Lower Colorado River Multi-Species Conservation Program

Draft Implementation Report
Work Plan and Budget for Fiscal Year 2006

July 2005

current as 072605

Prepared by

Multi-Species Conservation Program Office
Staff and Management

U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Region
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Executive Summary

The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) is a long-term (50-year) plan to conserve at least 26 species along the lower Colorado River (LCR) from Lake Mead to the Southerly International Boundary of Mexico through implementation of a Habitat Conservation Plan. Most of these species are State and/or Federal listed special status species. Implementation of this long-term conservation plan will provide the basis for Section 7 and Section 10 Endangered Species Act compliance for both Federal and non-Federal entities engaging in activities along the LCR including water delivery, river operations and maintenance, agricultural development, power generation, and the change in point of diversion of up to 1.574 maf of water from Imperial Dam to upstream points.

The overall goals of the LCR MSCP are to conserve habitat and work toward the recovery of threatened and endangered species, as well as reduce the likelihood of additional species being listed; accommodate present water diversions and power production and optimize opportunities for future water and power development, to the extent consistent with the law; and provide the basis for incidental take authorizations.

On April 2, 2005, and April 4, 2005, the Secretary of the Interior and representatives from the States of Arizona, California, and Nevada, and water and power organizations in these states signed the program documents required to implement the LCR MSCP. While tasks were initiated and funded by Reclamation in fiscal year (FY) 2004 and FY2005, the first full program year will begin October 1, 2005, which is the start of Federal FY2006. In accordance with the FMA, this annual Implementation Report, Work Plan and Budget (Annual Report) is being developed and submitted to the Steering Committee for review.

In addition to the other information required under Section 7.4.1 of the FMA, this Annual Report provides brief descriptions and projected costs of the FY2006 proposed work tasks as well as a description of work tasks and projected costs for FY2007 and FY2008. It is important to note that the projected work descriptions for FY2007 and FY2008 are projected and may change due to adaptive management activities and access to land and water resources.

Implementation Report, Work Plan, and Budget

The LCR MSCP FMA requires an Annual Report to the Steering Committee by the Program Manger each Federal fiscal year. This Annual Report is for the first full year of the LCR MSCP implementation, and as such will be much briefer than ensuing annual reports. This Annual Report provides information reporting for FY2004 work tasks and projected work tasks for FY2006 – FY2008. The following information fulfills the requirements outlined in the LCR MSCP FMA.

- A current financial report as described in Section 7.5.4 of the FMA.

  As stated earlier, the implementation phase of the LCR MSCP started April 5, 2005, and non-Federal funding for the LCR MSCP will not start before October 1, 2005. Therefore, a standard financial report is not presented, but will contain expenditures for Reclamation for fiscal year 2004, and estimates for expenditures for fiscal years 2005 through 2008. Refer to Table 1-2 of this document for more information.

- A description of all Conservation Measures initiated, continued, or completed during the previous year.

  This discussion in tabular form is found in Table 1-3 of this document.

- A description of all Conservation Measures intended to be initiated or continued during the next three-year period.

  This information is included in Sections A through G of this report, which includes the annual work plan for FY2006.

- The purpose for and the cost estimate of, all Conservation Measures intended to be initiated or continued during the next three-year period.

  This information is also included in Sections A through G of this report, and summarized in Table 1-1.

- A running tabulation and description of all Conservation Measures, which have been completed from the commencement of the LCR MSCP to the date of the report.

This information will be included in future annual reports. At the time of this writing, no Conservation Measures have been completed.

- A description of any take known to have occurred during the previous budget period.

  There has been no documented take to date for the LCR MSCP covered projects.

- A running tabulation of habitat created or restored by the LCR MSCP.

  In FY2004, more than 100 acres of habitat were planted and should result in habitat credit in the future.

- A description of all findings, conclusions, and results of monitoring, research, or Conservation Measures previously undertaken.

  The descriptions for FY2004 are found in the previously submitted document entitled "Work Tasks and Obligations Fiscal Year 2004". As reports, conclusions, and results are received or generated, they will be posted to the LCR MSCP website at http://www.usbr.gov/lc/lcrmscp/.

- Any recommendation made by the U.S. Fish and Wildlife Service or any state wildlife agency regarding the LCR MSCP.

  At this time Reclamation has not received any formal recommendations from the U.S. Fish and Wildlife Service or any state wildlife agencies regarding the LCR MSCP.

- Approval or rejection of any minor modification described in Section 14.1 of the Implementation Agreement.

  No minor modifications to the LCR MSCP have been made at this time.

Fiscal Year 2006 Funding Summary

As outlined in the FMA, the total program cost in 2003 dollars is $626 million split 50/50 between the Federal and non-Federal entities. In accordance with Table 7-1 of the Habitat Conservation Plan and Section 8.1.1 of the FMA, the annual funding commitment for FY2006 is $12,144,762. An inflation index of 1.083 was used to calculate the FY2006 funding commitment. In accordance with the FMA, Reclamation and the non-Federal parties are each responsible for 50 percent of the annual program cost. In accordance with Section 8.3, each state's and Federal share of the FY2006 allocation is as follows:

Federal:	$6,072,381.00
California:	$3,036,190.50
Arizona:	$1,518,095.25
Nevada:	$1,518,095.25

Total FY2006: $12,144,762.00

However, based on Section 8.3 of the FMA and direction from Central Arizona Water Conservation District (CAWCD) the FY2006 allocation of the non-Federal funds has been adjusted as follows:

Federal:	$6,072,381.00
California:	$3,491,619.08
Arizona:	$607,238.10
Nevada:	$1,973,523.82

Total FY2006: $12,144,762.00

This Annual Report describes the FY2006 work tasks, including: partners, Reclamation contact, task purpose, conservation measure associated with the work, long-term goal, location, cost estimates for FY2006, FY2007, and FY2008, and a project description. Cost estimates for FY2007 and FY2008 are based on FY2006 dollar values. This information should allow the reader to understand what work is being completed and how that work furthers the implementation of the Conservation Plan.

The work tasks have been divided into seven general categories. Each category represents a work task and is grouped for the benefit of the reader. The $12,144,762 is divided as follows:

Section A:	Program Administration - $1,000,000
Section B:	Fish Augmentation - $1,085,000
Section C:	Species Research - $1,669,000
Section D:	System Monitoring - $2,498,000

Section E: Conservation Areas Development and Management - $4,233,000
Section F: Post Development Monitoring - $420,000
Section G: Adaptive Management Program - $698,000
Section H: Existing Habitat Maintenance - $541,000

See Table 1-1 for a detailed financial breakdown of each section.

Reclamation's goal is to fully implement the LCR MSCP in an effective, cost efficient and transparent manner. Throughout FY2006, should Reclamation determine that a specific work task can not be undertaken due to unexpected circumstances, funds identified for this specific work will be redirected and used for the following purposes: increase the funding for a work task that is expected to require funding in FY2007 or FY2008; provide more than the minimum funding required to the Habitat Maintenance Fund; begin activities associated with any changed circumstances as defined in Section 5.12.3 of the Habitat Conservation Plan, should any occur.

Table 1-1. Fiscal Year 2006 Work Tasks and Budget Estimate Funding Summary
Lower Colorado River Multi-Species Conservation Program

WORK TASKS	PROGRAM ELEMENTS Sub-Elements		FY2006 Estimate
A.	**PROGRAM ADMINISTRATION**		**$1,000,000**
	1	Program Manager, Senior and Support Staff	$1,000,000
B.	**FISH AUGMENTATION**		**$1,085,000**
	1	Lake Mohave Razorback Sucker Larvae Collections	$225,000
	2	Willow Beach National Fish Hatchery	$200,000
	3	Achii Hanyo National Fish Hatchery	$25,000
	4	Dexter National Fish Hatchery	$110,000
	5	Bubbling Ponds Fish Hatchery	$200,000
	6	Lake Mead Fish Hatchery	$45,000
	7	Lakeside Rearing Ponds	$200,000
	8	Passive Integrated Transponder (PIT) Tag Procurement	$45,000
	9	Boulder City Wetland Ponds	$35,000
C.	**SPECIES RESEARCH**		**$1,669,000**
	1	Brown-Headed Cowbird Trap Assessment	$85,000
	2	Sticky Buckwheat and Threecorner Milkvetch Conservation	$25,000
	3	Multi-Species Conservation Program Covered Species Profile Development	$100,000
	4	Relict Leopard Frog	$15,000
	5	Effects of Abiotic Factors on Insect Populations in Riparian Restoration Sites	$90,000
	6	Insect Population Biology in Riparian Restoration Sites	$126,000
	7	Survey and Habitat Characterization for MacNeill's Sootywing	$150,000
	8	Razorback Sucker Survival Study	$190,000
	9	Razorback Sucker Pen Rearing Tests	$48,000
	10	Razorback Sucker Growth Studies	$125,000
	11	Bonytail Chub Rearing Studies	$165,000
	12	Demographics and Post Stocking Survival of Repatriated Razorback Suckers in Lake Mohave	$185,000
	13	Lake Mead Razorback Sucker Study	$350,000
	14	Humpback Chub Monitoring Program	$15,000

Table 1-1. Continued

D.	**SYSTEM MONITORING**		**$2,498,000**
	1	Marsh Bird Surveys	$25,000
	2	Southwestern Willow Flycatcher Presence/Absence Surveys	$880,000
	3	Southwestern Willow Flycatcher Habitat Monitoring	$90,000
	4	Southwestern Willow Flycatcher Habitat Monitoring (Hualapai Survey)	$68,000
	5	Monitoring Avian Productivity and Survivorship (MAPS)	$300,000
	6	System Monitoring for Riparian Obligate Avian Species	$100,000
	7	Yellow-billed Cuckoo Presence/Absence Surveys	$500,000
	8	Razorback Sucker and Bonytail Stock Assessment	$250,000
	9	Flannelmouth and Razorback Sucker Monitoring Below Davis Dam	$115,000
	10	System Monitoring and Research for Covered Bat Species	$110,000
	11	Use of Microchips/Passive Integrated Transponder (PIT) Tags and Initiation of Mark/Recapture Studies for Monitoring Small Mammal Populations	$60,000
E.	**CONSERVATION AREAS DEVELOPMENT AND MANAGEMENT**		**$4,233,000**
	REACH 3		
	1	Beal Lake Riparian	$200,000
	2	Beal Lake Native Fish	$210,000
	REACH 4		
	3	Ahakhav Tribal Preserve	$120,000
	4	Palo Verde Ecological Reserve	$310,000
	5	Cibola Valley Conservation Area	$1,633,000
	6	Cottonwood Genetics Study	$25,000
	7	Mass Planting Demonstration	$10,000
	8	Use of Seed in Riparian Habitat Restoration	$150,000
	9	Hart Mine Marsh, Cibola National Wildlife Refuge	$100,000
	REACH 5		
	10	Walker Lake, Imperial National Wildlife Refuge	$75,000
	11	Draper Lake, Imperial National Wildlife Refuge	$70,000
	12	Butler Lake	$140,000
	13	McAllister Lake	$75,000
	14	Imperial Demonstration Ponds	$595,000

Table 1-1. Continued

	MISCELLANEOUS		
	15	Backwaters Inventory and Data Collection	$200,000
	16	Conservation Area Site Selection	$200,000
	17	Topock Marsh Pumping	$70,000
	18	Law Enforcement and Fire Suppression	$50,000
F.	**POST DEVELOPMENT MONITORING**		**$420,000**
	1	Vegetation of Survival and Growth – Habitat Monitoring	$250,000
	2	Avian Use of Restoration Sites	$125,000
	3	Small Mammal Colonization of Restoration Sites	$45,000
G.	**ADAPTIVE MANAGEMENT PROGRAM**		**$698,000**
	1	Data Management	$225,000
	2	Annual Report Writing and Production	$35,000
	3	Adaptive Management Research Projects	$230,000
	4	Science/Adaptive Management Strategy	$173,000
	5	Public Outreach	$35,000
H.	**Existing Habitat Maintenance**		**$541,000**
	1	Existing Habitat Maintenance g	$541,000
	TOTAL BUDGET ESTIMATE		**$12,144,000**

Table 1-2. Current Financial Report
Lower Colorado River Multi-Species Program Funding,
(Actual Indices through September 2004 were used for Indexing and Inflation)

Annual Report
July 2005

	Annual Program Costs			**Credits / Deficits**		
Fiscal Year	Indexed Proposed Program	Indexed Proposed Federal	Indexed Proposed Non-Federal	Total Credits/Deficits	Federal Credits/Deficits	Non-Federal Credits/Deficits
*2004	0	0	0	3,381	3,381	
**2005	0	0	0	7,230	7,230	
2006	12,144	6,072	6,072	0		
2007	12,504	6,252	6,252	0		
2008	12,918	6,459	6,459	0		

Note:

**2004 Funds have been approved by the Steering Committee pending U.S. Fish and Wildlife Service review.*

***2005 Proposed costs to the Steering Committee have not been finalized.*
All figures are in millions

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
Yuma Clapper Rail	CLRA1	Create Habitat 512 ac		C3	E4 E5 E9 E10 E11 E12 E13 E14 E15 E16
	CLRA-R	Restoration Research		E1 E2-E15	E1 E3
	CLRA2	Maintain existing important habitat		C3	
	MRM1	Define Habitat Characteristics		C1 D1 D2 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D2 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3
	MRM5	Monitor Selenium levels in backwater			
	CMM1	Reduce risk of loss to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Southwestern Willow Flycatcher	WIFL1	Create Habitat 4050 ac			E4 E5 E16
	WIFL1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	WIFL2	Maintain existing important habitat			
		Study insect-habitat relationship			
		SWWFF-YBCU co/management techniques			
	MRM1	Define Habitat Characteristics	B2	C1 C4 C5 D1 D3 D4 D5 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2
	MRM2	Monitor and adaptively manage created habitat	C1	C1 C4 C5 D1 D3 D4 D5 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3
	MRM4	Brown-headed cowbird evaluation		C2	C1
	CMM1	Reduce risk of loss to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Desert Tortoise	DETO1	Acquire/protect Protect 230 ac			
	DETO2	Avoid impacts on individuals and burrows			
Bonytail	BONY1	Coordinate conservation efforts w/FWS and recovery programs			
	BONY2	360 ac		C3	E2 E10 E11 E12 E13 E14 E15 E16
	BONY2-R	Restoration Research		E1 E2 E8-E13	

