RECLAMATION

Managing Water in the West

FINAL ENVIRONMENTAL ASSESSMENT

Proposed Land Acquisition Within the Gila River Floodplain Near Fort Thomas

for

Southwestern Willow Flycatcher Habitat, Graham County, Arizona

Original Photo by Alex Smith
Arizona Game & Fish Department

U.S. Department of the Interior
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U.S. UNIT		METRIC EQUIVALENT
	U.S. WEIGHT	
1 short ton	2000 pounds	0.907 metric tons
1 long ton	2240 pounds	1.016 metric tons
1 hundredweight	100 pounds	45.359 kilograms
1 pound	16 ounces	0.453 kilograms
1 ounce	16 drams	28.349 grams
1 dram	27.343 grains	1.771 grams
1 grain	0.036 drams	0.0648 grams
	U.S. LIQUID MEASURE	
1 gallon	4 quarts	3.785 liters
1 quart	2 pints	0.946 liters
1 pint	4 gills	0.473 liters
1 gill	4 fluid ounces	118.291 milliliters
1 fluid ounce	8 fluidrams	29.573 milliliters
1 fluidram	60 minims	3.696 milliliters
1 minim	1/60 fluidram	0.061610 milliliters
	U.S. DRY MEASURE	
1 bushel	4 pecks	35.238 liters
1 peck	8 quarts	8.809 liters
1 quart	2 pints	1.101 liters
1 pint	½ quart	0.550 liters
	U.S. LENGTH	
1 mile	5,280 feet, 320 rods, 1,760 yds	1.609 kilometers
1 rod	5.50 yds, 16.5 feet	5.029 meters
1 yard	3 feet, 36 inches	0.9144 meters
1 foot	12 inches, 0.333 yrds	30.480 centimeters
1 inch	0.083 feet, 0.027 yds	2.540 centimeters
	U.S. AREA	
1 square mile	640 acres	2,589 sq. kilometers
1 acre	4,840 sq. yds, 43,560 sq. feet	0.405 hectares
1 square rod	30.25 sq. yards	25.293 sq. meters
1 square yard	1296 sq, inches, 9 sq. feet	0.836 sq. meters
1 square foot	144 sq. inches	0.093 sq. meters
1 square inch	0.007 sq. feet	6.451 sq. centimeters
	U.S. VOLUME	
1 cubic yard	27 cubic feet	0.765 cubic meters
1 cubic foot	1,728 cubic inches	0.028 cubic meters
1 cubic inch	0.00058 cubic feet	16.387 cubic centimeters
1 acre-foot	43,560 cu.ft., 325,851 gal.	1,234 cubic meters

ABBREVIATIONS AND ACRONYMS

ACS	Archaeological Consulting Services, Ltd.
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
APE	Area of potential effect
AWSA	Arizona Water Settlements Act of 2004
AZDC	Arizona Department of Commerce
BLM	U.S. Bureau of Land Management
CWA	Clean Water Act
EA	Environmental Assessment
ESA	Endangered Species Act of 1973
FWCA	Fish and Wildlife Coordination Act
FWS	U. S. Fish and Wildlife Service
Gila Decree	1935 Federal consent decree (*United States v. The Gila Valley Irrigation District, et al.*).
HCP	Habitat Conservation Plan
Management Fund	Southwestern Willow Flycatcher Management Fund
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
Opinion	Biological Opinion
PILT	Payment in lieu of taxes
P.L.	Public Law
Reclamation	U.S. Bureau of Reclamation
RHCP	Roosevelt Habitat Conservation Plan
RPA	Reasonable and Prudent Alternatives
SHPO	State Historic Preservation Office
SRP	Salt River Project
TDS	Total dissolved solids
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
willow flycatcher	Southwestern willow flycatcher

CHAPTER 1 – PURPOSE AND NEED

This environmental assessment (EA) has been prepared to evaluate the potential environmental impacts of the Bureau of Reclamation's (Reclamation) purchase and the Salt River Project's (SRP) management of about 700 acres of land in Graham County, Arizona. The proposed land purchase and management would partially fulfill requirements of the Endangered Species Act, as amended in 1973 (ESA), related to Reclamation's modifications to, and SRP's operation of, Theodore Roosevelt Dam.

The proposed land purchase is in support of Reclamation's implementation of a reasonable and prudent alternative (RPA) included in a 1996 Biological Opinion (Opinion) issued by the U.S. Fish and Wildlife Service (FWS). The purpose of the RPA is to compensate for the potential "incidental take"[1] of up to 90 Southwestern Willow Flycatchers - *Empidonax traillii extimus* (willow flycatcher) and the loss of their habitat at Roosevelt Lake, resulting from Reclamation's modification to Roosevelt Dam. Purchasing land to benefit the species is one of the management actions that fulfill Reclamation's obligations. SRP's 2002 Roosevelt Habitat Conservation Plan (RHCP) requires additional acquisition and management of riparian habitat and incorporates Reclamation's requirements from the 1996 Opinion.

Under the proposed action, Reclamation would purchase approximately 700 acres of land within the floodplain of the Gila River between the Fort Thomas crossing and Eden Bridge, in Graham County, Arizona (Figure 1). These parcels contain habitat suitable for the endangered willow flycatcher. As part of the proposed action and to fulfill its RHCP obligations, SRP would manage this property in perpetuity to benefit the willow flycatcher. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA), the Council of Environmental Quality regulations (40 CFR 1500-1508), and Reclamation's NEPA Handbook. Reclamation is the lead Federal agency in accordance with NEPA.

BACKGROUND

Reclamation's Modifications of Theodore Roosevelt Dam. Reclamation completed modifications to Theodore Roosevelt Dam on the Salt River in central Arizona in 1996. The modifications increased the height of the dam 88 feet to increase flood control capabilities, add capacity to prevent overtopping of the dam during the probable maximum flood,[2] and create additional water conservation capacity. The modifications were authorized by the Colorado River Basin Project Act of 1968 (Public Law [P.L.] 90-537) and the Safety of Dams Act of 1978

[1] Incidental take is defined in the Endangered Species Act of 1983 (ESA) as the taking (harassment, harm, pursuit, hunting, shooting, wounding, killing, trapping, capture or collection, or attempt to engage in any such conduct) of a federally protected species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or entity subject to the ESA.

[2] The probable maximum flood is the maximum runoff conditions that would result from the most severe combination of hydrologic and meteorologic conditions that are considered reasonably possible to occur for a particular drainage basin.

(P.L. 95-578). Modifications to the dam allow for a 15-foot increase in the water conservation pool elevation. This new conservation space is located upstream of the dam between elevations 2,136 feet and 2,151 feet.

On March 29, 1995, the FWS designated (listed) the willow flycatcher an endangered species under the authority of the ESA. In September 1995, Reclamation and the FWS entered into formal consultation in accordance with Section 7 of the ESA on the potential effects to the willow flycatcher resulting from the modifications to the dam. Section 7 of the ESA requires that a Federal agency consult with FWS regarding the effect of a proposed Federal action on a listed species. Storage of water in the new conservation space has the potential to inundate and degrade willow flycatcher habitat at the Tonto Creek and Salt River inflows to Roosevelt Lake.

The FWS issued a final Opinion on July 23, 1996. The Opinion concluded that storing water in the new conservation space within Roosevelt Lake would jeopardize the continued existence of the willow flycatcher by adversely affecting existing breeding habitat; however, FWS identified an RPA which, if implemented by Reclamation, would remove jeopardy to the willow flycatcher (FWS 1996). Reclamation accepted and agreed to implement all components of the RPA.

Component 1c of the RPA requires Reclamation to establish a Southwestern Willow Flycatcher Management Fund (Management Fund) to offset threats to the species resulting from the modified Theodore Roosevelt Dam. The Management Fund must be utilized to carry out specific management actions to benefit existing willow flycatcher populations and promote survival of the species, including habitat acquisition, procurement of conservation easements, and other measures approved by the FWS. The Management Fund, however, cannot be used for administrative costs or long-term management of properties.

Low rainfall associated with the regional drought led to very low water levels behind Theodore Roosevelt Dam from 1998 through 2001, allowing vegetation to grow within the exposed reservoir bottom. In 1998, only 48 willow flycatcher territories[3] occupied this area. Willow flycatchers moved into this vegetation as it became suitable, and, by 2001, the flycatcher population had expanded to 140 territories below elevation 2,136 feet (Arizona Game and Fish Department [AGFD] unpubl. data). Reclamation's Section 7 consultation only addressed the Federal action of raising the dam and the corresponding new conservation and flood control space above 2,136 feet.

SRP's Operation of the Theodore Roosevelt Dam. SRP operates and maintains the dam pursuant to a 1917 agreement with Reclamation. By 2001, in response to the increasing willow flycatcher population, SRP determined that in order to store water in both the old and new conservation space and have full operational control over the reservoir, it would need to obtain a "take" permit from the FWS. The take permit would protect SRP from liability for any harm caused to willow flycatchers as a result of inundating flycatcher nesting habitat within the

[3] A territory is the unit of measure used for documenting the status of the willow flycatcher and is defined as a single bird or pair defending territory.

reservoir. SRP developed the RHCP for authorization of incidental take of threatened and endangered species as authorized under Section 10 of the ESA.[4]

In 2002, the RHCP and FWS'-associated Environmental Impact Statement was finalized. The RHCP includes all impacts associated with SRP's storage of water in both the old and new conservation space within Roosevelt Lake. The RHCP provides measures to minimize and mitigate incidental take of the willow flycatcher, yellow-billed cuckoo (*Coccyzus americanus*), bald eagle (*Haliaeetus leucocephalus*), and Yuma clapper rail (*Rallus longirostris yumanensis*) to the maximum extent practicable and ensures that incidental take will not appreciably reduce the likelihood of the survival and recovery of these species in the wild. The measures include protection and management of habitat at Roosevelt Lake and acquisition and management of riparian habitat and its associated buffer lands. In addition, the RHCP also references Reclamation's responsibility for implementing the 1996 Opinion requirements.

