

**Lower Colorado River Multi-Species Conservation Program  
Steering Committee Meeting Materials  
April 22, 2020**

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**Lower Colorado River Multi-Species Conservation Program  
Steering Committee Conference Call  
April 22, 2020 9:30 am – 12:30 pm pdt/mst  
Call-in Number 312-757-3121 Participant Code 212-243-709**

**DRAFT AGENDA**

**ADMINISTRATIVE**

**Shanahan**

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Review of Agenda (**Action**)  
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Approve October 23, 2019 Meeting Notes (**Action**)  
Election of Chair and Vice-Chair (**Action**)

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**Swett**

PDD 20-001 Conserving Genetic Diversity Razorback Sucker Lake Mohave (**Action**)  
PDD 20-002 Yuma Clapper Rail Water Depth (**Action**)  
PDD 20-003 Least Bittern Water Depth (**Action**)  
PDD 20-004 California Black Rail Water Depth (**Action**)

**WORK PLAN AND BUDGET**

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**Swett**

Strategy for Updating Program Documents

**STEERING COMMITTEE SCHEDULE**

**Swett**

**SUMMARY AND ACTION ITEMS**

**Shanahan**

**ADJOURN**

**Draft Meeting Notes  
LCR MSCP Steering Committee  
October 23, 2019**

Attending Via Conference Call

Greg Adams	Bert Bell	Dee Bradshaw
Linda Carbone	Shawn Carlson	Gil Cristobal
Chuck Cullom	JR Echard	Jess Gwinn
Vineetha Kartha	Jeff Humphrey	Ned Hyduke
Matt Jeppson	Jimmy Knowles	Jamie Kelley
Jill Knipes	Bill Lamb	Victor Lujan
Kara Mathews	Terry Murphy	Jessica Neuwerth
Wade Noble	Sara Price	Melody Roberts
Peggy Roefer	Carrie Ronning	Dana Sedig
Seth Shanahan	Laura Simonek	Jim Stolberg
John Swett	Dale Turner	Laura Vecerina
David Vigil		

**ADMINISTRATIVE MATTERS**

Introductions

The meeting was convened at 9:30 a.m. by John Swett. There were self-introductions of all attending. Seth Shanahan chaired the meeting.

Review of Agenda

The agenda was reviewed and approved.

Public Comments

No public comments were offered.

Approve June 26, 2019 Meeting Notes

The June 26, 2019 meeting notes were approved, with minor edits (Moved by Sara Price, seconded by Chuck Cullom, and adopted by consensus).

Jess Gwinn introduced Jeff Humphrey who is the new Field Supervisor for the Arizona Ecological Service Field Office. He has been in that position for over a year. Previously he was head of External Affairs and worked with Leslie Fitzpatrick in the planning and roll out of the LCR MSCP, so he is familiar with the program.

## **WORK PLAN AND BUDGET**

John Swett noted that the Steering Committee approved the FY20 Work Plan and Budget at the June Steering Committee conference call. Reclamation received the U.S. Fish and Wildlife Service (FWS) concurrence letter on August 12, 2019. John then reviewed the FY20 funding schedule which shows FY20 total required contributions of \$33,268,164. This includes \$4,948,763.23 from Arizona, \$3,763,399.14 from Nevada, and \$4,411,034.38 from California. John noted that the federal government was on a continuing resolution until November 21<sup>st</sup>. The Steering Committee approved work plans for a total of \$27,107,844 with \$1,194,794 contributed to the Remedial Measures Fund. No funding will be contributed to the land and water fund in FY20. John noted that Reclamation will not be spending all of the required funding this fiscal year due to current construction capability. He noted that the remaining balance will be held in reserve by Reclamation for use in future years. San Diego County Water Authority is still using their funding credits in FY20.

## **PROCESS/PROGRAM UPDATES**

**Increasing Change-In-Flow Coverage:** John reviewed actions the Steering Committee has taken to date. He noted that at the October 24, 2018 Steering Committee meeting an ad hoc group was formed to explore the need for and options to increase the change in flow coverage. On April 24, 2019, the Steering Committee passed Motion 19-004 approving Reclamation to initiate discussions with the U.S. Fish and Wildlife Service regarding consultation to increase future change in flow coverage up to 1,574,000 cfs between Hoover and Parker Dams.

Since April, there have been a number of meetings where various topics were discussed. This has included working with Reclamation staff to understand how the original impact analysis was done and how hydrologic changes over the last 10 to 15 years compare to those that were modeled. The ad hoc group is still exploring options for moving forward. Jeff Humphrey asked to set up a timeframe for when the FWS could get involved in these discussions. John said that he would set up a call with FWS to further discuss. Seth Shanahan, as chair of the ad hoc group said that he would participate as well. John noted that originally Reclamation was leading this effort, but that now leadership is being provided by the ad hoc group. John indicated that we will keep this topic on future Steering Committee meeting agendas and report on the status.

## **STEERING COMMITTEE SCHEDULE**

John Swett reviewed the Steering Committee schedule noting a Financial Work Group conference call scheduled for February 20<sup>th</sup> and the 15 Year Tour scheduled for March 24<sup>th</sup> through the 26<sup>th</sup>. A Work Group meeting will be held the afternoon before the start of the tour.

## GENERAL

**Lake Mead Razorback Sucker Workgroup:** Jim Stolberg provided an update on discussions at the Lake Mead Razorback Sucker Workgroup meeting concerning future razorback sucker stockings in the Grand Canyon. Mark McKinstry, from Reclamation's Upper Colorado Regional Office, is going to put together a group to discuss agency responsibilities or requirements to augment the Grand Canyon razorback sucker population based on changed conditions at Pearce Ferry Rapid or prior Biological Opinion's. A science panel has convened twice since 2009 and recommended both times that no razorback sucker stockings should occur. However, Lake Mead elevations and localized conditions have changed since that time which has led to the discussion of possible stockings. The Lake Mead Work Group would partner to collect wild-born razorback sucker larvae from the lake which would be reared at the Lake Mead Hatchery if a decision was made for this purpose.

**Glen Canyon Adaptive Management Program:** Seth Shanahan wanted to keep everyone informed of activities across the Colorado basin. He noted that here there was a Glen Canyon Dam Technical Work Group Meeting that was held earlier in the week and provided an overview of some of the topics discussed. Seth noted that there was an update on the rainbow trout study being conducted by the Arizona Department of Fish and Game (AGFD). AGFD is working on a research project to determine why catch rates for rainbow trout are low. They want to know the persistence of rainbow trout stocking with regard to mortality, harvest, and immigration. Seth provided information on a proposal for a pump back storage project to generate hydropower. The project would involve construction of two dams on the little Colorado River. The Federal Energy Regulatory Commission posted a notice for public comment in the federal register. Comments are due in November. The National Park Service (NPS) started implementing an expanded non-native aquatic species management plan. One action of the plan consists of incentives to harvest brown trout. NPS will use incentive harvests to remove about 50% of the estimated 5,000 adult brown trout to decrease population. These incentives include NPS paying anglers \$33 per fish for the first 1,000 fish. Seth noted that because of how dry it has been, there was insufficient sediment input to trigger a fall High Flow Event. There is no information yet to determine if one could be conducted in spring.

**Save the Colorado River et al. V. Department of Interior:** Matt Jeppson provided an update on the lawsuit that was filed by Save the Colorado River, Center for Biological Diversity, and Living Rivers. The lawsuit alleges that Reclamation and the Department Of Interior (DOI) ignored climate science in the December 2016 Record of Decision for the Glen Canyon Dam Long-Term Experimental and Management Plan Final Impact Statement (LTEMP FEIS). The lawsuit alleges that Reclamation and DOI failed to comply with the National Environmental Policy Act. The lawsuit demands that BOR and DOI fix this by redoing the alternative analysis in the LTEMP FEIS including a full range of alternatives based on predicted climate change-related impacts on the flow of water in the Colorado River, including the decommissioning and removal of Glen Canyon Dam. The lawsuit says that Reclamation relied exclusively on "historic" inflow data, without considering the lower flows from climate-change models forecast.

