



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Laguna Division Conservation Area

2017 Annual Report



March 2021

Work conducted under LCR MSCP Work Task E27

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

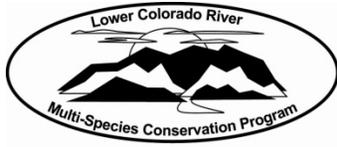
Colorado River Commission of Nevada
Nevada Department of Wildlife
Southern Nevada Water Authority
Colorado River Commission Power Users
Basic Water Company

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

Laguna Division Conservation Area 2017 Annual Report

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

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ACRONYMS AND ABBREVIATIONS

ft ³ /s	cubic feet per second
FY	fiscal year
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
LDCA	Laguna Division Conservation Area
Reclamation	Bureau of Reclamation

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1.0 INTRODUCTION

The purpose of this annual report is to summarize all activities that have occurred at the Laguna Division Conservation Area (LDCA) from October 1, 2016, through September 30, 2017, which is Federal fiscal year (FY) 2017, and projected activities for FY18. Use of Colorado River water is presented for the calendar year, January 1 through December 31, 2017, consistent with the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2017 (Bureau of Reclamation [Reclamation] 2018).

1.1 Background

The LDCA lies within the Laguna Division of the lower Colorado River, a stabilized and highly modified section of the river between Imperial Dam and the Laguna Diversion Dam.

The initial vision for this project focused on creating the cottonwood-willow (*Populus fremontii-Salix gooddingii*) land cover type, including a mosaic of open water, marsh, and honey mesquite (*Prosopis glandulosa*), by shaping and contouring multiple meandering channels of varying depths. Construction work consisted of developing a water delivery system, grading and contouring the existing topography, and planting native vegetation to support the creation of approximately 1,200 acres of habitat. The LDCA also supports approximately 80 acres of existing habitat in the historic channel of the Colorado River within the project area.

The LDCA is divided into two main areas: Reach 1 and Reach 2. During construction of the site, open water areas were created in the form of linear excavations aligned with historic river meanders to allow delivery of water to the cottonwood-willow habitat. To minimize earthwork during site development, cuts and fills followed the existing topography where feasible. Adjacent terraces were graded to allow flooding within the site and to promote the establishment of native riparian species. Water control structures were installed and are used to manage water levels within each reach, supplying water to native vegetation by raising and lowering the water surface.

2.0 CONSERVATION AREA INFORMATION

2.1 Purpose

The LDCA was developed to create a mosaic of native cottonwood-willow and honey mesquite land cover types and to restore, enhance, and protect native

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riparian and marsh habitats for the benefit of Lower Colorado River Multi-Species Conservation Program (LCR MSCP) covered species and other plants and wildlife. Marsh and riparian areas were integrated by contouring multiple meandering channels and through the management of hydrology. These land cover types support species covered under the LCR MSCP, specifically the Arizona Bell's vireo (*Vireo bellii arizonae*), elf owl (*Micrathene whitneyi*), southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-billed cuckoo (*Coccyzus americanus occidentalis*), gilded flicker (*Colaptes chrysoides*), summer tanager (*Piranga rubra*), vermilion flycatcher (*Pyrocephalus rubinus*), Yuma hispid cotton rat (*Sigmodon hispidus eremicus*), Sonoran yellow warbler *Dendroica petechia sonorana* = *Setophaga petechia sonorana*, and Gila woodpecker (*Melanerpes uropygialis*).

2.2 Location

The LDCA is located in Reach 6 of the LCR MSCP conservation areas, between Imperial Dam and the Laguna Diversion Dam, near Yuma, Arizona. It is within the historic floodplain of the lower Colorado River, adjacent to River Miles 43–49, and on both the California and Arizona side of the historic river channel (figure 1).

2.3 Landownership

The LDCA is located on Reclamation withdrawn land, which is federally owned and managed by Reclamation.

2.4 Water

Water for the LDCA is supplied through the LCR MSCP Water Accounting Agreement passed by Congress as part of the Omnibus Public Land Management Act of 2009 (Public Law No. 111-11, Title IX, Subtitle E, 123 Statute 991, 1327-29). The Act authorized the United States Secretary of the Interior to enter into an agreement with the Lower Basin States, providing for the use of water from the lower Colorado River for habitat creation and maintenance in accordance with the LCR MSCP Program Documents. The Lower Colorado River Multi-Species Conservation Program Water Accounting Agreement, signed on March 11, 2010, states that Reclamation shall not consider any resulting increase in evaporation or percolation of lower Colorado River water to be a diversion or consumptive use and not to report any such increase as a diversion or consumptive use in the annual report filed pursuant to Article V of the Consolidated Decree.

