# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Big Bend Conservation Area

## 2014 Annual Report

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

**July 2018**

**Work conducted under LCR MSCP Work Task E25**

# 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
Cibola Valley Irrigation and Drainage District
City of Bullhead City
City of Lake Havasu City
City of Mesa
City of Somerton
City of Yuma
Electrical District No. 3, Pinal County, Arizona
Golden Shores Water Conservation District
Mohave County Water Authority
Mohave Valley Irrigation and Drainage District
Mohave Water Conservation District
North Gila Valley Irrigation and Drainage District
Town of Fredonia
Town of Thatcher
Town of Wickenburg
Salt River Project Agricultural Improvement and Power District
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 Local Governments Authority
Desert Wildlife Unlimited

### California Participant Group

California Department of Fish and Wildlife
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
Southern California Edison Company
Southern California Public Power Authority
The Metropolitan Water District of Southern California

### Nevada Participant Group

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
Chemehuevi Indian Tribe

### Conservation Participant Group

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

# Lower Colorado River
# Multi-Species Conservation Program

## Big Bend Conservation Area

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**Multi-Species Conservation Program**
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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| BBCA | Big Bend Conservation Area |
| FY | fiscal year |
| LCR MSCP | Lower Colorado River Multi-Species Conservation Program |
| pH | the acidity or basicity (alkalinity) of an aqueous solution |
| PIT | passive integrated transponder |
| Reclamation | Bureau of Reclamation |
| SNWA | Southern Nevada Water Authority |

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## Tables



## Figures

# 1.0 INTRODUCTION

The purpose of this annual report is to summarize all activities that have occurred at the Big Bend Conservation Area (BBCA) from October 1, 2013, through September 30, 2014, which is Federal fiscal year (FY) 2014, and projected activities for FY15. Water usage is presented for the calendar year, January 1 through December 31, 2014, consistent with water accounting reporting.

## 1.1 Background

The Bureau of Reclamation (Reclamation), State of Nevada, and the Southern Nevada Water Authority (SNWA) worked in partnership since 2005 to secure the Boy Scout Camp property and protect the adjacent backwater for inclusion into the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The Boy Scout Camp property purchased by the SNWA (15 acres of upland honey mesquite [*Prosopis glandulosa*] habitat) and the adjacent 15 acres of backwater within Reach 3 owned by the State of Nevada are collectively known as the BBCA.

The LCR MSCP has a conservation measure requiring the creation of 85 acres of flannelmouth sucker (*Catostomus latipinnis*) habitat within Reach 3 (Davis Dam to Parker Dam). In addition, the program also requires the creation of 360 acres of backwater for both razorback suckers (*Xyrauchen texanus*) and bonytail (*Gila elegans*).

Flannelmouth suckers were reintroduced into the Colorado River below Davis Dam by the Arizona Game and Fish Department in 1976 by transfer of fish captured at the confluence of the Colorado and Paria Rivers at Lee's Ferry, Arizona. This stock has persisted for three decades and now represents the only known population of this native species in the Colorado River downstream from Grand Canyon.

# 2.0 CONSERVATION AREA SITE INFORMATION

## 2.1 Purpose

Backwater habitat maintained within the BBCA will be managed for flannelmouth suckers, razorback suckers, and bonytail. The adjacent marsh habitat will be maintained for western least bitterns *(Ixobrychus exilis hesperis*) and Yuma clapper rails (*Rallus longirostris yumanensis* [also known as Ridgway's rail = *R. obsoletus yumanensis*]). The upland honey mesquite habitat will be maintained to provide foraging habitat for additional LCR MSCP covered species and to provide a venue for low-impact recreation.

## 2.2 Location

The BBCA is located in Nevada in Reach 3, in Laughlin, Nevada. It is within the historic flood plain of the lower Colorado River at River Mile 266 (figure 1).