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	BONY3	Rear/stock 620,000: 4000-6000 sub-adults/yr for 40 yr Mohave 4000 sub-adult Lake Havasu/yr for 50 years 8000 exp augmentation parker-imperial 5 consecutive yrs 4000 sub-adult/yr Parker-Imperial for 45 yrs	A1 A2	B3 B4 B8 B9 C11 D8	B3 B4 B8 B9 C11 D8
	BONY4	Develop (if necessary) additional rearing capacity	A1	B3 B4 C11	B3 B4 C11
	BONY5	Monitor & Research, adaptive management pops and backwater habitat	A2 A3 C2	B8 B9 D8	B8 B9 D8
	MRM5	Monitor Selenium levels in backwater			
Humpback Chub	HUCH1	$500,000 to existing programs		D10	C14
Razorback Sucker	RASU1	Coordinate conservation efforts w/FWS and recovery programs		C10	
	RASU2	360 ac		C3	E2 E10 E11 E12 E13 E14E15 E16
	RASU2-R	Restoration Research		E1 E2 E8-E13	
	RASU3	Rear/stock 660,000: 24,000 sub-adult/yr for 5 yrs (Parker, Mohave – see plan) 6000 sub-adult/yr for 45 yrs Lake Havasu 6000 sub-adult/yr for 45 years Parker Dam	A2	B1 B2 B4 B5 B6 B7 B8 B9 C9 D8	B1 B2 B5 B6 B7 B8 B9 C9 C10 D8
	RASU4	Develop (if necessary) additional rearing capacity		B2 B4 B5 B6 C9	B2 B4 B5 B6 C9 C10
	RASU5	Support ongoing Mohave conservation efforts		B1 B7 D8	B1 B7 C12 D8
	RASU6	Monitor & Research, adaptive management pops and backwater habitat	A2 A3 C2	B8 B9 C8 C10 D9	B8 B9 C8 C12 D9
	RASU7	Funding for ongoing USBR/SNWA Lake Mead Studies		B6 D7	B6 C13
	RASU8	Continue conservation efforts identified in ISC/SIA BO		B1 B6	B1 B8
	MRM5	Monitor Selenium levels in backwater			
Western Red Bat	WRBA1	Status/habitat surveys			D10
	WRBA2	Create 765 ac			D10 E4 E5 E16

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	WRBA2-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics	B1	C1 D1 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	B1 C1	C1 D1 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Western Yellow Bat	WYBA1	Conduct surveys for species distribution			D10
	WYBA2	Avoid removal of roost trees (palms)			
	WYBA3	Create 765 ac			D10 E4 E5 E16
	WYBA3-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics	B1	C1 D1 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	B1 C1	C1 D1 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Desert Pocket Mouse	DPMO1	Located occupied habitat, restore disturbed habitat			
Colorado River Cotton rat	CRCR1	Status/habitat surveys - *define Habitat 1st 5-yr			
	CRCR2	Create 125 ac			D11 E4 E5 E16 F3
	CRCR2-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 F3	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Yuma Hispid Cotton rat	YHCR1	Status/habitat *define Habitat 1st 5-yr			
	YHCR2	Create 76 ac			D11 E4 E5 E16 F3
	YHCR2-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 F3	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat to wildfire			
	CMM2	Replace created habitat affected by wildfire			
Western Least Bittern	LEBI1	Create 512 ac			E4 E5 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16
	LEBI1-R	Restoration Research		E1 E2-E15	E1 E3
	MRM1	Define Habitat Characteristics		D1 D2 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D2 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM5	Monitor selenium levels			
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
CA Black Rail	BLRA1	Create 130 ac		C3	E4 E5 E9 E10 E11 E12 E13 E14 E15 E16
	BLRA1-R	Restoration Research		E1 E2-E15	E1 E3 E7 E8
	BLRA2	Maintain existing occupied habitat			
	MRM1	Define Habitat Characteristics		C1 D1 D2 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D2 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM5	Monitor selenium levels			
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Yellow-billed Cuckoo	YBCU1	Create 4050 ac			E4 E5 E16
	YBCU1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	YBCU2	Maintain Existing habitat			

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	MRM1	Define Habitat Characteristics		C1 C6 C7 D1 D6	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 C6 C7 D1 D6 F1 F2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Elf Owl	ELOW1	1,784 reach 3-5			E4 E5 E16
	ELOW1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	ELOW2	Install elf owl boxes ** before Gila Woodpeckers established			
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM3	Research nest competition European starlings			
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Gilded Flicker	GIFL1	Create 4050 ac reach 3-7			E4 E5 E16
	GIFL1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	GIFL2	Install artificial snags until vegetation has matured			
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM3	Research nest competition European starlings			
	CMM1	Reduce risk of loss of habitat affected by wildfire			

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	CMM2	Replace created habitat affected by wildfire			
Gila Woodpecker	GIWO1	Create 1,702 reach 3-6			E4 E5 E16
	GIWO1-R	Restoration Research		E1 E2-E6 – E8-E15	E1 E3 E6 E7 E8
	GIWO2	Install artificial snags			
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM3	Research nest competition European Starlings			
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Vermilion Flycatcher	VEFL1	Create 5,208 ac			E4 E5 E16
	VEFL1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics		D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM4	Brown-headed cowbird evaluation		C2	
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Arizona Bell's Vireo	BEVI1	Create 2,983 ac			E4 E5 E16
	BEVI1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM4	Brown-headed cowbird evaluation		C2	
Sonoran Yellow Warbler	YWAR1	Create 4050 ac			E4 E5 E16

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	YWAR1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM4	Brown-headed cowbird evaluation		C2	C1
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Summer Tanager	SUTA1	Create 602 acres			E4 E5 E16
	SUTA1-R	Restoration Research		E1 E2-E6 E8-E15	E1 E3 E6 E7 E8
	MRM1	Define Habitat Characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 F1 F2 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM4	Brown-headed cowbird evaluation		C2	C1
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Flat-tailed Horned Lizard	FTHL1	Acquire and protect 230 ac			
	FTHL2	Impl cons measure to avoid take			
Relict Leopard Frog	RLFR1	10,000/yr for 10 yrs to conservation program			C4
Flannelmouth Sucker	FLSU1	85 ac Reach 3		C3	E16
	FLSU1-R	Restoration Research			
	FLSU2	80,000/yr for 5 years		D9	D9
	FLSU3	Develop management needs/strategies		D9	D9
	MRM2	Monitor and adaptively manage created habitat	C1	D1 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	MRM5	Monitor Selenium levels in backwater			
MacNeills sootywing skipper	MNSW1	Status surveys/habitat - *define Habitat 1st 5-yr			

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	MNSW2	222 ac			E4 E5 E16
	MNSW2-R	Restoration Research			E1 E3 E7 E8
	MRM2	Monitor and adaptively manage created habitat	C1	C1 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habitat affected by wildfire			
Sticky buckwheat	STBU1	10,000 yr to 2030 to Clark CO conservation program			
Threecorner milkvetch	THMI1	10,000 yr to 2030 to Clark CO. conservation program			
EVALUATION SPP					
California Leaf-nose bat	CLNB1	Distribution Surveys			
	CLNB2	Create habitat near roost sites (priority when creating c-w, mesq habitat for other spp)			
	MRM1	Define habitat characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat affected by wildfire			
	CMM2	Replace created habit affected by wildfire			
Pale Townsend Bog-eared Bat	PTBB1	Distribution surveys			
	PTBB2	Create habitat near roost sites			
	MRM1	Determine habitat characteristics		C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 F2 G1 G2 G3
	MRM2	Monitor and adaptively manage created habitat	C1	C1 D1 D6 G1 G2	C3 C5 C6 D1 D2 D3 D4 D5 D6 D7 D11 F1 F2 F3 G1 G2 G3
	CMM1	Reduce risk of loss of habitat affected by wildfire			

Table 1-3 Conservation Measures Lower Colorado River Multi-Species Conservation Program					
Species/Habitat/Action	**Code**	**Description**	**FY2004 Obligation**	**FY2005 Proposed**	**FY2006 Proposed**
	CMM2	Replace created habitat affected by wildfire			
Colorado River Toad	CRTO1	Distribution surveys, habitat affinity, limiting factors			
	CRTO2	Protect existing occupied habitat			
	CRTO3	Research to establish in unoccupied habitat			
Lowland Leopard Frog	LLFR1	Distribution surveys, habitat affinity, limiting factors			
	LLFR2	Protect existing occupied habitat			
	LLFR3	Research to establish in unoccupied habitat			
OTHER					
Topock Marsh Pumping	AMM2	Avoid Flow-Related Impacts on Covered Species			E17
Law Enforcement and Fire Suppression	CMM1	Reduce effects of fire and vandalism on created habitats			E18

Table 1-4. Annual Funding Matrix
Lower Colorado River Multi-Species Conservation Program

	Work Plan Tasks	Task Code	FY2004	FY2005	FY2006	FY2007	FY2008
			Obligated	Proposed	Proposed	Estimate	Estimate
	Note: FY2007-2008 Amounts are estimates without inflation						
A. PROGRAM ADMINISTRATION							
	Program Manager, Senior and Support Staff	05-A1	$0	$550,000			
		06-A1			$1,000,000	$1,000,000	$1,000,000
B. FISH AUGMENTATION							
	Lake Mohave Razorback Sucker Larvae	04-A1	$50,000				
		05-B3		$250,000			
		06-B1			$225,000	$225,000	$225,000
	Willow Beach National Fish Hatchery	05-B2		$175,000			
		06-B2			$200,000	$200,000	$200,000
	Achii Hanyo National Fish Hatchery	04-A1	$50,000				
		05-B3		$50,000			
		06-B3			$25,000	$50,000	$50,000
	Dexter National Fish Hatchery	05-B4		$142,000			
		06-B4			$110,000	$110,000	$110,000
	Bubbling Ponds Fish Hatchery	05-B5		$86,000			
		06-B5			$200,000	$200,000	$200,000
	Lake Mead Fish Hatchery	05-B6		$50,000			
		06-B6			$45,000	$45,000	$45,000
	Lakeside Rearing Ponds	05-B7		$250,000			

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
		06-B7			$200,000	$200,000	$200,000
	Passive Integrated Transponder (PIT Tag) Procurement	04-A2	$54,762				
		05-B8		$75,000			
		06-B8			$45,000	$75,000	$75,000
	Boulder City Wetlands Ponds	05-B9		$35,000			
					$35,000	$35,000	$35,000
	Electro-Fishing Boat	04-A3	$58,823				
C. SPECIES RESEARCH							
	GENERAL						
	Brown-Headed Cow Bird Trap Assessment	05-C2		$80,000			
		06-C1			$85,000	$0	$0
	Sticky Buckwheat & Threecorner Milkvetch Conservation	06-C2			$25,000	$21,000	$21,000
	MSCP Covered Species Profile Development	06-C3			$100,000	$15,000	$15,000
	Point Count Design and Sample Size Evaluation	05-C1		$50,000			
	RIPARIAN/NEOTROPIC BIRDS						
	Relict Leopard Frog	06-C4			$15,000	$11,000	$11,000
	Effects of Abiotic Factors on Insect Populations in Riparian Restoration Sites	06-C5			$90,000	$86,000	$0
	Insect Population Biology in Riparian Restoration Sites	06-C6			$126,000	$0	$0
	Survey and Habitat Characterization for MacNeill's Sootywing	06-C7			$150,000	$150,000	$75,000

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
	Development of Backwater Rating Criteria	05-C3		$50,000			
	Southwestern Willow Flycatcher Colorimetry Study	05-C4		$21,000			
	Southwestern Willow Flycatcher Prey Base Study	04-B2	$41,032				
		05-C5		$65,000			
	Yellow-Billed Cuckoo Demographic Study	05-C6		$115,000			
	Yellow-Billed Cuckoo Surveys, Demographic Study and Survey	05-C7		$51,000			
	NATIVE FISHES						
	Razorback Sucker Survival Study	05-C8		$250,000	$190,000	$190,000	$190,000
		06-C8					
	Razorback Sucker Pen Rearing Tests	05-C9		$62,000			
		06-C9			$48,000	$48,000	$48,000
	Razorback Sucker Growth Studies	06-C10			$125,000	$125,000	$125,000
	Bonytail Chub Rearing Studies	06-C11			$165,000	$165,000	$165,000
	Demo. and Post Stocking Survival of Repatriated Razorbacks in Lake Mohave	06-C12			$185,000	$185,000	$185,000
	Lake Mead Razorback Sucker Study	05-D7		$198,000			
		06-C13			$350,000	$350,000	$350,000
	Humpback Chub Monitoring Program	05-D10		$10,000			
		06-C14			$15,000	$11,000	$11,000
	Senator Wash Razorback Sucker Stock Assessment	05-C10		$45,000			
	Bonytail Feeding Trials	05-C11		$24,000			
	Lower Colorado River Fishes Database Management	04-C2	$235,000				

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
D. SYSTEM MONITORING							
	GENERAL						
	Marsh Bird Surveys	05-D2		$50,000			
		06-D1			$25,000	$25,000	$25,000
	RIPARIAN/NEOTROPICAL BIRDS						
	Southwestern Willow Flycatcher Presence/Absence Surveys	05-D3		$785,000			
		06-D2			$880,000	$925,000	$950,000
	Southwestern Willow Flycatcher Habitat Monitoring	05-D4		$160,000			
		06-D3			$90,000	$90,000	$90,000
	Southwestern Willow Flycatcher Habitat Monitoring (Hualapai Survey)	05-D5		$65,000			
		06-D4			$68,000	$76,000	$78,000
	Monitoring Avian Productivity and Survivorship	05-D6		$300,000			
		06-D5			$300,000	$300,000	$300,000
	NATIVE FISHES						
	Razorback Sucker and Bonytail Stock Assessment	05-D8		$180,000			
		06-D8			$250,000	$250,000	$250,000
	Flannelmouth and Razorback Sucker Monitoring Below Davis Dam	05-D9		$58,000			
		06-D9			$115,000	$115,000	$115,000
	System Monitoring and Research of Covered Bats	06-D10			$110,000	$90,000	$110,000
	Microchip/PIT-Recapture of Mammals	06-D11			$60,000	$50,000	$50,000
	System Monitoring for Riparian Obligate Avian Species	06-D6			$100,000	$100,000	$100,000

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
	Yellow-billed Cuckoo Presence/Absence Surveys	06-D7			$500,000	$500,000	$500,000
	Vegetation Type Mapping	04-C1	$400,000				
		05-D1		$327,000			
E. CONSERVATION AREA DEVELOPMENT AND MANAGEMENT							
	REACH 3						
	Beal Lake-Havasu National Wildlife Refuge	04-D1	$1,232,267				
		05-E1		$543,000			
		06-E1			$200,000	$150,000	$150,000
	Beal Lake Native Fish	06-E2			$210,000	$50,000	$50,000
	Needles-Topock River Mile 240 Stabilization	05-E2		$80,000			
	REACH 4						
	Ahakhav Tribal Preserve	04-D4	$1,037,791				
		05-E5		$120,000			
		06-E3			$120,000	$100,000	$100,000
	Palo Verde Ecological Reserve	06-E4			$310,000	$800,000	$810,000
	Cibola Valley Conservation Area	05-E8		$120,000			
		06-E5			$1,633,000	$1,540,000	$1,550,000
	Cottonwood Genetics Study	06-E6		$90,000	$25,000	$15,000	$15,000
	Mass Planting Demonstration	06-E7			$10,000	$10,000	$10,000
	Use of Seed in Riparian Habitat Restoration	06-E8			$150,000	$10,000	$10,000
	Hart Mine Marsh	05-E7		$100,000			
Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
		06-E9			$100,000	$300,000	$1,000,000
	REACH 5						
	Walker Lake	05-E11		$61,000			
		06-E10			$75,000	$75,000	$450,000
	Draper Lake	05-E10		$100,000			
		06-E11			$70,000	$540,000	$70,000
	Butler Lake	04-D5	$6,673				
		05-E12		$55,000			
		06-E12			$140,000	$75,000	$25,000
	McAllister Lake	05-E13		$40,000			
		06-E13			$75,000	$20,000	$20,000
	Imperial Demonstration Ponds	05-E9		$105,000			
		06-E14			$595,000	$3,000,000	$300,000
	MISCELLANEOUS						
	Backwaters Inventory and Data Collection	06-E15			$200,000	$150,000	$150,000
	Conservation Area Site Selection	06-E16			$200,000	$100,000	$75,000
	Topock Marsh Pumping	06-E17			$70,000	$50,000	$300,000
	Law Enforcement and Fire Suppression	06-E18			$50,000	$50,000	$75,000
	Pintail Slough-Havasu National Wildlife Refuge	04-D2	$95,000				
		05-E3		$10,000			
	Planet Ranch	05-E4		$100,000			
	Unit 1-Cottonwood Cibola National Wildlife Refuge	04-D3	$110,004				
		05-E6		$492,000			

