



# Lower Colorado River Multi-Species Conservation Program

---

*Balancing Resource Use and Conservation*

## Big Bend Conservation Area

### 2019 Annual Report



**October 2020**

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

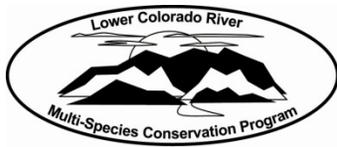
Colorado River Commission of Nevada  
Nevada Department of Wildlife  
Southern Nevada Water Authority  
Colorado River Commission Power Users  
Basic Water Company

### 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



— BUREAU OF —  
RECLAMATION

# **Lower Colorado River Multi-Species Conservation Program**

## **Big Bend Conservation Area 2019 Annual Report**

*Prepared by:*

Laken Anderson, Restoration Group

Beth Sabin, Wildlife Group

Trish Delrose, Fisheries Group

Becky Blasius, Adaptive Management Group

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

**October 2020**

Anderson, L, B. Sabin, T. Delrose, and B. Blasius. 2020. Big Bend Conservation Area, 2019 Annual Report. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada.

# 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

## **Symbols**

°C	degrees Celsius
μS/cm	microsiemens per centimeter
mg/L	milligrams per liter

# CONTENTS

	Page
1.0 Introduction.....	1
1.1 Background.....	1
2.0 Conservation Area Information .....	1
2.1 Purpose.....	1
2.2 Location .....	2
2.3 Landownership.....	3
2.4 Water.....	3
2.5 Agreements .....	3
2.6 Public Use.....	3
2.7 Law Enforcement.....	4
2.8 Wildfire Management .....	4
3.0 Habitat Development and Management.....	4
3.1 Planting .....	4
3.2 Irrigation .....	6
3.3 Site Management .....	6
4.0 Monitoring .....	6
4.1 Backwater Monitoring .....	6
4.1.1 Native Fishes.....	6
4.1.2 Water Quality.....	8
4.2 Avian Monitoring.....	10
4.3 Small Mammal Monitoring.....	10
4.4 MacNeill’s Sootywing Skipper Monitoring.....	10
5.0 Habitat Creation Conservation Measure Accomplishment.....	10
6.0 Adaptive Management Recommendations .....	11
Literature Cited.....	13

## Tables

Table	Page
1 Species-specific habitat creation conservation measure creditable total acres for 2019.....	11

## Figures

Figure	Page
1 LCR MSCP planning area with the BBCA (inset). .....	2
2 Managed acreage at the BBCA through FY19. ....	5
3 Proposed maintenance dredge acreage at the BBCA.....	7
4 FY19 water temperature at the BBCA.....	8
5 FY19 dissolved oxygen at the BBCA.....	9
6 FY19 specific conductivity at the BBCA. ....	9
7 FY19 pH at the BBCA.....	10

# 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, 2018, through September 30, 2019, which is Federal fiscal year (FY) 2019, and projected activities for FY20. Water usage is presented for the calendar year, January 1 through December 31, 2019, consistent with the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada (Bureau of Reclamation [Reclamation] 2020).

## 1.1 Background

Reclamation, the 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 the Grand Canyon.