In 2003, FWS issued a Section 10 Incidental Take Permit to SRP for continued operation of Roosevelt Dam and Lake and storage of water up to an elevation of 2,151 feet. The Permit covers the four species mentioned above and is conditioned upon SRP's implementation of the RHCP.

Through the currently proposed project, Reclamation and SRP are implementing ESA Section 7 and Section 10 compliance requirements, respectively, for impacts to the willow flycatcher from Reclamation's modifications to, and SRP's operation of, Theodore Roosevelt Dam.

FWS's Finalization of the Southwestern Willow Flycatcher Recovery Plan. In accordance with the ESA, recovery plans are prepared that identify actions which are needed to recover and/or protect a particular listed species. FWS finalized its Southwestern Willow Flycatcher Recovery Plan (Recovery Plan) on August 20, 2002 (FWS 2002). The overall recovery objective for the willow flycatcher is to achieve a population and distribution sufficient for long-term survival (FWS 2002). The Recovery Plan indicates suitable habitat should be geographically located in a way that allows for willow flycatcher movement within and between drainages. Willow flycatcher habitat is dynamic; it frequently scours out and regenerates, resulting in corresponding willow flycatcher movement as the habitat changes. Ensuring that suitable habitat exists across the willow flycatcher's range protects it from further decline following localized catastrophic events. This proposed acquisition and long-term protection of willow flycatcher habitat supports and would help to achieve the overall objective of the Recovery Plan because occupied willow flycatcher sites are nearby, extensive suitable habitat is present in the Safford Valley, and large known populations exist along the Gila River.

PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the project is to purchase and manage riparian habitat for the benefit of the willow flycatcher, to carry out a portion of RPA Component 1c of the 1996 Opinion and SRP's

[4] Under Section 10 of the ESA, a private entity may coordinate with FWS to develop a Habitat Conservation Plan (HCP) if its action will result in the incidental take of a listed species but will not jeopardize the existence of the species.

2003 RHCP Section IV(c)(a) requirement. The acquisition and preservation of willow flycatcher habitat would partially offset the anticipated incidental take of up to 90 willow flycatchers and the cumulative effect of habitat loss at Roosevelt Lake resulting from the modification of Roosevelt Dam.

Approximately 700 acres within the Gila River floodplain are available for purchase, which consist of habitat suitable for the willow flycatcher. Reclamation proposes to purchase this property and enter into an agreement with SRP for the long-term management for willow flycatcher habitat conservation.

LOCATION

The project area is located within the Gila River floodplain in Graham County, Arizona. The subject property is currently in private ownership and is located about 3 miles southeast of Fort Thomas, just north of U.S. Highway 70 (Figure 2).

PUBLIC INVOLVEMENT/SCOPING PROCESS

On January 26, 2005, Reclamation sent out an initial memorandum to about 90 entities announcing its intention to prepare an EA on the proposed land purchase. Reclamation indicated public comments would be accepted until February 8, 2005, regarding issues and concerns that should be addressed in the EA. In response to numerous comments indicating the public scoping period provided insufficient time to submit comments, Reclamation sent out another memorandum on February 18, 2005, informing this same mailing list that public scoping comments would be considered if received in time for incorporation into the draft EA. In addition, Reclamation indicated the draft EA would be available for a 30-day public review and comment period. Then, on March 2, 2005, Reclamation sent out a subsequent memorandum with a corrected figure clarifying that the property proposed to be purchased does not include any lands currently under cultivation. Eleven letters commenting on the scope of the EA were received. The majority of these letters voiced concern that the proposed project would adversely affect (1) local efforts to control and/or eradicate saltcedar (*Tamarix sp.*); (2) the amount of water available for diversion and current irrigation diversion practices; (3) neighboring agricultural and

other land use practices (through further restrictions) resulting from willow flycatchers moving into the area or designation of Critical Habitat;[5] and, (4) the local farming economy. These issues have been addressed in this EA.

On March 18, 2005, Reclamation's Lower Colorado Regional Director and staff from Reclamation and SRP attended a meeting in Thatcher, Arizona, at the invitation of the Thatcher Town Manager, Mr. Terry Hinton. Among those in attendance were the Mayor of Thatcher, the Graham and Pima County Managers, a Graham County Supervisor, and representatives from the Gila Watershed Partnership and Gila Valley Natural Resource Conservation District. At this meeting, Reclamation and SRP staff responded to questions regarding the proposed land purchase. Then on April 12, 2005, Reclamation was invited to attend a regularly scheduled meeting of the Gila Watershed Partnership. A Reclamation representative was on the agenda to describe the proposed project. Representatives from numerous Federal, State, and local governments were in attendance, in addition to local citizens.

The draft EA was distributed to about 100 agencies, organizations, and interested individuals for public review and comment on May 26, 2005, with comments due by July 1, 2005, regarding the EA's adequacy in describing and addressing impacts anticipated to result from the proposed project. Six letters were received (copies of which are provided in Appendix A). A letter from Graham County requested that Reclamation meet with representatives of Graham County to discuss potential mitigation for project impacts. Reclamation and SRP staff met with County representatives on July 7, 2005, to discuss local concerns.

RELEVANT CONSIDERATIONS IN THE GENERAL VICINITY

Three reasonably foreseeable future actions may occur that could affect lands and the Gila River within the general vicinity of the project area: Proposed designation of Critical Habitat for the willow flycatcher; implementation of Title II of the Arizona Water Settlements Act of 2004 (P.L. 108-451) (AWSA); and local efforts to control and/or remove saltcedar from the river channel. These are briefly described below.

Proposed Designation of Critical Habitat for the Willow Flycatcher. On October 12, 2004, FWS published proposed Critical Habitat designation for the willow flycatcher in the *Federal Register* (69 FR 60706). In the general vicinity of the project area, two separate segments of the Gila River totaling 66 miles are included in the proposed designation, from the upper end of Earven Flat (just downstream of the Gila River's confluence with Bonita Creek) downstream to

[5] Critical Habitat is a geographic area that is considered essential for the conservation of a federally threatened or endangered species which may require special management and protection (FWS 2000). It may include habitat that is not currently occupied by the species but is needed for a species' recovery. Critical Habitat becomes designated after FWS provides for a public review and comment period on its draft proposal and then publishes a Federal regulation in the *Federal Register*.

Coolidge Dam (Figure 3).[6] The lateral extent of the Critical Habitat designation roughly corresponds to the 100-year floodplain or flood-prone area (70 FR 16474). Riparian areas that have been urbanized or are subject to agricultural, utility, and mining activities are not included in the proposed designation because these areas do not meet the definition of Critical Habitat (FWS 2005). FWS has prepared an EA covering this proposed designation (see Chapter 3, Biological Resources). FWS is required by a Federal court order to complete the final designation of Critical Habitat by September 30, 2005. The project area falls within proposed Critical Habitat.

Designation of Critical Habitat may assist in focusing conservation activities by identifying areas that contain essential habitat features regardless of whether or not they are currently occupied by a listed species. This identification alerts the public and land management agencies to the importance of an area in the conservation of the targeted species. Critical Habitat also identifies areas that may require special management considerations or protection.

An area designated as Critical Habitat for a federally protected species is not a refuge or sanctuary for that species. Critical Habitat designation does not allow government or public access to private lands. According to FWS, the designation of Critical Habitat alone would likely not impose additional modifications to or restrictions on land use projects having a Federal tie (e.g., using Federal funds or requiring a Federal permit). This is because impacts to the habitat would already be under evaluation as part of a Section 7 consultation on effects to the federally protected species. Section 7 consultation with FWS is already required if these activities are likely to affect the federally protected species or its habitat. Most projects are likely to proceed, but some may be required to be modified to minimize harm to the species or Critical Habitat (FWS 2000).

Currently, private landowners are subject to Section 9 of the ESA, which prohibits taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing or collecting, or the attempt to undertake such conduct) a federally listed fish or wildlife species without a special exemption (usually granted by a take permit). Harm includes significant modification or degradation to habitat that impairs essential behavioral patterns, resulting in the death or injury to a listed species (50 CFR § 17.22 and 17.32). Simply stated, private landowners are already subject to Section 9 of the ESA, which requires that people who engage in activities that would substantially modify willow flycatcher habitat must determine if a proposed activity would result in a "taking." In certain situations, a permit (under Section 10 of the ESA) would need to be obtained from the FWS in order for a person to carry out activities that may potentially substantially modify habitat occupied by a listed species.