Table 1-4. Annual Funding Matrix (Continued) Lower Colorado River Multi-Species Conservation Program							
	Pratt Agriculture-Lease	04-D6	$5,088				
		05-E14		$15,000			
	Mittry Lake-Fire Rehabilitation	05-E15		$50,000			
F. POST DEVELOPMENT MONITORING							
	Vegetation of Survival and Growth – Habitat Monitoring	05-F1		$250,000			
		06-F1			$250,000	$275,000	$310,000
	Avian Use of Restoration Sites	05-F2		$50,000			
		06-F2			$125,000	$150,000	$175,000
	Small Mammal Colonization of Restoration Sites	05-F3		$45,000			
		06-F3			$45,000	$50,000	$55,000
G. ADAPTIVE MANAGEMENT							
	Data Management	05-G1		$160,000			
		06-G1			$225,000	$160,000	$175,000
	Annual Report Writing and Production	05-G2		$35,000			
		06-G2			$35,000	$35,000	$35,000
	Adaptive Management Research Projects	06-G3			$230,000	$275,000	$325,000
	Science/Adaptive Management Strategy	06-G4			$173,000	$0	$0
	Public Outreach	06-G5			$35,000	$35,000	$35,000
H. HABITAT MAINTENANCE ACCOUNT							
	Existing Habitat Maintenance	06-H1			$541,000	$541,000	$541,000
	YEARLY TOTALS:		**$3,376,440**	**$7,230,000**	**$12,144,000**	**$14,574,000**	**$11,814,000**

Table 1-5. Habitat Conservation Plan (Table 7-1 Crosswalk)
Lowe Colorado River Multi-Species Conservation Program

COST CATEGORY	Table 7-1 Years 1-5 2003 dollars	Table 7-1 Years 1-5 2006 dollars	Table 7-1 FY2006 2006 dollars	FY2006 Workplan 2006 dollars
Program Administration	$5,090,000	$5,512,000	$1,102,000	$1,000,000
Land Acquisition	$1,000,000	$1,083,000	$217,000	$0
Planning, Design, and Engineering	$1,590,000	$1,722,000	$344,000	$1,230,000
Habitat Creation	$11,560,000	$12,518,000	$2,504,000	$1,273,000
Environmental Compliance	$380,000	$412,000	$82,000	$120,000
Fish Augmentation	$4,000,000	$4,332,000	$866,000	$1,120,000
Conservation Area Management and Maintenance	$2,410,000	$2,610,000	$522,000	$335,000
Law Enforcement Staff	$500,000	$542,000	$108,000	$25,000
Firefighting Staff	$500,000	$542,000	$108,000	$25,000
Existing Habitat Maintenance	$2,500,000	$2,708,000	$542,000	$541,000
Topock Marsh Pumping	$540,000	$585,000	$117,000	$70,000
Monitoring, Research, and Adaptive Management	$24,000,000	$25,992,000	$5,199,000	$5,440,000
Remedial Measures	$0	$0	$0	$0
Water Acquisition	$2,000,000	$2,166,000	$433,000	$700,000
Total	**$56,070,000**	**$60,724,000**	**$12,144,000**	**$12,144,000**
Note: The costs allocated in Table 7-1 were an estimate developed using the best available information at the time. However, based on actual implementation and adaptive management, dollars allocated within specific cost categories have changed.				

Section A:
Program Administration

Work Task A1:
Senior and Support Staff

Contact:	Lorri Gray, LC-8000
Purpose:	Provides senior staff and administrative support to manage implementation of the LCR MSCP. The LCR MSCP Program Manager will direct functions and activities associated with implementation.
Long-term Goal(s):	Provides the management and supervision to ensure the program is implemented in a cost-efficient, effective and transparent manner, while achieving the requirements of the Habitat Conservation Plan.
Location:	Bureau of Reclamation, Lower Colorado Regional Office, Boulder City, NV 89005
FY2006 Estimate:	$1,000,000 funds program administration, supervision and provides for the continued development of the LCR MSCP Office within Reclamation's Lower Colorado Region.
FY2007 Estimate:	$1,000,000. Same as previous year.
FY2008 Estimate:	$1,000,000. Same as previous year.
Project Description:	Provides management, supervision and support for the LCR MSCP.

Section B:

Fish Augmentation

Work Task B1:
Lake Mohave Razorback Sucker Larvae Collections

Partners:	Lower Colorado River Native Fish Work Group
Contact:	Tom Burke, LC-8300
Purpose:	Harvest wild razorback sucker larvae from Lake Mohave and deliver to Willow Beach National Fish Hatchery (Willow Beach NFH).
Conservation Measures:	RASU3, RASU5, and RASU8
Long-term Goal(s):	Razorback suckers are one of two endangered fish species targeted for the Fish Augmentation Project. Wild razorback sucker larvae provide the best quality fish for this program.
Location:	Lake Mohave
FY2006 Estimate:	$225,000 for Reclamation staff, equipment and supplies for the collection and transportation of larvae from Lake Mead to Willow Beach NFH.
FY2007 Estimate:	$225,000. Same as previous year.
FY2008 Estimate:	$225,000. Same as previous year.
Project Description:	This project involves capturing wild-born razorback sucker larvae from Lake Mohave, and delivering them to Willow Beach NFH for initial rearing. Since 1992, Reclamation and its partners have been rebuilding the razorback sucker brood stock in Lake Mohave. Their larvae represent the remaining genomes for razorback sucker and provide a level of genetic diversity found nowhere else in the world.

Work Task B2:
Willow Beach National Fish Hatchery

Partners:	U.S. Fish and Wildlife Service (FWS)
Contact:	Tom Burke, LC-8300
Purpose:	Develop, maintain, and operate a portion of the fish rearing facility to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	RASU3 and RASU4
Long-term Goal(s):	The two principal fishes to be reared are the razorback sucker and the bonytail. Over 1.20 million native fish need to be reared. Willow Beach National Fish Hatchery (Willow Beach NFH) is an integral part of the Fish Augmentation Program.
Location:	Willow Beach NFH is located on the LCR approximately five miles below Hoover Dam
FY2006 Estimate:	$200,000 for Reclamation and FWS staff, equipment, materials and supplies to rear razorback sucker and bonytail.
FY2007 Estimate:	$200,000. Same as previous year.
FY2008 Estimate:	$200,000. Same as previous year.
Project Description:	This program will facilitate rearing of razorback sucker and bonytail for release into the lower river as part of the LCR MSCP's Fish Augmentation Program. Willow Beach NFH is managed by the FWS, and is staffed by both FWS and Reclamation employees.

Work Task B3:
Achii Hanyo National Fish Hatchery

Partners:	Colorado River Indian Tribes (CRIT) U.S. Fish and Wildlife Service (FWS)
Contact:	Tom Burke, LC-8300
Purpose:	Continue to develop a native fish rearing facility to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	BONY3 and BONY4
Long-term Goal(s):	Increase native fish production capabilities. The two principal fishes to be reared are razorback sucker and bonytail. The goal is to rear and stock over 1.2 million native fish. This facility will have a role in the Fish Augmentation Program.
Location:	Achii Hanyo, Colorado River Indian Tribes Reservation, south of Parker, Arizona
FY2006 Estimate:	$25,000 to continue work on water intakes, strengthen earthen berms, develop fish collection kettles and similar facility improvements.
FY2007 Estimate:	$50,000 for Reclamation staff and agreement costs.
FY2008 Estimate:	$50,000. Same as previous year.
Project Description:	Complete construction of the maintenance building, which will help facilitate rearing of razorback suckers and bonytails for release into the lower river as part of the LCR MSCP's Fish Augmentation Program. Achii Hanyo is a satellite facility of Willow Beach National Fish Hatchery and is managed by the FWS.

Work Task B4:
Dexter National Fish Hatchery

Partners:	U.S. Fish and Wildlife Service (FWS)
Contact:	Tom Burke, LC-8300
Purpose:	Rear razorback sucker and bonytail to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	RASU3, RASU4, BONY3, and BONY4
Long-term Goal(s):	Increase native fish production capabilities. The two principal fishes to be reared are razorback sucker and bonytail. The goal is to rear and stock over 1.2 million native fish. Dexter Hatchery is an integral part of the Fish Augmentation Program and will be the key production facility for the bonytail.
Location:	Dexter National Fish Hatchery, New Mexico
FY2006 Estimate:	$110,000. $100,000 will be obligated under an interagency agreement for work at the hatchery. An additional $10,000 will be expended by LCR MSCP fishery staff for participation in tagging, stocking and contract management.
FY2007 Estimate:	$110,000. Same as previous year.
FY2008 Estimate:	$110,000. Same as previous year.
Project Description:	This project will rear razorback suckers and bonytails for release into the LCR as part of the LCR MSCP's Fish Augmentation Program. Dexter National Fish Hatchery is managed and operated by the FWS. The facility maintains the only brood stock for bonytails in the world, and also maintains a backup brood stock for razorback suckers. Work scheduled for FY2006 includes

maintaining extant brood fish and producing young for use in the LCR MSCP program. Target production for FY2006 is 75,000 fingerling bonytail for distribution to other hatcheries; rear 500-1,000 razorback suckers to 350 mm or greater; and rear 3,000-5,000 bonytails to 300 mm or greater.

Work Task B5:
Bubbling Ponds Fish Hatchery

Partners:	Arizona Game and Fish Department (AZGFD)
Contact:	Tom Burke, LC-8300
Purpose:	Develop, maintain, and operate a native fish rearing facility to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	RASU3 and RASU4
Long-term Goal(s):	Maintain Bubbling Ponds Fish Hatchery as an integral part of the Fish Augmentation Program for the LCR MSCP, providing between 5,000 and 15,000 razorback suckers annually to the program.
Location:	Bubbling Ponds Fish Hatchery, Sedona, Arizona
FY2006 Estimate:	$200,000 covers Reclamation staff and agreement costs.
FY2007 Estimate:	$200,000. Same as previous year.
FY2008 Estimate:	$200,000. Same as previous year.
Project Description:	Program for FY2006 is projected to support rearing of 10,000 razorback suckers; replace aging water delivery lines; install flow-measuring devices; and refine design and specifications for construction of new settling basin. The facility was first developed in the 1950's. Reclamation and AZGFD have been cooperatively upgrading this facility since 1998, and so far, the hatchery has reared and released more than 50,000 razorback suckers into the LCR.

Work Task B6:
Lake Mead Fish Hatchery

Partners:	Nevada Department of Wildlife (NDOW)
Contact:	Tom Burke, LC-8300
Purpose:	Develop warm water rearing capability for offspring of Lake Mead razorback suckers to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	RASU3, RASU4, RASU7, and RASU8
Long-term Goal(s):	Razorback sucker are one of two endangered fish species targeted for the Fish Augmentation Program. Production needs will range from 15,000 to 30,000 sub-adult fish per year. Development of warm water capability at Lake Mead Hatchery will provide program assurance for reaching the needed annual production.
Location:	Lake Mead
FY2006 Estimate:	$45,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$45,000. Same as previous year.
FY2008 Estimate:	$45,000. Same as previous year.
Project Description:	This project will assist and expedite development of native fish rearing capability at NDOW's Lake Mead Fish Hatchery, and will provide for the feeding and care of 4,000 juvenile razorback suckers captured from Lake Mead. The facility is operated and managed by NDOW.

Work Task B7:
Lakeside Rearing Ponds

Partners:	Lower Colorado River Native Fish Work Group
Contact:	Tom Burke, LC-8300
Purpose:	Rear razorback suckers in isolated rearing ponds along the Lake Mohave shoreline to contribute to the LCR MSCP Fish Augmentation Program.
Conservation Measures:	RASU3 and RASU5
Long-term Goal(s):	Increase native fish production capabilities. The Lake Mohave razorback sucker population is the brood stock for the Fish Augmentation Program. Maintenance of this population is dependent upon the success of the Lakeside Pond operation.
Location:	Lake Mohave
FY2006 Estimate:	$200,000 for Reclamation staff, travel, boat maintenance, fuel and slip rentals to provide bi-weekly care of fish in these ponds from March to November.
FY2007 Estimate:	$200,000. Same as previous year.
FY2008 Estimate:	$200,000. Same as previous year.
Project Description:	This project is part of the Lake Mohave razorback Sucker repatriation program and provides for on-site conditioning of juvenile razorback suckers to local water quality and other environmental factors. This work began as the primary tool for accomplishing the repatriation program, prior to the involvement of Willow Beach National Fish Hatchery (1996).

Work Task B8:
Passive Integrated Transponder (PIT) Tag Procurement

Contact:	Tom Burke, LC-8300
Purpose:	Acquire fish tagging materials for native fish being released into the LCR.
Conservation Measures:	RASU3, RASU6, BONY 3 and BONY5
Long-term Goal(s):	The goal is to rear and stock over 1.2 million native fish. During the first 10 years of the program, most fish will be tagged with PIT tags to allow for maximum information gathering upon recapture. Such survival and distribution data will be needed for future decision-making.
Location:	Lower Colorado River
FY2006 Estimate:	$45,000 for 10,000 tags and associated equipment.
FY2007 Estimate:	$75,000 for 20,000 tags and associated equipment.
FY2008 Estimate:	$75,000. Same as previous year.
Project Description:	Purchase 10,000 PIT tags, new tag reader, and directional antenna. Fish Augmentation Program requires all fishes to be marked in some way to facilitate identification upon recapture. To assist with survival studies, a PIT tag, which provides a unique ten-digit alphanumeric code for each tag is inserted into the fish's body cavity. Each tag contains a coil of wire and a computer chip. A magnetic field will generate enough electricity to download the tag number. Theoretically, the tags should last indefinitely. Reclamation and the U.S. Fish and Wildlife Service have been using these tags successfully along the LCR since 1991.

Work Task B9:
Boulder City Wetland Ponds

Partners:	Nevada Department of Wildlife (NDOW) City of Boulder City, Nevada
Contact:	Tom Burke, LC-8300
Purpose:	Develop and maintain off-site rearing capabilities to augment production at state and federal hatcheries.
Conservation Measures:	RASU3, RASU6, BONY3 and BONY5
Long-term Goal(s):	The two principal fishes to be reared are Razorback sucker and bonytail. Maintain rearing capability at multiple sites to assure program accomplishment by providing contingencies in case of catastrophic events at one or more facilities.
FY2006 Estimate:	$35,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$35,000. Same as previous year.
FY2008 Estimate:	$35,000. Same as previous year.
Project Description:	This is a carryover project from FY2005. Work originally scheduled in the spring of 2005 to replace the liner on pond #4, which was destroyed by fire. The work had to be postponed until fall/winter due to the unavailability of City of Boulder City maintenance staff and equipment. Reclamation, NDOW, and the City of Boulder City have been cooperatively operating fish rearing ponds at the Veteran's Memorial Park in Boulder City since 1997.

