

V. Implementation Schedule

The following Implementation Schedule outlines actions and costs for the southwestern willow flycatcher recovery program. It is a guide for meeting the objectives elaborated throughout Section IV of this Recovery Plan. This schedule indicates action numbers, priorities, descriptions, duration, potential partners, and estimated costs. These actions, when accomplished, should bring about the recovery of the southwestern willow flycatcher. The costs estimated are intended to assist in planning. The time estimated to reclassification as threatened is 20 years, with removal from the Federal endangered species list possible in 30 years. Primary emphasis is placed on estimating costs for the first 5 years because the USFWS intends to re-evaluate this Recovery Plan, and amend as necessary, in 5 years. This Recovery Plan does not obligate any involved agency and/or partner to expend the estimated funds. Although cooperation and collaboration with private landowners is an important tenant of this Recovery Plan, private landowners are also not obligated to expend any funds. In some instances, it is not possible to estimate costs until related actions have been completed.

Action Priority

Priority actions for recovering the southwestern willow flycatcher are based on the following ranking system: actions with a value of 1 are necessary to prevent extinction or irreversible decline in the species in the foreseeable future; actions with a value of 2 are necessary to prevent a significant decline in species population/habitat quality, or some other significant negative impact, short of extinction; and actions with a value of 3 include all other actions necessary to meet recovery objectives.

Commonly used abbreviations in the Implementation Schedule are noted below. Refer to Appendix B for a complete list of acronyms and abbreviations.

FTE	Full Time Equivalent. Estimated at GS-11 salary and benefits (\$61,000) in Phoenix, Arizona.
FY	Fiscal Year. FY01 refers to the first year, subsequent to approval of the Recovery Plan, in which implementation of recovery actions begin.
MU	Management Unit, as designated in the Recovery Plan.
RU	Recovery Unit, as designated in the Recovery Plan.
TBD	To be determined.

Shaded boxes represent years when no action (or funds) is expected to be taken.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
1	1.1.1	Develop management plans to reduce threats and promote processes that secure, restore, and enhance currently suitable and potentially suitable habitat.	5 yrs.	AFA	600	120	120	120	120	120			20% of MUs complete 1 plan each year until 100%. At \$20,000 per management plan/year, \$20,000 x 6 MUs = \$120,000/year.
2	1.1.2.1.1	Identify dams where modification of dam operating rules will benefit recovery of the flycatcher.	2 yrs.	USBR, COE, FERC	1100	550	550						6 RUs x 1.5 FTEs/RU = 9 FTEs. 9 FTEs @ \$61,000/year = \$549,000/year.
2	1.1.2.1.2	Identify dams where modification of dam operations will benefit recovery of the flycatcher by taking advantage of system flexibility and water surpluses/flood flows.	2 yrs.	USBR, COE, FERC	0	0	0						Same funds as 1.1.2.1.1.
3	1.1.2.1.3	Determine feasibility of simulating the natural hydrograph to restore/enhance riparian systems.	3 yrs.	USBR, COE, DOE, GCAMWG	1650			550	550	550			6 RUs x 1.5 FTEs/RU = 9 FTEs. 9 FTEs @ \$61,000/year = \$549,000/year. Feasibility studies to be conducted for those areas identified in 1.1.2.1.1-1.1.2.1.2.