There are likely to be few situations requiring a consultation based on impacts to Critical Habitat on private land, unless the activities are subject to either Section 7 or Section 9 (FWS 2005). Designation of Critical Habitat may, however, result in the initiation of more consultations

[6] Figure 3 includes only a small portion of habitat in Arizona proposed for designation. Identification of all areas proposed to be designated as Critical Habitat for willow flycatchers can be found in FWS' "Designation of Critical Habitat for the Southwestern Willow Flycatcher-Draft Environmental Assessment," which is available at http://arizonaes.fws.gov/, or "Proposed Designation of Critical Habitat for Southwestern Willow Flycatcher; Proposed Rule" published in the *Federal Register* on October 12, 2004 (69 FR 60706).

because it increases the awareness that a federally protected species may occur in the area (personal communication, Greg Beatty, FWS, April 20, 2005).

Arizona Water Settlements Act (AWSA) of 2004. Among other actions, Title II of this Act authorizes the execution of several agreements related to the administration of a 1935 Federal consent decree governing the use of Gila River water between Virden, New Mexico, and its confluence with the Salt River in Maricopa County, Arizona (*United States v. The Gila Valley Irrigation District, et al.*, commonly referred to as the "Gila Decree"). One of the agreements included in the AWSA entitled "Forbearance Agreement Among the Gila River Indian Community, the United States of America, the San Carlos Irrigation and Drainage District, the Franklin Irrigation District, the Gila Valley Irrigation District, and Other Parties Located in the Upper Valley of the Gila River," (Upper Gila River Valley Forbearance Agreement) includes provisions to establish programs for the reduction of irrigated acres in the upper Gila River Valley. These reductions are proposed to occur in phases over several years following the enforceability date of the agreements (not later than December 31, 2007). One of the goals of these programs is to reduce the total water demand for irrigation use in the upper Gila River Valley, by acquiring the water rights associated with recently irrigated lands in this area. The Upper Gila River Valley Forbearance Agreement includes provisions for the permanent retirement and, in some instances, the severance and transfer of water rights associated with a minimum of 3,000 acres and possibly up to 6,000 acres of recently irrigated lands in the upper Gila River Valley. The provisions also include establishment of another program to acquire and extinguish water rights associated with lands that have not been recently irrigated, with the objective being to prevent conversion of lands that are currently riparian habitat into irrigated farmland. This program is referred to as the "Cooperative Program." No funding, specific lands, or acreages have been identified for this latter program. For purposes of this analysis, it is assumed these actions will occur with or without implementation of the proposed action; however, there is currently insufficient information to determine which lands and/or water rights would be affected. It is anticipated compliance with NEPA would be completed, as appropriate, prior to the Federal government implementing actions related to these agreements.

Local Saltcedar Eradication Efforts. Saltcedar is a nonnative plant species introduced into the western United States in the early 1800s for ornamental use, bank stabilization and windbreaks (Lovich and Gouvenain 1998). The proliferation of saltcedar in the southwestern United States, including the general vicinity of the project area, is attributed to its ability to thrive in riparian areas where flows and spring floods have declined and salinity has increased (Glenn and Nagler 2005). The Graham County Board of Supervisors has a long standing commitment to enhance the Gila River's quantity and quality of water, which it believes would be supported by the control and/or removal of saltcedar (John 2005). The Gila Valley National Resource Conservation District is presently working to establish a saltcedar control/eradication program. It believes removing saltcedar from the river channel would address flooding problems that have historically occurred during high flows within the river channel, and also would increase flows in the river that are currently being lost to evapotranspiration[7] (Lunt 2005).

[7] Evapotranspiration is the loss of water by both evaporation from the soil's surface and uptake by plants rooted in the soil.

Over the years, another local organization, the Gila Watershed Partnership, has also attempted to obtain funding for saltcedar clearing projects. This organization is currently developing a broader approach to controlling saltcedar along the upper Gila River. As a first step, the Gila Watershed Partnership intends to apply for a grant to map saltcedar vegetation on a watershed-wide scale. Once these data have been obtained, a more comprehensive plan to control and/or eradicate saltcedar may be developed, if funding can be obtained (personal communication, Jan Holder, March 23, 2005).

CHAPTER 2 – DESCRIPTION OF ALTERNATIVES

NO ACTION

The No Action alternative describes the conditions that are assumed to exist into the future in the absence of the Federal action and provides a basis for comparison with Reclamation's proposed action.

Under the No Action alternative, Reclamation would not purchase and SRP would not manage the privately owned parcels within the Gila River floodplain, identified in Figure 2. Reclamation and SRP would continue to pursue purchase of willow flycatcher habitat within the bird's breeding area in central Arizona, pursuant to their respective ESA compliance requirements.

The project area lies within the floodplain and remains in riparian habitat. Periodic scouring from floods and occasional fire regenerate this habitat. For purposes of this analysis, it is assumed the project area would continue under its current ownership, and its current condition and management would continue into the foreseeable future.

PROPOSED ACTION

The Proposed Action alternative considers the effects of the Federal action in comparison to the No Action alternative.

Under the Proposed Action, Reclamation would purchase approximately 700 acres of privately owned land within the Gila River floodplain, between Fort Thomas crossing and Eden Bridge. The property contains riparian vegetation that is suitable habitat for the willow flycatcher. Reclamation does not intend to purchase, hold, or exercise any of the Gila Decree water rights that may be associated with the property. Decreed lands may be eliminated from the property to be purchased. In the event any of the lands proposed for purchase remain decreed acres, Reclamation would forego those water rights through the purchase agreement. Reclamation's purchase would fulfill a portion of the 1996 Opinion's RPA Component 1c.

Reclamation would be responsible for installing fences to manage human use of the property and exclude livestock, providing or improving access as needed, providing signage, removing trash and debris from the property, and conducting Class III intensive cultural resource surveys (discussed in more detail in Chapter 3).

Reclamation and SRP would enter into an agreement for long-term management of the subject property. SRP would then take over management of the 700 acres to benefit the willow flycatcher in perpetuity. In doing so, SRP would receive credit toward its RHCP obligation of Habitat Acquisition and Management. Within a year of purchase, SRP would develop a detailed management plan for the property that, once approved by FWS and with Reclamation's concurrence, would be used to protect the project area's riparian corridor. Management plans being implemented by SRP on other lands acquired in support of the RHCP typically include, but are not limited to, the following types of activities: Completion of baseline inventory studies for

targeted species; vegetation monitoring and targeted bird surveys; on-site management, including regular patrols of the property and fence lines, repairs to fencing as needed, identification and removal of potential fire hazards, and removal of trespass livestock; and coordination with neighbors and community (SRP 2005). A wildfire abatement and response plan is typically developed to provide pertinent information to fire-fighting agencies, should a wildfire occur on the subject property. SRP's wildfire plan would address (1) containment of any fires, thus minimizing risk to adjacent properties; and (2) protection of native riparian vegetation which, unlike saltcedar, is unable to withstand burning (personal communication, Ruth Valencia, May 9, 2005).

The project area was chosen for several reasons. First, a relatively large amount of suitable habitat exists along the upper Gila River and, where surveys have been conducted, willow flycatchers have been found (FWS 2002). Second, SRP recently purchased habitat for conservation purposes within the general vicinity of the project area. Third, Reclamation and SRP were able to locate willing sellers. And fourth, results of a habitat suitability model[8] predicted the presence of high-quality willow flycatcher breeding habitat in the project area (the Gila River basin contained the greatest amount of high-quality breeding habitat in the State [Dockens and Paradzick 2004]).

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER STUDY

Acquisition and management of habitat by Reclamation were determined not to be feasible. The Opinion states the Management Fund cannot be used for long-term land management purposes; therefore, Reclamation would not have a guaranteed source of income with which to manage the property once it was purchased. Additional appropriations from Congress would need to be sought in order to assure proper maintenance of the property in perpetuity. Given the uncertainty associated with obtaining funding needed to manage the property, this alternative was not considered to be feasible.

Transfer of management responsibility once land is purchased by Reclamation to another Federal or State agency was also considered. This alternative did not offer any advantages over the proposed action given the following considerations: SRP's willingness to conduct preliminary negotiations with the landowners; SRP's RHCP requirements to protect willow flycatcher habitat; SRP's willingness to manage the land at no cost to Reclamation; and the close proximity of the project area to lands already being managed by SRP for willow flycatchers. These factors made the proposed action the most cost effective overall.

Reclamation also has pursued acquisition of other properties for willow flycatcher habitat, which would have been managed in perpetuity by The Nature Conservancy. In 2001-2002, two separate parcels were identified near Dudleyville on the lower San Pedro River in Pinal County,

[8] The habitat suitability model, which was based on satellite imagery, digital elevation maps, and flycatcher survey and nesting habitat data, predicted the likelihood of suitable willow flycatcher breeding habitat in low elevation riparian habitat in Arizona (Dockens and Paradzick 2004).

Arizona; however, both private landowners subsequently decided not to proceed with the sales. In 2004, Reclamation proposed to purchase a conservation easement for willow flycatcher habitat on land located along the San Pedro River near Cascabel in Cochise County, Arizona. This property was sold while Reclamation was preparing an EA in compliance with NEPA.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

GENERAL SETTING

The project area, located approximately 3 miles southeast of Fort Thomas in Graham County, encompasses portions of Sections 17, 18, 19, and 20 of Township 5 South, Range 24 East, of the Gila and Salt River Baseline and Meridian. The climate in the region is semiarid, hot in the summer and moderate in the winter. Temperatures in the general vicinity range from a monthly mean of 44° Fahrenheit in December to 84° Fahrenheit in July. The annual mean precipitation is 9.85 inches; the annual mean snowfall is 0.1 inches (Western Regional Climate Center). About half of the precipitation falls during the summer thunderstorms, and the remainder occurs as intermittent winter or spring storms.

