit 1 Conservation Area.

Wildland firefighters emphasize the basic tenants of firefighter safety: the 10 Fire Orders, 18 Watch Out Situations, the Common Denominators of Fire Behavior on Tragedy Fires, and LCES (Lookouts, Communications, Escape routes, and Safety zones). The potential fire behavior conditions that exist on the Lower Colorado River, particularly the potential for high rates of spread and profuse spotting, make it imperative that firefighters fully understand and embrace all the elements of fireline safety. A complete summary of fire fighter safe practices is available in Chapter 5 of the Fireline Handbook (NWCG Handbook, PMS 410-1).

Firefighter and public safety is the first priority of the wildland fire management program. When evaluating an appropriate management response, the Incident Commander should consider risks to public and firefighter safety, recognizing that no natural or cultural resource, home, or item of property is worth a human life. Incident Commanders should develop and establish incident objectives, strategies, and operational tactics that ensure firefighter and public safety.

Site specific safety concerns for Cibola NWR Unit 1 include:

- The potential for extreme fire behavior with rapid rates of spread, which may be exacerbated by medium and long range spotting.
- Smoke management issues on or near the Colorado River and/or highways.
- Venomous snakes and insects may be present.
- Boggy ground can contribute to unsure footing.

5.2 Medical Facilities and Ambulance Services

The Palo Verde Hospital is located at 250 N First Street in Blythe, California. The intensive care facility, which is part of the hospital, has the ability to stabilize accident and burn victims not deemed to be in critical condition.

A Level II trauma and burn center is co-located with the Arrowhead Regional Medical Center, 400 N Pepper Avenue, Colton, California. The non-emergency number for the burn center is 909-580-1000.

The Arizona Burn Center and a Level I trauma center and emergency center are part of the Maricopa Medical Center, which cares for a wide range of critical injuries. This facility is the primary destination for critically injured persons from the Blythe area. The Arizona Burn Center is located at 2601 Roosevelt Street, Phoenix, AZ. The non-emergency number for the center is 602-344-5726.

Careflight, Native Air, and Mercy Air provide air medical transport, including helicopter transport, for critically ill and injured patients. Air medical transport can be requested through the CALFIRE/Imperial County Fire Department, CALFIRE /Riverside County Fire Department, or Ehrenberg Fire Department or through the 911 system.

6.0 FUELS MANAGEMENT

6.1 Non-Fire Fuels Management

Fuels management in this LCR MSCP project should consist primarily of reducing fine herbaceous fuels and maintaining fuel discontinuities (i.e. maintaining fuel breaks within and adjacent to the plantings). Please see recommendations below.

6.2 Prescribed Fire

With the interspersed cottonwood, willow, and mesquite in the current planting, prescribed burning would not appear to be a profitable tool in this LCR MSCP project area.

Recommendations should include maintaining cleared fuel breaks and using prescriptive grazing by sheep or mechanical reduction by mowing to reduce fine fuels. This area has the greatest fine fuel danger issue with Bermuda grass, alfalfa, and the invasive ivyleaf morning glory.

7.0 WILDLAND FIRE PREVENTION/OUTREACH

Because a majority of all fires that occur on the Colorado River are human caused, any fire management planning effort should emphasize fire prevention. Once fire causes are evaluated, it is possible to determine when, where, and how to implement effective fire prevention programs that fall within one of four broad categories. These categories are:

1. Education—aimed at changing people’s behavior by awareness and knowledge.
2. Engineering—reducing or eliminating fire risks and hazards.
3. Enforcement—gaining compliance with fire regulations and ordinances.
4. Administration—planning, budgeting, and training.

The interagency fire community and local fire and emergency management organizations have a good system for determining the level of fire danger and deciding when fire restrictions are necessary. Notices and posters are printed and distributed by all fire management agencies. The Arizona Interagency Fire Prevention and Information Group maintains the following wildfire prevention website available on the Internet at: <http://www.azfireinfo.az.gov/>.

The sources of ignition are often attributable to visitors recreating outside the habitat area. Traditional means to contact visitors may prove difficult because the many recreational users are focused on the Colorado River and may be entirely unaware of the habitat areas. In consideration of the demographics, the best locations to post fire danger warning signs and fire restriction notifications may in prominent locations where visitors might stop. This would include convenience stores, gas stations, marinas, launch ramps, boat repair shops, and other similar facilities at or near the river.