**Unique Wildlife Sightings:** Carrie Ronning noted that a number of covered species have returned to the same conservation sites year after year. A male summer tanager was recaptured on May 22 and June 26, 2019 at the Beal Lake Conservation Area (BLCA) during annual bird monitoring. He was first captured and banded at the BLCA on June 9, 2011, making him almost 8 years old. Summer tanagers leave the area each fall and typically winter from central Mexico into northern South America. LCR MSCP records show that he has been recaptured at BLCA in 4 other years since 2011. A southwestern willow flycatcher that was banded in 2008 at the Overton Wildlife Management Area was recaptured at Alamo Lake this year. He was at least 13 years old, which ties him for the willow flycatcher longevity record. Carrie also noted that five southwestern willow flycatcher nests at Topock Marsh produced 12 fledglings. This represents the highest number of fledglings and successful nests at Topock Marsh since 2008. A question was asked about sightings of northern Mexican gartersnakes. Carrie noted that trapping by the FWS at Havasu National Wildlife Refuge detected 14 individual snakes, with 7 located in the BLCA willow marsh.

## **SUMMARY AND ACTION ITEMS**

Seth Shanahan reviewed actions by the Steering Committee noting that the meeting agenda and previous meeting notes were approved. He noted that the ad hoc group on increasing the reduction in flow coverage would keep the Steering Committee apprised of its efforts.

## **ADJOURN**

The conference call adjourned at 10:25 am

**Change to Conservation Measure for the Razorback Sucker  
Lower Colorado River Multi-Species Conservation Program  
Draft Program Decision Document 20-001**

**Steering Committee Motion**

The Steering Committee approves Reclamation’s recommended changes to conservation measure RASU5 to conserve and protect the razorback sucker genetic diversity in Lake Mohave, specifically:

**RASU5—Support ongoing razorback sucker conservation efforts at Lake Mohave.** Provide support to ~~maintain the current Lake Mohave Program (Native Fish Work Group)~~ protect and conserve the genetic diversity of the existing Lake Mohave razorback sucker population with the goal of maintaining a population of 50,000 adult razorback sucker in Lake Mohave ~~this population~~ as a genetic refuge for the species.

**Current Conservation Measure**

5.7.6.2 Conservation Measures (LCR MSCP 2004)

***RASU5 – Support ongoing razorback sucker conservation efforts at Lake Mohave. Provide support to maintain the current Lake Mohave Program (Native Fish Work Group) goal of maintaining a population of 50,000 adult razorback sucker in Lake Mohave as a genetic refuge.***

**Justification**

Historically widespread and abundant in the Colorado River and its tributaries, the razorback sucker experienced a considerable, range-wide decline in the second half of the twentieth century. The population in Lake Mohave followed this trend, and abundance estimates that had ranged from 60,000–75,000 in the 1980s had declined to fewer than 15,000 by the mid-1990s (Marsh et al. 2003). Impacts of nonnative fishes and habitat alteration associated with regional water development were identified as key factors affecting razorback sucker populations, and despite recovery efforts that began in 1976, the species was listed as endangered in 1991 (USFWS 1991).

The Native Fish Work Group (NFWG) is a multi-agency, ad-hoc team that was brought together by mutual consent in the late 1980s for the single purpose of replacing the aging, senescent population of adult razorback suckers in Lake Mohave. The group formed in response to the observed decline of the species in the lake and developed a novel conservation strategy (the Lake Mohave Program) with three basic components: (1) harvest wild-born larvae from the lake each year, (2) rear these fish in protective custody, and (3) repatriate individuals to the reservoir at a size that would reduce predation. It was believed that this strategy would provide the best opportunity for replacing the population in both quantity and quality by conserving the genetic diversity of the extant adult population through collection and eventual repatriation of their

offspring. The NFWG's original program goal was to produce and stock 5,000–10,000 juvenile razorback suckers each year for a minimum of five years to establish a population of 50,000 adults in Lake Mohave.

Repatriation of wild-born razorback suckers to Lake Mohave was met with limited success. Post-stocking survival of these individuals remained low and population estimates declined to fewer than 3,000 individuals in Lake Mohave by 2001 (Marsh et al. 2003). Despite annual augmentation of this population and the development of improved monitoring techniques during the first 15 years of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP), little change has been observed in annual population estimates. Based on data collected in 2018–2019, the Lake Mohave repatriate population was estimated at 3,649 individuals. This estimate suggests that ongoing augmentation has been successful in conserving this population; however, poor post-stocking survival of repatriated fish has not led to an expanding population. The NFWG's original goal of establishing a population of 50,000 adult razorback suckers in Lake Mohave has yet to be realized, and 15 years of research and monitoring completed by the LCR MSCP suggests that it may not be realistic under current conditions.

The primary purpose of this conservation measure, protecting and conserving the genetic diversity of the existing population as a genetic refuge for the species, may however be met through ongoing activities. Wild-born razorback sucker larvae will continue to be collected from Lake Mohave each year. Collections will occur at all known spawning locations and will occur throughout the entire spawning season to provide the best opportunity for including the extant genetic diversity in each year's collections. Captured larvae will be reared in protective custody at program partner hatcheries until reaching an appropriate size for repatriation to the lake. Genetic analyses of larvae and repatriated adults collected during the first 15 years of program implementation have verified that this strategy has effectively conserved the historic genetic diversity that was present in the lake in the 1990s, and has provided evidence of increased gene diversity over the last 21 years (Dowling et al. 2017). Genetic monitoring of larvae and captured adults will continue for the life of the program, and the adaptive management process will use the best science available to address any issues and/or implement any changes in management (e.g., stocking fewer but larger repatriates to improve post-stocking survival) for the express purpose of conserving the genetic diversity of this population.

## **Literature Cited**

Dowling, T. E., P. C. Marsh, and T. F. Turner. 2017. Razorback Sucker Genetic Diversity Assessment: 2017 Annual Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada, by Wayne State University under agreement No. R14AC00004. 31 pp.

Marsh, P.C., C.A. Pacey, and B.R. Kesner. 2003. Decline of the Razorback Sucker in Lake Mohave, Colorado River, Arizona and Nevada. *Transactions of the American Fisheries Society* 132: 1251–1256.

Lower Colorado River Multi-Species Conservation Program. 2004. Lower Colorado River Multi-Species Conservation Program: Volume II. Habitat Conservation Plan. Final. December 2004.

USFWS. 1991. Endangered and threatened wildlife and plants; the razorback sucker (*Xyrauchen texanus*) determined to be an endangered species; final rule. Federal Register 56:54957–54967.

**Change to Conservation Measure for the Yuma Clapper Rail  
Lower Colorado River Multi-Species Conservation Program  
Draft Program Decision Document 20-002**

**Steering Committee Motion**

The Steering Committee approves Reclamation's recommended changes to conservation measure CLRA1 to revise Yuma Clapper rail water depths, specifically:

**CLRA1: Create and manage 512 acres of marsh to provide Yuma clapper rail habitat (Figure 5-2).** This created habitat will also provide habitat for the western least bittern and the California black rail (see conservation measures LEB11 and BLRA1). Habitat will be created in patches as large as possible but will not be created in patches smaller than 5 acres. Smaller patches are likely to support isolated nesting pairs and be within the range of habitat patch sizes used by the species for foraging and dispersal. Larger patches would be expected to support multiple nesting pairs. Additional Yuma clapper rail habitat may be provided by marsh vegetation that becomes established along margins of the 360 acres of backwaters that will be created in Reaches 3–6. These small patches of habitat would provide cover for dispersing rails, thereby facilitating linkages between existing breeding populations and the colonization of created habitats.

Yuma clapper rail habitat will be created and maintained as described in Section 5.4.3.3. Marshes created to provide Yuma clapper rail habitat will be designed and managed to provide an integrated mosaic of wetland vegetation types, water depths, and open water areas. Within this mosaic of marsh conditions, Yuma clapper rail habitat will generally be provided by patches of bulrush and cattails interspersed with small patches of open water with water levels maintained at depths appropriate for this species (~~no more than 12 inches~~). Created marsh habitat will generally be managed to provide for gradual fluctuations in water level during Yuma clapper rail breeding season (March – June).