Section C:
Species Research

Work Task C1:
Brown-Headed Cowbird Trap Assessment

Partners:	Havasu National Wildlife Refuge Bill Williams River National Wildlife Refuge Alamo Lake State Wildlife Area
Contact:	Theresa Olson, LC-8222
Purpose:	Evaluate brown-headed cowbird (BHCO) Control Program.
Conservation Measures:	MRM4
Long-term Goal(s):	Post-trap monitoring will continue until BHCO population numbers and/or parasitism rates approach pre-trap numbers. This data will enable Reclamation to determine potential BHCO trapping intervals and when such control measures are deemed necessary to protect LCR MSCP covered species, especially the southwestern willow flycatcher.
FY2006 Estimate:	$85,000. Reclamation's Denver Technical Center is conducting this evaluation. Costs also include Lower Colorado Regional staff oversight. It is not anticipated that study will continue beyond 2006.
FY2007 Estimate:	0
FY2008 Estimate:	0
Project Description:	From 1998-2001, Reclamation implemented a BHCO Control Program in accordance with the 1997 Biological Opinion on routine operations and maintenance of the LCR. BHCO traps were placed at Havasu National Wildlife Refuge (1998 only), Alamo Lake State Wildlife Area, and the Bill Williams River National Wildlife Refuge, all

located in Arizona. Trapping was suspended after the 2001 breeding season and success was monitored from 2002-2005. BHCO populations have not reached pre-trap numbers and parasitism rates for host species have remained low. Monitoring will continue to determine how long trapping can be effective before BHCO population numbers and/or parasitism rates approach pre-trap levels.

Work Task C2:
Sticky Buckwheat and Threecorner Milkvetch Conservation

Partners:	Clark County Multiple Species Habitat Conservation Program (MSHCP)
Contact:	John Swett, LC-8220
Purpose:	Support implementation of conservation measures for sticky buckwheat and threecorner milkvetch.
Conservation Measures:	STBU1 and THMI1
Long-term Goal(s):	$20,000 will be provided annually to the Clark County MSHCP Rare Plant Workgroup to support conservation measures for these plant species until 2030.
FY2006 Estimate:	$25,000. $20,000 will be provided to the Clark County MSHCP Rare Plant Workgroup to support conservation measures for these plant species. An additional $5,000 will be used for grant development and oversight.
FY2007 Estimate:	$21,000. $20,000 will be provided to the Clark County MSHCP Rare Plant Workgroup to support conservation measures for these plant species in FY2007. An additional $1,000 will be used for grant development and oversight.
FY2008 Estimate:	$21,000. Same as previous year.
Project Description:	Sticky buckwheat and threecorner milkvetch are covered species within the Clark County MSHCP as well as the LCR MSCP. Funding will be provided to the Clark County MSHCP Rare Plant Workgroup to support implementation of conservation measures

for these two plant species that are beyond the permit requirements of the Clark County MSHCP.

Work Task C3:
Multi-Species Conservation Program Covered Species Profile Development

Contact:	John Swett, LC-8220
Purpose:	Assess existing knowledge for each LCR MSCP covered species to determine research needs and habitat requirements for future restoration projects.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	All literature searches, data compilation, and species profile development will be conducted in FY2006. As new information becomes available through the LCR MSCP or other projects, species profiles will be updated. Research priorities will be determined as data gaps are identified.
FY2006 Estimate:	$100,000. Reclamation staff will conduct all tasks.
FY2007 Estimate:	$15,000. Species profiles will be developed in FY2006. New literature will be evaluated each year and species profiles will be updated, when necessary. Estimated costs for FY2007 are approximately $15,000 for Reclamation staff and acquisition of new data.
FY2008 Estimate:	$15,000. Same as previous year.
Project Description:	To successfully create habitat for LCR MSCP covered species, species profiles must be developed. Extensive literature searches will be conducted to accumulate existing knowledge on each covered species. Species profiles will be written, including known habitat requirements and management concerns. Data gaps will be identified in order to direct species research priorities.

Work Task C4:
Relict Leopard Frog

Partners:	Relict Leopard Frog Conservation Team
Contact:	John Swett, LC-8220
Purpose:	Support implementation of conservation measures for relict leopard frog.
Conservation Measures:	RLFR1
Long-term Goal(s):	$10,000 will be provided annually to the Relict Leopard Frog Conservation Team to support conservation measures for this species until 2016.
FY2006 Estimate:	$15,000. $10,000 will be provided to the Relict Leopard Frog Conservation Team to support conservation measures for this species. An additional $5,000 will be needed for grant development and oversight.
FY2007 Estimate:	$11,000. $10,000 will be provided to the Relict Leopard Frog Conservation Team to support conservation measures for this species in FY2007. An additional $1,000 will be needed for grant oversight.
FY2008 Estimate:	$11,000. Same as previous year.
Project Description:	The LCR MSCP will assist and contribute to existing relict leopard frog research and conservation efforts initiated by the Relict Leopard Frog Conservation Team. $10,000 per year for a period of ten years will be contributed to the Relict Leopard Frog Conservation Team to implement planned, but unfunded conservation measures.

Work Task C5:
Effects of Abiotic Factors on Insect Populations in Riparian Restoration Sites

Contact:	Bill Wiesenborn, LC-8226
Purpose:	Investigate the effects of soil conditions, especially nitrogen concentration, on insect abundance in riparian restoration sites to determine prey availability for riparian obligate bird species, including southwestern willow flycatcher.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Information obtained from this study will be used to help plan riparian habitat restoration techniques and may be used to evaluate habitat quality.
FY2006 Estimate:	$90,000 includes Reclamation staff and travel.
FY2007 Estimate:	$86,000. This two-year study will be completed in FY2007.
FY2008 Estimate:	0
Project Description:	Insect populations are known to be affected by soil conditions, especially nitrogen concentration. Many riparian sites are sustained by high-nitrogen water due to irrigation drainage, discharge of treated wastewater or direct application of fertilizer. This study will quantify effects of soil composition on insect population abundance and insect predator/parasite abundance.

Work Task C6:
Insect Population Biology in Riparian Restoration Sites

Contact:	Bill Wiesenborn, LC-8226
Purpose:	Investigate insects utilizing riparian areas, especially riparian restoration sites, to determine prey availability for riparian obligate bird species, including southwestern willow flycatcher, and to develop recommendations for increasing this prey base.
Conservation Measure:	MRM1 and MRM2
Long-term Goal(s):	Information obtained from this study will be used to help plan riparian habitat restoration projects.
FY2006 Estimate:	$126,000 includes Reclamation staff, travel, and a contract for insect identification.
FY2007 Estimate:	0
FY2008 Estimate:	0
Project Description:	Nine LCR MSCP covered bird species utilize riparian habitat for breeding. All nine species utilize insects as their main diet. The main objectives of this study are to measure insect diversity in riparian habitat, especially Hymenoptera; to measure insect availability in restored habitats; and to make recommendations on how to increase insect populations to provide increased food base for riparian birds.

Work Task C7:
Survey and Habitat Characterization for MacNeill's Sootywing

Contact:	Bill Wiesenborn, LC-8226
Purpose:	Conduct surveys and research to locate MacNeill's sootywing skipper habitat and to better define its habitat requirements.
Conservation Measure:	MNSW1
Long-term Goal(s):	Results of this project will be used to assist with the creation of 222 acres for the MacNeill's sootywing skipper habitat.
FY2006 Estimate:	$150,000. Project will require Reclamation staff (½-full time equivalent) and one university employee (½ time). Reclamation lab will provide plant water content and soils analyses. An educational institution will provide genetic analysis of plant tissue.
FY2007 Estimate:	$150,000. Same as previous year.
FY2008 Estimate:	$75,000 includes completion of work and development of the final report.
Project Description:	Survey MacNeill's sootywing skipper and its host plant within LCR MSCP boundaries. Surveys will concentrate on river and wash inflows to LCR, including Virgin, Muddy, and Bill Williams Rivers as well as Sacramento Wash. Measure site factors affecting presence or absence of MacNeill's sootywing skipper concurrent with surveys.

Work Task C8:
Razorback Sucker Survival Study

Partners:	Arizona State University Arizona Game and Fish Department
Contact:	Tom Burke, LC-8300
Purpose:	Assess survival and distribution of razorback suckers released into the LCR.
Conservation Measures:	RASU6
Long-term Goal(s):	The LCR MSCP will rear and release over 1.2 million fish into the LCR. Assessments of the overall effectiveness of this program will be focused on the survival of these fish and an understanding of the factors affected said survival. These data are required for the Adaptive Management Program.
Location:	Lower Colorado River, below Parker Dam
FY2006 Estimate:	$190,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$190,000. Same as previous year.
FY2008 Estimate:	$190,000. Same as previous year.
Project Description:	Assess the survival and distribution of razorback sucker stocked in the LCR below Parker Dam. This effort includes tracking, collecting fish for population age and growth, and measuring other factors that affect fish survival and distribution.

Work Task C9:
Razorback Sucker Pen Rearing Tests

Partners:	Willow Beach National Fish Hatchery
Contact:	Tom Burke, LC-8300
Purpose:	Assess utility of pen-rearing of razorback suckers in the LCR at Willow Beach National Fish Hatchery to increase rearing capability at the hatchery and to familiarize fish with Colorado River water conditions before release.
Conservation Measures:	RASU3 and RASU4
Long-term Goal(s):	The LCR MSCP will rear and release over 1.2 million fish into the LCR, and will continuously seek for measures to improve both quantity and quality of the fish reared and released. This action offers such improvements.
FY2006 Estimate:	$48,000 for labor and analysis.
FY2007 Estimate:	$48,000. Same as previous year.
FY2008 Estimate:	$48,000. Same as previous year.
Project Description:	This program will evaluate the usefulness of pen culture for juvenile and sub-adult razorback suckers. Studies to date indicate that both size at time of release and conditioning prior to release are important factors for post stocking survival. This program will allow us to examine effects of reduced density in the hatchery raceways and could potentially improve both the size and condition of razorback suckers.

Work Task C10:
Razorback Sucker Growth Studies

Contact:	Tom Burke, LC-8300
Purpose:	Evaluate factors affecting growth of sub-adult razorback sucker in order to maximize total length at release.
Conservation Measures:	RASU3 and RASU4
Long-term Goal(s):	Rear and stock 660,000 razorback suckers into LCR.
Location:	Bubbling Ponds Fish Hatchery
FY2006 Estimate:	$125,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$125,000. Same as previous year.
FY2008 Estimate:	$125,000. Same as previous year.
Project Description:	Research to date shows that first year survival for razorback sucker is directly related to total length of sub-adult fish at time of release. Hatchery programs currently yield substantial numbers of 10-12 inch fish. This study will evaluate the relationship between density and growth for fish, which have already reached 8+ inches total length.

Work Task C11:
Bonytail Chub Rearing Studies

Partners:	U.S. Fish and Wildlife Service Hualapai Tribe Arizona Game and Fish Department
Contact:	Tom Burke, LC-8300
Purpose:	Evaluate effects of temperature, diet, and density on growth of bonytail chub.
Conservation Measures:	BONY3 and BONY4
Long-term Goal(s):	LCR MSCP will continue to support research that will benefit the performance of conservation measures.
Location:	Hualapai Indian Reservation, Colorado River Indian Tribes Reservation and Bubbling Ponds Fish Hatchery.
FY2006 Estimate:	$165,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$165,000. Same as previous year.
FY2008 Estimate:	$165,000. Same as previous year.
Project Description:	Bonytail have shown extremely varied growth in captivity, even for fish from the same family lot. Reasons for this wide range in size are unknown. Additionally, age, not size, seems to determine sexual maturity, and small bonytail left in ponds after sorting by size, have actually spawned. Their offspring crowd the pond and add to poor growth problems of the species. This work will comprise three separate studies to investigate variation in

growth: improvements to diet, effects of fish density, and effects of ambient temperature.

Work Task C12:
Demographics and Post Stocking Survival of Repatriated Razorback Suckers in Lake Mohave

Contact:	Tom Burke, LC-8300
Purpose:	Evaluate population dynamics of repatriated razorback suckers in Lake Mohave and assess post stocking distribution and survival.
Conservation Measures:	RASU5 and RASU6
Long-term Goal(s):	Develop and maintain a brood stock of 50,000 razorback sucker in Lake Mohave.
Location:	Lake Mohave
FY2006 Estimate:	$185,000 for Reclamation staff and agreement costs.
FY2007 Estimate:	$185,000. Same as previous year.
FY2008 Estimate:	$185,000. Same as previous year.
Project Description:	The LCR MSCP accepted responsibility to complete the Lake Mohave razorback sucker repatriation program, which is attempting to develop a brood stock of 50,000 adult fish. This study will evaluate the population, means used to monitor these fish, and assess whether this low population estimate is real or a result of the monitoring technique used. Extensive use of radio and sonic tracking of fish will be used to assess distribution and survival. Demographic modeling will also be used to assess population structure.

Work Task C13:
Lake Mead Razorback Sucker Study

Partners:	Southern Nevada Water Authority (SNWA) Nevada Department of Wildlife (NDOW)
Contact:	Tom Burke, LC-8300
Purpose:	Monitor razorback sucker population in Lake Mead; collect razorback sucker larvae, rear and repatriate to Lake Mead.
Conservation Measure:	RASU7
Long-term Goal(s):	Razorback suckers are one of the target fish species for the LCR MSCP. The Lake Mead population is a unique stock within the project area. Monitoring will continue to provide data to assess overall species status and evaluate conservation measures.
Location:	Lake Mead
FY2006 Estimate:	$350,000 for Reclamation staff and contract costs.
FY2007 Estimate:	$350,000. Same as previous year.
FY2008 Estimate:	$350,000. Same as previous year.
Project Description:	This project will continue a monitoring program for the Lake Mead razorback sucker population. Since 1994, Reclamation has collaborated with SNWA and NDOW to conduct this work. Bio/West, Inc. has been on contract to SNWA to implement much of this monitoring. The study is evaluating this remarkable recruitment. The work includes monitoring three spawning areas, radio telemetry work on suckers in Las Vegas Bay, and continued assessment of water level fluctuations with sucker ecology.

Work Task C14:
Humpback Chub Monitoring Program

Contact:	Tom Burke, LC-8300
Purpose:	Provide support to existing Humpback chub conservation.
Conservation Measure:	HUC1
Long-term Goal(s):	Humpback chub conservation will be supported at this level for the 50-year life of the LCR MSCP.
Location:	Grand Canyon
FY2006 Estimate:	$15,000. $10,000 will be provided to the Humpback Chub Monitoring Program to support conservation measures for this species. An additional $5,000 will be needed for grant development and oversight.
FY2007 Estimate:	$11,000. $10,000 will be provided to the Humpback Chub Monitoring Program to support conservation measures for this species. An additional $1,000 will be needed for grant oversight.
FY2008 Estimate:	$11,000. Same as previous year.
Project Description:	The LCR MSCP will support implementation of existing humpback chub conservation measures currently planned but unfunded in the lower Grand Canyon. $10,000 per year for a period of fifty years will be provided to the Glen Canyon Adaptive Management Program or other entity approved by the U.S. Fish and Wildlife Service. The purpose and use of this funding will be reevaluated if this species is recovered and delisted during the LCR MSCP period. At the discretion of Glen Canyon Adaptive Management Staff, Reclamation expertise could be utilized in place of financial contributions.