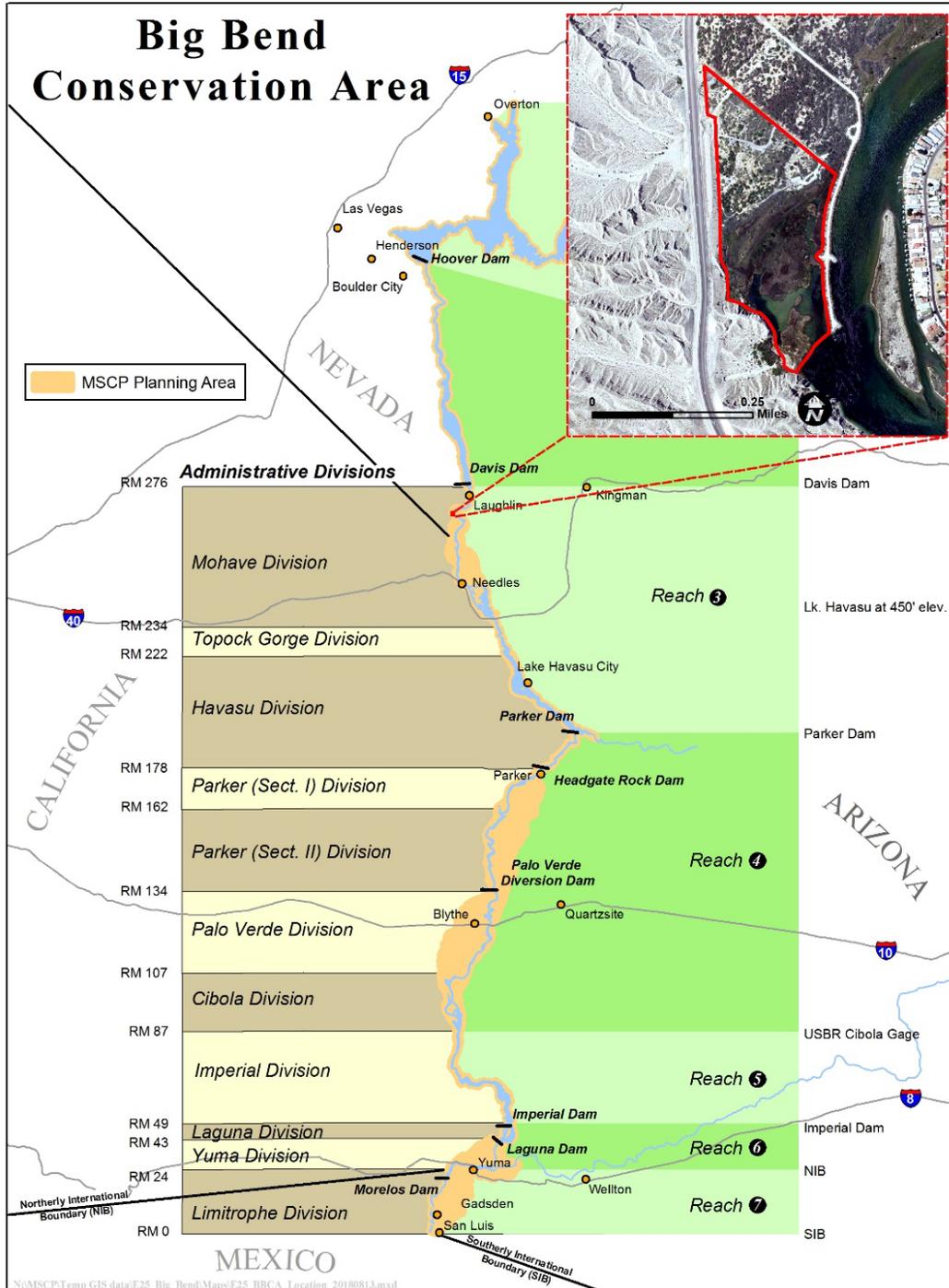
# 2.0 CONSERVATION AREA INFORMATION

## 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 Reach 3 in Laughlin, Nevada. It is within the historic floodplain of the lower Colorado River at River Mile 266 (figure 1).



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

## **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.

## **2.4 Water**

The SNWA has an entitlement to Colorado River water for use on 15 acres of upland honey mesquite for up to 10 acre-feet per year. However, the site no longer has the water entitlement because the restored honey mesquite plantings have been established and are 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 as 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 in 2010, after the Wildlife Commission 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 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**

The LCR MSCP is responsible for wildfire management at the BBCA. As guided by commitments in the LCR MSCP Habitat Conservation Plan, wildfire management practices on the conservation area will "...reduce the risk of loss of related habitat to wildfire by providing resources to suppress wildfires, e.g., contributing to and integrating with local, State, and Federal agency fire management plans, and implement land management and habitat creation measures to support the reestablishment of native vegetation that is lost to wildfire" (LCR MSCP 2010).

Federal, State, and local fire agencies, either by existing management agreements or mutual aid agreements, provide wildland fire suppression, incident dispatch, fire investigation, fuels reduction, and potential fire restrictions. The full range of suppression strategies are available to managers provided that selected options do not compromise firefighter or public safety, are cost effective, consider the benefits of suppression and the values to be protected, and are consistent with resource objectives.

## **3.0 HABITAT DEVELOPMENT AND MANAGEMENT**

Figure 2 shows the established land cover types that are being managed for LCR MSCP covered species.

### **3.1 Planting**

There were no new plantings at the BBCA during FY19. The backwater is maintained by the daily rise and fall of the Colorado River's operation.



Figure 2.—Managed acreage at the BBCA through FY19.

## **3.2 Irrigation**

No irrigation was conducted at the BBCA during FY19, as all the honey mesquite plantings have been established and utilize groundwater.