**Current Conservation Measure**

5.7.1.2 Conservation Measures (LCR MSCP 2004)

***CLRA1: Create and manage 512 acres of marsh to provide Yuma clapper rail habitat (Figure 5-2). This created habitat will also provide habitat for the western least bittern and the California black rail (see conservation measures LEB11 and BLRA1). Habitat will be created in patches as large as possible but will not be created in patches smaller than 5 acres. Smaller patches are likely to support isolated nesting pairs and be within the range of habitat patch sizes used by the species for foraging and dispersal. Larger patches would be expected to support multiple nesting pairs. Additional Yuma clapper rail habitat may be provided by marsh vegetation that becomes established along margins of the 360 acres of backwaters that will be created in Reaches 3–6. These small patches of habitat would provide cover for dispersing rails, thereby facilitating linkages between existing breeding populations and the colonization of created habitats.***

*Yuma clapper rail habitat will be created and maintained as described in Section 5.4.3.3. Marshes created to provide Yuma clapper rail habitat will be designed and managed to provide an integrated mosaic of wetland vegetation types, water depths, and open water areas. Within this mosaic of marsh conditions, Yuma clapper rail habitat will generally be provided by patches of bulrush and cattails interspersed with small patches of open water with water levels maintained at depths appropriate for this species (no more than 12 inches).*

## **Justification**

According to the Habitat Conservation Plan, the marsh habitat created by the LCR MSCP must maintain water levels at appropriate depths for this species, which is defined as no more than 12 inches. The LCR MSCP has interpreted this as water levels at created marsh habitat will be maintained between 0 and 12 inches at all times.

There is strong evidence from the LCR and the scientific literature that Yuma clapper rails can tolerate fluctuating water levels with water depths greater than 12 inches (Dodge and Rudd 2017, Edelman 1989, Nadeau et al 2011). The 12-inch limit reduces the LCR MSCP's ability to fluctuate marsh levels to encourage a mixture of cattail and rush species and manage salt levels. Removal of the specific water depth will not change the intent of the conservation measure, to create and manage appropriate habitat for the species, using the best available information. It should increase management flexibility and habitat quality.

## **Literature Cited**

Dodge, C. and N. Rudd. 2017. Marsh Bird Water Depth Analysis, 2016 Progress Report. Annual report prepared by the Lower Colorado Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada.

Edleman, W.R. 1989. Biology of the Yuma Clapper Rail in the Southwestern U.S. and Northwestern Mexico, Final Report, July 1989. U.S. Fish and Wildlife Service Contract 4-AA-30-02060.

Nadeau, C.P., C.J. Conway, M.A. Conway, and M. Ogonowski. 2011. Restoration of Managed Marsh Units to Benefit California Black Rails and Other Marsh Birds: An Adaptive Management Approach, Final Report. Wildlife Research Report #2011-01, U.S. Geological Survey Arizona Cooperative Fish and Wildlife Research Unit, Tucson, Arizona, USA.

**Change to Conservation Measure for the Western Least Bittern  
Lower Colorado River Multi-Species Conservation Program  
Draft Program Decision Document 20-003**

**Steering Committee Motion**

The Steering Committee approves Reclamation’s recommended changes to conservation measure LEBI1 to revise western least bittern water depths, specifically:

**LEBI1—Create 512 acres of western least bittern habitat.** Create and manage 512 acres of marsh to provide western least bittern habitat ~~(Figure 5-2)~~. This created habitat will also be habitat for the Yuma clapper rail (conservation measure CLRA1). Habitat will be created in patches as large as possible. Smaller patches are likely within the range of habitat patch sizes used by the species for foraging and dispersal, and larger patches may be used for breeding. Western least bittern habitat will be created and maintained as described in Section 5.4.3.3. Marshes created to provide western least bittern habitat will be designed and managed to provide an integrated mosaic of wetland vegetation types, water depths, and open water areas. Priority will be given, when consistent with achieving LCR MSCP goals for other covered species, to establishing habitat near occupied habitat. The largest numbers of western least bitterns in the LCR MSCP planning area are located at Topock Marsh and marshes near Imperial Dam, but they are present in suitable marshes throughout the LCR MSCP planning area. Within this mosaic of marsh conditions, western least bittern habitat will generally be provided by patches of bulrush and cattails interspersed with small patches of open water ~~that maintain water depths no greater than 12 inches~~with water levels maintained at depths appropriate for this species. Created marsh habitat will generally be managed to provide for gradual fluctuations in water level during Western least bittern breeding season (March – June).

**Current Conservation Measure**

5.7.12.2 Conservation Measures (LCR MSCP 2004)

***LEBI1—Create 512 acres of western least bittern habitat. Create and manage 512 acres of marsh to provide western least bittern habitat (Figure 5-2). This created habitat will also be habitat for the Yuma clapper rail (conservation measure CLRA1). Habitat will be created in patches as large as possible. Smaller patches are likely within the range of habitat patch sizes used by the species for foraging and dispersal, and larger patches may be used for breeding. Western least bittern habitat will be created and maintained as described in Section 5.4.3.3. Marshes created to provide western least bittern habitat will be designed and managed to provide an integrated mosaic of wetland vegetation types, water depths, and open water areas. Priority will be given, when consistent with achieving LCR MSCP goals for other covered species, to establishing habitat near occupied habitat. The largest numbers of western least bitterns in the LCR MSCP planning area are located at Topock Marsh and marshes near Imperial Dam, but they are present in suitable marshes throughout the LCR MSCP planning area. Within this mosaic of marsh conditions, western least bittern habitat will generally be provided by patches of bulrush and cattails interspersed with small patches of open water that maintain water depths no greater than 12 inches.***

## Justification

According to the Habitat Conservation Plan, the marsh habitat created by the LCR MSCP must maintain water levels at appropriate depths for this species, which is defined as no more than 12 inches. The LCR MSCP has interpreted this as water levels at created marsh habitat will be maintained between 0 and 12 inches at all times. Scientific literature has described habitat for this species with the highest abundance as having depths closer to 24 inches (Jobin et al. 2009). There has also been no significant difference found in water depths between areas with and without least bittern detections and areas with detections had depths up to 30 inches (Moore et al. 2009, Poole 2009). The 12-inch limit reduces the LCR MSCP's ability to fluctuate marsh levels to encourage a mixture of cattail and rush species and manage salt levels. Removal of the specific water depth will not change the intent of the conservation measure, to create and manage appropriate habitat for the species, using the best available information. It should increase management flexibility and habitat quality.

## Literature Cited

Jobin, B., L. Robillard, and C. Latendresse. 2009. Response of a Least Bittern (*Ixobrychus exilis*) population to interannual water level fluctuations. *Waterbirds*, 32(1), 73-80.

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.

Moore, S., J. R. Nawrot, and J. P. Severson. 2009. Wetland-scale habitat determinants influencing Least Bittern use of created wetlands. *Waterbirds*, 32(1), 16-24.

Poole, A. F., P. E. Lowther, J. P. Gibbs, F. A. Reid, and S. M. Melvin. 2009. Least Bittern (*Ixobrychus exilis*), version 2.0. In *The Birds of North America* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.17>

**Change to Conservation Measure for the California Black Rail  
Lower Colorado River Multi-Species Conservation Program  
Program Decision Document 20-004**

**Steering Committee Motion**

The Steering Committee approves Reclamation’s recommended changes to conservation measure BLRA1 to revise California black rail water depths, specifically:

**BLRA1 – Create 130 acres of California black rail habitat.** Of the 512 acres of LCR MSCP – created marsh, 130 acres will be created and managed to provide California black rail habitat near occupied habitat in Reaches 3, 4, 5, 6, and 7. This habitat will be provided by designing and managing at least 139 acres of the 512 acres of created Yuma clapper rail habitat to provide habitat for both species. Habitat will be created in patches as large as possible but will not be created in patches smaller than 5 acres. Additional California black rail habitat may be provided by marsh vegetation that becomes established along margins of the 360 acres that will be created of backwaters that will be created in Reaches 3, 4, 5, 6, and 7. These small patches of habitat provided cover for dispersing rails, thereby facilitating linkages between existing breeding populations and the colonization of created habitats.