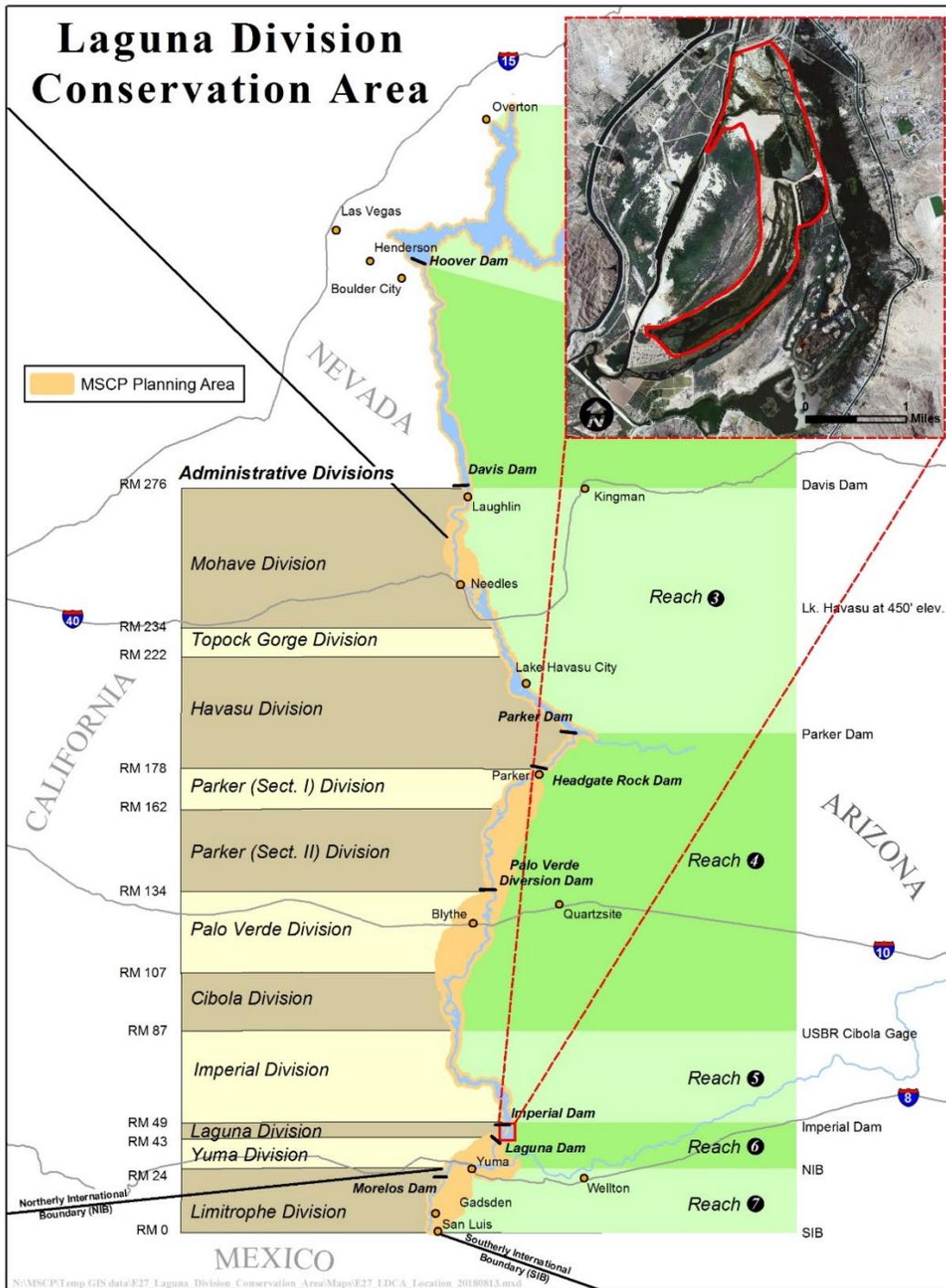


Figure 1.—LDCA location map.