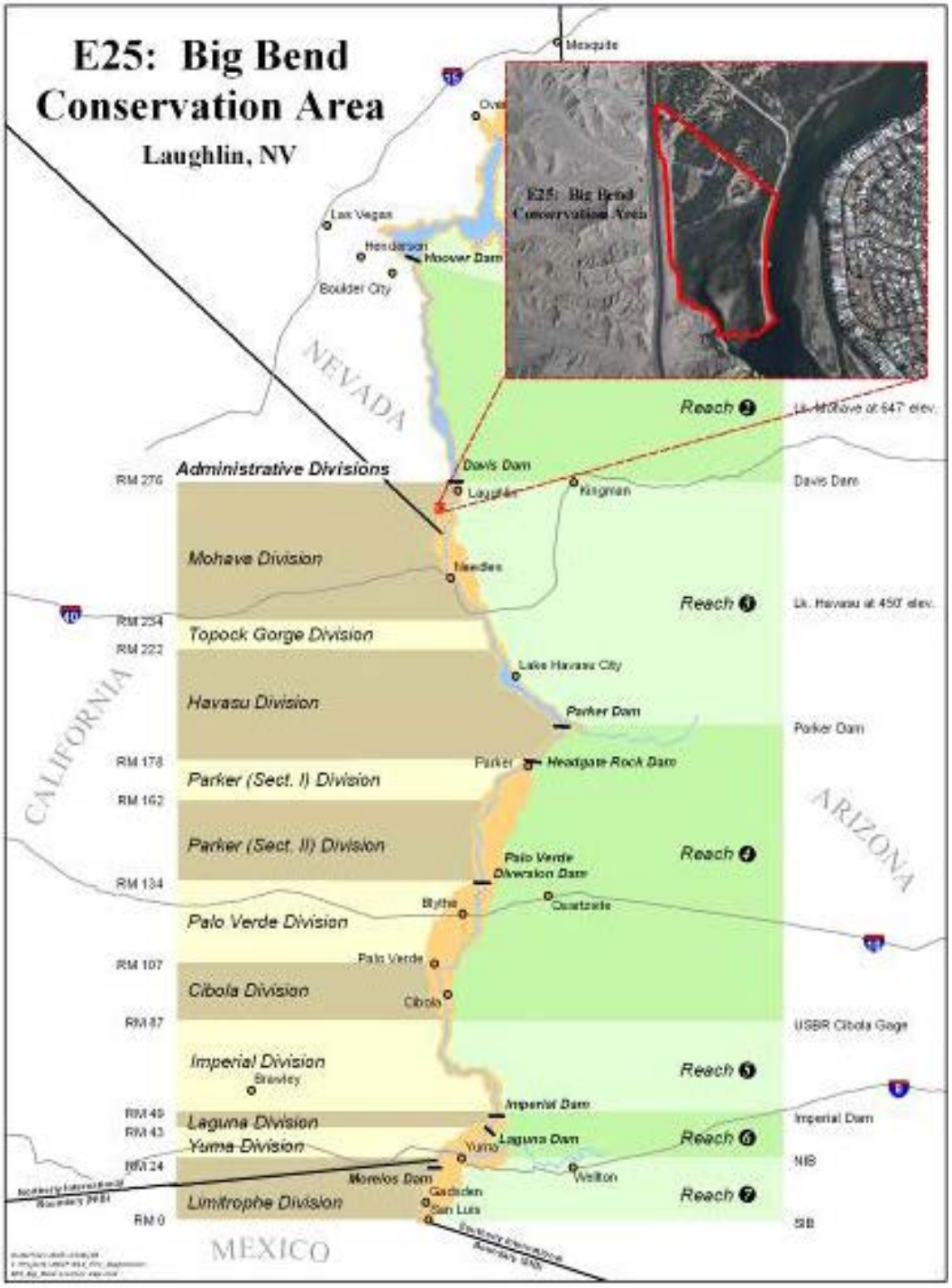


**Figure 1.—LCR MSCP planning area with the BBCA.**

## 2.3 Landownership

The 15 acres of backwater habitat is owned by the State of Nevada, and the 15 acres of upland honey mesquite is owned by the SNWA (figure 2).