Implementation of the proposed action is not anticipated to substantially affect the following resources, which are not addressed in this EA: Air quality, noise, and aesthetics.

WATER RESOURCES

Affected Environment

The project area is located within the upper Gila River watershed and within Arizona Department of Water Resources' (ADWR)-designated Gila Valley groundwater sub-basin of the Safford groundwater basin. The following discussions provide more detailed information regarding the ground and surface water resources in the vicinity of the project area.

Surface Water. The upper Gila River watershed originates in southwestern New Mexico and extends westward to San Carlos Reservoir, just above Coolidge Dam in southeastern Arizona. The entire watershed drains a total of 12,890 square miles, of which roughly 7,430 square miles fall within Arizona (ADWR 1994). Major tributaries to the Gila River within the Arizona portion of the watershed include the San Francisco, San Carlos, and San Simon rivers and Eagle and Bonita creeks. Perennial flows are found in several drainages within the watershed where water is present year-round except during periods of drought. These include a portion of the Gila River upstream of Safford; the San Francisco River and its major tributaries including the Blue River; San Carlos River; Eagle Creek; portions of Bonita Creek; and other minor short drainage segments (Brown et al. 1981; ADWR 1994; Arizona Department of Environmental Quality [ADEQ] 2004). In addition, the Gila River gains in flow as it passes through the Safford Valley, primarily due to groundwater inflow (ADWR 1994).

There are two stream gages maintained by the U.S. Geological Survey (USGS) that provide information regarding Gila River streamflow conditions within the general vicinity of the project area. One gage is located in the Gila River 8 miles northeast of Solomon at the head of Safford Valley (09448500), which is approximately 30 miles upstream of the subject property. It

measures a drainage area of 7,896 square miles. The second stream gage (09466500) is located about 23 miles downstream of the subject property, near Calva, Arizona, covering a drainage area of 11,470 square miles. Selected flow data from these gages are provided in Table 1.

Table 1. Flow Data from USGS Stream Gages on the Gila River in the General Vicinity of the Project Area, Arizona

Station Name USGS #	Head of Safford Valley 09448500	Calva 09466500
Period of Record	1921-2003	1930-2003
Annual Mean Flow for period of record	461 cfs; ~333,764 af/yr	372 cfs; ~269,328 af/yr
Highest Peak Flow (cfs) **Date**	132,000 cfs 10/02/1983	150,000 cfs 10/03/1983
Highest Annual Mean Flow **Water Year**	2,229 cfs; ~1,613,796 af/yr 1993	2,451 cfs; ~1,774,524 af/yr 1993
Minimum flow (cfs)	11 cfs 06/25/1956	0 cfs several occurrences
Lowest Annual Mean Flow **Water Year**	101 cfs; ~73,124 af/yr 1951	28.7 cfs; ~20,779 af/yr 1956

Source of data: USGS 2004a

Flooding occurs primarily as a result of rainfall during fall and winter storm seasons. The largest floods in the Gila River basin have occurred in water years (October through September) 1891, 1907, 1941, 1973, 1979, and 1984 (Reclamation 2004). The lowest streamflows occur most frequently during the month of June.

Reclamation recently completed a fluvial geomorphology[9] study of two major reaches of the upper Gila River assisted by a grant from the Arizona Water Protection Fund (Grant No. 98-054WPF) (Reclamation 2004). Graham County also was a cost-share partner. Among other things, the study documents and analyzes the historical changes that have occurred in the Gila River channel upstream of the San Carlos Reservoir in relation to the area's geologic features and historical trends in hydrology, as well as resultant erosion, sedimentation, and vegetation changes within the channel. The study found that the stretch of the Gila River in the vicinity of the project area is moderately unstable, especially with respect to its width and sinuosity (degree to which it tends to form meanders, which is the natural tendency of a stream to adjust to the lowest energy state). The study concluded the river channel has migrated laterally (shifted back and forth) over the past several hundred years in response to natural and human-caused hydrologic stresses (such as construction of levees and diversions and channelization), within the boundaries of alluvial deposits[10] referred to as the "Pima Soil Boundary" (Reclamation 2004).

As mentioned in Chapter 1, use of Gila River water between Virden, New Mexico, and its confluence with the Salt River in Maricopa County, Arizona, is dictated by the 1935 Gila

[9] Fluvial geomorphology addresses rivers and their processes related to earth materials and surfaces, especially sediment that is eroded, transported, and deposited by channel flow in stream and rivers (FWS 2002).
[10] Alluvial deposits (alluvium) are substrate particles that typify flowing waters (FWS 2002). Alluvium can also be derived from material moved downslope from mountain fronts that is then deposited onto floodplains over several hundreds of thousands of years.

Decree. The Gila Decree established the methods by which available water can be diverted from the Gila River. These include a system of diversion priorities, limits on the rate at which water can be diverted, and the total quantity of water that can be diverted in any given year. The Gila Decree also designates which lands in the Safford Valley can be irrigated with Gila River water. These lands are referred to as "decreed lands." The Gila Water Commissioner is appointed by the U.S. District Court to administer the Gila Decree provisions. According to the Gila Water Commissioner's "Summary of 2004 Annual Report," Safford Valley diversions of Gila River water totaled 45,177 acre feet in 2004 (Gila Water Commissioner 2005).

Groundwater. The project area falls within the Safford groundwater basin, which covers approximately 4,854 square miles. The Safford basin is further subdivided into the San Simon Valley, Gila Valley, and San Carlos Valley sub-basins. The project area falls within the Gila Valley sub-basin, covering 1,642 square miles. The sub-basin is bounded on the northeast by the Gila and Peloncillo mountains and on the southwest by the Pinaleño and Santa Teresa mountains (BLM 2003a). The Gila Valley sub-basin has been divided into two basin-fill units—younger and older alluvium. The younger alluvium forms the principal water-bearing unit; however, groundwater is found in both. Recharge from the Gila River is the primary source of water into the sub-basin, with smaller contributions coming from mountain-front recharge and irrigation seepage.

In the immediate project area, depth to groundwater within the younger alluvium typically ranges from 30 to 35 feet, based upon data from large capacity irrigation wells drilled in the 1960s and 1970s (ADWR 2005). Depth to groundwater on the subject property ranges from 30 to 80 feet below ground surface (Robertson 2005). Groundwater in the riparian area along the stream is at or near the surface, at least seasonally.

Groundwater in the Safford Valley is pumped primarily for agricultural irrigation purposes; surface flow diversions typically are insufficient to irrigate all the acreage farmed. Pumped groundwater is applied directly to fields and is also delivered to farm fields via canal systems transporting Gila River surface flow (BLM 2003a).

Water Quality. Gila River water flowing into Arizona from New Mexico is low in mineral content and contains mostly calcium and bicarbonate. As it flows downstream, the quality of the water degrades. Some of this degradation results from inflows to the Gila River from seeps and springs, which contain dissolved minerals leached from soluble evaporite deposits (such as phosphates, anhydrite, gypsum, and other calcium and/or magnesium sulfates) and from irrigation return flows, which are high in total dissolved solids (TDS) (ADWR 1994). Water quality data from water samples taken at the USGS gages upstream and downstream of the project area one day apart reflect the increasing levels of TDS as flows move downstream (Table 2).

Table 2. Selected Water Quality Data from USGS Gaging Stations on the Gila River, Arizona

Head of Safford Valley 09448500				Calva 09466500			
Date	TDS[11] (mg/L)	Chloride Dissolved (mg/L as CL)	Sulfate Dissolved (mg/L as SO4)	TDS (mg/L)	Chloride Dissolved (mg/L as CL)	Sulfate Dissolved (mg/L as SO4)	Date
12/06/01	606	170	76.0	1596	540	250	12/07/01
03/20/02	624	190	76.0	2586	930	440	03/21/02
05/22/02	810	280	110	2946	1210	450	05/23/02
08/22/02	636	170	57.0	1044	640	350	08/23/02

Source: USGS Water Year 2002

Information in ADEQ's assessments of water quality in Arizona (commonly referred to as the 305(b) Report[12]) indicates that segments of the Gila River upstream of the project area have been identified as having some impairment over the past several years. The 1996 305(b) report indicates a 12.6-mile segment of the Gila River, between the San Simon River and Peck Wash, had elevated levels of arsenic in the water, cadmium and thallium in the sediment, and copper and zinc in fish (BLM 2003a). This segment is located just under 8 miles upstream of the project area. The 2002 305(b) report indicates a small stretch of the Gila River (about 4.5 miles) between Bonita Creek and Yuma Wash (which is located about 20 miles upstream of the project area) was impaired by turbidity[13] (ADEQ 2002). This segment remains listed in the draft 2004 305(b) report as having impaired water quality due to exceedences of *Escherichia coli*. Other parameters of concern in this segment include copper, lead, suspended sediment concentrations, and turbidity (ADEQ 2004).

Groundwater in the younger alluvium is generally high in total dissolved solids (ADWR 1994). High concentrations of nitrite in groundwater also have been detected in the Safford area. These high concentrations are generally attributed to the infiltration of irrigation water (ADEQ 1990, in ADWR 1994; ADEQ 2004). Due to the presence of evaporite deposits, groundwater in the older alluvium is also high in total dissolved solids (ADWR 1994). The draft 2004 305(b) report indicates results of well sampling along the Gila River in the general vicinity of the project area show concentrations of arsenic and fluoride at or above U. S. Environmental Protection Agency standards. These elevated concentrations are thought to occur naturally (ADEQ 2004).