## **3.3 Site Management**

No maintenance activities for the upland honey mesquite area were conducted at the BBCA during FY19. Future maintenance activities may consist of invasive vegetation removal and road repair.

An annual backwater lidar survey was conducted to monitor sedimentation and water depths within the BBCA. These data are being collected to compare elevations for LCR MSCP management to determine future maintenance needs of the backwater.

Land discussions were facilitated for future maintenance dredging work with the purpose of identifying acreage for dredge material placement. Approximately 275,000 cubic yards of material is estimated to be moved to deepen the existing 15-acre backwater to varying target depths identified on figure 3. Dredging is anticipated to start in FY21.

# **4.0 MONITORING**

## **4.1 Backwater Monitoring**

Routine fisheries monitoring of the BBCA was conducted monthly throughout FY19. Multiple sampling methods and gear types were used to contact various life stages of native fish species. Active monitoring was conducted by manual larval sampling, and passive monitoring was completed using remote passive integrated transponder (PIT) scanning. Trammel netting was discontinued until the BBCA is dredged in FY21. Monitoring efforts targeted areas where native fishes had been previously contacted; however, sampling locations were occasionally shifted to areas where daily fluctuations in river stage permitted access. Water quality was also recorded during each active monitoring trip, and again during the summer months, to complete water quality sampling quarterly.

### **4.1.1 Native Fishes**

Fisheries monitoring activities were conducted monthly throughout the year. Netting activities that are usually completed in the winter and spring months were discontinued due to lack of available space. These netting activities will resume