Design of created habitat will be directed toward establishing moist-soil marshes that support a predominance of three-square bulrush with suitable water depths to ~~replicate conditions present at Mitty Lake and the Bill Williams Delta that~~ support the species. Habitat will be designed and managed to provide an integrated mosaic of patches of cattail, bulrush, and mudflat, interspersed with small patches of open water with varying water depths. Created marsh habitat will generally be managed to provide for gradual fluctuations in water level during California black rail breeding season (March – July).

**Current Conservation Measure**

5.7.13.2 Conservation Measures (LCR MSCP 2004)  
(Amended October 27, 2010, Minor Modification PDD-11-004)

*BLRA1 – Create 130 acres of California black rail habitat. Of the 512 acres of LCR MSCP – created marsh, 130 acres will be created and managed to provide California black rail habitat near occupied habitat in Reaches 3, 4, 5, 6, and 7. This habitat will be provided by designing and managing at least 139 acres of the 512 acres of created Yuma clapper rail habitat to provide habitat for both species. Habitat will be created in patches as large as possible but will not be created in patches smaller than 5 acres. Additional California black rail habitat may be provided by marsh vegetation that becomes established along margins of the 360 acres that will be created of backwaters that will be created in Reaches 3, 4, 5, 6, and 7. These small patches of habitat provided cover for dispersing rails, thereby facilitating linkages between existing breeding populations and the colonization of created habitats.*

*Design of created habitat will be directed toward establishing moist-soil marshes that support a predominance of three-square bulrush with suitable water depths to replicate conditions*

*present at Mittry Lake and the Bill Williams Delta that support the species. Habitat will be designed and managed to provide an integrated mosaic of patches of cattail, bulrush, and mudflat, interspersed with small patches of open water with varying water depths.*

## **Justification**

According to the Habitat Conservation Plan, the marsh habitat created by the LCR MSCP for California black rail must maintain water levels at appropriate depths for this species, which is defined as no more than 1 inch. The LCR MSCP has interpreted this as water levels at created marsh habitat will be maintained between 0 and 1 inch during breeding season. The LCR MSCP currently manages marsh water levels to be as stable as possible during the California black rail breeding season in order to maintain areas at 1-inch depths.

The information that was used to originally inform the LCR MSCP HCP came from known habitat locations near Mittry Lake, Arizona (Flores and Eddleman 1995; Repking and Ohmart 1977). Water levels in this area remain very stable throughout the year. This demonstrates that this species can use areas with stable water levels, but it does not necessarily demonstrate that stable water levels are a habitat requirement of the species. The largest populations of the California black rail are found in the San Francisco Bay area and in the foothills of the Sierra Nevada in Yuba County, CA. More recent research in these areas has shown that the California black rail can adapt to spatially fluctuating water levels during the breeding season (Tsao et al 2009, Tsao et al 2015).

The published research shows that California black rails use shallow water of roughly an inch or less in depth. However, the birds utilize habitats where water depths vary daily by moving into shallower areas as water levels change. Optimal habitats created for California black rails should have gently sloping landscapes that allow them to move into areas of suitable depth as water levels vary (Richmond 2010).

The 1-inch limit reduces the LCR MSCP's ability to fluctuate marsh levels to encourage a mixture of cattail and rush species and manage salt levels. Removal of the specific water depth will not change the intent of the conservation measure, to create and manage appropriate habitat for the species, using the best available information. It should increase management flexibility and habitat quality.

## **Literature Cited**

Dodge, C. 2019. California Black Rail Documented Use of Water Depths, 2019. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada.

Eddleman, W.R. 1989. Biology of the Yuma Clapper Rail in the Southwestern U.S. and Northwestern Mexico, Final Report. U.S. Fish and Wildlife Service Contract 4-AA-30-02060. July 1989.

Repking, C.F. and R.D. Ohmart. 1977. Distribution and density of black rail populations along the lower Colorado River. *The Condor* 79(4):486–489.

Richmond, O.M.W. 2010. Inferring Ecological Relationships from Occupancy Patterns for California Black Rails in the Sierra Nevada foothills. Doctoral dissertation. University of California, Berkeley.

Tsao, D.C., J.Y. Takekawa, I. Woo, J.L. Yee, and J.G. Evens. 2009. Home range, habitat selection, and movements of California black rails at tidal marshes at San Francisco Bay, California. *The Condor* 111(4):599–610.

Tsao, D.C., R.E. Melcer, Jr., and M. Bradbury. 2015. Distribution and habitat associations of California black rail (*Laterallus jamaicensis cortuniculus*) in the Sacramento–San Joaquin Delta. *San Francisco Estuary and Watershed Science* 13(4).



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM



Final Implementation Report, FY21 Work Plan and Budget, FY19 Accomplishment Report



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## LCR MSCP FY19 Overview Funding Summary

FY19 Total Required Funding	FY19 Approved Estimate	FY19 Actual Obligations	Cumulative Program Accomplishment
\$31,960,488.00	\$38,398,788.00	\$34,470,241.30	\$332,433,005.08



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## FY19 Program Element Accomplishment

Program Administration	\$ 1,133,593.18 ( 3%)
Fish Augmentation	\$ 2,407,700.10 ( 7%)
Species Research	\$ 768,487.03 ( 2%)
System Monitoring	\$ 2,395,308.66 ( 7%)
Conservation Area D&M	\$ 22,746,010.55 (66%)
Post Development Monitoring	\$ 2,463,509.84 ( 7%)
AMP	\$ 1,295,047.27 ( 4%)
Remedial Measure Fund	\$ 1,147,832.00 ( 3%)
Public Outreach	\$ 112,752.67 ( 1%)
<b>TOTAL</b>	<b>\$ 34,470,241.30</b>



# Lower Colorado River Multi-Species Conservation Program

## *Balancing Resource Use and Conservation*

### FY19 Financial Accomplishments

- Obligations under approved Work Tasks by \$3,928,546.70
  - Construction costs less at Mohave Valley Conservation Area and Cibola Valley Conservation Area
  - AMP savings in Data Management, Research, and Habitat Monitoring
- Status of Special Funds
  - HMF: Cumulative Total through FY19 = \$36,967,064.61
  - RMF: \$1,147,832.00 FY19 payment
    - Cumulative Total through FY19 = \$9,142,832.05
  - LWF: \$0 contributed in FY19 but \$9,730,000 withdrawn (DUCA)
    - Cumulative Total through FY19 = \$5,670,000



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## FY19 Fisheries Accomplishments



Razorback sucker contacted via remote PIT scanning (Reach 2)



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Larvae Collection and Fish Augmentation

Larvae collected from Lake Mohave: **44,806**

### Augmentation

Reach 2 (RASU 5): 6,185 RASU > 300 mm

Reach 3 (RASU 3): 6,060 RASU > 300 mm

Reaches 4/5 (RASU 3): 13,090 RASU > 305 mm

Total RASU (credited): **25,335**

Reach 2 (BONY 3): 220 BONY > 300 mm

Reach 3 (BONY 3): 1,026 BONY > 300 mm

Reaches 4/5 (BONY 3): 7,013 BONY > 305 mm

Total BONY (credited): **8,259**



Razorback sucker larvae attracted to submerged light



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Fish Augmentation Summary FY05-19

SPECIES	LAKE MOHAVE	DAVIS-PARKER	BELOW PARKER	GRAND TOTAL	AUGMENTATION TOTAL
RAZORBACK SUCKER	132,201*	100,146	112,267	344,614*	212,413
BONYTAIL	2,330	60,065	46,125	108,520	108,520
TOTAL	134,531*	160,211	158,392	453,134*	320,933



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Augmentation Accomplishment

REACH	BONYTAIL			% COMPLETE	RAZORBACK SUCKERS			% COMPLETE
	HCP Goal	Current	Remaining		HCP Goal	Current	Remaining	
All	620,000	108,520	511,480	17.5	660,000	212,413	447,587	32

- Based on the overall augmentation goal for bonytail, we are currently 17.5% complete. Hatchery production capacity has been increased and development of additional rearing habitat will be completed to meet future year goals
- Based on the overall augmentation goal for razorback suckers, we are currently 32% complete