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2	1.1.2.1.4	Determine feasibility of managing reservoir levels to establish and maintain lake fringe and inflow habitat.	3 yrs.	USBR, COE	0			0	0	0			Same funds as 1.1.2.1.3. Feasibility studies to be conducted for those areas identified in 1.1.2.1.1-1.1.2.1.2.
3	1.1.2.1.5	Determine feasibility of using surplus and/or flood flows to increase or add water to marsh areas between levees and on flood flows.	3 yrs.	USBR, COE, MRGCD, MSCP	0			0	0	0			Same funds as 1.1.2.1.3. Feasibility studies to be conducted for those areas identified in 1.1.2.1.1-1.1.2.1.2.
2	1.1.2.1.6	Determine feasibility of keeping daily ramping rates and daily fluctuations for dam releases as gradual as possible to prevent bank erosion and loss of riparian vegetation, except when mimicking flood flows.	3 yrs.	USBR, COE, GCAMWG	0			0	0	0			Same funds as 1.1.2.1.3. Feasibility studies to be conducted for those areas identified in 1.1.2.1.1-1.1.2.1.2.
3	1.1.2.1.7	Determine feasibility of augmenting sediment in sediment-depleted systems.	3 yrs.	USBR, COE, MRGCD, MSCP, GCAMWG	0			0	0	0			Same funds as 1.1.2.1.3. Feasibility studies to be conducted for those areas identified in 1.1.2.1.1-1.1.2.1.2.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	1.1.2.1.8	Implement 1.1.2.1.3-1.1.2.1.7, where feasible.	6-30 yrs.	USBR, COE	TBD						TBD	TBD	Costs dependent on feasibility findings.
2	1.1.2.1.9	Monitor 1.1.2.1.3-1.1.2.1.7, and provide feedback to the Technical Subgroup.	6-30 yrs.	USBR, COE	TBD						TBD	TBD	Costs dependent on feasibility findings.
1*	1.1.2.2.1.1	Increase efficiency of groundwater management to expand habitat, favor native over exotic plants, and reduce fire potential.	30 yrs.	IRR, MRGCD, ADWR, ABQ	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Critical areas need to be identified and strategies agreed upon.
2	1.1.2.2.1.2	Use urban waste water outfall and rural irrigation delivery and tail waters for habitat restoration to expand habitat, favor native over exotic plants, and reduce fire potential.	30 yrs.	MRGCD, IRR, MWD, ABQ, PHX, LSV, SND	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Water districts to identify opportunities for implementation and determine associated costs.
2	1.1.2.2.1.3	Provide (reestablish) instream flows to expand habitat, favor native over exotic plants, and reduce fire potential.	6-30 yrs.	USBR, COE, ADWR, MWD, MRGDC, ABQ, PHX, LSV, SND, IRR	TBD						TBD	TBD	Cost should be coordinated with 1.1.2.1.3-1.1.2.1.7.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	1.1.2.2.2	Expand the active channel area that supports currently suitable and potentially suitable flycatcher habitat by increasing the width of levees and using available flows to mimic overbank flow.	6-30 yrs.	USBR, COE	TBD						TBD	TBD	Costs should be coordinated with 1.1.2.1.3-1.1.2.1.7.
2	1.1.2.2.3	Reactivate flood plains to expand native riparian forests.	6-30 yrs.	USBR, COE, MSCP, MRGCD	TBD						TBD	TBD	Costs should be coordinated with 1.1.2.1.3-1.1.2.1.7.
3	1.1.2.2.4	Restore more natural channel geometry (width, depth, bank profiles) where the return of the natural hydrograph will be insufficient to improve habitat.	6-30 yrs.	USBR, COE	TBD						TBD	TBD	
2	1.1.2.3.1	Develop fire risk and management plans.	5 yrs.	BLM, FS, FWS, DOD, USBR	600	120	120	120	120	120			Same formula as 1.1.1.
2	1.1.2.3.2	Suppress fires.	30 yrs.	BLM, FS, FWS, DOD, USBR	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Sites to be prioritized in management plans in 1.1.2.3.1.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
1	1.1.2.3.3	Restore ground water, base flows, and flooding.	6-30 yrs.	USBR, COE MWD, MRGCD, ADWR, IRR	TBD						TBD	TBD	Identify opportunities from implementing 1.1.1.
3	1.1.2.3.4.1	Manage/reduce exotic species that contribute to increased fire incidence.	6-30 yrs.	BLM, FS, USBR, FWS, DOD, NRCS	TBD						TBD	TBD	Identify opportunities from implementing 1.1.1.
3	1.1.2.3.4.2	Use water more efficiently and reduce fertilizer applications.	30 yrs.	NRCS, FWS, BLM	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Opportunities based on local conditions.
3	1.1.2.3.5	Reduce recreational fires.	5 yrs.	USBR, BLM, FS, FWS	1200	240	240	240	240	240			4 agencies x 6 RU x \$10,000/year = \$240,000/year.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	1.1.3.1.1.1	If livestock grazing is a major stressor implement conservative livestock grazing guidelines. Implement general livestock grazing guidelines from Appendix G (see also Section E. Narrative Outline for Recovery Actions) in occupied, suitable, or restorable habitat (restorable habitats are riparian systems that have the appropriate hydrologic and ecologic setting to be suitable flycatcher habitat.)	5 yrs.	BLM, FS	7320	1464	1464	1464	1464	1464			Reevaluate with 5 year revision of plan. 24 FTEs @ \$61,000/year = \$1,464,000/year. (Assuming 12 FTEs per agency.)
2	1.1.3.1.1.2	Determine appropriate use areas for grazing.	5 yrs.	BLM, FS, FWS, SGF	0	0	0	0	0	0			Same funds as 1.1.3.1.1.1.
2	1.1.3.1.1.3	Reconfigure grazing management units.	5 yrs.	BLM, FS	0	0	0	0	0	0			Same funds as 1.1.3.1.1.1.
3	1.1.3.1.1.4	Improve documentation of grazing practices.	5 yrs.	BLM, FS	0	0	0	0	0	0			Same funds as 1.1.3.1.1.1.