2.5 Agreements

The LDCA is located on lands owned and managed by Reclamation; therefore, no agreements with other parties are anticipated at this time.

2.6 Public Use

The LDCA is an area that is open to pedestrian traffic. There is no public vehicle access. Activities open to the public include horseback riding, hiking, bicycling, and fishing from the shoreline.

2.7 Law Enforcement

Law enforcement activities at the LDCA are performed primarily by the Bureau of Land Management law enforcement office under the LCR MSCP's site-specific Fire Management & Law Enforcement Strategy (LCR MSCP 2010). Additional local law enforcement assistance is available through the Arizona Game and Fish Department's Kingman Office and the Yuma County Sheriff's Office.

2.8 Wildfire Management

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 (LCR MSCP 2010).

3.0 HABITAT DEVELOPMENT AND MANAGEMENT

The cottonwood-willow and honey mesquite land cover types were created at the LDCA from 2013 to 2015 and are managed for LCR MSCP covered species (figure 2).

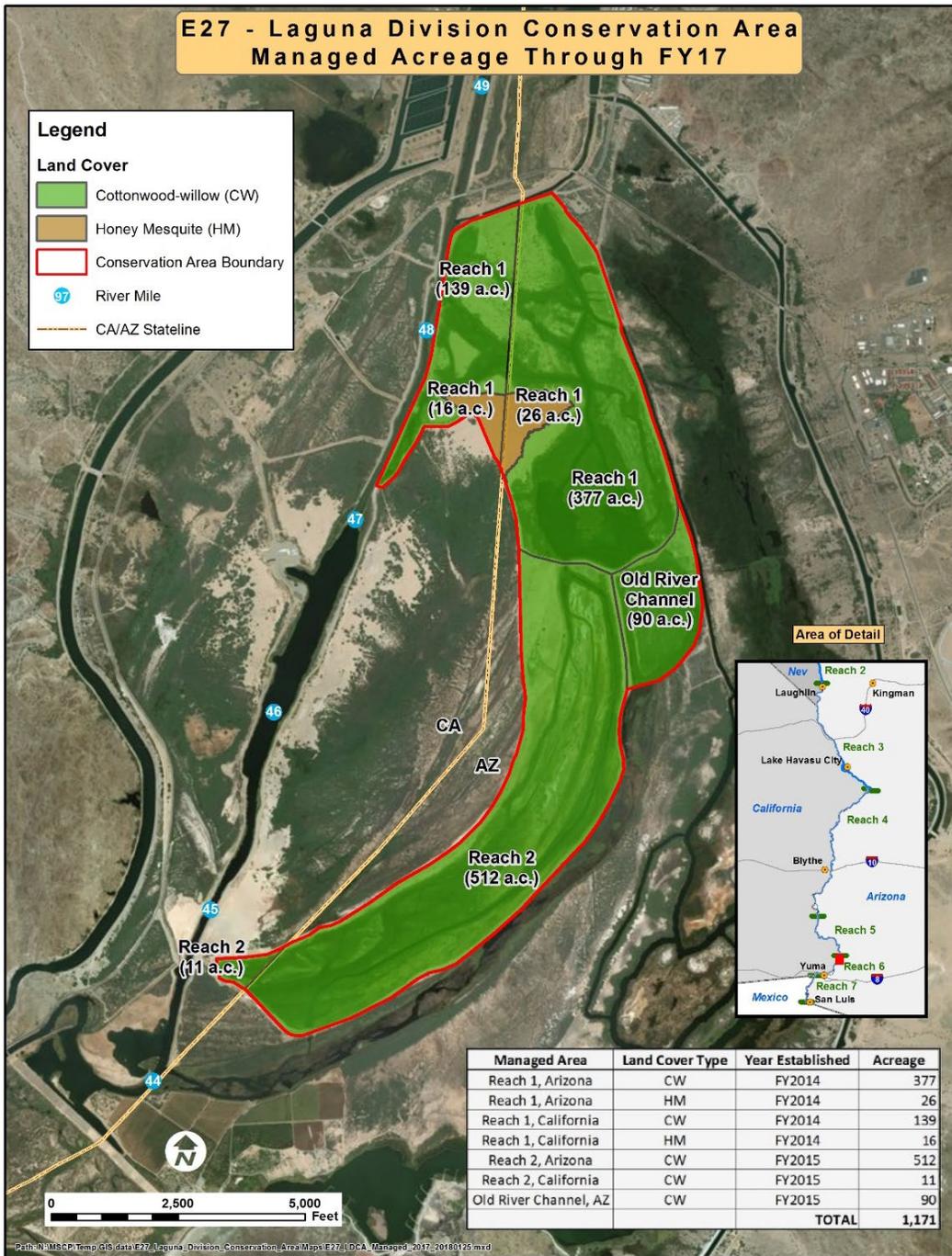


Figure 2.—Managed acreage at the LDCA through FY17.