[11] Calculated from specific conductance (μS/cm) using a conversion factor of 0.6 (Hem 1985).

[12] Under section 305(b) of the Federal Water Pollution Control Act (the Clean Water Act), each State is required to develop a program to monitor the quality of its surface and ground waters, and provide a report to the U.S. Environmental Protection Agency every 2 years on the status of its water quality. This report is commonly referred to as a 305(b) report.

[13] Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms, organic acids, and dyes (USGS 2004b).

Environmental Consequences

No Action

In the absence of the sale and management of approximately 700 acres of private land along the Gila River for habitat conservation, it is anticipated the water resources in the general vicinity would be used in the same manner and at about the same rate as they are currently. The project area primarily has dense saltcedar vegetation, with some native riparian vegetation interspersed. While some of these lands may have been farmed historically, none have been farmed for many years. Under the current flow regime, vegetation is mature and dense. Approximately 51 acres are "decreed lands" that were historically irrigated with water diverted from the Gila River.[14] Gila River water associated with these decreed lands is typically "pooled" and delivered to other decreed lands under cultivation within their respective irrigation districts.

Under the No Action alternative, it is assumed the estimated 700 acres proposed to be purchased would continue to remain vegetated and would not be farmed. Gila River water associated with the estimated 51 acres of decreed lands would continue to be pooled and used elsewhere within the irrigation districts or be severed and transferred to existing irrigated lands. Irrigation return flows would continue to be discharged to the Gila River at their current rates and locations in the foreseeable future. The existing riparian vegetation within the floodplain would continue to be sustained by Gila River water and/or irrigation return flows within the river channel to the extent they are available.

Reclamation's fluvial geomorphology study indicates that between 1935 and the early 1960s, the Gila River channel narrowed due to sedimentation, vegetation growth, agricultural development, and levee construction. From the late 1960s to 2000, the channel widened back to its approximate 1935 width due to large floods (Reclamation 2004). With or without the project, it is expected the river channel would continue to widen and narrow, migrating laterally within the boundaries of the Pima Soil Boundary.

Proposed Action

Under the proposed action, approximately 700 acres located within the Gila River floodplain would be purchased by Reclamation. SRP would manage the property in perpetuity for the benefit of the willow flycatcher. No change in the existing use is anticipated to occur, although some land improvements such as fencing, fire management, and access road improvement are envisioned. The existing riparian vegetation within the floodplain would continue to be sustained by Gila River water and/or irrigation return flows within the river channel to the extent they are available. Because the existing vegetation is mature, no increase in evapotranspiration would result from protection and preservation of the habitat under the current flow regime. As in the No Action alternative, the vegetation would change through time, in response to flood, fire, and other natural events.

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[14] The estimate of decreed acres was derived from the Gila Decree, Gila River Determination Map (1920, as revised), and Urbanized and Permanently Retired Agricultural Lands (ADWR 1994).

As described in Chapter 2, Reclamation does not intend to purchase, hold, or exercise any of the Gila Decree water rights that may be associated with the property. Decreed lands may be eliminated from the property to be purchased. In the event any of the lands proposed for purchase remain decreed acres, Reclamation would forego those water rights through the purchase agreement. The current landowners would be able to pursue transfer of those rights to other irrigated acreage currently being served by the applicable irrigation districts, thus continuing the current practice. With implementation of the proposed action, there would be no change in the amount of Gila River water available to irrigate decreed lands, nor would there be a change in the amount of water removed from the river channel as a result of evapotranspiration.

Cumulative Impacts

It is anticipated there would be no change to water use or water quality in the project area should the flood-prone area of the 63-mile stretch of upper Gila River be designated as Critical Habitat for the willow flycatcher, as proposed by the FWS. On April 27, 2005, FWS issued a draft EA for public review. That EA describes the anticipated environmental impacts from FWS' proposed designation of Critical Habitat along the upper Gila River. Comments on the draft EA were due to FWS by May 31, 2005; FWS subsequently reopened the comment period from July 7 to July 17, 2005.

As described earlier in this document, programs are anticipated to be implemented to reduce the number of irrigable acres in the upper Gila River Valley, pursuant to Title II of the AWSA. These programs have two objectives: (1) the permanent retirement, and/or the severance and transfer, of water rights associated with between 3,000 and 6,000 acres of recently irrigated land in the upper valley of the Gila River; and (2) acquisition and extinguishment of water rights associated with an unknown number of acres that have not been recently irrigated and currently consist of riparian habitat (referred to in this EA as the Cooperative Program). Reduction of permitted diversions from the Gila River associated with recently irrigated decreed lands (6 acre-feet per acre) would leave water previously diverted for irrigation purposes in the river. The Cooperative Program targets lands that have not been recently irrigated and would not necessarily result in water being left in the river. It is not possible to accurately estimate the increase in water flowing downstream that could result from implementation of these programs.

As noted earlier, county and local organizations have long desired to control and/or remove saltcedar from the Gila River channel, which is thought to cause flooding of adjacent land during lesser magnitude floods. Thus far, funds for these activities have not been available. Should funds be identified to implement a saltcedar control program, the end result might be an increase in the amount of water flowing downstream into the San Carlos Reservoir, which would increase the amount of water made available to decreed acres in the upper Gila River Valley. However, it is not possible to estimate the amount of water that might be conserved from these efforts.

BIOLOGICAL RESOURCES

Affected Environment

Vegetation

There are two primary vegetative communities found along the upper Gila River--Sonoran Riparian Scrubland and Sonoran Riparian Deciduous Forest and Woodland communities, both of which are found in the project area.

The Sonoran Riparian Deciduous Forest and Woodland community consists primarily of streamside vegetation such as Fremont cottonwood (*Populus fremontii*) and Goodding willow (*Salix gooddingii*) (Brown 1994). Along the upper Gila River and within the project area, this cottonwood-willow vegetation exists within the floodplain in the form of small patches and narrow stringers. In general, this vegetative community also includes velvet and/or honey mesquite (*Prosopis velutina* or *Prosopis glandulosa*) and some exotic saltcedar (*Tamarix ramosissima*).

Where upstream water use and associated floodplain alterations have reduced the amount and timing of flows, the Sonoran Riparian Scrubland community has replaced much of the formerly lush Sonoran Riparian Deciduous Forest and Woodland vegetation along the upper Gila River. This community consists of dense riparian and desertscrub species, with riparian vegetation dominating the stream channel. Plant species are shorter in stature than in the Sonoran Riparian Deciduous Forest and Woodlands community, which is a function of more arid conditions (Brown 1994).

Along the upper Gila River, and within the project area, the Sonoran Riparian Scrubland community is now dominated by saltcedar. Replacement of native vegetation with saltcedar occurs where native vegetation has been removed, flows and spring floods have declined, the water table has dropped, and salinity is high (Brown 1994, Horton et al. 1960, Horton 1977, Turner 1974, Warren and Turner 1975). Activities leading to this habitat conversion include water diversions and impoundments, groundwater pumping, flood control, agriculture, grazing, fire, and fuelwood cutting (Brown 1994).

A complete plant inventory has not been conducted on the subject property; however, common shrub species within the Sonoran Riparian Scrubland community are seepwillow (*Baccharis salicifolia*), arrowweed (*Pluchea* sp.), and burrobrush (*Hymenoclea monogyra*). Thickets of saltcedar may be accompanied by quailbush (*Atriplex lentiformis*), desert broom (*Baccharis sarothroides*), and mesquite (*Prosopis velutina*, *Prosopis glandulosa* var. *torreyana*) in less-disturbed sites. Small patches and narrow isolated willow and cottonwood trees are interspersed.

Wildlife

Riparian ecosystems are characterized by high diversity in both plant and wildlife species. The presence of water permits the establishment and growth of many plant species not found on adjacent, drier uplands (Briggs 1996). Covering less than one percent of the State, riparian habitat is a valuable natural resource; approximately 60 to 75 percent of Arizona's resident wildlife species is dependent on riparian habitat (Arizona Riparian Council 2004). Riparian areas also function as movement corridors for neotropical migratory birds and other wildlife species. Within the last 100 years, most of these low-elevation habitats, including those within the project area, have been altered.

Wildlife inventories have not been conducted in the project area. Species that may occur in the Safford Valley are included in the following paragraphs. These wildlife species were compiled from a study in nearby Bonita Creek (Snow et al. 2004); the Arizona Bird Conservation Plan (Latta et al. 1999); the Arizona Species of Special Concern (AGFD in prep.); and the expertise of Reclamation, FWS, AGFD, and Arizona State University biologists.

Many of the following birds likely to breed in saltcedar-dominated riparian habitat either nest within riparian communities exclusively or in greater numbers than in adjacent communities. Bird species typical of this geographic area include Abert's towhee (*Pipilo aberti*), Bell's vireo (*Vireo bellii),* black phoebe (*Sayornis nigricans*), blue grosbeak (*Passerina caerulea*), common yellowthroat (*Geothlypis trichas*), Lucy's warbler (*Vermivora luciae*), mourning dove (*Zenaida macroura*), northern cardinal (*Cardinalis cardinalis*), summer tanager (*Piranga rubra*), vermilion flycatcher (*Pyrocephalus rubinus),* western yellow-billed cuckoo (*Coccyzus americanus*), white-winged dove (*Zenaida asiatica*), willow flycatcher, yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*) (Latta et al. 1999; Snow et al. 2004). The western yellow-billed cuckoo is a State Species of Special Concern (AGFD in prep.) and a candidate for Federal listing (66 FR 38611). Native resident and migratory birds also are protected under the Migratory Bird Treaty Act (16 United States Code 703-712).