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3	1.1.3.1.2	Manage wild ungulates.	30 yrs.	BLM, FS, FWS, SGF	0	0	0	0	0	0	0	0	Can be accomplished through existing and ongoing program activities; no new funds needed.
3	1.1.3.1.3	Manage keystone species.	30 yrs.	BLM, FS, FWS, SGF	0	0	0	0	0	0	0	0	Can be accomplished through existing and ongoing program activities; no new funds needed.
2	1.1.3.2.1	Develop exotic species management plans.	5 yrs.	USBR, COE, BLM, FS, FWS, DOD, NRCS, SGF, SAG, MRGCD	600	120	120	120	120	120			20% of MUs complete 1 plan each year until 100%. At \$20,000 per management plan/year, \$20,000 x 6 MUs/year = \$120,000/year.
3	1.1.3.2.2	Coordinate exotic species management efforts.	5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, SAG, MSCP, MRGCD	1830	366	366	366	366	366			6 RUs x 1 FTE /RU @ \$61,000/year x 5 yrs = \$366,000/year.
2	1.1.3.2.3.1	Eliminate physical stresses, such as high salinity or reduced stream flows, that favor exotic plants.	30 yrs.	USBR, COE, FWS, SGF	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Opportunities identified in 1.1.3.2.1.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	1.1.3.2.3.2	Create or allow for a river hydrograph that restores the natural flood disturbance regime.	30 yrs.	USBR, COE	732	366	366	TBD	TBD	TBD	TBD	TBD	To identify appropriate areas, 6 RU x 1 FTE/RU @ \$61,000 = \$366,000/year. FY03-30 funds dependent on feasibility findings in FY01-02.
2	1.1.3.2.3.3	Restore ungulate herbivory to intensities and types under which native plant species are more competitive.	30 yrs.	BLM, FS, FWS, SGF	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Coordinate with 1.1.3.1.2.
1	1.1.3.2.4	Retain native riparian vegetation in floodplains or channels.	20 yrs.	BLM, FS, FWS, USBR, SGF, SAG	1,800	600	600	600	TBD	TBD	TBD		\$100,000 for each RU (6) for 3 years to retain native riparian vegetation where immediately threatened. Prioritize with plans in 1.1.1 for longer-term management.
2	1.1.3.2.5.1	At native dominated sites, retain tamarisk in occupied flycatcher habitat and, where appropriate, in suitable but unoccupied habitat, unless there is a trend for steady increase of tamarisk.	20 yrs.	BLM, FS, FWS, USBR, NRCS, SGF, SAG	TBD	TBD	TBD	TBD	TBD	TBD	TBD		Coordinate with 1.1.2.3.3.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	1.1.3.2.5.2	If needed, increase habitat quality within stands of exotic plants by implementing restorative actions such as seasonal flooding.	30 yrs.	USBR, COE	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Coordinate with 1.1.2.3.3.
3	1.1.3.2.6.1	In suitable and potential habitats where exotic species are to be removed through chemical or mechanical means, use a temporally staged approach to clear areas so some mature habitat remains throughout the restoration period for potential use by flycatchers.	30 yrs.	NRCS, BLM, FS, FWS, SAG	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Depends on planned site-specific management actions.
2	1.1.3.2.6.2	Release habitat-targeted biocontrol agents only outside the occupied breeding range for the flycatcher.	30 yrs.	USDA, USGS, FWS	0	0	0	0	0	0	0	0	Costs not accrued within range of flycatcher.