Attempts should be made to work with local and regional media to call attention to the wildfire threat facing resources along the LCR. The National Wildfire Coordination Group issued a Wildfire Prevention and Media Guide (PMS 458) that is available on the Internet at: <http://www.nwcg.gov/pms/docs/wpsandmedia.pdf> . This guide provides information and guidance to establish a media program. This tool would best be implemented using an interagency approach.

8.0 RECOMMENDATIONS

The following suggested tasks and actions are submitted by Wildland Fire Associates, and are not intended to change or re-direct existing management of the Cibola NWR Unit 1 Conservation Area.

8.1 Prevention

- Conduct prevention patrols during periods of very high fire danger or elevated human-caused risk (e.g. Fourth of July and fireworks).
- Issue press releases and distribute materials, where appropriate, informing the public about the benefits of prescribed fire as opposed to the adverse impacts of wildland fire.
- Participate in fire prevention and safety programs at public schools.
- Engage in outreach programs with adjacent landowners to explain the fire management program, to emphasize prevention of human-caused wildfires, and to identify actions that landowners can take to minimize the risk of wildfire on their property.
- Post appropriate signage during periods of high fire danger.
- Install and maintain a “Smokey Bear” type of wildland fire risk sign in a prominent location.

- Close or reduce visitor use in and near habitat areas when fire danger is extreme.
- Constrain certain types of visitor activities (e.g. campfires, fireworks, shooting) when fire danger is very high or extreme.
- Continue to work with the National Ad Council to air Public Service Announcements featuring Smokey Bear on local radio stations and implement a program that calls attention to the impacts of wildfires to resources along the LCR.

8.2 Preparedness (Presuppression)

Administrative:

- Develop a program designed to monitor live fuel moisture on a predetermined schedule and identify a representative fuel type. Live fuel moisture is an important component of modeling the fuel type in the habitat areas.
- Work with adjacent landowners to maintain boundaries that are free of flammable debris which, if ignited, could threaten the adjacent area; focus on bi-annual fuels reduction in irrigation ditches and drains.

Fuels Management:

- Maintain green or bare ground (fallow) strips where they currently exist along some habitat units. Consider establishing such strips near other habitat units.
- Reduce fine fuels along the perimeter of habitat areas, within habitat areas, and along roadways and irrigation systems. This will reduce the probability of fire entering a habitat unit and reduce fire behavior if a wildfire does establish within the unit.
- A common practice in fuels management is reduction of fine flashy fuels. Where appropriate and permitted, consider use of prescriptive grazing by domestic sheep or mechanical reduction by mowing in new LCR MSCP habitat units to reduce the fine fuels.
- Maintain dry fuel breaks within conservation area.
- Establish plans for immediate post-fire rehabilitation (e.g. rapid replanting) in cottonwood stands to reduce tamarisk invasion.

8.3 Suppression

Constraints:

- Avoid using retardants within 300 feet of open water.
- Avoid using heavy equipment within the Cibola NWR Unit 1 Conservation Area (heavy equipment may do more damage than surface fires).

Strategies and Tactics:

- Utilize roads and dry fuel breaks on the perimeter and interior of LCR MSCP conservation area to confine fire, as much as possible, to a single compartment or a few compartments of vegetation.
- Apply Minimum Impact Suppression Tactics (MIST), whereby the environmental impacts of emergency fire management methods will be no greater than necessary to meet fire management objectives.

- If fire is within a “compartment” (i.e. a small block separated from other blocks by roads or dry fuel breaks), consider burning out from the perimeter of that compartment to reduce the probability of fire crossing fuel breaks and moving into adjacent compartments. (Better to lose trees within the compartment than to risk losing trees in several compartments.)
- If fire is within a “compartment,” consider the possibility of immediately flooding that block and adjacent blocks to reduce or stop fire spread.
- In eastern hardwood forests where the primary surface fuel is leaf litter, leaf blowers are commonly used to clear leaf litter to mineral soil or to reduce surface fuels to make handline construction easier. LCR MSCP cottonwood-willow stands, when they mature, will have surface fuels similar to the eastern hardwood forests. Even now, some of the dense cottonwood stands have surface fuels comprised mainly of leaf litter. Rather than constructing traditional “mineral soil” handlines in the interior of these stands, consider use of leaf blowers to create bare ground “firelines” in older cottonwood stands. This technique would not be effective where rooted herbaceous vegetation exists.

8.4 Other:

- Provide fireline-qualified resource advisors (READs) and/or agency representatives that can provide to Incident Commanders timely information in support of habitat protection objectives during wildland fires.
- Investigate wildfires to determine cause.