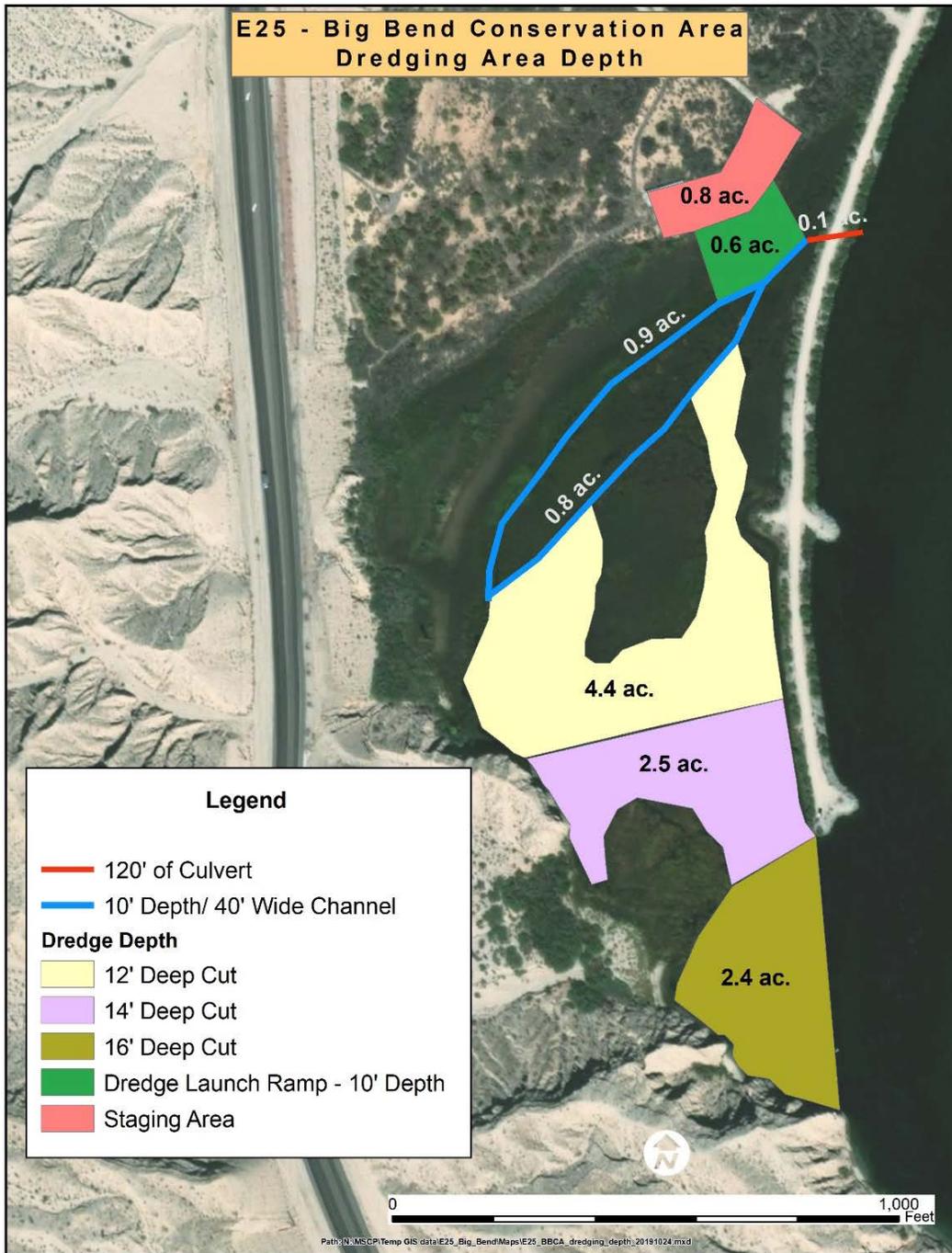


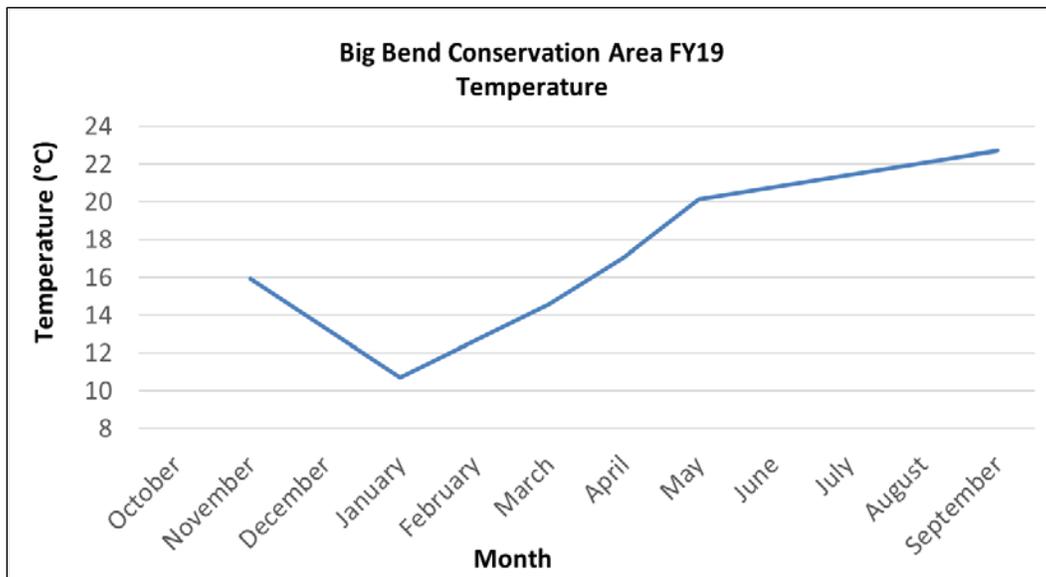
Figure 3.—Proposed maintenance dredge acreage at the BBCA.

**Big Bend Conservation Area  
2019 Annual Report**

once the BBCA is dredged. Remote PIT scanning was conducted continuously throughout the year. Routine monitoring using remote scanning resulted in contacting 63 razorback suckers and 1 bonytail. A majority of the contacted razorback suckers came from two stockings on April 5, 2018: one at the Big Bend State Park Boat Ramp and the other at Laughlin Lagoon. However, of the razorback suckers contacted, fish from stockings as far back as 2008 were recorded on the remote scanners. The bonytail that was contacted on the remote PIT scanner was from a May 30, 2017, stocking at Laughlin Lagoon. The number of stockings were reduced in FY19 due to Laughlin Lagoon being dredged during the winter and early spring months. Razorback sucker and flannelmouth sucker larvae were both present during the spring larval surveys. Larval capture rates were the same as FY17 and similar to previous years.

**4.1.2 Water Quality**

Water quality was recorded at a single location in the backwater during each active fish monitoring trip and again during the summer months. A multi-parameter probe was used to record water temperature in degrees Celsius (°C), dissolved oxygen in milligrams per liter (mg/L), specific conductivity in microsiemens per centimeter (µS/cm), and pH. Due to its hydrological connection to the river, this backwater maintained excellent water quality throughout the year. Water temperature, dissolved oxygen, specific conductivity, and pH all remained within the known thresholds for native fishes throughout FY19. Water quality data are presented on figures 4–7.