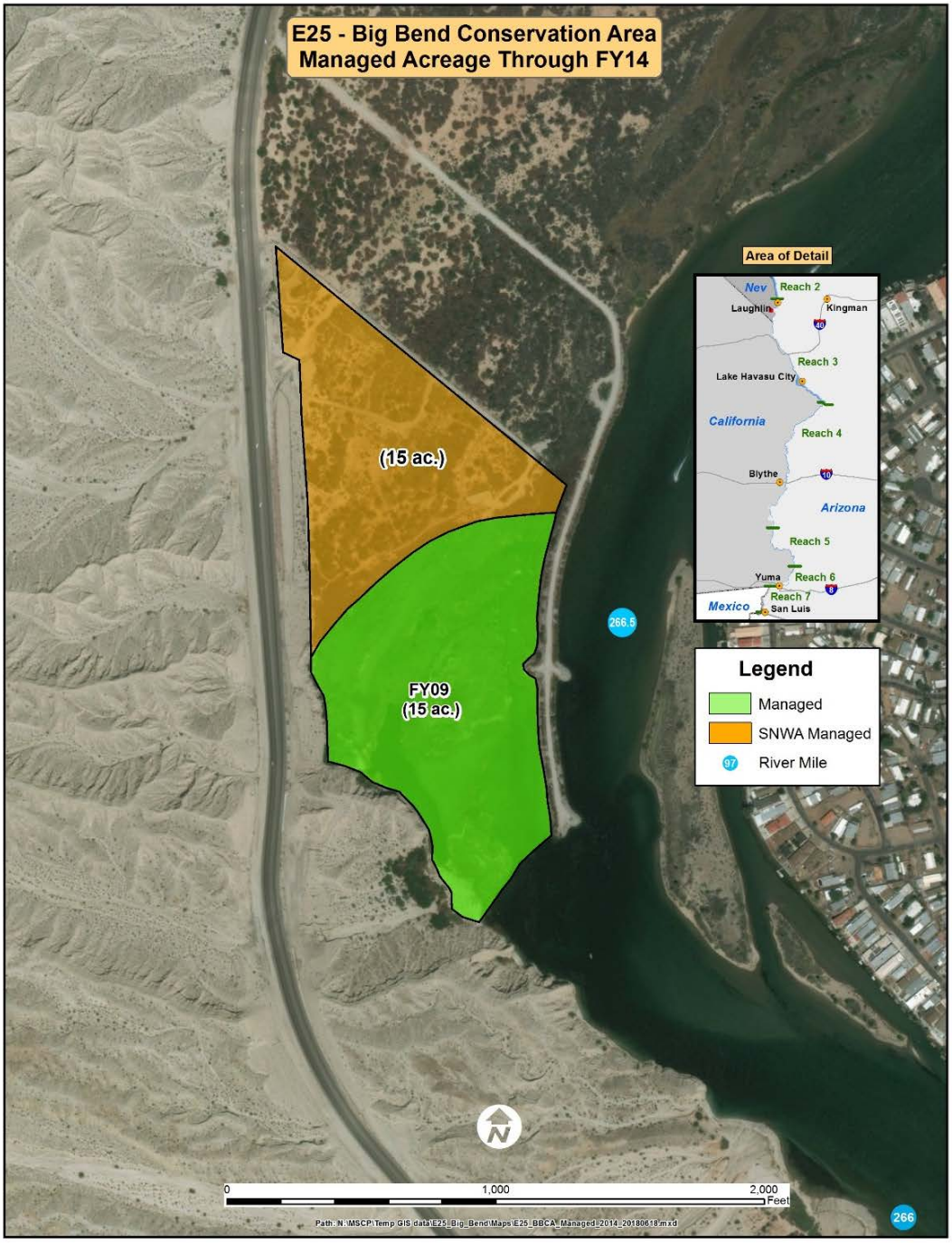


**Figure 2.—BBCA managed acreage through FY14.**

## 2.4 Water

The SNWA has an entitlement to Colorado River water for use on 15 acres of honey mesquite upland for up to 10 acre-feet per year. However, the site utilizes less than 2 acre-feet per year for irrigation of the restored mesquite planting. It is envisioned that after 4 years of consecutive irrigation, no water will be required due to the revegetation area utilizing groundwater.

## 2.5 Agreements

A Land Use Agreement was signed in 2008 by Reclamation, the SNWA, and the State of Nevada to secure land and water for the BBCA for the remainder of the 50-year LCR MSCP. The agreement outlines the rights and responsibilities of each partner in the project's development and maintenance.