Mammals using these riparian communities, for at least part of their home ranges or as movement corridors, include beaver (*Castor canadensis*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), ringtail (*Bassaricus astutus*), badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), hooded skunk (*Mephitis macroura*), hog-nosed skunk (*Conepatus mesoleucus*), mountain lion (*Puma concolor*), black bear (*Ursus americanus*), bobcat (*Felis rufus*), collared peccary (*Tayassu tajacu*), mule deer (*Odocoileus hemionus*), and several rodent and bat species (Snow et al. 2004).

Riparian-dependent reptiles and amphibians that may be found in the Safford Valley include lowland leopard frog (*Rana yavapaiensis*), Woodhouse's toad (*Bufo woodhousii*), red-spotted toad (*Bufo punctatus*), Arizona toad (*Bufo microscaphus microscaphus*), Mexican garter snake (*Thamnophis eques*), and Sonoran mud turtle (*Kinosternon sonoriense*) (Snow et al. 2004; personal communication, Mike Sredl, AGFD, March 31, 2005). The high predator load of non-native bullfrogs (*Rana catesbeiana*), crayfish (*Orconectes virilis*), and fish found in the Gila River have negatively impacted populations of native amphibians and reptiles (Rosen 2001; personal communication, Jeff Servoss, FWS, March 31, 2005). The lowland leopard frog and

Mexican garter snake are State Species of Special Concern (AGFD in prep.). Although the Mexican garter snake probably occurred on the upper Gila River in Arizona, it is unlikely to occur there now (personal communication, Andy Holycross, Arizona State University, April 18, 2005). Nonnative predators may preclude Mexican garter snakes from occupying this area (personal communication, Jeff Servoss, FWS, March 31, 2005).

Altered flow regimes resulting from human activities are often the overriding cause of riparian ecosystem degradation, including conversion from native habitat to saltcedar (Glenn and Nagler 2005; FWS 2002). The related impact of saltcedar upon wildlife species is variable, site specific, and often debated. In some cases, it is unclear whether the impacts to wildlife are attributed to saltcedar alone or to changes in the ecosystem as a whole (Zouhar 2003). Alterations of river flows that favor saltcedar may also reduce riparian components important to wildlife such as shallow backwaters, flood debris piles, habitat heterogeneity, and open water (Shafroth et al. 2005). Saltcedar can provide the vertical structure, foliar cover, and food resources needed by species dependent upon riparian vegetation, and serves as an acceptable substitute where fire, lack of water, and salinity are preventing native riparian vegetation from becoming established (Shafroth et al. 2005). This is especially important in the desert Southwest, where sparse and low-statured upland vegetation supports different wildlife taxa than riparian forest. Without this replacement riparian habitat, populations of some wildlife species may decline even more rapidly (Ellis 1995 and 1997; FWS 2002; Glinski and Ohmart 1984; Hunter et al. 1988).

Most studies on the value of saltcedar as wildlife habitat have focused on birds. From a biological perspective, saltcedar may not be as desirable as native riparian vegetation for breeding birds, but it is superior to bare ground, weeds, or arrowweed habitats (Anderson 1995; Anderson and Ohmart 1984; Anderson et al. 1977; Rosenberg et al. 1991; van Riper et al. 2004). Clearly some birds, such as the endangered willow flycatcher, have adapted to saltcedar; flycatcher productivity is at least equal to productivity in native willow-dominated vegetation (Paradzick 2004; Sogge et al. 2005). Surveys conducted since 1993 in Arizona have documented many other riparian-dependent bird species that often use saltcedar (AGFD unpubl. data; Reclamation unpubl. data).

In many riparian habitats dominated by saltcedar, including the project area, some native willows and cottonwoods are also present. Mixed stands of native and saltcedar trees are among the most productive for willow flycatchers (Paradzick 2004; Sogge et al. 2005). A relatively small percentage of native cottonwood/willow or mesquite vegetation within saltcedar-dominated habitat can have a disproportionately positive influence on bird species diversity and abundance (van Riper et al. 2004). The mixture of native plant species and saltcedar provides greater structural diversity and a more diverse prey base.

Federally Listed Species

Federal agencies are required by Section 7 of the ESA to assess the potential effects of proposed actions on federally protected species and designated Critical Habitat. The FWS lists 17 species that are endangered, threatened, or proposed for listing in Graham County (Table 3).

Table 3. FWS Threatened, Endangered, or Proposed Species in Graham County, Arizona

Common Name	Scientific Name	Status*
Apache trout	*Oncorhynchus apache*	T
Arizona cliffrose	*Purshia subintegra*	E
Bald eagle	*Haliaeetus leucocephalus*	T
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	E
California brown pelican	*Pelecanus occidentalis californicus*	E
Chiricahua leopard frog	*Rana chiricahuensis*	T
Desert pupfish	*Cyprinodon macularius*	E
Gila chub	*Gila intermedia*	P
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	E
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E
Loach minnow	*Tiaroga cobitis*	T
Mexican gray wolf	*Canis lupus baileyi*	E
Mexican spotted owl	*Strix occidentalis lucida*	T
Mount Graham red squirrel	*Tamiasciurus hudsonicus grahamensis*	E
Razorback sucker	*Xyrauchen texanus*	E
Southwestern willow flycatcher	*Empidonax traillii extimus*	E
Spikedace	*Meda fulgida*	T
* T=Threatened; E=Endangered; P=Proposed		

Source: U.S. Fish and Wildlife Service (http://arizonaes.fws.gov) March 2005

The following listed species are not found within the project area due to the lack of suitable habitat and/or because the current range for the species is outside the project area: Apache trout, Arizona cliffrose, bald eagle, cactus ferruginous pygmy-owl, California brown pelican, Chiricauhua leopard frog, Gila chub, lesser long-nosed bat, loach minnow, Mexican gray wolf, Mexican spotted owl, Mount Graham red squirrel, and spikedace. The desert pupfish and Gila topminnow occur outside the Gila River floodplain, approximately 1 mile away from the project area where both species were introduced in 1985. The project area currently is not considered suitable habitat for either of these species due to the presence of nonnative predatory fishes.

Following are descriptions of the listed species that may occur in or near the project area and designated Critical Habitat located within the project area.

Razorback Sucker. The razorback sucker was listed as endangered on October 23, 1991 (56 FR 54957). This fish is also listed as a Species of Special Concern by the State of Arizona (AGFD in prep.). Critical Habitat was designated for this species on March 21, 1994 (59 FR 13379). In Arizona, Critical Habitat includes the Gila River from the New Mexico border downstream to Coolidge Dam (including San Carlos Reservoir), most of the Colorado River, and parts of the Salt and Verde rivers.

Adult razorback suckers use quiet backwater areas and river channel habitats. Radio telemetry on adults released into the Verde River showed that the fish used pools and other slow water areas and avoided riffles (Clarkson et al. 1993). Telemetry studies from other locations have

shown that some razorback suckers will make extensive up and downstream movements while others will remain in the same immediate area.

The razorback sucker is endemic to the Colorado River Basin. It formerly occurred in all major rivers and larger streams in the basin and was once the most widespread and abundant of the basin's "big-river" fishes. Razorback suckers completely disappeared from the Gila River by 1960 (Hendrickson 1993).

The main causes of the species' decline are introductions of nonnative fishes and human-caused habitat modifications such as dam construction, irrigation, diversions, and channelization. Today, populations in the Lower Colorado River Basin are found in Lakes Mohave, Havasu, and Mead and the lower Colorado River below Lake Havasu. The most recent razorback sucker record closest to the project area was from the mid-1990s, about 30 miles upstream of the project area in Bonita Creek (personal communication, Rob Clarkson, Reclamation, March 4, 2005).

From 1981 to 1990, more than 12 million larval and juvenile razorback suckers were stocked into historic habitats in Arizona and California, including the Gila, Salt, and Verde rivers (Hendrickson 1993). More than 1,100,000 of these razorback suckers were reintroduced into the Gila River and its tributaries upstream of San Carlos Reservoir, including Bonita Creek (Hendrickson 1993). No populations of razorbacks appear to have been established in any areas where they were reintroduced, and little evidence has been found of individuals persisting for more than a few months (SWCA 1998). Predation by nonnative fishes such as channel catfish and largemouth bass are likely the primary cause of the failure of this species to re-establish (Marsh and Brooks 1984; Minckley et al. 1991).

Southwestern Willow Flycatcher. The southwestern subspecies of the willow flycatcher was listed as endangered, effective March 29, 1995 (60 FR 10694). This bird is also listed as a Species of Special Concern by the State of Arizona (AGFD in prep.). Designation of Critical Habitat was deferred at the time of listing. A final Critical Habitat designation was made on July 22, 1997 (62 FR 39129), with a correction on August 20, 1997 (62 FR 44228). On May 11, 2001, the 10th Circuit Court of Appeals set aside designated Critical Habitat. The Court instructed FWS to issue a new Critical Habitat designation in compliance with the Court's ruling. In 2003, the 10th Circuit Court ruled that FWS must repropose Critical Habitat within a year and complete a final designation by September 30, 2005 (Memorandum Opinion, U.S. District Court, New Mexico, September 2003). In preparation for reproposing Critical Habitat, FWS solicited public input in early 2004, through a series of scoping meetings and a written comment period (69 FR 2940). Critical Habitat was re-proposed on October 12, 2004 (69 FR 60706), with comments due by May 31, 2005. As mentioned in Chapter 1, the Recovery Plan was completed on August 20, 2002 (FWS 2002).