**Figure 4.—FY19 water temperature at the BBCA.**

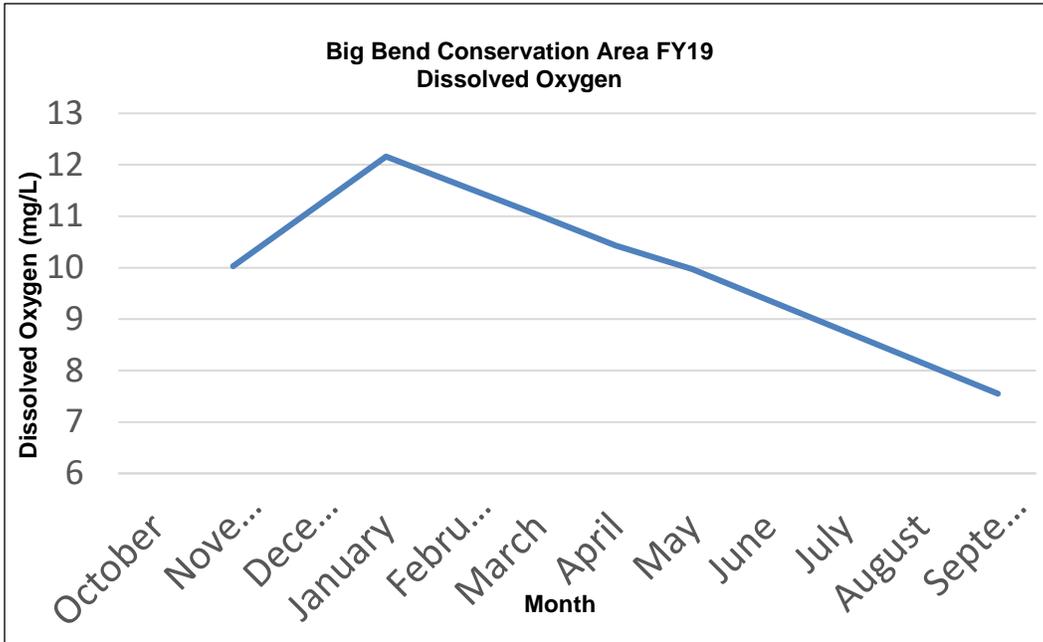


Figure 5.—FY19 dissolved oxygen at the BBCA.

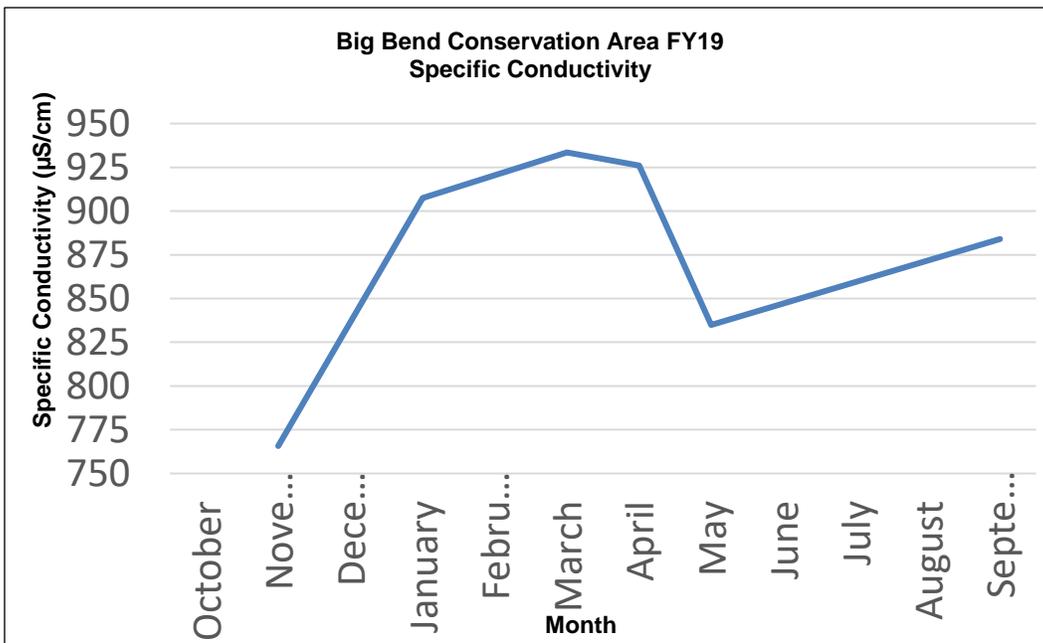
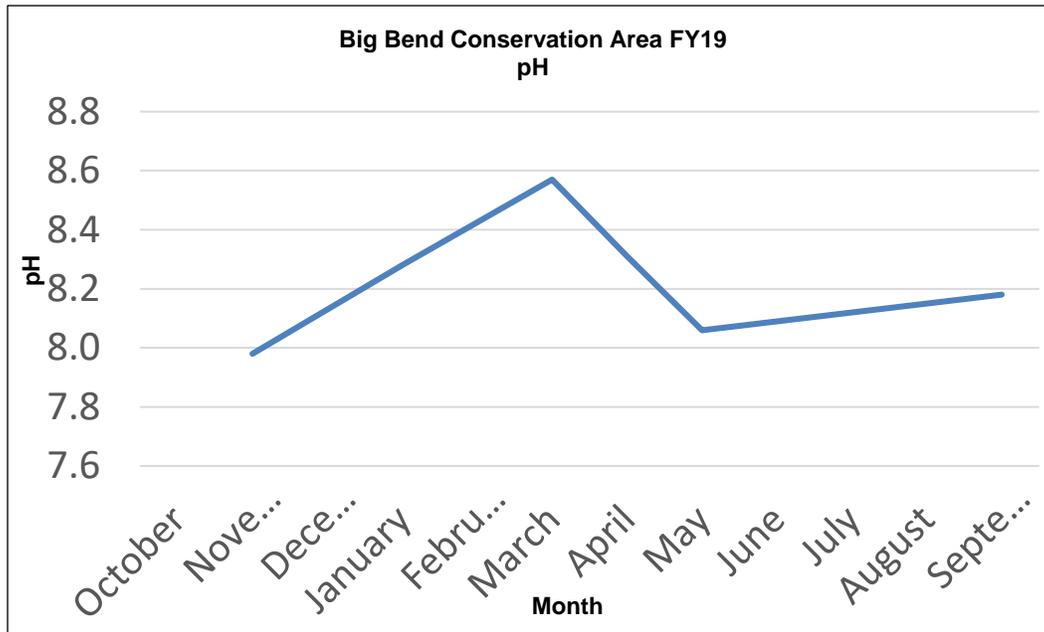