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3	1.1.3.3.1	Reduce impacts from recreationists.	5 yrs.	BLM, FS, NPS, SPK	7320	1464	1464	1464	1464	1464			4 agencies x 6 RU = 24 FTEs @ \$61,000/year = \$1,464,000/year. Reassess at 5 yr. revision.
3	1.1.3.3.2	Confine camping areas.	5 yrs.	BLM, FS, NPS, SPK	0	0	0	0	0	0			Same funds as 1.1.3.3.1.
3	1.1.3.3.3	Restore habitat impacted by recreation.	5 yrs.	BLM, FS, NPS, SPK	0	0	0	0	0	0			Same funds as 1.1.3.3.1.
3	1.1.3.3.4	Place designated recreation shooting areas away from riparian areas.	5 yrs.	BLM, FS, FWS, SGF	0	0	0	0	0	0			Same funds as 1.1.3.3.1.
3	1.1.3.3.5	Minimize attractants to scavengers, predators, and brown-headed cowbirds.	5 yrs.	BLM, FS, NRCS, SPK, SGF, SAG	0	0	0	0	0	0			Same funds as 1.1.3.3.1.
3	1.1.3.3.6	Provide on-site monitors where recreation conflicts exist.	5 yrs.	BLM, FS, FWS, NPS, SGF, SPK	0	0	0	0	0	0			Same funds as 1.1.3.3.1.
2	1.2.1	Evaluate and provide rangewide prioritization of non-Federal lands.	Complete	USBR, BLM, FS, FWS, NRCS, SGF	0								

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1	1.2.2	Achieve protection of occupied habitats.	30 yrs.	FWS, FS, BLM, NRCS	24315	1430	1430	1430	1430	1430	715 / year	644 / year	Approximately half of currently known territories occur on federal lands and are already protected. Assume that half (975) of total number of territories needed to delist the species (1950) need protection. Based on the Recovery Plan, each territory = 1.1 ha. Cost of protection of 1 territory is estimated at \$2,600/ha. Years 1-5: 500 territories x 1.1ha x \$2600/ha. Years 6-20: 250 territories x 1.1ha x \$2600/ha. Years 21-30: 225 territories x 1.1ha x \$2,600/ha.
2	1.2.3	Provide technical assistance to conserve and enhance occupied habitats on non-Federal lands.	30 yrs.	DOI, USDA	29280	976	976	976	976	976	976 / yr	976 / yr	32 MU x 0.5 FTE/year = \$976,000/year.
2	1.2.4	Pursue joint ventures toward flycatcher conservation.	5 yrs.	FWS	250	50	50	50	50	50			For projects along U.S. - Mexico border.

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2	1.3.1	Work with tribes to establish a regular system of surveys and monitoring, and train tribal staff in the flycatcher survey protocol.	10 yrs.	DOI	100	10	10	10	10	10	10 /yr thru FY10		4 (Phoenix, Albuquerque, Southern California, Utah) regional workshops through BIA area offices, at \$2500 / workshop + travel costs per year.
3	1.3.2	Determine protocols for information sharing.	5 yrs.	DOI	305	61	61	61	61	61			4 BIA area offices (as above) x 0.25 FTEs/office @ \$61,000/FTE.
2	1.3.3	Maintain an incumbent in the position of Tribal Liaison to the Technical Subgroup.	30 yrs.	FWS	30	1	1	1	1	1	1/yr	1/yr	Travel costs.
2	1.3.4	Provide technical assistance to tribes that have flycatchers on their lands.	5 yrs.	FWS, BIA, USBR	1220	244	244	244	244	244			1 FTE @ \$61,000/year x 4 BIA area offices.
2	1.3.5	Support tribal efforts to improve currently suitable and potentially suitable habitat.	5 yrs.	FWS, BIA, USBR	0	0	0	0	0	0			Same funds as 1.3.4.