Section D:
System Monitoring

Work Task D1:
Marsh Bird Surveys

Contact:	John Swett, LC-8220
Purpose:	System monitoring of Yuma clapper rail (CLRA) and other LCR MSCP covered marsh bird species.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	This program will be used to monitor marsh birds covered under the LCR MSCP System Monitoring portion of the Adaptive Management Plan.
FY2006 Estimate:	$25,000. Reclamation will conduct surveys between U.S. Route 40 and Lake Havasu in March, April and May 2006. Estimates include staff, travel, equipment, and boat maintenance costs.
FY2007 Estimate:	$25,000. Same as previous year.
FY2008 Estimate:	$25,000. Same as previous year.
Project Description:	Yuma clapper rail surveys have been conducted annually along the LCR since 1995. In anticipation of the implementation of the LCR MSCP, the University of Arizona conducted a study to determine if CLRA surveys could be expanded to include all three marsh birds of interest to the LCR MSCP, without compromising CLRA detection rates. This study has shown that one survey can be conducted for all marsh birds, including the LCR MSCP covered species (CLRA, black rail, and least bittern). Reclamation will conduct marsh bird surveys, in 2006, using the newly established protocol, contingent upon U.S. Fish and Wildlife Service's approval.

Work Task D2:
Southwestern Willow Flycatcher Presence/Absence Surveys

Contact:	Theresa Olson, LC-8222
Purpose:	Monitor southwestern willow flycatcher (SWFL) breeding populations along the LCR, and conduct demography studies in four study areas to understand life requisites, habitat requirements, and population trends.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Presence/absence surveys will be conducted for SWFL through the life of the project as part of system monitoring.
FY2006 Estimate:	$880,000. Reclamation has executed option year three of the SWCA Contract. The cost reflected here includes field support and quality assessment.
FY2007 Estimate:	$925,000. Reclamation will execute option year four of the SWCA Contract if all contract obligations are met for option year three. SWCA Contract consists of presence/absence surveys, life history studies, and includes field support and quality assessment.
FY2008 Estimate:	$950,000. A new contract will be awarded for FY2008 and beyond. Funding levels will be similar to those of the previous contract.
Project Description:	Reclamation entered into a contract with SWCA in 2003 to conduct presence/absence surveys along the LCR from the Southerly International Boundary to Separation Rapids in the Grand Canyon, including

several tributaries of the LCR, and to conduct life histories studies at four areas.

Work Task D3:
Southwestern Willow Flycatcher Habitat Monitoring

Contact:	Theresa Olson, LC-8222
Purpose:	Monitor the effects of reduced flows and the associated reduction in the groundwater table on southwestern willow flycatcher (SWFL) breeding habitat between Parker and Imperial Dams.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Continue to monitor SWFL habitat condition through the Secretarial Implementation Agreement (SIA) period.
FY2006 Estimate:	$90,000. Reclamation has modified the existing SWCA-SWFL Contract to monitor 372 acres of breeding habitat between Parker and Imperial Dams. Costs include field support and quality assessment.
FY2007 Estimate:	$90,000. Costs include contracting, field support, and quality assessment.
FY2008 Estimate:	$90,000. A new contract will be written and awarded for FY2008 and beyond. Funding levels will be similar to those of the previous contract.
Project Description:	In 2001, Reclamation received a Biological Opinion on the SIA for the change in point of diversion of up to 400,000 acre-feet between Imperial and Parker Dams. This work is being implemented through the LCR MSCP. Reduced river flows created by the change in point of diversion may affect SWFL breeding habitat found between these two dams. Reclamation will monitor 372 acres of

SWFL breeding habitat to document changes in habitat condition.

Work Task D4:
Southwestern Willow Flycatcher Habitat Monitoring - Hualapai Survey

Partners:	Hualapai Tribe
Contact:	Theresa Olson, LC-8222
Purpose:	Conduct presence/absence surveys for southwestern willow flycatcher (SWFL) on Hualapai tribal lands within the Grand Canyon.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Surveys will continue as part of the system-monitoring program.
FY2006 Estimate:	$68,000. FY2006 costs are estimated to be approximately $63,000 to the Hualapai Tribe through a grant agreement and $5,000 for field support and quality assessment.
FY2007 Estimate:	$76,000. Costs through the four-year grant are approximately $71,000 and $5,000 for field support and quality assessment.
FY2008 Estimate:	$78,000. Costs through the four-year grant are approximately $73,000 and $5,000 for field support and quality assessment.
Project Description:	Reclamation provided the Hualapai Tribe a four-year grant agreement to conduct presence/absence surveys for SWFL on tribal lands within the Grand Canyon. These surveys are conducted on sensitive tribal lands not monitored by SWCA in the system wide SWFL monitoring program. These surveys enable the tribe to manage recreation on their lands within the canyon, while limiting disturbance to

nesting SWFL, as well as provide additional data for the system-monitoring program.

Work Task D5:
Monitoring Avian Productivity and Survivorship

Partners:	U.S. Fish and Wildlife Service (FWS) Havasu National Wildlife Refuge Cibola National Wildlife Refuge
Contact:	John Swett, LC-8220
Purpose:	Monitor breeding bird long-term population trends and habitat use along the LCR using the Monitoring Avian Productivity and Survivorship (MAPS) protocol.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Monitor long-term trends along the LCR and evaluate avian use of riparian restoration sites.
FY2006 Estimate:	$300,000 for Reclamation staff, travel, and equipment.
FY2007 Estimate:	$300,000. Same as previous year.
FY2008 Estimate:	$300,000. Same as previous year.
Project Description:	Monitoring Avian Productivity and Survivorship involves examining avian populations, using a standardized protocol, throughout the U.S., Canada, and Mexico. Long-term population trend data is collected by conducting intensive banding throughout the breeding season. Data collected are analyzed by the Institute for Bird Populations and long-term population trends are determined on a regional and continental level. In addition, site-specific use can be derived from MAPS data after five years of continuous data collection.

Data on fall migration and winter use of these sites is also be recorded, using an adapted MAPS protocol similar to migration banding projects conducted throughout the west and the MOSI protocol used in Mesoamerica.

Work Task D6:
System Monitoring for Riparian Obligate Avian Species

Contact:	John Swett, LC-8220
Purpose:	Monitor riparian obligate bird species covered under the LCR MSCP.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Surveys will continue throughout the LCR MSCP period in order to monitor long-term trend of riparian, obligate, LCR MSCP covered bird species.
FY2006 Estimate:	$100,000. Reclamation biologists will conduct point count transects along the LCR. Cost includes Reclamation staff, travel, and equipment.
FY2007 Estimate:	$100,000. Same as previous year.
FY2008 Estimate:	$100,000. Same as previous year.
Project Description:	The LCR MSCP lists 26 covered species and 5 evaluation species. Some individual species (southwestern willow flycatcher and yellow-billed cuckoo) have or will have system monitoring programs established. However, it is inefficient to monitor every covered species individually throughout the entire LCR MSCP project area. Monitoring bird populations is an effective way to monitor ecosystem health, especially neo-tropical migratory birds within riparian habitats. Reclamation has worked with Great Basin Bird Observatory, U.S. Geological Survey, and other state and federal agencies to develop a system monitoring design for the State of Nevada, through

Partners-in-Flight. By utilizing a similar monitoring plan, data from the LCR can be incorporated into a larger, regional database to make these data more powerful during analysis. Population trends can be derived over time, thus enabling Reclamation to monitor riparian habitat health and effectiveness of the LCR MSCP Habitat Conservation Plan.

Work Task D7:
Yellow-billed Cuckoo Presence/Absence Surveys

Contact:	John Swett, LC-8220
Purpose:	Conduct surveys to determine existing yellow-billed cuckoo (YBCU) populations along the LCR from the Grand Canyon to the Southerly International Boundary and to monitor long-term trend.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	System monitoring for YBCU will continue throughout the LCR MSCP project period. Data collected will enable Reclamation to design restoration sites for YBCU and/or recommend future demographic studies necessary to understand more about the YBCU populations along the LCR.
FY2006 Estimate:	$500,000. YBCU presence/absence surveys will be contracted by Reclamation in FY2006. Costs include field support and quality assessment.
FY2007 Estimate:	$500,000. Same as previous year.
FY2008 Estimate:	$500,000. Same as previous year.
Project Description:	Yellow-billed cuckoo has been identified in the Habitat Conservation Plan as an umbrella species for mature cottonwood-willow habitat along the LCR. Conservation measure YBCU1 calls for the creation of 4,050 acres of YBCU breeding habitat, including 1,350 acres created and managed specifically for YBCU. Conservation measure YBCU2 specifies the maintenance of existing important YBCU habitat areas.

Little is known about existing YBCU breeding habitat along the LCR. Systematic YBCU surveys have not been conducted over the project area. In order to accomplish YBCU2, existing YBCU habitat must be identified. In addition, system monitoring for YBCU will enable Reclamation to determine potential reasons for successful YBCU habitat restoration.

Work Task D8:
Razorback Sucker and Bonytail Stock Assessment

Partners:	Lake Mohave Native Fish Work Group (NFWG) Lake Havasu Fishery Project
Contact:	Tom Burke, LC-8300
Purpose:	Monitor razorback sucker and bonytail populations in LCR MSCP project area.
Conservation Measures:	RASU3, RASU5, BONY3 and BONY5
Long-term Goal(s):	The Lake Mohave population is the target brood stock for the Fish Augmentation Program. Monitoring of this stock will be maintained for the life of the program.
Location:	Lakes Mead, Mohave and Havasu
FY2006 Estimate:	$250,000 for Reclamation staff and equipment.
FY2007 Estimate:	$250,000. Same as previous year.
FY2008 Estimate:	$250,000. Same as previous year.
Project Description:	This project will continue a monitoring program for these species through the LCR. This program consists of trammel netting, electro-fishing, and helicopter surveys within different river reaches throughout the year to assess population status and distribution by Reclamation staff. Focus areas are Lakes Mead, Mohave and Havasu where augmented populations of these species occur. Project costs include data collection from other research and monitoring activities and transfer of data to information management facilities.

Work Task D9:
Flannelmouth and Razorback Sucker Monitoring Below Davis Dam

Contact:	Tom Burke, LC-8300
Purpose:	Monitor razorback sucker and flannelmouth sucker populations in the LCR between Davis Dam and Lake Havasu.
Conservation Measures:	RASU6, FLSU2, and FLSU3
Long-term Goal(s):	Razorback suckers and flannelmouth suckers are target fish species for the LCR MSCP program. The LCR MSCP will support monitoring the flannelmouth sucker for at least five years. razorback sucker stock assessments are expected to continue as part of assessment and evaluation of fish augmentation actions.
Location:	Lower Colorado River, below Davis Dam
FY2006 Estimate:	$115,000 for Reclamation staff.
FY2007 Estimate:	$115,000. Same as previous year.
FY2008 Estimate:	$115,000. Same as previous year.
Project Description:	This project will continue a monitoring program for two native suckers in the LCR between Lake Havasu and Davis Dam. Arizona Game and Fish Department reintroduced flannelmouth suckers to the LCR in 1976, when a few hundred fish were captured in Grand Canyon at the mouth of the Paria River and transferred to the river below Davis Dam. This stock has persisted through time and is the only known population of flannelmouth sucker in the LCR downstream of Grand Canyon.

Work Task D10:
System Monitoring and Research of Covered Bat Species

Contact:	Theresa Olson, LC-8222
Purpose:	Develop survey protocols, techniques, intervals, and standards LCR MSCP covered bat species and implement system wide surveys for these species.
Conservation Measures:	WRBA1, WYBA1, WRBA2 and WYBA3
Long-term Goals:	The Habitat Conservation Plan outlines two conservation measures for western red bats and three for western yellow bats. Conservation measures WRBA1 and WYBA1 both call for surveys to be conducted to determine the distribution of these species in Reaches 3-5. Development of survey protocol and standards will enable Reclamation to effectively conduct these bat surveys. In addition, conservation measures WRBA2 and WYBA3 state that 765 acres of cottonwood-willow and mesquite habitat be created for roosting habitat for these bat species. Surveys will be conducted to evaluate implementation success of these conservation measures.
FY2006 Estimate:	$110,000. Reclamation staff will write protocols and techniques. Full system wide surveys will be conducted via a contract or grant. Restoration site specific surveys will be conducted by Reclamation staff.
FY2007 Estimate:	$90,000. Same as previous year.
FY2008 Estimate:	$110,000. Same as previous year.

Project Description: Indigenous bat species were surveyed annually along the LCR from 2001-2005 by Brown and Berry. Existing survey protocol must be adapted to evaluate bat use at restoration sites and to conduct system monitoring of covered bat species along the LCR. Survey protocols, including techniques, survey intervals, seasonality, etc., will be determined. Once these protocols are developed, system wide monitoring via either a contract or grant will continue. Reclamation staff will also conduct preliminary bat surveys before and after restoration utilizing Anabat, Sonabat, infrared cameras, and stationary detection equipment and may conduct field sampling/netting to confirm bat species.

Work Task D11
Use of Microchips/PIT Tags and Initiation of Mark/Recapture Studies for Monitoring Small Mammal Populations

Contact:	Theresa Olson, LC-8222
Purpose:	To determine the effectiveness and feasibility of using Microchips/Passive Integrated Transponder (PIT) Tags for mark recapture study of small mammals in restoration sites along the LCR, and to conduct the mark/recapture study utilizing this technology if effective.
Conservation Measures:	MRM2, CRCR2, and YHCR2
Long-term Goals:	Data will be used in the adaptive management process to coordinate surveys of restoration sites and to design habitat for covered mammal species.
FY2006 Estimate:	$60,000 for either a research grant, a consultant and/or to cover Reclamation staff, travel, and equipment.
FY2007 Estimate:	$50,000 and cover Reclamation staff, travel and equipment.
FY2008 Estimate:	$50,000. Same as previous year.
Project Description:	The Colorado River cotton rat and Yuma hispid cotton rat are covered species under the LCR MSCP and have habitat acres listed as a restoration goal within the Habitat Conservation Plan. The desert pocket mouse is listed as an evaluation species. Reclamation will conduct a research study to determine the effectiveness of using microchips in a mark/recapture study. Small mammal studies in the

past have utilized ear tags and toe clippings which tend to maim the individuals. Using microchips, if effective, would be less invasive and more humane for the small mammal and would give Reclamation valuable information on the life history of these covered species. Information received from mark/recapture studies would provide Reclamation with population densities per habitat type, movements, and/ or preferred vegetation use. These data will be used in the adaptive management program to design and manage habitat restoration for these species.