Figure 6.—FY19 specific conductivity at the BBCA.



**Figure 7.—FY19 pH at the BBCA.**

## **4.2 Avian Monitoring**

No monitoring occurred for avian species in FY19.

## **4.3 Small Mammal Monitoring**

No monitoring occurred for small mammal species in FY19.

## **4.4 MacNeill’s Sootywing Skipper Monitoring**

No monitoring occurred for the MacNeill’s Sootywing Skipper (*Pholisora graciela* = *Hesperopsis graciela* [ MacNeill]) in FY19.

# **5.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT**

Vegetation data were collected in FY19 using lidar. Lidar measures the vegetation structure throughout the canopy and provides the ability to

identify structural diversity and successional growth stages. Conservation area vegetation will be evaluated on a periodic basis using lidar to ensure the habitat is meeting species' requirements. A procedure to analyze and provide vegetation structure metrics will be developed, and results will be presented in future reports.

Preliminary analyses suggest that airborne lidar may not provide the necessary detail for evaluating marsh habitat. Alternative techniques will be explored.

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). All areas within the BBCA were designed to benefit covered species at the landscape level. The BBCA was brought into the LCR MSCP to benefit flannelmouth suckers (FLSU1), razorback suckers (RASU2), and bonytail (BONY2) (table 1), including other covered species.

Table 1.—Species-specific habitat creation conservation measure creditable total acres for 2019

<b>Species-specific habitat creation conservation measure</b>	<b>FLSU1</b>	<b>RASU2</b>	<b>BONY2</b>
Creditable acres in 2019	0	0	0
<b>Total, including previous years</b>	<b>15</b>	<b>15</b>	<b>15</b>

## **6.0 ADAPTIVE MANAGEMENT RECOMMENDATIONS**

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 27<sup>1</sup> covered species and to determine if they potentially benefit 5 evaluation species. Post-development monitoring and species research

---

<sup>1</sup> The northern Mexican gartersnake (*Thamnophis eques megalops*) was added as a covered species by an amendment to the Program Documents on March 5, 2018.

**Big Bend Conservation Area  
2019 Annual Report**

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**

Bureau of Reclamation. 2020. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2019. Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

LCR MSCP (see Lower Colorado River Multi-Species Conservation Program).

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

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

\_\_\_\_\_. 2011. Final Habitat Creation Conservation Measure Accomplishment Tracking Process. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada. October 26.