# Lower Colorado River Multi-Species Conservation Program

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*Balancing Resource Use and Conservation*

## Fisheries Monitoring

### Reach 1

- 46 razorback suckers were captured by trammel net during the spawning season
- 130 razorback suckers were contacted by remote PIT scanning
- The current Lake Mead razorback sucker population estimate is 248 individuals

### Reach 2

- 37,258 hours of PIT scanning contacted 4,408 unique razorback suckers
- The current Lake Mohave RASU population estimate is 3,649 individuals

### Reach 3

- 5,552 razorback suckers, 51 bonytail, and 25 flannelmouth suckers were contacted
- The current Reach 3 razorback sucker population estimate is 4,791 individuals

### Reach 4 and 5

- 1,861 razorback suckers and 347 bonytail were contacted using multiple methods
- The current razorback sucker population estimate is 147 individuals



# Lower Colorado River Multi-Species Conservation Program

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## *Balancing Resource Use and Conservation*

### Highlights

- C64: Post-Stocking Movement, Distribution, and Habitat Use of Razorback Suckers and Bonytail
- Reach 4 - Discovery of a razorback sucker aggregation site in the main channel (300 contacts)
  - Known aggregation sites are important for improving annual monitoring

F5: Post-Development Monitoring of Fishes at Conservation Areas

- Mohave Valley Conservation Area – 1,931 razorback suckers contacted

### Updates

D15: Genetic Monitoring and Management of Native Fish Populations

- Use of new genotyping methods will be expanded, a central repository for tissue samples will be established and maintained, and a widely accessible genetic database will be developed

B5: Bubbling Ponds Fish Hatchery

- Renovations of the Bubbling Ponds Fish Hatchery scheduled for FY21
- AZGFD does not anticipate producing razorback suckers for the LCR MSCP for at least 3 years

# FY19 Wildlife Accomplishments

## Species Research

Just one research project ongoing:

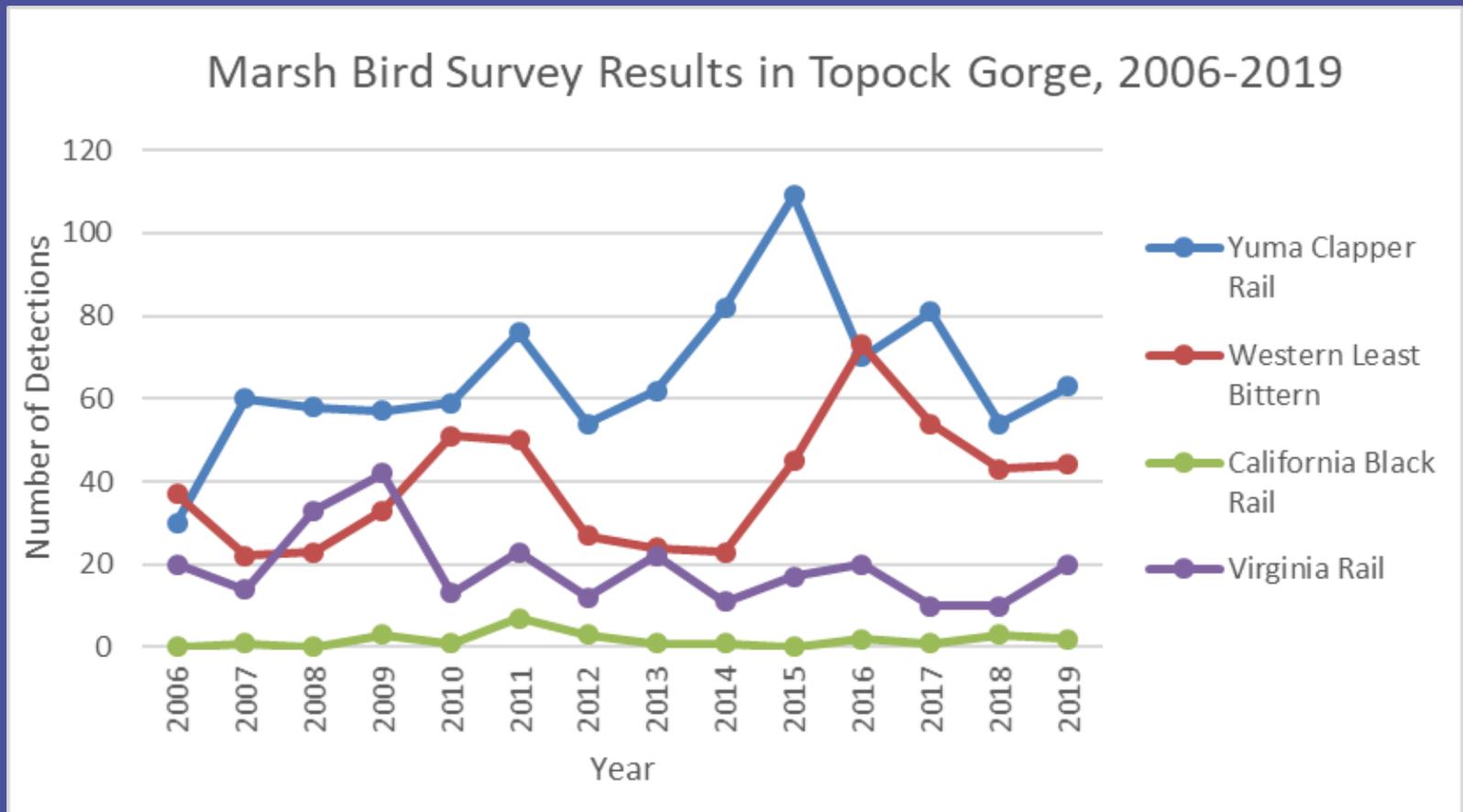
- C2 – Contributed \$10,000 a year to a conservation program for **threecorner milkvetch** and **sticky buckwheat** at Lake Mead.

## System-wide and Post Development Monitoring

- marsh birds
- southwestern willow flycatcher
- yellow-billed cuckoo
- gilded flicker
- riparian birds
- bats
- rodents
- McNeill's sootywing



- **Yuma clapper rails** were detected at Hart Mine Marsh, Field 18 at Imperial Ponds, and Yuma East Wetlands, as well as marsh areas of Beal Lake Conservation Area and Laguna Division Conservation Area.



- **Southwestern willow flycatcher**
  - 158 flycatchers from 95 territories were recorded at Topock Marsh, the Bill Williams River, and Alamo Lake, Arizona.
  - No resident breeding southwestern willow flycatchers were detected at LCR MSCP conservation areas.
- **Yellow-billed cuckoo** – Cuckoos were detected at BLCA, Cibola NWR Unit #1, CVCA, Hunters Hole, LDCA, Middle Bill Williams River NWR, Planet Ranch, PVER, and YEW.
  - 20 confirmed territories, 26 probable territories and 31 possible territories and 17 confirmed nests at LCR MSCP conservation areas
- **Gilded flicker** - Detected for the first time at PVER on June 12 and July 28. Not yet observed at conservation areas during nesting season.



## Other Species Highlights:

- Arizona Bell's vireo, Gila woodpecker, Sonoran yellow warbler, summer tanager and vermilion flycatcher were detected at LCR MSCP conservation areas during the breeding season.

	Beal Lake Conservation Area	Cibola NWR Unit #1	Cibola Valley Conservation Area	Hunters Hole	Laguna Division Conservation Area	Middle Bill Williams River NWR	Palo Verde Ecological Reserve	Parker Dam Camp	Pretty Water Conservation Area	Yuma East Wetlands
Arizona Bell's vireo	Breeding				Breeding	Breeding	Breeding			
Gila woodpecker		Breeding	Breeding		Breeding	Breeding		Breeding		Breeding
Sonoran yellow warbler	Breeding	Breeding	Breeding		Breeding	Breeding				
summer tanager	Breeding	Breeding	Breeding			Breeding	Breeding			
vermilion flycatcher		Breeding								

## Other Species Highlights:

- **Yuma hispid cotton rat** continued to be detected at Laguna Division Conservation Area and Hunters Hole
- **Colorado River cotton rats** continued to be captured at PVER, Cibola NWR Unit #1, the CVCA, and HMM
- **MacNeill's sootywing skippers** continue to be detected at conservation areas containing quailbush
- **Western red bats** and **western yellow bats** continued to be monitored at conservation areas acoustically and are detected throughout the system.