Section E:

Conservation Area Development and Management

Conservation Areas Development and Management Projects Summary

The work tasks in this section are included in one of the following four categories:

1. Conducting applied research directed at establishing cost effective methods to develop and maintain habitat.

2. Restoring habitat in accordance with the Secretarial Implementation Agreement.

3. Providing operation and maintenance of existing conservation areas.

4. Conducting miscellaneous tasks required to implement the LCR MSCP in an effective manner.

Listed below is a brief summary of the work tasks identified in this section. A detailed discussion on each task is provided in the subsequent pages. Figure E-1 shows the approximate geographic location of each work task or project.

1. Research and Development Projects

Work Task E1. Beal Lake Riparian and Marsh

The Beal Lake Riparian Project is being developed in coordination with Havasu National Wildlife Refuge to provide the LCR MSCP with an in-situ facility, complete with laser level fields and flood irrigation capabilities to evaluate and demonstrate restoration techniques and monitor irrigation rates.

Work Task E3. Ahakhav Tribal Preserve

This project combines research, development, and maintenance of existing habitat under an agreement to fund seeding, planting, and irrigation to allow determinations of best/most efficient methods. The results of these activities will also produce cottonwood, willow and mesquite habitat for various LCR MSCP species.

Work Task E6. Cottonwood Genetics Study

This project includes investigating the influence of genetic diversity in Fremont cottonwood on community diversity in the context of habitat restoration.

Work Task E7. Mass Planting Demonstration

This project involves evaluating mass planting techniques for cottonwood and willow using commercially available mechanized planting equipment to increase the cost effectiveness of future habitat creation projects.

Work Task E8. Use of Seed in Riparian Habitat Restoration

The purpose of this study is to determine the best methods for establishing native riparian habitat from seed consisting of cottonwood, willow, and other native groundcovers and shrubs, to increase the cost effectiveness of future habitat creation projects.

2. Secretarial Implementation Agreement (SIA)

The obligations and commitments of the SIA Biological Opinion are being implemented as part of the LCR MSCP. The habitat restoration goals include: creation of 372 acres of cottonwood and willow managed for southwestern willow flycatchers, and the creation of 44 acres of backwater managed for native fish.

To ensure the minimum habitat goal is achieved, substantially more acreage than required has been identified for implementation under the SIA. However, before implementation, a long-term agreement for land and water use is needed.

In order to accomplish the goals of the SIA by 2008, any conservation area being targeted to satisfy the SIA requirements is not required to undergo a formal site selection screening and ranking process. The formal process for ranking and selecting conservation areas is being prepared and should be ready for use in FY2006.

Cottonwood/Willow Habitat

Work Task E4. Palo Verde Ecological Reserve

The Palo Verde Ecological Reserve has been targeted for partial fulfillment of the SIA cottonwood and willow habitat creation goals. The implementation schedule includes the planting of 20 acres in FY2006, 80 acres in FY2007, and 80 acres in FY2008.

Work Task E5. Cibola Valley Conservation Area

The Cibola Valley Conservation Area has been targeted for partial fulfillment of the SIA cottonwood and willow habitat creation goals. The implementation schedule includes the planting of 86 acres in FY2006, 80 acres in FY2007, and 80 acres in FY2008.

Backwater/Marsh Habitat

Work Task E9. Hart Mine Marsh

The Hart Mine Marsh has been targeted for backwater restoration under the SIA commitment. Preliminary data collection indicates the marsh may be more suited to marsh restoration than backwater development, which is required under the SIA.

Work Task E10. Walker Lake

Walker Lake has been targeted for backwater restoration under the SIA commitment. Preliminary data collection indicates the site may be more suited to marsh restoration than backwater development, which is required under the SIA.

Work Task E11. Draper Lake

Draper Lake has been targeted for backwater restoration under the SIA commitment.

Work Task E12. Butler Lake

Butler Lake has been targeted for backwater restoration under the SIA commitment.

Work Task E14. Imperial Demonstration Ponds

The Imperial Demonstration Ponds, which are currently dedicated to native fish, could be expanded up to an additional 50 acres of backwater, which would satisfy the backwater commitment of the SIA.

3. Operation and Maintenance of Created Habitat

Work Task E2. Beal Lake Native Fish

Beal Lake was developed as a native fish backwater under the 1997 Biological Opinion and is being managed as such. Improvements in water delivery and management are ongoing on the site.

Work Task E13. McAllister Lake

McAllister Lake was targeted as a native fish backwater under the 1997 Biological Opinion and actions are continuing to stock and manage the backwater for native fish.

4. Miscellaneous

Work Task E15. Backwater Inventory and Data Collection

The purpose of this work task is to implement a standardized, repeatable data collection process for backwaters in support of the screening and ranking of conservation areas.

Work Task E16. Conservation Area Site Selection

It is anticipated that the LCR MSCP Restoration Group will spend a considerable amount of time in FY2006 developing proposals with our partners, which would be submitted to Reclamation for LCR MSCP screening.

A screening, ranking, and evaluation criterion in conjunction with our stakeholders is being developed. In FY2006, proposals for projects will be screened, selected and reflected in future work plans. Sequencing of implementation will be a function of habitat acreage needs, available resources, and funding.

Work Task E17. Topock Marsh Pumping

The work task is intended to identify, design, permit, and construct a reliable source of water for Topock Marsh.

Work Task E18. Law Enforcement and Fire Suppression

The intent is to evaluate options for law enforcement and fire suppression in support of the LCR MSCP habitat creation requirements.

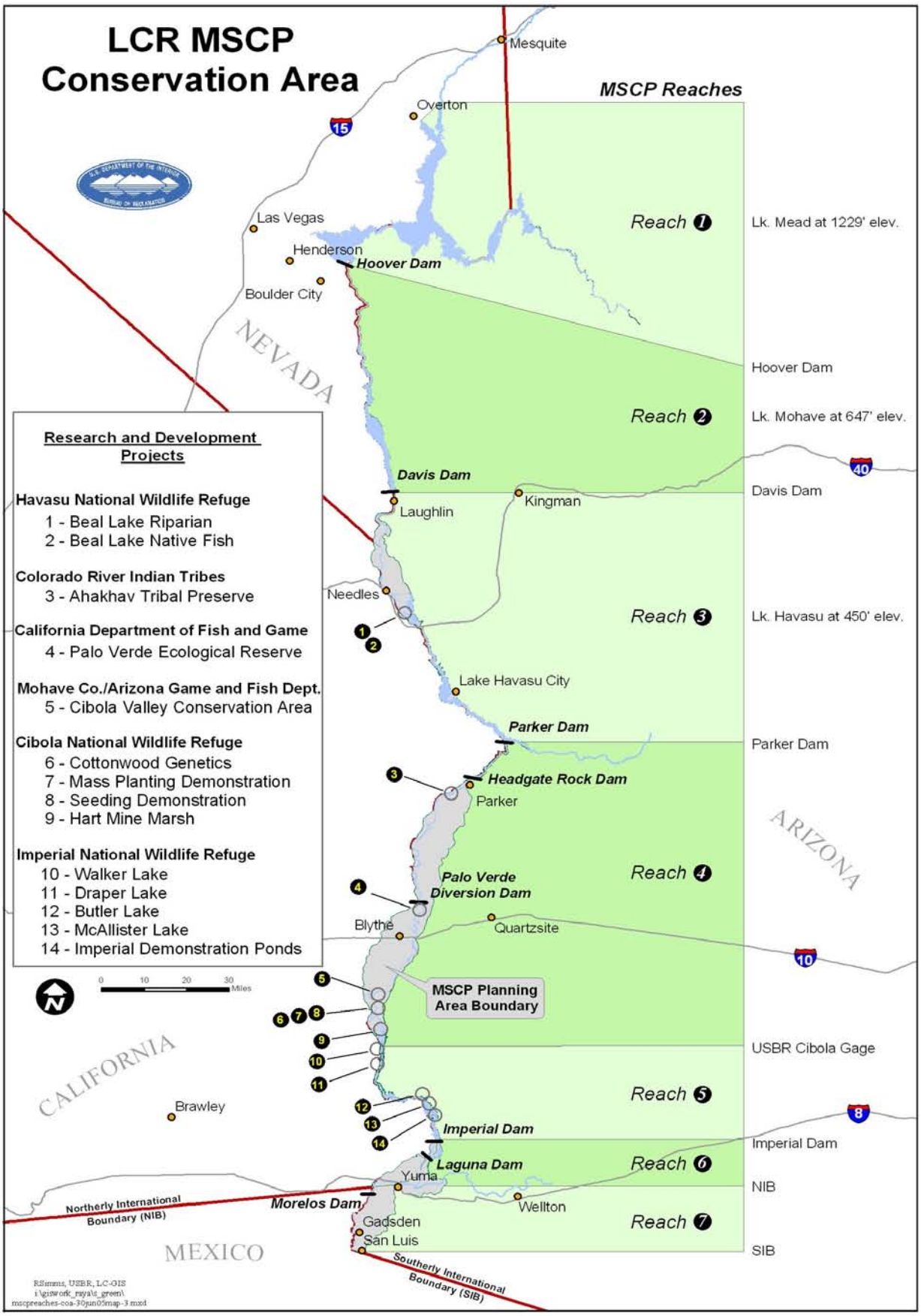

Figure E-1: Conservation Area Development and Management Projects

Work Task E1:
Beal Lake Riparian and Marsh

Partners:	U.S. Fish and Wildlife Service
Contact:	Barbara Raulston, LC-8453
Purpose:	Establish and demonstrate restoration techniques (using areas covered by material from dredging of Beal Lake) with native riparian and marsh vegetation to create habitat for southwestern willow flycatchers, yellow-billed cuckoos, black rails and other LCR MSCP species of concern. Restoration techniques being evaluated include; hydroseeding, broadcast seeding, poles, potted plants, contouring for wetland/marsh creation.
Conservation Measures:	Research targeting habitat development for covered species that occur in Reach 3 that use cottonwood/willow, honey mesquite and marsh habitats.
Long-term Goal(s):	Each field has been laser-leveled and can be flooded independently. This allows a wide range of restoration research tasks to be conducted and monitored. The information obtained from the seeding, planting, and flooding at this site will be directly applicable to other restoration projects. Upon completion, the habitat acreage expected to be established at the site is approximately 100 acres of cottonwood and willow, 12 acres of mesquite, and 5-20 acres of marsh.
Location:	Adjacent to Beal Lake and Topock Marsh on Havasu National Wildlife Refuge.
FY2006 Estimate:	$200,000 includes Reclamation staff costs, fuel, irrigation contract services including labor for

planting and maintenance/irrigation, and development of 5-20 acre wetland.

FY2007 Estimate: $150,000 for continued research, development, and monitoring.

FY2008 Estimate: $150,000 for continued research, development, and monitoring. In FY2009, the project will be reevaluated for continued funding under the LCR MSCP either as research or as habitat acreage credit.

Project Description: Beal Lake is located on Havasu National Wildlife Refuge in Needles, California, within the historic floodplain of the LCR. Beal Lake was approximately 225 acres of shallow, low quality aquatic habitat that was dredged to deepen it beginning in 2001. Dredge material was distributed over adjacent areas, to be planted at a later date with native vegetation. When completed, the riparian portion of the project will include over 100 acres of cottonwood, willow, and mesquite habitat. It will also include a 5-20 acre experimental site to determine methods for creating and managing habitat for black rails.

Riparian/Marsh. Establish and restore native riparian species on lands adjacent to the lake. Due to the size of the project, the riparian component has been separated into two phases. Clearing, root plowing, leveling, and installation of an irrigation system for Phases I and II have been completed.

Phase I (56 acres) of the project resulted in cottonwood, willow, and mesquite along with some naturally established arrow-weed and saltcedar.

Phase II (50 acres) is partially planted with cottonwood, willow, and mesquite; the remaining acres have a cover crop in place and will be planted in 2005. A portion of field in Phase I and II will be used to develop, maintain and manage habitat for black rails. This will provide needed information on

water management (maintaining a stable 5” depth) required for this species.
The irrigable fields are being used to evaluate various riparian establishment techniques such as hydroseeding, hand seeding, poles, and potted plants. Reclamation is monitoring the fields and tracking the watering use and requirements, which should provide guidance on future riparian establishment and management procedures.

Work Task E2:
Beal Lake Native Fish

Partners:	U.S. Fish and Wildlife Service
Contact:	Gregg Garnett, LC-8455
Purpose:	Complete water/fishery management improvements, operate and maintain as an existing native fish refugium.
Conservation Measures:	RASU2, BONY2 and habitat development targeting covered species that occur in Reach 3 that use marsh habitats.
Long-term Goal(s):	Manage backwater created under the 1997 Biological Opinion for native fish throughout the life of the LCR MSCP.
Location:	Adjacent to Topock Marsh on Havasu National Wildlife Refuge
FY2006 Estimate:	$210,000 includes costs for engineering, construction, Reclamation staff and contract services.
FY2007 Estimate:	$50,000 for backwater management and monitoring.
FY2008 Estimate:	$50,000. Same as previous year.
Project Description:	Beal Lake is located on Havasu National Wildlife Refuge in Needles, California, within the historic floodplain of the LCR. Beal Lake was approximately 225 acres of shallow, low quality aquatic habitat that was dredged to deepen it beginning in 2001. Additional improvements to make the backwater suitable for native fish are ongoing.

For FY2006, a dewatering facility will be constructed on the south end of Beal Lake. Reclamation's Yuma Area Office will design and engineer the facility. The current approach is to use land-based equipment to construct a peninsula from one of the existing roads out to the closest deep water (dredged channel) in Beal Lake. A permanent water line with totalizing flow-meter will be installed within the peninsula and under the existing road to convey pumped water from the south end of Beal Lake back into Topock Marsh.

An additional contract for the biological evaluation of the screen system effectiveness is also being considered. Larval stages of threadfin shad will be introduced into the vicinity of the screen system and samples from the downstream end of the screens will be examined to determine the percent exclusion of larval shad.

Work Task E3:
Ahakhav Tribal Preserve

Partners:	Colorado River Indian Tribes (CRIT)
Contact:	Barbara Raulston, LC-8453
Purpose:	A research, development, and maintenance agreement was awarded to fund various planting, maintenance, and irrigation methods and activities. The results of these activities will also produce cottonwood, willow and mesquite habitat for various LCR MSCP species.
Conservation Measures:	Research targeting habitat development for covered species that occur in Reach 4 that use cottonwood/willow, honey mesquite and marsh habitats.
Long-term Goal(s):	Research and habitat acreage credit (cottonwood/willow, mesquite, and marsh)
Location:	CRIT 9, 10, 11, and 12 at the Ahakhav Tribal Preserve (Preserve). The Preserve is located on the LCR, south of Parker, Arizona on the Colorado River Indian Reservation.
FY2006 Estimate:	$120,000 for Reclamation's staff, supplies, and materials in support of the agreement. Funding for the CRIT Research and Development Grant was obligated in FY2004.
FY2007 Estimate:	$100,000. Same as previous year.
FY2008 Estimate:	$100,000. Same as previous year.
Project Description:	The project will utilize four areas to test different mass planting techniques, irrigation methods, weed control, seed collection, and document site

maintenance requirements. Three sites are currently in progress on the Ahakhav Preserve, CRIT 9, CRIT 10, and CRIT 11. A site location for CRIT 12 has yet to be determined.