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3	1.3.6	Work with tribes to determine the extent to which tribal water rights might or might not be available to aid in conservation and recovery of the flycatcher.	5 yrs.	FWS, BIA, USBR	0	0	0	0	0	0			Same funds as 1.3.4.
3	1.3.7	Provide aid in developing educational programs and opportunities that further flycatcher recovery.	5 yrs.	FWS, BIA	0	0	0	0	0	0			Same funds as 1.3.4.
1	2.1.1	Conserve and manage all existing breeding sites.	30 yrs.	AFA, SGF, SPK, SAG	0	0	0	0	0	0	0	0	Same funds as 1.2.2.
1	2.1.2	Secure, maintain, and enhance largest populations.	5 yrs.	AFA, SGF, SPK, SAG	600	120	120	120	120	120			See narrative outline 2.1.2 for list of 12 largest populations. \$10,000/year x 12 populations = \$120,000/year
2	2.1.3.1	Use existing habitat acquisition / conservation priorities.	30 yrs.	USBR, BLM, FS, FWS, DOD, NRCS	0	0	0	0	0	0	0	0	No additional funds necessary.

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2	2.1.4	Enhance connectivity to currently isolated occupied sites.	5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF	15750			3150	3150	3150	3150	FY06 - 07	6 RU x 7 agencies x \$75,000/year = \$2,100,000/year.
2	2.1.5	Facilitate establishment of new, large populations in areas where none exist, through habitat restoration.	3-5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, MSCP, MRGCD	515			172	172	172			Assume 1 new site of at least 10 territories in each RU. 1 territory = 1.1 ha. Costs of \$2,600 per territory. 6 RU x 10 territories x 1.1 ha x \$2,600 = \$172,000/year.
2	2.1.6	Increase population sizes at small occupied sites.	5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, MSCP, MRGCD	7545	1509	1509	1509	1509	1509			Based on Recovery Plan, approximately 223 sites currently exist, minus 12 large populations; assume that 25% of small sites will be increased by 10 territories at 1.1 ha/territory @\$2600/territory. (25%) (211) x 11 ha x \$2600 = \$1,509,000

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2	3.1.1.1	Increase the amount and quality of riparian habitat to increase habitat patch sizes and local flycatcher population sizes thereby minimizing levels and impacts of cowbird parasitism.	5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, MRGCD, MSCP	0	0	0	0	0	0			Coordinate with 2.1.4 - 2.1.6.
2	3.1.1.2	Develop cowbird management programs if warranted by baseline data on parasitism rates.	3-5 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, MRGCD, MSCP	0			0	0	0			See FY 01-02 baseline data collection, action 6.5.1. Coordinate funds with 3.1.1.3.
2	3.1.1.3	Implement cowbird management programs if warranted by baseline data on parasitism rates.	3-10 yrs.	USBR, BLM, FS, FWS, DOD, NRCS, SGF, MRGCD, MSCP	3120			390	390	390	390 / year until FY10		\$65,000/year per 5-trap site x 6 RU for 7 years.
3	3.1.1.4	Pursue long-term landscape objectives for cowbird reduction.	30 yrs.	BLM, FS, FWS, DOD, MRGCD, MSCP, NRCS, SGF	0	0	0	0	0	0	0	0	Coordinate with 2.1.4 - 2.1.6 and 3.1.1.2 - 3.1.1.3.
2	3.1.2	Reduce direct impacts that topple or otherwise destroy nests.	30 yrs.	BLM, FS, FWS	0	0	0	0	0	0	0	0	Coordinate with 1.1.3.1.1.1 and 1.1.3.3.1.

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3	3.1.3	Reconsider assessment of habitat quality or other threats if cowbird control measures do not increase numbers of breeding flycatchers.	10 yrs.	USGS, FWS, BLM, FS	TBD	TBD	TBD	TBD	TBD	TBD	TBD		Based on results from 3.1.1.3.
2	4.1	Identify, for purposes of protection, riparian habitats in the U.S. to provide migration and stopover habitat.	5 yrs.	USBR, COE, BLM, FS, FWS, DOD, SGF, SPK, IRR	750	150	150	150	150	150			Estimated funds for studies to complement ongoing research in each RU.
2	4.2	Restore, protect, and expand riparian migration and stopover habitats in the U.S.	4-30 yrs.	USBR, COE, BLM, FS, FWS, DOD, SGF, SPK	TBD				TBD	TBD	TBD	TBD	Based on 4.1. Prioritize areas to protect.
2	4.3	Pursue international partnerships to identify migration and winter habitats and threats.	1-5 yrs.	FWS, USGS, USBR, SGF	125	25	25	25	25	25			Re-evaluate with 5-year Recovery Plan revision.
2	4.4	Encourage programs that preserve habitats used by wintering and migrating flycatchers.	5 yrs.	FWS, USGS	125	25	25	25	25	25			Re-evaluate with 5-year Recovery Plan revision.