The Recovery Plan divides the Southwest into six Recovery Units, which are further subdivided into Management Units. The project area is located within the Upper Gila Management Unit in the Gila Recovery Unit. The Upper Gila Management Unit contains portions of both southwestern New Mexico and southeastern Arizona. One of the Recovery Plan goals is the

establishment of 325 willow flycatcher territories in the Upper Gila Management Unit (FWS 2002). The greatest number of territories documented in a single year within this Management Unit was 262 in 1999 (69 FR 60723). Most of these territories were located in New Mexico.

The willow flycatcher is a neotropical migrant that breeds in the southwestern United States and migrates to Mexico, Central America, and possibly northern South America during the non-breeding season (Phillips 1948; Stiles and Skutch 1989; Ridgely and Tudor 1994; Howell and Webb 1995). Declines in the distribution and abundance of flycatchers in the Southwest are attributed to habitat loss and modification caused by impacts of dams and reservoirs, stream diversions and groundwater pumping, channelization and bank stabilization, phreatophyte control, livestock grazing, agricultural development, urbanization, recreation, and fire (FWS 2002). Fires accidentally started by recreation users or vehicles have burned a few known willow flycatcher sites (AGFD unpubl. data; FWS 2002).

In Arizona, the historical range of the willow flycatcher included all major watersheds. Recent surveys have documented willow flycatchers, probably in much reduced numbers, along the Big Sandy, Bill Williams, Colorado, Gila, Hassayampa, Little Colorado, Salt, San Francisco, San Pedro, Santa Cruz, Santa Maria, Tonto Creek, and Verde river systems (FWS 2002). This species has been found in Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, Yavapai, and Yuma counties.

The willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands, where patchy to dense trees and shrubs are established, usually near or adjacent to surface water or saturated soil (FWS 2002). Plant species composition and height vary across the geographical range of this species, but occupied habitat usually consist of a mosaic of dense patches of vegetation, often interspersed with small openings, open water, or shorter/sparser vegetation. Dense vegetation usually occurs within the first 10 to13 feet above ground. Willow flycatchers can occupy habitat within 3 to 5 years of a flood event (Paradzick and Woodward 2003). Periodic flooding and habitat regeneration are important to the recovery of this species.

In Arizona, willow flycatchers now nest predominantly in saltcedar. Saltcedar-dominated stands mimic the riparian woodlands structure of willow in many areas where willow has declined (FWS 2002). Ninety percent of willow flycatcher nests found between 1993 and 2000 in Arizona were in saltcedar (Paradzick and Woodward 2003). Of 462 willow flycatcher nests monitored in Arizona in 2004, 298 were in saltcedar, 129 were in Goodding willow, 24 were in Fremont cottonwood, and the remaining nests were in other tree species (Munzer et al. 2005). Nesting substrate in the upper Gila River in Arizona is primarily saltcedar and willow, with some seepwillow and cottonwood.

Nest success, female productivity (number of young fledged per female), and survivorship (rate of returning adults and nestlings) for willow flycatchers using saltcedar-dominated habitat are comparable to native habitat. In a comparison of 1,632 nests compiled from Arizona, California, and New Mexico from 1993 to 2000, willow flycatcher nests in saltcedar were at least as successful as those in other plant species (FWS 2002). From the late 1990s through 2003, female productivity and survivorship at Roosevelt Lake were not significantly different between native and saltcedar-dominated habitat (Sogge et al. 2005).

In recent years, surveys to locate willow flycatcher territories have been conducted annually, at selected locations having suitable habitat along the Gila River between the New Mexico border and the San Carlos Indian Reservation's eastern boundary (an unknown number of flycatchers exist on the San Carlos Indian Reservation). Table 4 provides a summary of the number of territories documented annually from 2000 to 2004 at five sites along this portion of the upper Gila River. These numbers are considered to be an underestimation because only a small portion of existing suitable habitat has been surveyed, and all five sites have not been surveyed every year (Munzer et al. 2005). It is likely there are more than 25 territories between the Arizona/New Mexico border and the eastern San Carlos Indian Reservation boundary. Territories located through these surveys contribute toward the overall Recovery Plan goal of establishing 325 willow flycatcher territories within the Upper Gila Management Unit.

Table 4. Number of Southwestern Willow Flycatcher Territories Documented on the Gila River during 2000-2004 from the Arizona/New Mexico Border Downstream to the Eastern Border of the San Carlos Indian Reservation, Arizona (dashed line indicates no surveys conducted in that year)

		YEAR				
SITE NAME	**COUNTY**	**2000**	**2001**	**2002**	**2003**	**2004**
Duncan	Greenlee	1	1	2	-	-
Guthrie	Greenlee	-	-	3	0	-
Earven Flat	Graham	-	0	0	2	-
Pima East	Graham	15	14	9	1	3
Fort Thomas, Geronimo	Graham	-	7	10	22	-
Total		**16**	**22**	**24**	**25**	**3**

Source: Munzer et al. 2005; Paradzick et al. 2001; Smith et al. 2004; Smith et al. 2003; Smith et al. 2002; USGS unpubl. data

In preparing for 2005 surveys, SRP contractors found several willow flycatchers utilizing habitat located on recently acquired land just north of and adjacent to the subject property (personal communication, Ruth Valencia, SRP, May 11, 2005).

Environmental Consequences

No Action

Under the No Action alternative, in the foreseeable future, the project area is likely to continue to support about the same variety and number of species that currently exist.

It is anticipated the existing riparian habitat would be maintained in its current condition into the reasonably foreseeable future. The Gila River channel widens and narrows about every 10 years due to both natural and human-caused factors (Reclamation 2004). As has occurred historically, the upper Gila River is expected to migrate laterally and change course following large floods,

causing over-bank flooding as a result of the inability of the natural river hydrology to be controlled during these events. Natural flood events will continue to scour out riparian vegetation in the floodplain, regardless of whether natural or exotic vegetation exists.

Long-term future ownership and management of the subject property are unknown. Located within the active floodplain, the project area is not expected to be converted to agriculture or used for other purposes. Although current land use practices on the subject property are beneficial to maintaining flycatcher habitat, a change in ownership in the future could result in degradation or destruction of suitable willow flycatcher habitat. Without protection, the future of this property as suitable flycatcher habitat is uncertain.

In the absence of purchasing the subject property, Reclamation would continue pursuing purchase of land containing habitat suitable for willow flycatchers from willing sellers, and entering into a management agreement with a willing partner. It is anticipated SRP would continue to seek purchase and management of sufficient acres of habitat suitable for willow flycatchers from willing sellers to fulfill its RHCP requirements.

Proposed Action

Acquisition of this property by Reclamation and management by SRP are expected to maintain and/or possibly improve the quality of riparian habitat within the project area. Reclamation does not intend to purchase, hold, or exercise any of the Gila Decree water rights that might be associated with the subject property; however, it is anticipated in the foreseeable future that return flows would continue to be delivered to the river channel by an irrigation ditch on the east side of the property.

Fencing and on-site monitoring would help protect the property from habitat degradation resulting from unauthorized recreational activities or accidental fire. A fire management plan would be developed that includes fire prevention and recovery procedures. SRP would conduct surveys for the willow flycatcher and western yellow-billed cuckoo in 2006 in accordance with the RHCP.

As noted above under the No Action alternative, naturally occurring large flood events will continue to scour out riparian vegetation in the floodplain, regardless of whether natural or exotic vegetation exists. Periodic floods are expected to remove existing vegetation and woody debris, deposit sediment and seeds, and promote regeneration. This natural cycle is important for riparian plant succession and riparian-dependent wildlife species.

Implementation of the proposed action is not expected to affect the federally listed razorback sucker or its Critical Habitat.

The project area is located midway between two of the largest known populations within the Gila River drainage. One population is located on the Gila River in New Mexico, near the towns of Cliff and Gila. The second is located in Arizona on the lower San Pedro River south of Mammoth downstream to Winkelman, and from Winkelman downstream to Kelvin on the Gila River. The project area is 4 miles downstream and 11 miles upstream of known willow

flycatcher sites on the Gila River, and midway between these two populations (FWS 2002). The proposed action may affect and is likely to benefit the continued existence of the willow flycatcher (see Appendix B). Purchase and management of the subject property would ensure there is suitable habitat geographically located in a way that allows for willow flycatcher movement within and between drainages, consistent with the Recovery Plan objectives.

Cumulative Impacts

SRP recently acquired 304 acres of willow flycatcher habitat and has obtained a conservation easement on 250 acres owned by Phelps Dodge; both parcels are located north of and adjacent to the project area. These actions are in support of fulfilling SRP's RHCP. SRP will conduct surveys of these 552 acres in 2005 and 2006. As noted above; in preparing for the 2005 surveys, willow flycatchers have already been detected on the SRP property. Combined with the purchase and management of the estimated 700 acres for habitat conservation, there would be a total of approximately 1,252 acres of adjoining habitat that would be protected for willow flycatchers. The number of willow flycatchers currently supported by these properties would be known once field surveys are completed in 2005 and 2006. These numbers would contribute toward the recovery goal of 325 territories for the Upper Gila Management Unit, within which the project area is located.