All work will be done in an effort to determine the most successful, efficient, and cost-effective methods for various revegetation projects and to document maintenance activities required to manage the areas for the benefit of LCR MSCP species. Management of the project will include standard restoration efforts and modern farming techniques. Ahakhav staff will closely document all steps so processes will be able to be consistently recreated and expanded upon in the future. The end result of this project will be approximately 135 acres of newly revegetated land, a 135-acre maintenance project, and valuable data on many aspects and methods of the restoration process.

Work Task E4:
Palo Verde Ecological Reserve

Partners:	California Department of Fish and Game (CDFG)
Contact:	Terry Murphy, LC-8400
Purpose:	Habitat creation
Conservation Measures:	Habitat development targeting covered species that occur in Reach 4 that use cottonwood/willow, honey mesquite and marsh habitats.
Long-term Goal(s):	To create as much viable habitat as possible on these approximately 1,300 irrigable acres.
Location:	Within Palo Verde Irrigation District, just north of Blythe, California.
FY2006 Estimate:	$310,000 for contracts and Reclamation staff costs to evaluate and plan the overall habitat creation project, and to implement Phase I to develop a 20-acre native plant nursery.
FY2007 Estimate:	$800,000 for contracts and Reclamation staff costs to restore 80 acres of habitat.
FY2008 Estimate:	$810,000. Same as previous year.
Project Description:	Portions of the Palo Verde Valley, owned by the CDFG are being evaluated as a potential habitat creation project. The intent of the assessment is to determine possible restoration research projects and accomplish as much viable habitat creation as possible on the site. Phase I, a 20-acre parcel, will be developed with cottonwood and willow in FY2006 to initiate the habitat creation process. Discussions with CDFG

are in process and should define future restoration actions on the reserve.

Work Task E5:
Cibola Valley Conservation Area

Partners:	Mohave County Water Authority (MCWA) Arizona Game and Fish Department (AGFD)
Contact:	Patti Aaron, LC-8456
Purpose:	Habitat creation
Conservation Measures:	Habitat development targeting covered species that occur in Reach 4 that use cottonwood/willow and honey mesquite.
Long-term Goal(s):	To create as much viable habitat as possible on these 1,319 acres (approximately 1,000 irrigable acres).
Location:	About 15 miles south of Ehrenberg, Arizona.
FY2006 Estimate:	$1,633,000 includes: (1) Reclamation staff costs to evaluate and plan the overall habitat creation project, (2) conversion of 86 acres of habitat at $8,000 per acre using the mass planting method, and (3) $700,000 for the one time acquisition of 500 acre feet of Colorado River water from Mohave County.
FY2007 Estimate:	$1,540,000 includes: (1) Reclamation staff costs, (2) conversion of 80 acres of habitat at $8,000 per acre using the mass planting method, and (3) $700,000 for the one time acquisition of 500 acre-feet of Colorado River water from Mohave County.
FY2008 Estimate:	$1,550,000 includes: (1) Reclamation staff costs, (2) conversion of 80 acres of habitat at $8,000 per acre using the mass planting method, and (3) $700,000 for the one time acquisition of 500 acre-feet of Colorado River water from Mohave County.

Project Description:

Portions of the Cibola Valley, owned by Mohave County Water Authority, are being evaluated as a potential habitat creation project. The intent of the assessment is to determine possible restoration research projects and accomplish as much viable habitat creation as possible on the site.

Phase I, an 86-acre parcel, will be developed with cottonwood and willow in FY2006 to establish a native plant nursery and initiate the habitat creation process. Discussions with MCWA and AGFD on land ownership, water issues, and management options are in process.

Work Task E6:
Cottonwood Genetics Study

Partners:	Northern Arizona University (NAU) Cibola National Wildlife Refuge (CNWR)
Contact:	Gregg Garnett, LC-8455
Purpose:	Investigate the influence of genetic diversity in Fremont cottonwood on community diversity in the context of habitat restoration. One result of this study will be to determine the genetics of the existing stands of cottonwoods along the LCR. The inclusion of genetic considerations in restoration efforts is vital to provide locally adapted genotypes necessary for the foundations of wildlife native communities, and to avoid potentially detrimental effects of loss of genetic diversity.
Conservation Measures:	Research targeting habitat development for covered species that use cottonwood habitat.
Long-term Goal(s):	Use the information gained from this study to insure that genetic diversity is represented in restorations sites and to identify and include tree genotypes with genetically superior traits, with respect to growth, reproduction, survival, and habitat quality they influence in a restoration sites. The experimental garden will supply stock of known genetic diversity and origin for future restoration efforts. The experimental garden, when mature, will also add to the site habitat structural mosaic and may serve as suitable habitat for yellow-billed cuckoo.
Location:	32 acres of active alfalfa fields within Unit #1 on CNWR.
FY2006 Estimate:	$25,000 includes Reclamation staff, equipment, and contract services for the cooperative agreement.

FY2007 Estimate: $15,000 includes Reclamation staff, equipment, and contract services for the cooperative agreement.

FY2008 Estimate: $15,000 includes Reclamation staff, equipment, and contract services for the cooperative agreement. In FY2009, the project will be evaluated for continued funding under the LCR MSCP either as a research project or for habitat acreage credit.

Project Description: Information is lacking regarding the relative levels of genetic diversity within the remaining cottonwoods along the LCR, and the impact of this genetic diversity as it pertains to community structures and ultimately, wildlife diversity within restoration sites.

In an effort to increase knowledge and success in creating functional wildlife habitat, Reclamation's Lower Colorado Regional Office solicited the scientific community for proposals to investigate these relationships. NAU was awarded a cooperative agreement and contributed matching funds to undertake these investigations. Their project is twofold and includes: (1) the identification of genetic stocks of Fremont cottonwoods that possess traits including superior growth, reproduction, and survival in a typical restoration site, and (2), the identification of stocks of Fremont cottonwood trees that support diverse biological communities, including communities that sustain wildlife species.

The first part of the project includes genetic screening of tissues collected from stands of Fremont cottonwood trees across the southwestern U.S. The second involves creating an experimental garden to propagate representatives of the collected genetic stock and monitor the expressions of these different genotypes.

Work Task E7:
Mass Planting Demonstration

Partners:	Cibola National Wildlife Refuge (CNWR)
Contact:	Gail Iglitz, LC-8459
Purpose:	Investigate the influence of genetic diversity in Analyze restoration research projects which have the potential for future habitat development. Evaluate mass planting techniques for cottonwood and willow using mechanized planting equipment to increase the cost effectiveness of future habitat creation projects.
Conservation Measures:	Research targeting habitat development for covered species that occur in Reach 4 that use cottonwood/willow and honey mesquite habitats.
Long-term Goal(s):	Restoration research to reduce the cost of habitat creation and development of southwestern willow flycatcher and yellow-billed cuckoo habitat.
Location:	31.5 acres of previous agriculture fields within Unit #1 on CNWR.
FY2006 Estimate:	$10,000 includes Reclamation staff and contractual services in support of the mass planting demonstrations.
FY2007 Estimate:	$10,000. Same as previous year.
FY2008 Estimate:	$10,000. Same as previous year. In FY2008, the project will be evaluated for continued funding under the LCR MSCP.
Project Description:	Reclamation is demonstrating automated mass-planting techniques using native riparian species.

This project represents a combination of research and habitat creation. The intent is to investigate the feasibility and effectiveness of using this technique in restoration of agricultural fields. The cost benefit of this method will be evaluated along with its effectiveness and appropriateness in the creation of native habitat to meet LCR MSCP goals. The technique involves mechanized, rapid, dense planting of 4,500 seedlings per acre to inhibit growth of non-native plant species and to achieve dense growth of native tree species

Work Task E8:
Use of Seed in Riparian Habitat Restoration

Partners:	U.S. Fish & Wildlife Service
Contact:	Barbara Raulston LC-8453
Purpose:	Determine the best methods to establish native riparian habitat from seed consisting of cottonwood, willow, and other native groundcovers and shrubs to increase the cost effectiveness of future habitat creation projects.
Conservation Measures:	Research targeting habitat development for covered species that occur in Reach 4 that use cottonwood/willow and honey mesquite habitats.
Long-term Goal(s):	Use restoration research to reduce the cost of habitat creation, increase the quality of created habitat, preserve the genetic diversity of vegetation used for restoration, and develop high quality riparian habitat for all covered species.
Location:	Cibola NWR, Unit 1 (20 acres)
FY2006 Estimate:	$150,000 contract for conducting study and on-site demonstrations, $50,000 for Reclamation staff and travel.
FY2007 Estimate:	$10,000 for monitoring and evaluation of the site.
FY2008 Estimate:	$10,000 for monitoring and evaluation of the site. In FY2008 the project will be evaluated for continued funding under the LCR MSCP.
Project Description:	Reclamation's goal for this study is to explore the use of seed to produce a dense mosaic of

cottonwood, willow, native shrubs and groundcovers with as little saltcedar as possible. Use of locally collected seeds may be less labor intensive than other methods such as pole and rooted nursery stock. This method will also preserve the genetic diversity and integrity of the riparian vegetation found on the LCR.

Work Task E9:
Hart Mine Marsh

Partners:	U.S. Fish & Wildlife Service
Contact:	Gregg Garnett, LC-8455
Purpose:	Restore and create marsh habitat for covered wildlife species.
Conservation Measures:	Habitat development targeting covered species that occur in Reach 4 that use marsh habitats.
Long-term Goal(s):	To provide marsh habitat for species covered under the LCR MSCP.
Location:	Arizona side of Cibola National Wildlife Refuge (CNWR) south of refuge headquarters.
FY2006 Estimate:	$100,000 covers costs for Reclamation staff.
FY2007 Estimate:	$300,000 covers costs for Reclamation staff for construction of diversion and water management structures.
FY2008 Estimate:	$1,000,000 covers costs for Reclamation staff, earthwork and dredging.
Project Description:	Hart Mine Marsh is a degraded marsh located on CNWR. The marsh is a terminus for agricultural drain water from CNWR farm units and has seasonal open water with relatively poor water quality. Currently, portions of the marsh remain extremely saline and are devoid of vegetation. Portions (approximately 20 acres) of the marsh will be deepened by dredging/excavating. At least 40 acres adjacent to the deepened areas will be re-

graded to provide more suitable marsh areas and more controllable water levels.

Work Task E10:
Walker Lake

Partners:	U. S. Fish and Wildlife Service
Contact:	Gregg Garnett, LC-8455
Purpose:	Evaluate Walker Lake as a possible habitat creation project.
Conservation Measures:	RASU2, BONY2, and habitat development targeting covered species that occur in Reach 5 that use marsh habitats.
Long-term Goal(s):	Provide consistent water into the site to maintain adequate breeding habitat requirements for rail (marsh), southwestern willow flycatcher (wetted/moist forest understory and adjacent open water), and/or native fish habitat.
Location:	River Mile 88.7, California side. Walker Lake is located on lands managed by Imperial National Wildlife Refuge and the Bureau of Land Management.
FY2006 Estimate:	$75,000 will fund Reclamation staff.
FY2007 Estimate:	$75,000. Same as previous.
FY2008 Estimate:	$450,000 will fund Reclamation staff, earthwork, and dredging.
Project Description:	Walker Lake is a historically occupied southwestern willow flycatcher site on the LCR. Currently, Walker Lake maintains a subsurface connection to the Colorado River. Seasonally, surface water is reduced in area or not present in the lake. In addition, high evaporation rates have concentrated salts into the lake and the surrounding soil. The

project includes reshaping a wide shallow channel to provide continual surface flow into Walker Lake to maintain open water, marsh habitat, and flooded adjacent forested habitats throughout the breeding seasons of Yuma clapper rail and southwestern willow flycatcher. This additional water will dilute and flush salts from the lake and surrounding area, providing more suitable substrates for aquatic, emergent, and riparian vegetation which, in turn, will provide increased habitat for terrestrial and aquatic wildlife species.

Work Task E11:
Draper Lake

Partners:	U. S. Fish and Wildlife Service
Contact:	Gregg Garnett, LC-8455
Purpose:	Evaluate Draper Lake as a potential habitat creation project.
Conservation Measures:	RASU2, BONY2 and habitat development targeting covered species that occur in Reach 5 that use marsh habitats.
Long-term Goal(s):	Restore decadent backwater to provide protected habitat for native fish. Create marsh and riparian habitats for other species identified under the LCR MSCP.
Location:	River mile 82.7, California side, Imperial National Wildlife Refuge (INWR).
FY2006 Estimate:	$70,000 will fund Reclamation staff.
FY2007 Estimate:	$540,000 will fund Reclamation staff, earthwork, dredging, and installation of wedge wire fish screens.
FY2008 Estimate:	$70,000 will fund monitoring and evaluation of the constructed backwater.
Project Description:	Draper Lake is an existing backwater on INWR. Colorado River inflow has been substantially reduced due to siltation and vegetation encroachment of a natural channel that runs between Draper Lake and the Colorado River. The project includes design work, regulatory compliance and associated coordination involved in dredging/excavating 0.3-mile long channel between

Draper Lake and the Colorado River at river mile 82.7. Passive fish barrier technology will be used to exclude non-native fish life stages from Draper Lake. This project will supply additional water capacity to Draper Lake, permitting the survival and maintenance of native fish habitat in the protected backwater.

Work Task E12:
Butler Lake

Partners:	U. S. Fish and Wildlife Service
Contact:	Nathan Lenon, LC-8457
Purpose:	Butler Lake is a potential restoration project intended to determine whether effective restoration techniques can be developed to provide the conditions needed to support self-sustaining populations of LCR native fish. The techniques developed in this project will be widely applicable to other projects.
Conservation Measures:	RASU2, BONY2 and habitat development targeting covered species that occur in Reach 5 that use marsh habitats.
Long-term Goal(s):	Habitat creation, restoration research
Location:	Reach 5
FY2006 Estimate:	$140,000 will fund Reclamation staff and an agreement, which will make minor site improvements (boat access) and continue the monitoring process.
FY2007 Estimate:	$75,000 will fund Reclamation staff and an agreement to modify (treat) and monitor the response of the backwater to the disturbance.
FY2008 Estimate:	$25,000 will fund Reclamation staff and an agreement to evaluate and monitor the backwater.
Project Description:	Butler Lake is seepage-driven, with no known surface connection to the Colorado, or any other body of water. The lack of freshwater flushing has

caused the lake to become hypereutrophic (an advanced state of nutrient enrichment).
In its current condition, Butler Lake provides little benefit to fish or wildlife. This assessment will focus on improving the water quality in the lake. Data obtained will provide: (1) a better understanding of what drives the aquatic system from an aquatic ecology perspective, and (2) a baseline from which to measure the success of any potential restoration activities.

Work Task E13:
McAllister Lake

Partners:	U. S. Fish and Wildlife Service
Contact:	Nathan Lenon, LC-8457
Purpose:	Determine whether a self-sustaining population of native fish can be established in the lake, which has undergone repeated treatments to improve water quality conditions.
Conservation Measures:	RASU2, BONY2 and habitat development targeting covered species that occur in Reach 5 that use marsh habitats.
Long-term Goal(s):	The long term goal for McAllister is to establish a self-sustaining population of native fish in a healthy condition. In addition, this project will serve as a template for addressing salinity-related water quality issues occurring in other seepage-driven backwaters within the LCR MSCP planning area.
Location:	Reach 5
FY2006 Estimate:	$75,000 for backwater monitoring and possible removal of non-native fish.
FY2007 Estimate:	$20,000 for backwater monitoring and evaluation.
FY2008 Estimate:	$20,000. Same as previous year.
Project Description:	McAllister Lake is an isolated backwater that is seepage-driven, with no known surface connection to the LCR, or any other body of water. The lack of freshwater flushing had caused the lake to become highly saline, to the extent that it supported very limited numbers of fish and waterfowl.