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2	4.5	Encourage programs that minimize threats to wintering and migrating flycatchers.	5 yrs.	FWS, USGS	125	25	25	25	25	25			Re-evaluate with 5-year Recovery Plan revision.
2	5.1.1	Adopt standardized protocols for surveying and monitoring.	1 yr.	FWS, SGF	15					15			Re-evaluate with 5-year Recovery Plan revision.
2	5.1.2	Institute appropriate monitoring of all reaches within management units.	5 yrs.	FWS, USBR, BLM, FS, DOD, SGF, USGS	3500	700	700	700	700	700			Extrapolated from 2000-2001 statistics from BLM, FS.
2	5.1.3	Integrate survey data at state and rangewide levels.	5 yrs.	FWS, USGS, SGF	125	25	25	25	25	25			
2	5.2.1	Review data to improve effectiveness of management and restoration practices.	5 yrs.	FWS, USGS, SGF	50	10	10	10	10	10			Funds for several team meetings per year.
3	5.3	Survey to determine dispersal movements and colonization events.	5 yrs.	USGS, FWS, USBR, BLM, FS, SGF	0	0	0	0	0	0			Same funds as 5.1.2.
3	5.4	Expand survey efforts in wintering habitat.	5 yrs.	USGS, FWS	500	100	100	100	100	100			Extrapolated from current USGS survey efforts in wintering habitat.

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Priority #	Action #	Action Description	Duration	Minimum List of Potential Partners	Total Estimated Costs	Costs (\$1000s)							Comments
						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	6.1.1	Determine plant species / structure that determines occupancy and reproductive success.	5 yrs.	USGS, SGF, FS, BLM	500	100	100	100	100	100			
3	6.1.2	Determine habitat area needed for breeding birds.	3 yrs.	USGS, FWS, SGF	1098			366	366	366			6 RU x 1 FTE/RU @ \$61,000 = \$366,000
3	6.1.3	Determine effects of conspecifics on site occupancy and reproductive success.	3 yrs.	USGS, FWS, SGF	225			75	75	75			Estimated costs for two studies within the range.
3	6.1.4	Determine use vs. availability of exotics in occupied sites.	3 yrs.	USGS, SGF, USBR, BLM, FS, FWS	150	50	50	50					Estimated costs for one study within the range.
3	6.1.5	Determine long-term ecological productivity of native habitats vs. exotic habitats.	5 yrs.	USGS, SGF, FWS	1000	200	200	200	200	200			Estimated costs for one study within the range.
3	6.1.6	Refine understanding of effects of physical microclimate on site occupancy and reproduction.	3 yrs.	USGS, SGF, FWS	180			60	60	60			Estimated costs for one study within the range.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	6.1.7	Determine influence of environmental toxins on breeding, survival, and prey base.	3 yrs.	FWS, USGS	225	75	75	75					Estimated costs for one study within the range.
2	6.2	Investigate dam and reservoir management scenarios to determine thresholds for habitat suitability and to maximize habitat quality.	30 yrs.	USGS, FWS, USBR, COE, GCAMWG, MSCP	0	0	0	0	0	0	0	0	Coordinate funds with feasibility studies in actions 1.1.2.1.3 - 1.1.2.1.7.
2	6.3	Investigate surface and groundwater management scenarios to determine thresholds for habitat suitability and to maximize habitat quality.	3 yrs.	FWS, USGS, USBR, SGF	0	0	0	0					Same funds as 1.1.2.2.1.1.
2	6.4.1	Investigate grazing systems, strategies, and intensities for riparian recovery and maintenance.	5 yrs.	BLM, FS, FWS	0	0	0	0	0	0			Same funds as 1.1.3.1.1.1.
3	6.4.2	Investigate direct effects of livestock grazing on the flycatcher.	5 yrs.	BLM, FS, FWS	0	0	0	0	0	0			Same funds as 1.1.3.1.1.1.