## 2.6 Public Use

The upland area consists of a low-impact recreational hiking trail and a wildlife viewing area. Interpretive signage is located at the gravel parking lot for visitors. Although the LCR MSCP does not have substantial involvement in the interpretive area, cooperation is necessary to ensure all activities conducted in the upland area are consistent with the program's goals and objectives.

The backwater area has been designated a no-wake zone. Coordination between the Nevada Department of Wildlife and the Nevada Wildlife Commission resulted in the installation of two buoys at the entrance to the backwater to designate the wakeless area. Installation of the buoys occurred after the Wildlife Commission in FY10 approved the BBCA backwater as a no-wake zone (Colorado River Regulation 382, Legislative Council Bureau File No. R004-10). The buoys restrict access to the backwater to only wake-less speed in order to decrease disturbance to the wildlife.

## 2.7 Law Enforcement

The SNWA is responsible for law enforcement at the BBCA. A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy was finalized for the BBCA (LCR MSCP 2010). Reclamation continues to work with the SNWA and local officials to ensure law enforcement activities do not conflict with the LCR MSCP Habitat Conservation Plan.

## 2.8 Wildfire Management

A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy has been finalized for the BBCA (LCR MSCP 2010). The LCR MSCP will continue to work with local State and Federal fire agencies to reduce the risk of wildland fires and to maintain clear lines of communication among agencies.

# 3.0 HABITAT DEVELOPMENT AND MANAGEMENT

There were no new plantings at the conservation area during FY14. Youth conservation crews are contracted (typically once per year) to conduct trail and habitat maintenance activities. Invasive vegetation such as saltcedar (*Tamarix* spp.) and fountain grass (*Pennisetum setaceum*) are cut down and mulched onsite. The mulched material is spread on trails for dust and erosion control.

## 3.1 Irrigation

The upland honey mesquite habitat was removed from drip irrigation in 2014 due to the mesquite tree roots reaching groundwater. The mesquite upland area is now self-sustaining on groundwater alone. The backwater is self-irrigated using the daily rise and fall of the Colorado River's operation. The aboveground irrigation system provides water to other individual upland plants (not mesquite trees) through emitters and a series of connecting tubing. Salts and sediment typically clog the emitters, and they must be replaced. The connecting lines are also prone to rabbit damage and must be repaired.

## 3.2 Site Maintenance

Maintenance activities for the upland honey mesquite area consists of invasive vegetation removal, road repair, and irrigation system repair.

The BBCA upland section experienced flood damage in September 2014. The main wash leading into the site flooded and washed debris over Needles highway and into the site, damaging the fencing and filling the culverts with sediment. The State of Nevada Department of Transportation/Clark County cleared the highway of sediment and debris but left the culverts full of sediment. The Reclamation/ LCR MSCP conservation area Project Manager was contacted by the SNWA

regarding the damage and indicated that Clark County would be responsible for clearing the culverts, but the roads and fencing repair would be the responsibility of Reclamation/LCR MSCP and the SNWA in FY15.

# 4.0 MONITORING

## 4.1 Backwater Monitoring

Routine fisheries monitoring of the BBCA was conducted monthly from December through May. Monitoring included the use of trammel netting, remote passive integrated transponder (PIT) scanning, and larval light trapping in areas where adequate water levels permitted access and native fishes had previously been contacted. Water quality was also recorded during each monitoring trip and at least quarterly for the remainder of the year.

### 4.1.1 Native Fishes

In FY14, eight razorback suckers and one flannelmouth sucker were captured by trammel nets within the BBCA. The flannelmouth sucker was contacted in May and was identified as a juvenile fish that had been released as part of an ongoing sonic telemetry study. Observations indicated that this fish was present in the backwater for several weeks and was routinely found in the large bulrush (*Scirpus* spp.) stand toward the western shore of the backwater. All razorback sucker captures were repatriated fish that had been released in recent years.

Due to the continued success of remote PIT scanning throughout the system, remote PIT scanning was incorporated into the BBCA monitoring protocol in FY14. Scanners were set throughout the backwater during monthly surveys and scanned continuously until the end of each monitoring trip. Throughout the FY14 field season, all scanners combined scanned for 30,135 scanning minutes and contacted 14 unique razorback suckers.