# Lower Colorado River Multi-Species Conservation Program

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*Balancing Resource Use and Conservation*

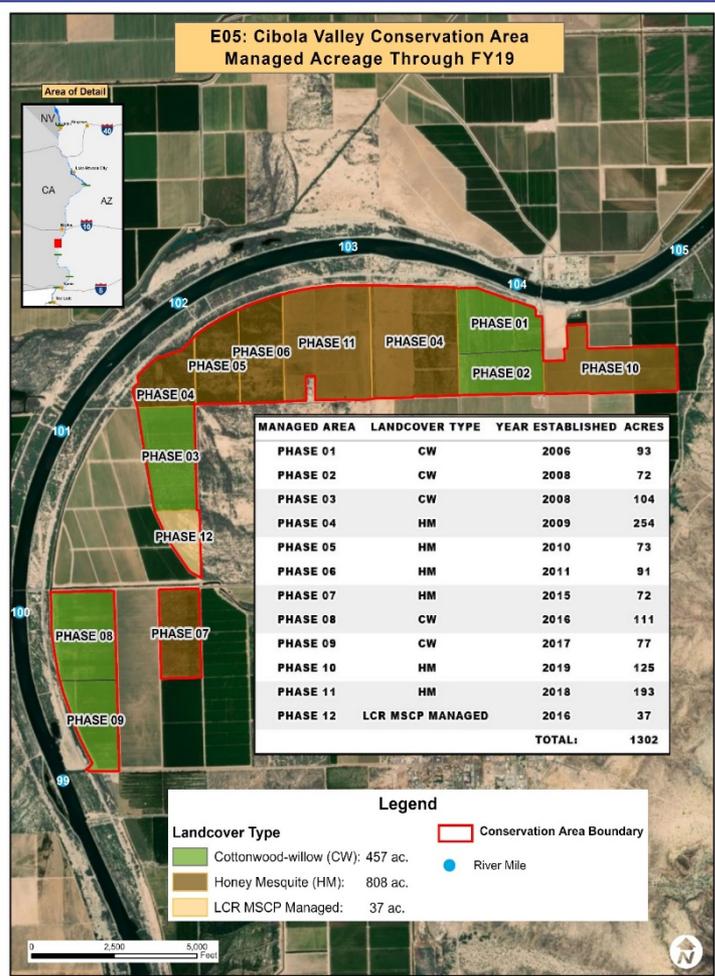
## FY 19 Conservation Area Development Accomplishments

- Cibola Valley Conservation Area Planting HM
- Cibola NWR Unit #1 Planting CW
- Dennis Underwood “officially” a Conservation Area & Planting HM
- Mohave Valley Conservation Area Completed
- Beal Lake Dredging Starts
- Planet Ranch Construction Starts



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*



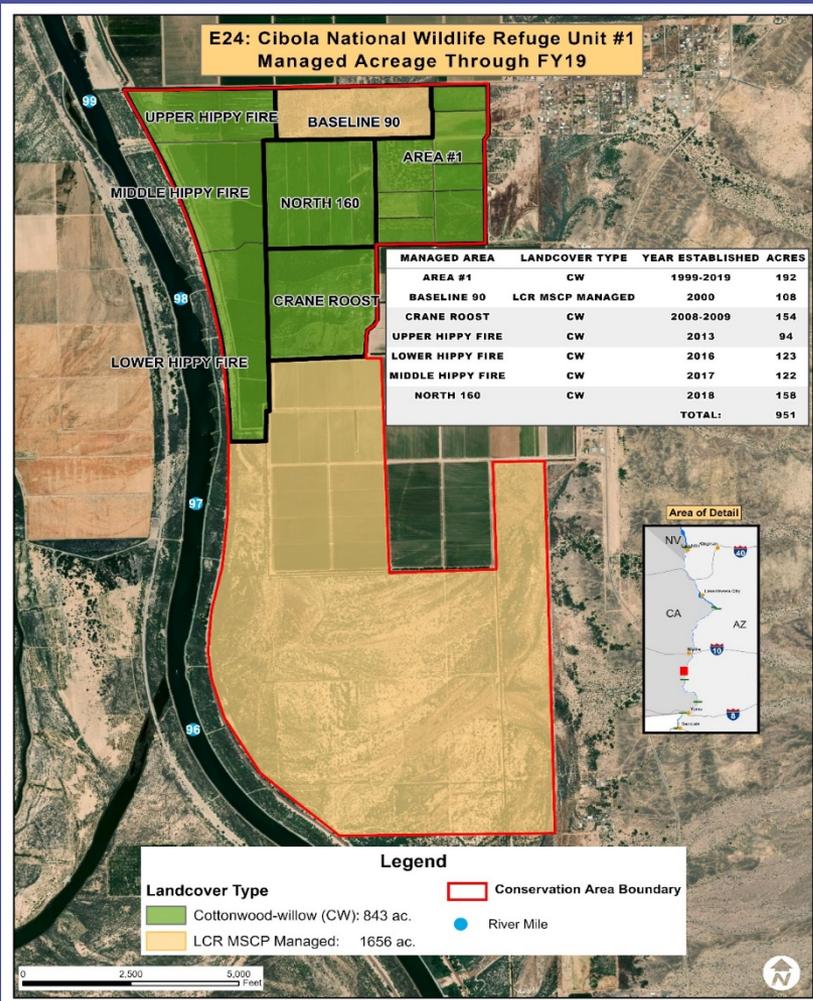
## Cibola Valley Conservation Area

- Phase 10 Planted
- Established 125 acres of CW
- Development is Complete



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*



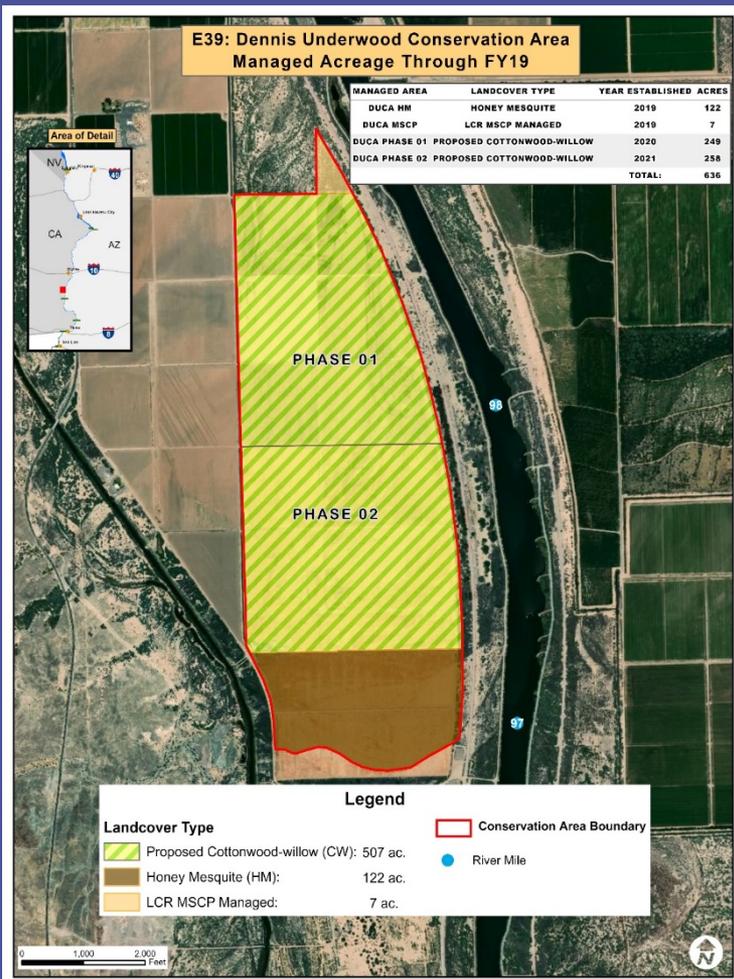
## Cibola Refuge Unit #1

- Planted 57 acres of CW
- Development is Complete
- Planning for Expansion Area Initiated



# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*



## Dennis Underwood Conservation Area

- Officially a Conservation Area
- Planting of 122 acres of HM

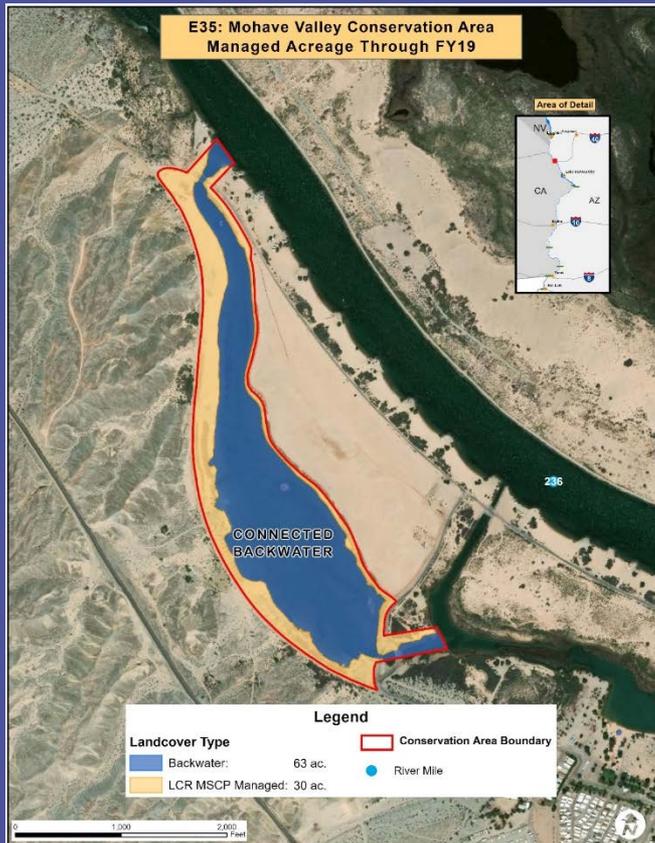


# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Mohave Valley Conservation Area

- 63 acres of connected Backwater



# Lower Colorado River Multi-Species Conservation Program



*Balancing Resource Use and Conservation*

Beal Lake Dredging Starts (100,000 cubic yards)





# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

Planet Ranch Pond Excavation Starts (300,000 cubic yards)





# Lower Colorado River Multi-Species Conservation Program

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*Balancing Resource Use and Conservation*

## Conservation Area Acreage Summary (Table 1-15)

- 6,437 acres of Established Land Cover through FY19
- 8,733 acres of Planned Land Cover Type
- 11,764 acres of LCR MSCP Managed Acreage
- 14,067 acres of Total Conservation Area

Note: Minimum is 8,132 acres

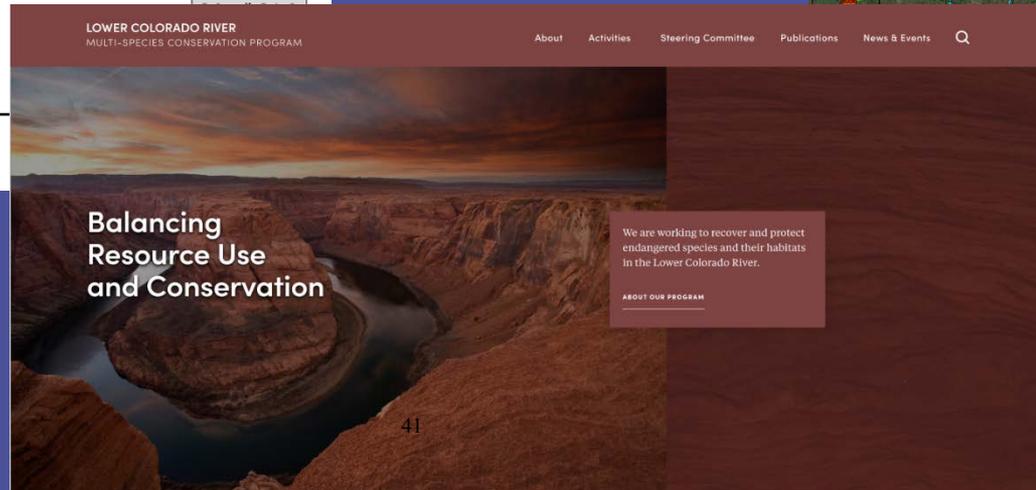
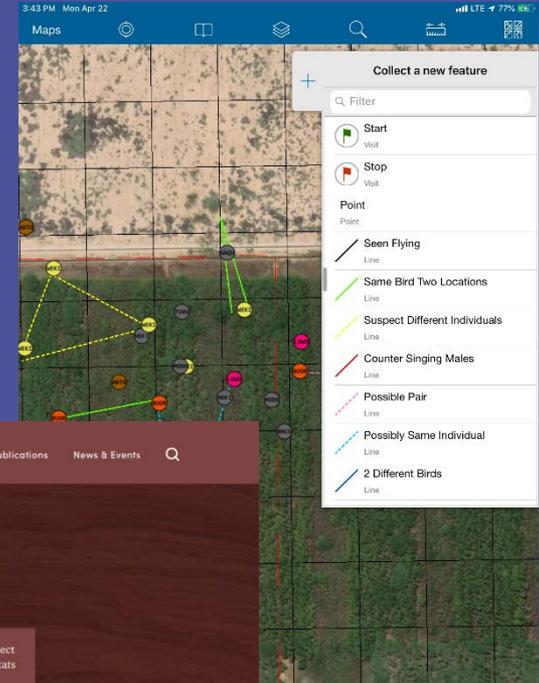
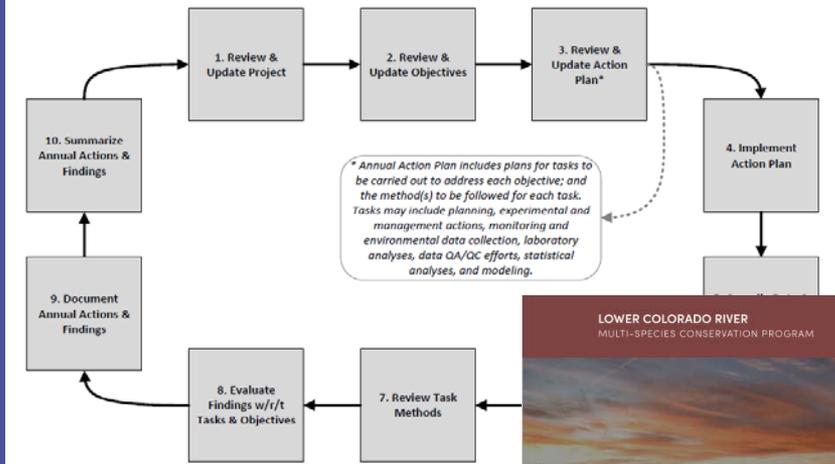


# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## FY19 Adaptive Management Program Accomplishments

Annual Cycle of A.M. Efforts per Project





# Lower Colorado River Multi-Species Conservation Program

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*Balancing Resource Use and Conservation*

## Adaptive Management

### General accomplishments

- Peer review (25 research and monitoring reports)
- Study plan designs and statistical analyses
- Adaptive Management Plans
- Conceptual Ecological Models

### Fish-related accomplishments

- Fish genetics review
- Continued support of the LCR Native Fish Database and the Remote Scanning database

### Wildlife-related accomplishments

- Riparian bird monitoring review continues
- Field data collection improvements
- Reporting automation