3.1 Planting

No planting occurred at the LDCA in 2017.

3.2 Irrigation

The project is irrigated with water diverted from the Gila Canal Desilting Basin between Imperial Dam and the Gila Gravity Main Canal. Water demands for the LDCA have a lower priority than downstream user demands. The maximum flow through the Gila Gravity Main Canal is 2,200 cubic feet per second (ft³/s), and project flows cannot cause loss of deliveries to downstream users. Peak demand for water delivery in the canal occurs during the hot, summer months. Should downstream user demand exceed the 2,200-ft³/s capacity, flows to the LDCA would be temporarily reduced, or cease entirely, until normal operations resumed.

The gravity-fed water delivery system includes a metered flumegate and a 48-inch-diameter pipeline. Designed for a maximum flow of 100 ft³/s, the average flow into the LDCA is approximately 74 ft³/s annually. Water enters the LDCA from the north, passes through the conservation area, and returns back to the Colorado River.

The project is managed as a leveed wetland rather than a riverine system in order to maximize the use of available water. Water control structures regulate the water levels within each reach and are used to mimic periodic flooding events. As the water surface elevation in Reach 1 increases (flooding), flows into Reach 2 decrease (return to base flow), and vice versa. This pulse, or cycle, of irrigation water occurs approximately once every 3 weeks.

Irrigation of the site occurs 12 months of the year, with longer cycles occurring during the winter months (November – February). The longer cycles are used to manage salinity levels and to flush excess salts that build up on the soil crust during the hot, summer months.

Waterflow into the LDCA for calendar year 2017 was measured as 55,164 acre-feet.

3.3 Site Management

No invasive plant management activities occurred during 2017. Road grading was conducted as needed throughout the site in 2017.

4.0 MONITORING

4.1 Avian Monitoring

Avian monitoring at the LDCA in 2017 included surveys for southwestern willow flycatchers, yellow-billed cuckoos, marsh birds, and riparian breeding birds.

4.1.1 Southwestern Willow Flycatcher Surveys

Surveys to detect the presence of southwestern willow flycatchers were conducted five times during FY17 in cottonwood-willow habitat. No breeding or resident southwestern willow flycatchers were detected. Migrant willow flycatchers (*Empidonax traillii*) were detected in May and June (McLeod et.al., *in press*). Most birds detected after June 24, or individuals detected repeatedly before June 24, are considered to be southwestern willow flycatchers. Birds detected before June 24, and those detected only once after June 24, are considered migrant willow flycatchers.

4.1.2 Yellow-billed Cuckoo Surveys

Four surveys for yellow-billed cuckoos were conducted within the riparian portion of the LDCA. During the first survey period (June 15 – June 30), there were seven cuckoo detections. Two surveys are conducted during the second survey period (approximately July 1 – July 31) and resulted in two detections. Between approximately August 1–15, there were no detections of yellow-billed cuckoos (Parametrix, Inc., and Southern Sierra Research Station 2018).

Breeding was not confirmed at the LDCA in FY17. Due to the behavior of this species, detections alone do not indicate the number of cuckoos present nor do detections confirm breeding. The number, timing, and location of detections, along with behaviors observed, may be used to estimate abundance, distribution, and/or breeding status. The possible, probable, and confirmed counts were used to estimate the number of breeding territories and not the number of breeding pairs. Territory estimates represent two adults associated with a single nest. There were two possible territories and no probable or confirmed territories at the LDCA in FY17 (Parametrix, Inc., and Southern Sierra Research Station 2018).

4.1.3 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 LDCA in three survey sessions from March through May. There was one detection of a Yuma clapper rail and one detection of a western least bittern during the first survey session (March 22). There were three detections of Yuma clapper rails and four detections of western least bitterns during the second survey session (April 20). There were three detections of Yuma clapper rails and six detections of western least bitterns during the third survey session (May 10) (Ronning and Kahl, Jr. 2017).