Larval fish surveys were conducted from January to May to coincide with previously documented native fish larval emergence. During each month, surveys were conducted at six locations over a period of 2 nights. With the exception of February, native fish larvae were captured during each monthly survey. Similar to previous years, razorback sucker larvae were captured in January and March, and flannelmouth sucker larvae were captured in the April and May.

### 4.1.2 Water Quality

Water quality was recorded at a single location in the backwater during each of the fish monitoring trips, and additional water quality surveys were conducted throughout summer. Due to its hydrological connection to the river, this

backwater maintained excellent water quality throughout the year. Temperature, dissolved oxygen, pH, and conductivity remained within the known thresholds for native fishes throughout FY14.

### 4.1.3 Phytoplankton and Zooplankton

Phytoplankton and zooplankton monitoring was discontinued in 2014 due to the backwater's hydrological connection to the river.

## 4.2 Avian Monitoring

Avian monitoring in FY14 included surveys for marsh birds.

### 4.2.1 Marsh Bird Surveys

Presence surveys for California black rails (*Laterallus jamaicensis coturniculus*), western least bitterns (*Ixobrychus exilis hesperis*), Virginia rails (*Rallus limicola*), and Yuma clapper rails (*Rallus longirostris yumanensis* [also known as Yuma Ridgway's rail = *R. obsoletus yumanensis*]) were conducted in marsh habitat at the BBCA in three survey sessions during March and April. No LCR MSCP covered species were detected during any of the three survey sessions (March 27, April 3, and April 24) (Ronning and Kahl 2017).

## 4.3 Small Mammal Monitoring

Rodent monitoring was conducted at the BBCA in FY14.

### 4.3.1 Rodent Monitoring

Live trapping was conducted in the fall and spring of FY14 to determine the presence of Colorado River cotton rats (*Sigmodon arizonae plenus*) and desert pocket mice (*Chaetodipus penicillatus sobrinus*). In fall, 120 traps were set on transects at the BBCA each night for 2 nights. In spring, 80 traps were set on transects at the BBCA for 1 night. Three Colorado River cotton rats were captured in fall and one was captured in spring. Fifty-eight desert pocket mice were captured in fall and five were captured in spring; it is likely they were of the *sobrinus* subspecies based on range (Hill and Calvert 2016).

# 5.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). The BBCA was brought into the LCR MSCP to benefit flannel mouth suckers (FLSU1), razorback suckers (RASU2), and bonytail (BONY2), including other covered species.

In 2014, no additional acres of backwaters were creditable, as the conservation area is fully developed.

Table 1.—Species-specific habitat creation conservation measure creditable total acres for 2014

| Species-specific habitat creation conservation measure | FLSU1 | RASU2 | BONY2 |
|---|---|---|---|
| Creditable acres in 2014 | 0 | 0 | 0 |
| Total, including previous years | 15 | 15 | 15 |

# 6.0 ADAPTIVE MANAGEMENT

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (LCR MSCP 2007). The Adaptive Management Program's role is to ensure habitat creation sites are biologically effective and fulfill the conservation measures outlined in the Habitat Conservation Plan for 26 covered species and if they potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage habitat creation sites after initial implementation. Once monitoring data are collected over a few years, and then analyzed for the BBCA, recommendations may be made through the adaptive management process for site improvements in the future.

There are no adaptive management recommendations for the BBCA at this time.

# LITERATURE CITED

Lower Colorado River Multi-Species Conservation Program (LCR MSCP). 2007. Draft Final Science Strategy. Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

_____. 2010. Lower Colorado River Multi-Species Conservation Program Fire Management & Law Enforcement Strategy. Bureau of Reclamation, Boulder City, Nevada.

_____. 2011. Final Habitat Creation Conservation Measure Accomplishment Tracking Process. Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

Hill, J. and A. Calvert. 2016. Post-Development and System Monitoring of Rodent Populations: 2012–2014. Annual report prepared by the Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada.

Ronning, C.J. and J. Kahl. 2017. Marsh Bird Surveys at Conservation Areas, 2014–2016 Annual Report. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.