In anticipation of the possible decision to prepare McAllister Lake for the introduction of native fish in the spring of 2006, Reclamation is currently evaluating monitoring proposals to provide management recommendations for the lake.

Work Task E14:
Imperial Demonstration Ponds

Partners:	U. S. Fish and Wildlife Service
Contact:	Nathan Lenon, LC-8457
Purpose:	Redesign and expand the site to improve functionality and provide additional backwater acreage.
Conservation Measures:	RASU2, BONY2 and habitat development targeting covered species that occur in Reach 5 that use marsh habitats.
Long-term Goal(s):	Habitat creation, maintenance of existing backwaters
Location:	Reach 5
FY2006 Estimate:	$595,000 for environmental compliance, surveying, exploratory drilling, project management, and minor earthwork.
FY2007 Estimate:	$3,000,000 for construction costs and project management.
FY2008 Estimate:	$300,000 for backwater evaluation, non-native fish removal, and monitoring.
Project Description:	The Imperial Native Fish Habitat, also referred to as the DU2 Ponds, was originally constructed to provide a mixture of habitat types, including isolated backwaters, marsh, and riparian. Due to competing needs of riparian and backwater habitats, water management (as originally designed) was not possible; therefore the decision was made to designate the entire site for native fish.

An interdisciplinary workshop was conducted in May of 2005, during which a draft design was completed for retrofitting and expanding the site. The new site design addresses the deficiencies of the previous design, while providing approximately 47 additional acres of backwater habitat. The actual physical contours of the ponds and their shorelines are expected to provide a higher quality, and physically diverse fisheries habitat. While the site is planned specifically for native fish, the spatial pattern of emergent vegetation incorporated into the design has been shown (in other demonstration sites) to provide valuable benefits to a variety of marsh birds, including western least bittern.

Work Task E15:
Backwaters Inventory and Data Collection

Contact:	Nathan Lenon, LC-8457
Purpose:	The purpose of this work task is to implement a standardized, repeatable site selection approach to select backwater restoration projects with the greatest potential for success, at the best possible value to the LCR MSCP.
Conservation Measures:	Research targeting habitat development for covered species that use marsh and backwater habitats.
Long-term Goal(s):	Habitat creation
Location:	Reach 5
FY2006 Estimate:	$200,000 for Reclamation staff and/or contracts to conduct inventory of all backwaters within Reach 5.
FY2007 Estimate:	$150,000 for detailed monitoring of highest priority backwaters.
FY2008 Estimate:	$150,000. Same as previous year.
Project Description:	This work task will inventory approximately 100 backwaters in Reach 5 for selection, further analyses, and finally project implementation. Additional backwater inventories are anticipated in this and other reaches of the LCR in future years. Of these 100 backwaters, approximately 30 of the highest potential sites will be selected for physical, biological, and limnological characterization. These 30 sites will be rated/ranked on these characteristics, and then prioritized based on their

rating, availability of a willing partner, anticipated costs, and other management considerations. Finally, 15 of the highest priority backwaters will be selected to undergo in-depth baseline monitoring for a minimum of 1 year, which will provide the scientific basis for selecting an appropriate restoration technique.

Work Task E16:
Conservation Area Site Selection

Contact:	Terry Murphy, LC-8400
Purpose:	To prepare restoration proposals and consistently identify, screen, and rank potential restoration projects to determine which conservation areas will be included in the LCR MSCP to accomplish the established habitat acreage goals.
Conservation Measures:	Habitat development targeting covered species that use cottonwood/willow, honey mesquite and marsh habitats.
Long-term Goal(s):	Identify and prioritize conservation areas to develop the most cost effective areas to fulfill the habitat creation requirements of the LCR MSCP.
Location:	Reaches 1-7 of the LCR.
FY2006 Estimate:	$200,000 for Reclamation staff.
FY2007 Estimate:	$100,000. Same as previous year.
FY2008 Estimate:	$75,000. Same as previous year.
Project Description:	The screening process will identify sites as early as possible to allow smooth integration into the program. Reclamation will coordinate with land owners to identify potential sites and prepare restoration proposals. After the site has been identified, Reclamation will work with the landowner to draft a proposal which addresses the goals of the LCR MSCP and perform limited site specific sampling in support of the proposal. This will allow adequate information to be collected for the proposal so the proposal can be evaluated.

Work Task E17:
Topock Marsh Pumping

Partners:	U.S. Fish and Wildlife Service
Contact:	Terry Murphy, LC-8400
Purpose:	To identify, design, permit, and construct a reliable and manageable water delivery system for Topock Marsh.
Conservation Measures:	AMM2
Long-term Goal(s):	Avoid flow-related covered impacts on covered species habitats at Topock Marsh.
Location:	Topock Marsh, Reach 3, Havasu National Wildlife Refuge
FY2006 Estimate:	$70,000 for contracts and Reclamation staff including planning and design.
FY2007 Estimate:	$50,000 for contracts and Reclamation staff including compliance and permitting.
FY2008 Estimate:	$300,000 for contracts and Reclamation staff including construction of the water delivery system.
Project Description:	Topock Marsh has been identified as an important area for covered species such as Yuma clapper rail and the southwestern willow flycatcher. At times, flow-related activities could lower river elevations to levels that could disrupt diversion of water from the river to the marsh. Improvements to intake structures that allow water to continue to be diverted or other measures to maintain the water surface elevation will avoid effects on groundwater elevation.

Work Task E18:
Law Enforcement and Fire Suppression

Contact:	Terry Murphy, LC-8400
Purpose:	Provide law enforcement and fire suppression support for the LCR MSCP.
Conservation Measures:	CMM1
Long-term Goal(s):	Reduce the effect of fire on created habitats.
Location:	Lower Colorado River (Reaches 1-7).
FY2006 Estimate:	$50,000 for contracts and Reclamation staff to develop an integrated approach to law enforcement and fire suppression.
FY2007 Estimate:	$50,000 for contracts and Reclamation staff.
FY2008 Estimate:	$100,000 for contracts and Reclamation staff.
Project Description:	Evaluate options for system wide, site-specific law enforcement, and fire suppression. The strategy developed will from the basis for future law enforcement and fire suppression activities for the LCR MSCP along the LCR.

Section F:

Post Development Monitoring

Work Task F1:
Vegetation Survival and Growth – Habitat Monitoring

Contact:	John Swett, LC-8220
Purpose:	Habitat restoration will be monitored for initial survivorship and successional changes over time to determine if habitat goals are met. These data will be used to manage the restoration sites.
Conservation Measures:	MRM2
Long-term Goal(s):	As each demonstration or habitat creation site is established, Reclamation will monitor initial survivorship for two years. Monitoring successional changes will occur on a periodic basis over time, with the interval dependent on age of each stand.
FY2006 Estimate:	$250,000 includes costs for Reclamation staff, travel, and equipment.
FY2007 Estimate:	$275,000 includes costs for Reclamation staff, travel, and equipment.
FY2008 Estimate:	$310,000 includes costs for Reclamation staff, travel, and equipment.
Project Description:	In order to implement the adaptive management program, habitat restoration projects must be monitored to determine if necessary habitat components have been provided. Monitoring the biotic components (vegetation) and abiotic components (soil moisture, etc.) will provide data to incorporate into future restoration efforts. Vegetation will be monitored using two separate protocols. Initially, each restoration site will be

monitored to determine if all necessary habitat components have been provided, and to determine survivorship of the newly restored sites. After year two, successional changes within stands will be monitored as each restoration site matures. Changes in habitat quality over time, in conjunction with covered species monitoring, will drive management of each restoration site.

Work Task F2:
Avian Use of Restoration Sites

Contact:	John Swett, LC-8220
Purpose:	Monitor effectiveness of restoration sites in providing habitat for LCR MSCP covered avifauna.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Monitoring restoration sites for avian use will continue throughout the LCR MSCP in order to provide data for the adaptive management process, and to develop management criteria for restored sites.
FY2006 Estimate:	$125,000 includes costs for Reclamation staff and travel.
FY2007 Estimate:	$150,000 includes costs for Reclamation staff and travel.
FY2008 Estimate:	$175,000 includes costs for Reclamation staff and travel.
Project Description:	Riparian habitat restoration will benefit nine LCR MSCP covered avian species, including southwestern willow flycatcher and yellow-billed cuckoo. Restoration demonstration sites will be monitored for bird activity, using a variety of techniques including point counts, area searches, and species specific survey protocols. Protocols will be developed to monitor habitat creation sites as the LCR MSCP evolves. Data gathered will be used in the adaptive management process to design riparian habitat restoration projects to provide covered species habitat.

Work Task F3:
Small Mammal Colonization of Restoration Sites

Contact:	John Swett, LC-8220
Purpose:	Monitor small mammal populations within restored habitats.
Conservation Measures:	MRM2, CRCR2, and YHCR2
Long-term Goal(s):	Data will be used in the adaptive management process to design habitat for covered mammal species.
FY2006 Estimate:	$45,000 includes costs for Reclamation staff, travel, and equipment.
FY2007 Estimate:	$50,000 includes costs for Reclamation staff, travel, and equipment.
FY2008: Estimate:	$55,000 includes costs for Reclamation staff, travel, and equipment.
Project Description:	The Colorado River cotton rat and Yuma hispid cotton rat are covered species under the LCR MSCP and have habitat acres listed as a restoration goal within the Habitat Conservation Plan. The desert pocket mouse is listed as an evaluation species. Reclamation will conduct presence/absence surveys in restoration demonstration and habitat creation sites to determine small mammal occurrence. These data will be used in the adaptive management program to design habitat restoration for these species.

Section G:

Adaptive Management Program

Work Task G1:
Data Management

Contact:	John Swett, LC-8220
Purpose:	Centralize data and reports for LCR MSCP, develop and maintain physical and electronic data storage and retrieval system.
Conservation Measures:	MRM1 and MRM2
Long-term Goal(s):	Data management will be an ongoing task of the LCR MSCP.
FY2006 Estimate:	$225,000 funds Reclamation staff, maintenance of existing environmental databases and development of new databases, associated hardware, software, and storage requirements. Funding includes the development of databases for financial accounting, geographical information systems, and internet-related systems and activities.
FY2007 Estimate:	$160,000 includes data management, maintenance, and technology upgrades.
FY2008 Estimate:	$175,000. Same as previous year.
Project Description:	This action will develop a physical report library, and will collect, organize and catalog hard copies of studies and reports for ongoing monitoring and research actions of the LCR MSCP. It includes developing/or maintaining electronic storage and retrieval systems for scientific data so these data are available for decision making in the adaptive management process.

Work Task G2:
Annual Report Writing and Production

Contact:	Tom Burke, LC-8300
Purpose:	Write and produce annual report for LCR MSCP program.
Conservation Measures:	MRM1, MRM2, and a permit requirement
FY2006 Estimate:	$35,000 includes writing and producing the annual report for the LCR MSCP.
FY2007 Estimate:	$35,000. Same as previous year.
FY2008 Estimate:	$35,000. Same as previous year.
Project Description:	This activity will develop and produce annual reports.
Long-term Goal(s):	This will be an ongoing task of the LCR MSCP.

Work Task G3
Adaptive Management Research Projects

Point of Contact:	John Swett, LC-8220
Purpose:	After completion of species profiles, evaluating existing knowledge for each LCR MSCP covered species to determine research needs and habitat requirements, develop a research program to provide input the habitat restoration program.
Conservation Measures:	MRM1 and MRM2
Long-term Goals:	As data gaps are identified for each covered species and their habitats, a research program will be developed to provide information for the Adaptive Management Program.
FY2006 Estimate:	$230,000 funds establishment of contracts, grants, and agreements to conduct research.
FY2007 Estimate:	$275,000. Same as previous year.
FY2008 Estimate:	$325,000. Same as previous year.
Project Description:	To implement a successful habitat creation plan for the LCR MSCP covered species, an Adaptive Management Program must be developed. Extensive literature searches will be conducted to accumulate existing knowledge on each covered species. Species profiles will be written, including known habitat requirements and management concerns. Data gaps will be identified in order to direct species research priorities. Once priority research needs are identified, contracts, grants, and agreements must be initiated. New knowledge accumulated during the adaptive management

process will be used to adapt habitat creation for covered species.

Work Task G4
Science/Adaptive Management Strategy

Point of Contact:	Glen Gould, LC-8070
Purpose:	Define the process for implementing the LCR MSCP using the best science available and responsive adaptive management processes.
Long-term Goals:	Ensure successful and efficient implementation of LCR MSCP conservation measures for the benefit of the natural resources on the LCR.
FY2006 Estimate:	$173,000 funds Reclamation and U.S. Fish and Wildlife staff.
FY2007 Estimate:	0
FY2008 Estimate:	0
Project Description:	Draft a peer-reviewed science strategy that defines processes for ensuring project accomplishments using sound science. This strategy will include processes for analysis, recommendations for improved habitat construction, peer review of reports generated for research and monitoring, and other activities associated with adaptive management needs.

Work Task G5
Public Outreach

Point of Contact:	Phil Aurit, LC-8021
Purpose:	Communicate and coordinate LCR MSCP activities to the general public, internal and external stakeholders, and other interested entities within the LCR MSCP Planning Area and other areas as necessary.
Long-term Goals:	To ensure public acceptance and support of the LCR MSCP goals.
FY2006 Estimate:	$35,000 funds Reclamation staff and outreach activities. This includes formation of a farmers' advisory board to assist with conservation area development.
FY2007 Estimate:	$35,000. Same as previous.
FY2008 Estimate:	$35,000. Same as previous.
Project Description:	Develop material needed to inform, educate and promote LCR MSCP projects and activities. This will be accomplished by a variety of methods including presentation and participation in conferences, community activities, and meetings with targeted entities and individuals.

Section H:

Existing Habitat Maintenance

Work Task H1:
Existing Habitat Maintenance

Contact:	Glen Gould, LC-8070
Purpose:	Provide funding to restore habitat that becomes degraded after the signing of the LCR MSCP due to past river operations and maintenance activities.
Long-term Goal(s):	Reduce or stop ecosystem degradation resulting from past river operations and maintenance activities.
Location:	Lower Colorado River (Reaches 1-7)
FY2006 Estimate:	$541,000 - $2,500,000. Covers the development of a process for habitat maintenance and deposit in non-federal habitat maintenance fund accounts.
FY2007 Estimate:	$542,000 - $2,500,000. Covers habitat maintenance projects and/or deposit in non-federal habitat maintenance fund accounts.
FY2008 Estimate:	$542,000. Same as previous year.
Project Description:	Determine current ecosystem status and develop program for distribution of funds (grants, etc.) for habitat restoration. Unexpended funds would remain in the non-federal interest bearing accounts. In the event that some FY2006 activities are unable to be accomplished, the funding projected for those activities may also be added to the non-federal interest bearing accounts during the last quarter of FY2006.