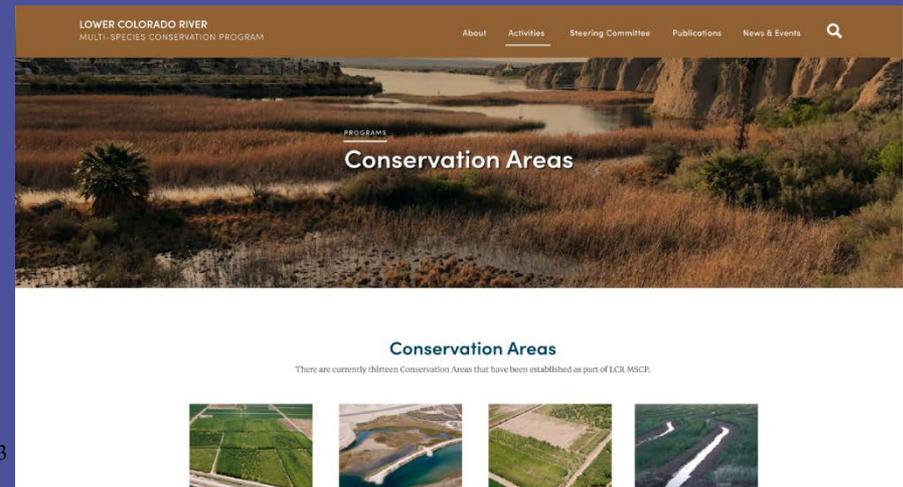
# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Data Management

### Data management accomplishments

- Improvements in field data collection techniques and data processing workflows
- Development of QA/QC tools for MSCP staff and contractors
- Automation of reports
- LCR MSCP website redesign
- Data sharing





# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use*

## Salinity and Soil Moisture Monitoring

Established network at six conservation areas:

- Beal Lake Conservation Area
- Palo Verde Ecological Reserve
- Cibola National Wildlife Refuge Unit #1
- Cibola Valley Conservation Area
- Yuma East Wetlands
- Hunters Hole

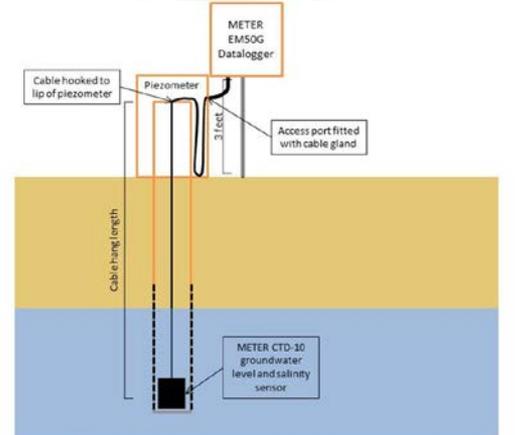


Expanded to additional sites in 2019

- Imperial Ponds
- Three Fingers Lake

Parameters:

- Soil moisture and salinity
- Groundwater level and salinity



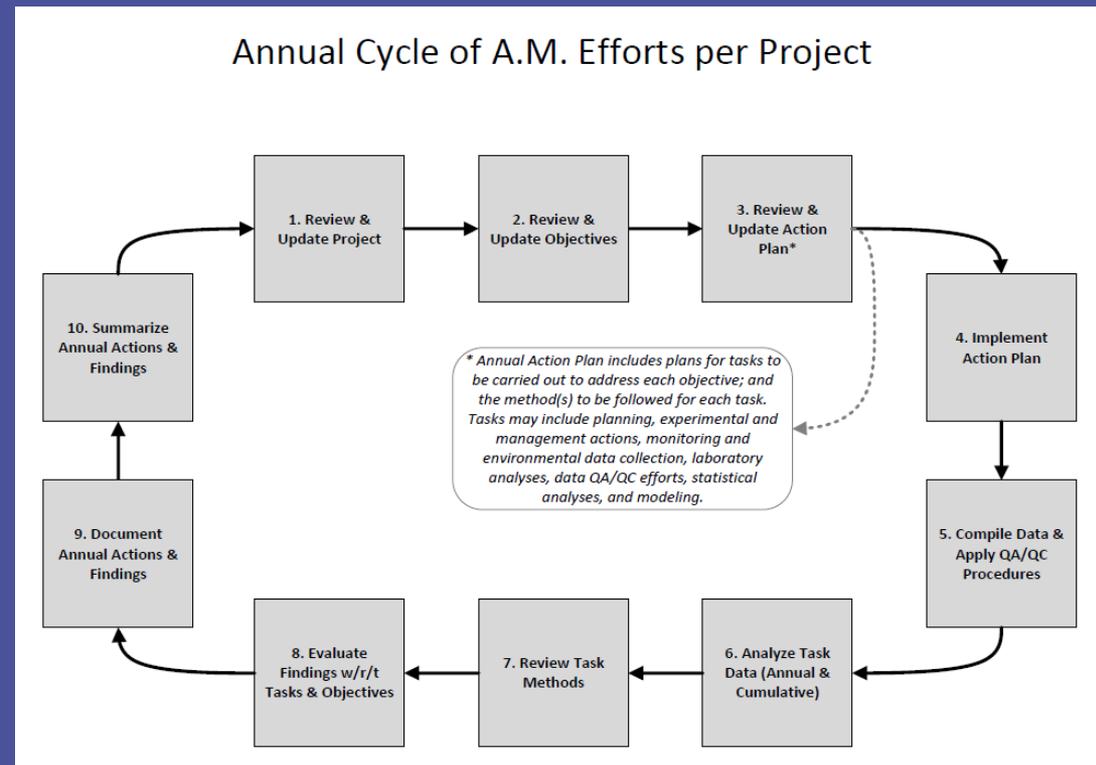


# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

## Adaptive Management Plans

- Formalize all existing research and monitoring plans into a standardized format
- Ensure they contain all components referenced in HCP
- Ensure that our monitoring and research provides necessary information for the Adaptive Management Program and other LCR MSCP needs





# Lower Colorado River Multi-Species Conservation Program

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*Balancing Resource Use and Conservation*

Proposed FY21 Program Work Plan and Budget





# Lower Colorado River Multi-Species Conservation Program

*Balancing Resource Use and Conservation*

FY21 Funding Requirements  
(Preliminary Inflation Rate = 1.518%)

Funding Entity	FY21 Contributions	FY21 Adjusted Contributions
<b>Federal</b>	<b>\$15,166,338.00</b>	<b>\$15,166,338.00</b>
<b>Non-Federal</b>	<b>\$15,166,338.00</b>	<b>\$15,166,338.00</b>
<i>California</i>	<i>\$ 7,583,169.00</i>	<i>\$ 7,183,572.58</i>
<i>Arizona</i>	<i>\$ 3,791,584.50</i>	<i>\$ 4,590,777.34</i>
<i>Nevada</i>	<i>\$ 3,791,584.50</i>	<i>\$ 3,391,988.08</i>
<b>TOTAL</b>	<b>\$30,332,676.00</b>	<b>\$30,332,676.00</b>



# Lower Colorado River Multi-Species Conservation Program

## *Balancing Resource Use and Conservation* FY21 Proposed Work Plans

Program Administration	\$ 1,545,324
Fish Augmentation	\$ 2,060,000
Species Research	\$ 766,000
System Monitoring	\$ 3,135,000
Conservation Area D&M	\$ 12,561,000
Post Development Monitoring	\$ 2,695,000
AMP	\$ 1,390,000
Remedial Measures Fund	\$ 1,208,328
Public Outreach	\$ 125,000
Land and Water Fund	\$ 0
<b>TOTAL FY19 BUDGET</b>	<b>\$ 25,485,652*</b>

\*The proposed annual program budget is less than the minimum required funding due to current construction capability. The balance will be held in reserve by Reclamation and used in future years to complete conservation measure requirements, especially habitat creation and management activities.

## Steering Committee Schedule

### 2020

5/4 - 5/5      **Work Group Conference Call – Review of FY20 Work Plan**

5/4    1:00 pm - 5:00 pm pdt/mst

5/5    8:00 am - 4:00 pm pdt/mst

6/24      **Steering Committee Conference Call** 9:30 – 10:30 am pdt/mst

September    **Work Group Meeting (Tentative)**

10/28      **Steering Committee Meeting** 9:30 am – 12:30 pm pdt/mst  
McCarran Airport, Las Vegas

### Future Steering Committee Meetings

4/28/21	SC Meeting	4/27/22	SC Meeting
6/23/21	SC Conference Call	6/22/22	SC Meeting
10/27/21	SC Meeting	10/26/22	SC Meeting