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3	6.4.3	Investigate impacts of native ungulates on riparian recovery and maintenance.	3 yrs.	SGF, BLM, FS, FWS,	150			50	50	50			Estimated funds for one study within the range.
2	6.5.1	Collect baseline data on cowbird parasitism.	2 yrs.	USGS, SGF, USBR, BLM, FS, FWS	300	150	150						See 3.1.1.2.
3	6.5.2	Experimentally test the efficacy of cowbird trapping programs.	7 yrs.	USGS	0			0	0	0	0 thru FY10		Coordinate funds with programs from 3.1.1.3.
2	6.6	Determine the most successful techniques for creating or restoring suitable habitat to degraded or former riparian lands, such as abandoned agricultural fields in riparian corridors.	10 yrs.	USGS, USDA, MSCP, MRGCD, IRR	1720	172	172	172	172	172	172 / yr. FY 06-10		Based on efforts to create 11 ha of suitable habitat in each RU each year for 10 years. 11 ha x 2,600\$ x 6RUs = \$172,000
2	6.7.1	Acquire demographic and dispersal information.	5 yrs.	USGS, SGF, USBR, BLM, FS, FWS	750	150	150	150	150	150			Complement ongoing surveys rangewide.
2	6.7.2	Conduct limiting factor analyses.	5 yrs.	USGS, SGF, FWS	250	50	50	50	50	50			Estimated costs for one study within the range.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	6.7.3	Explore new methods and data needs for population viability analyses.	5 yrs.	USGS, FWS	0	0	0	0	0	0			Coordinate funds with 5.1.3 and 5.2.1.
3	6.7.4	Develop methodologies, which can be site specific if necessary, for determining year-to-year trends in population sizes at breeding sites.	3 yrs.	USGS, SGF, FWS	300	100	100	100					Complement ongoing surveys rangewide.
3	6.7.5	Establish and refine protocols for addressing flycatcher distribution.	3 yrs.	USGS, SGF, FWS	450	150	150	150					Complement ongoing studies rangewide.
3	6.8	Determine present and historical distribution of the subspecies through genetic work.	3 yrs.	USGS	150	50	50	50					Estimated costs for one study within the range.
3	6.9.1	Investigate migration ecology, habitat selection and use.	5 yrs.	USGS	375	75	75	75	75	75			Continue ongoing work.
3	6.9.2	Investigate wintering distribution, status, ecology, and habitat selection.	5 yrs.	USGS	375	75	75	75	75	75			Continue ongoing work.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	6.9.3	Determine influence of environmental toxins on wintering flycatchers and their prey base.	3 yrs.	USGS, FWS	225			75	75	75			Estimated costs for one study.
3	6.10	Conduct research on means of increasing reproductive success by approaches other than, or in addition to, cowbird management, such as reducing losses of flycatcher eggs and nestlings to general nest predators.	5 yrs.	USGS, FWS	250	50	50	50	50	50			Estimated costs for one study within the range to complement an ongoing nest monitoring study.
3	6.11	Conduct research to determine why increases in reproductive success due to cowbird control or other measures may not lead to increases in numbers of breeding birds in populations experiencing improved reproductive success or in populations that could receive emigrants from such populations.	5 yrs.	USGS	250	50	50	50	50	50			Estimated costs for one study within the range to complement an ongoing nest monitoring study.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	6.12.1	Evaluate fuel reduction techniques in riparian habitat, especially tamarisk types.	3 yrs.	BLM, FS, FWS, DOD, SGF, USGS	450			150	150	150			Estimated costs for one assessment within the range to complement ongoing fuel reduction activities.
3	6.12.2	Test modifying flammability for fuels to modify fire risks.	5 yrs.	BLM, USGS, FWS, FS, DOD	250	50	50	50	50	50			
3	6.12.3	Test prescribed fire to achieve desired fire hazard reduction, habitat protection, and habitat improvement.	20 yrs.	BLM, FS, FWS, DOD, SGF, USGS	3,000	600	600	600	600	600	TBD		1 study (\$100,000) in each RU (6). Reevaluate with Recovery Plan revision.