4.1.4 General Bird Surveys

Bird surveys were conducted in order to detect breeding LCR MSCP riparian bird species and other territorial riparian bird species. Surveys were conducted within areas of the cottonwood-willow and honey mesquite land cover types that were of adequate growth to support breeding birds. General bird surveys resulted in the detection of 12 species (194.75 territories) of birds breeding within the surveyed plots. There were no LCR MSCP covered species confirmed breeding at the LDCA in FY17 during these surveys (SWCA Environmental Consultants 2018).

4.2 Small Mammal Monitoring

4.2.1 Rodent Monitoring

Live trapping was conducted on October 26, 2016, and February 10, 2017, to determine the presence of Yuma hispid cotton rats. A total of 120 traps were set on each night. Reach 1 was trapped in October, and the southern end of Reach 2 was trapped in February. No LCR MSCP covered rodent species were captured (Hill 2017).

5.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT

5.1 Vegetation Monitoring

Vegetation data were collected in FY17 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 the results will be presented in future reports.

5.2 Evaluation of the Laguna Division Conservation Area

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). All areas within the LCDA were designed to benefit covered species at the landscape level.

To meet species habitat creation requirements, the Habitat Conservation Plan provides goals for habitat creation based on land cover types (LCR MSCP 2004). These land cover types are described using the Anderson and Ohmart vegetation classification system (Anderson and Ohmart 1976, 1984a, 1984b).

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). Under the Adaptive Management Program, habitat creation sites will be assessed for biological effectiveness and whether they fulfill the conservation measures outlined in the Habitat Conservation Plan for 26 covered species and to determine 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 LCDA, recommendations may be made through the adaptive management process for site improvements in the future.

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

LITERATURE CITED

- Anderson, B.W. and R.D. Ohmart. 1976. Vegetation Type Maps of the Lower Colorado River from Davis Dam to the Southerly International Boundary, Final Report. Submitted to the Bureau of Reclamation, Boulder City, Nevada.
- _____. 1984a. Vegetation Management Study for the Enhancement of Wildlife Along the Lower Colorado River, Final Report. Submitted to the Bureau of Reclamation, Boulder City, Nevada.
- _____. 1984b. Lower Colorado River Riparian Methods of Quantifying Vegetation Communities to Prepare Type Maps, Final Report. Submitted to the Bureau of Reclamation, Boulder City, Nevada.
- Bureau of Reclamation. 2018. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2017. Bureau of Reclamation, Boulder City, Nevada.
- Hill, J. 2017. Post-Development and System-Wide Monitoring of Rodent Populations, Fiscal Year 2017. Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada.
- LCR MSCP (see Lower Colorado River Multi-Species Conservation Program).
- Lower Colorado River Multi-Species Conservation Program (LCR MSCP). 2004. Lower Colorado River Multi-Species Conservation Program, Volume II: Habitat Conservation Plan, Final. December 17 (J&S 00450.00). Sacramento, California.
- _____. 2007. Final Science Strategy. Bureau of Reclamation, 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, Boulder City, Nevada. October 26.

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McLeod, M.A., S. Nichols, and A. Pellegrini. *In press*. Southwestern Willow Flycatcher Surveys, Demography, and Ecology Along the Lower Colorado River and Tributaries, 2017 Draft Annual Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada, by SWCA Environmental Consultants, Flagstaff, Arizona, under contract No. R13PD30017.

Parametrix, Inc., and Southern Sierra Research Station. 2018. Yellow-billed Cuckoo Surveys on the Lower Colorado River, 2017 Annual Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada, by S.E. McNeil and D. Tracy, Southern Sierra Research Station, Weldon, California; and J. Lisignoli, Parametrix, Inc., Albuquerque, New Mexico, under contract No. R14PD0004.

Ronning, C.J. and J. Kahl, Jr. 2017. Marsh Bird Surveys, Conservation Areas – 2017 Annual Report. Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada.

SWCA Environmental Consultants. 2018. Riparian Bird Surveys at Conservation Areas in the Lower Colorado River Region, 2017. Submitted to the Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada, by SWCA Environmental Consultants, Flagstaff, Arizona, under contract No. R17PC00026.