3	7.1	Hold annual Implementation Subgroup meetings.	5 yrs.	RTTS, ISGs	0	0	0	0	0	0			Same duration and funds as 9.1.
3	7.2	Maintain updated website.	Ongoing	FWS, USGS	25	5	5	5	5	5	TBD	TBD	Repeat 5 year time cycle as needed, based on plan revisions.
3	7.3.1	Educate the public about landscaping with native plants.	5 yrs.	USDA, DOI, SGF	0	0	0	0	0	0			Revise public education focal themes based on plan revision. Same funds as 1.1.3.2.
3	7.3.2	Educate the public about recreational impacts, especially about fire hazards.	5 yrs.	USDA, DOI, SGF	0	0	0	0	0	0			Revise public education focal themes based on plan revision. Same funds as 1.1.2.3.5.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
3	7.3.3	Educate the public that cowbird parasitism is a natural process but may require management efforts in some instances due to high levels or other stressors that have endangered flycatchers.	5 yrs.	USDA, DOI, SGF	TBD*	TBD	TBD	TBD	TBD	TBD			*Could include brochures/printed materials, information sessions, presentations for recreationists (e.g., campfire talks)
3	7.4	Post and maintain signs at some protected flycatcher breeding locations.	5 yrs.	BLM, FS, NPS, FWS, SGF, SPK	0	0	0	0	0	0			Coordinate funds with 1.1.3.3.1.
3	7.5	Conduct information exchange programs with foreign governments and publics.	Ongoing	USGS, FWS	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
3	7.6	Conduct symposia and workshops.	1 workshop every 10 yrs.	USGS, FWS	75						25 in FY10	25 in FY20 and FY30	
2	7.7	Continue survey training.	5 yrs.	FWS, SGF, USGS	125	25	25	25	25	25			
1	8.1	Fully implement 7(a)(1) of the ESA.	Ongoing	AFA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
1	8.2	Fully implement all Biological Opinions resulting from ESA 7(a)(2) consultations.	Ongoing	AFA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
2	8.3.1	Support compliance with ESA 7(a)(1)	Ongoing	AFA	915	183	183	183	183	183	TBD	TBD	1FTE @ \$61,000 x 3 FWS Regions = \$183,000. Estimated for five year periods, to be revised and continued as needed.
3	8.3.2	Provide resource managers with training in conservation benefits.	Ongoing	AFA, SGF, SPK	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
2	8.3.3	Monitor compliance with ESA 7(a)(2).	Ongoing	AFA	0	0	0	0	0	0	0	0	Same funds as 8.3.1
2	8.3.4	Ensure consistency among ESA 7(a)(2) consultations.	Ongoing	FWS	0	0	0	0	0	0	0	0	Same funds as 8.3.1.
2	8.3.5	Monitor compliance with existing Biological Opinions.	Ongoing	AFA	0	0	0	0	0	0	0	0	Same funds as 8.3.1.
2	8.4	Integrate recovery efforts with those for other species.	Ongoing	RTTS, ISGs	0	0	0	0	0	0	0	0	Same funds as 9.1.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	8.5	Monitor compliance and effectiveness of agreements and other mechanisms used as delisting criteria.	20 yrs.	FWS	275						25 in FY20	25 per year	Action would begin at downlisting; downlisting is estimated to occur in 20 years.
2	8.6.1	Effectively communicate with Tribes.	5 yrs.	AFA	0	0	0	0	0	0			Can be accomplished through existing and ongoing program activities; no new \$ needed.
3	9.1	Maintain collaborative structure of Recovery Team.	Ongoing	FWS, RTTS, ISGs	120	20	20	20	20	40			\$20,000 each year; \$40,000 in fifth year to revise plan. Repeat as necessary.
2	9.2	Annual review of survey and monitoring data.	1-5 yrs.	RTTS	0	0	0	0	0	0			Same funds as 9.1.
2	9.3	Review and synthesis of current flycatcher research and other pertinent research.	1-5 yrs.	USGS, FWS, SGF	50	10	10	10	10	10			
3	9.4	Repeat Population Viability Analysis.	4 th , 5 th years	FWS, USGS	120				20	100			
2	9.5	Develop recommendations for survey and monitoring strategies.	5 yrs.	USGS, FWS, SGF	0	0	0	0	0	0			Coordinate funds with 9.1 - 9.3.

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						FY 01	FY 02	FY 03	FY 04	FY 05	FY 06-20	FY 21-30	
2	9.6	Update Recovery Plan every 5 years.		FWS, RTTS, ISGs	40					40			