If Critical Habitat is designated, there would likely be little to no increase in the number of Section 7 consultations generated as a direct result. However, the additional awareness of ESA requirements by those conducting projects within areas designated as Critical Habitat may help reduce potentially negative impacts to this species (personal communication, Greg Beatty, FWS, April 20, 2005).

Implementation of the Upper Valley Forebearance Agreement, pursuant to Title II of the AWSA, may result in agricultural lands upstream of the project area being retired, with associated water rights being transferred to the San Carlos Irrigation Project. This would result in an increase in flows through the project area. Although it is not possible to quantify the amount, it is anticipated any increase in flows would improve the quality of both native and exotic riparian habitat alike, improving conditions for the willow flycatcher within the project area, as well as other areas along the Gila River. Other wildlife species dependent upon riparian habitat would also benefit from the additional habitat created; however, those species heavily impacted by non-native predatory frogs, crayfish, and fish, which would also increase in population, are unlikely to benefit from increased flows without further control of these non-native species.

As noted in Chapter 1, there is local support for programs to control and/or eradicate saltcedar in Graham County. Many comments received during scoping and during the public review and comment period on the draft EA indicated Reclamation's proposed action would conflict with and/or jeopardize these efforts. One of the concerns raised was that Reclamation's management of the property for willow flycatchers would maintain a saltcedar seed source and could frustrate local efforts to eradicate saltcedar. With implementation of the proposed action, the project area would serve as a seed source to colonize suitable substrates beyond the project area boundaries.

A single large plant is capable of producing 500,000 seeds per year (Neill 1985). The seeds are produced from April to October, remain viable for several weeks, are small and easily dispersed by wind, and germinate within 24 hours on moist soils (Kerpez and Smith 1987). However, because of the presence of extensive stands of saltcedar located on private, Federal, and Tribal lands between the Safford Valley and San Carlos Reservoir, including lands purchased for habitat conservation, it is anticipated the project area would be a minor seed source to the Safford Valley.

It is anticipated the project area would remain dominated by saltcedar vegetation into the foreseeable future or until such time as a scouring flood reworks the floodplain and scours out most of the vegetation. Even then, some saltcedar would remain on the drier banks beyond the reach of floodwaters. Revegetation and survival in these scoured areas would also likely be dominated by saltcedar. In a recent review on the comparative physiology of saltcedar and native trees in western riparian zones, Glenn and Nagler (2005) concluded that field and greenhouse studies do not support the conclusion that saltcedar has a competitive advantage over cottonwood and willow with respect to seedling growth and establishment, at least under natural spring flood conditions. Saltcedar clearly does have, however, a superior tolerance to salt and water stress than cottonwoods and willows, and these adaptations appear to be the principal means by which saltcedar has come to dominate many western rivers (Glenn and Nagler 2004; Lovich and De Gouvenain 1998). Alterations to the natural flow regime that result in higher salt levels in the soils and lowered groundwater tables enhance the ability of saltcedar to replace native species.

Implementation of the proposed project by Reclamation would not limit local efforts to control or eradicate saltcedar on any other property. Numerous studies have shown, however, there are complex interrelated factors and technical challenges that affect how saltcedar and native riparian vegetation respond to changes in a river's natural hydrologic conditions. At the very least, these studies indicate saltcedar removal by itself may not restore conditions suitable for native riparian vegetation in most dry sites currently dominated by saltcedar (FWS 2002). Studies of various saltcedar removal projects undertaken indicate that saltcedar has not been successfully controlled on a large scale along any of the major rivers in the Western United States (Zouhar 2003 in Glenn and Nagler 2005). The most sucessful outcome expected of any restoration program in this geographic area would be a mixed stand of saltcedar and native species. As noted above, these habitats are also among the most productive for willow flycatchers (Paradzick 2004; Sogge et al. 2005).

Nevertheless, if a local large-scale program of saltcedar eradication is successfully carried out, and if it can be shown that conversion of saltcedar to native habitat suitable for willow flycatchers can be sustained, Reclamation and SRP would be willing to consider implementing such a program on the subject property, contingent upon available funding and FWS approval. It should be noted any program of saltcedar eradication utilizing Federal funding would be subject to ESA Section 7 requirements.

LAND OWNERSHIP AND USE

Affected Environment

The project area is located within the Gila River floodplain in Graham County, Arizona. Graham County encompasses approximately 4,630 square miles (roughly 2,963,200 acres) (Arizona Department of Commerce 2004), most of which is rural. The San Carlos Indian Reservation comprises approximately one-third of the County. Land ownership within the County is divided into the following categories:

Table 5. Land Ownership Status in Graham County, Arizona

Ownership Status	Percent
Private/corporate	8
State of Arizona	17
Federal	39
Tribal Reservations	36

Source: U.S. Department of Agriculture (USDA) 2002.

Agriculture and ranching are currently and historically important to the area. In 2002, there were 34,509 acres of irrigated farm land and 32,298 acres of harvested cropland in Graham County. This represents a 14 percent and 17 percent decrease from the amount of irrigated farm land and harvested crop land that was recorded in Graham County in 1997. Within this same timeframe, statewide there was about an 8 percent decrease in both the amount of irrigated farm land and harvested crop land (USDA 1998, 2002). Grazing occurs on State Trust Land and federally administered public land, where permitted.

There are seven designated national wilderness areas within Graham County—the Santa Teresa and Galiuro wilderness areas are managed by the Forest Service; the Aravaipa Canyon, Fishhooks, North Santa Teresa, Peloncillo Mountains, and Redfield Canyon wilderness areas are managed by BLM. Wilderness areas are Federal lands where grazing, mining, timber cutting, and mechanized vehicles are restricted, pursuant to the Wilderness Act (P.L. 88-577). BLM also manages the Gila Box Riparian National Conservation Area, a 20,900-acre area located about 20 miles northeast of Safford, Arizona. The Gila Box Riparian National Conservation Area was established by Congress in 1990 to conserve, protect, and enhance the natural, cultural, scientific, and recreational resources and values of the area.

Another popular recreation area is the San Carlos Indian Reservation, which provides fishing, boating, hunting, camping, and birding opportunities; tribal permits are required. The State of Arizona owns and manages Cluff Ranch, a 1,037-acre State wildlife preserve located about 5 miles south of Pima, Arizona, and also operates Roper Lake State Park, located about 5 miles south of Safford, Arizona. Some public lands are open to hunting and fishing.

In the general vicinity, fire is sometimes used by property owners to remove unwanted vegetation; this typically occurs in the spring, although it sometimes also occurs in winter. Unintentional fires also occur in the area. Regardless of the cause, the general effect of fire is reestablishment of saltcedar in greater density (personal communication, Bill Brandau, BLM, May 19, 2005). Graham County has drafted a Wildfire Protection Plan which identifies stretches of the Gila River floodplain that are considered to be either at moderate or high risk of wildlife where action will be required to reduce risk and hazard.

In the recent past, properties within the County, particularly along the Gila River, have come under management for habitat conservation purposes (Figure 4). Phelps Dodge is preserving, creating, and/or enhancing a total of 244 acres of riparian habitat, to mitigate for impacts to regulated waters of the United States and federally listed species, resulting from its Dos Pobres/San Juan Project mining project. The riparian habitat is located on three farm properties totaling 890 acres, which were purchased by Phelps Dodge along the Gila River roughly between Solomon and Fort Thomas, Arizona. SRP has obtained a conservation easement on 250 acres of other Phelps Dodge land to help fulfill its obligations under the RHCP. In addition, SRP purchased 304 acres just north of the project area, also in support of the RHCP. A total of about 6 river miles fall within areas currently being managed for habitat conservation.

Based upon 9 years of aerial photographs taken between 1935 and 1997, portions of the subject property were previously farmed at some time during that time period. It appears that farming within the project area ceased around 1992, and by 1998, riparian vegetation had reclaimed all previously cultivated fields (Reclamation unpubl. data).

Environmental Consequences

No Action

Under the No Action alternative, it is anticipated current land use practices in the project area would continue. The existing habitat on the property would remain unchanged unless a major storm event or fire occurred that removed the vegetation. No fire management practices are implemented by the current landowners (personal communication, John Felty, SRP, May 9, 2005). As explained in Chapter 1, private landowners are already subject to Section 9 of the ESA, which prohibits the take of federally listed species. The current landowners would continue to be subject to Section 9 regarding any land use activities that would substantially alter habitat occupied by willow flycatchers.

Proposed Action

Purchase of approximately 700 acres of privately owned land by Reclamation would not appreciably change land ownership patterns within Graham County, nor would it result in a change in current land use in the area. There would be a slight increase in the number of river miles being managed for riparian habitat conservation—about 5 percent, from 6 to roughly 8 miles out of a total of 40 miles of the Gila River located within Graham County.

Saltcedar and other riparian vegetation can direct river flows out of the active channel and onto the adjacent floodplain during lesser magnitude flood events. Because the riparian vegetation on the property would continue to exist in its present condition, no increase in flooding potential is expected to occur as a result of Reclamation's ownership and/or SRP's management of the proposed property.

Due to the density of the habitat, it is extremely difficult to access the river channel in the vicinity of the project area. To the degree that any recreation occurs within the project area, fencing that would be undertaken as part of ongoing management would curtail those activities to the extent they adversely affect the quality of the willow flycatcher habitat. Owners of the subject property indicated permission to use the riparian zone for hunting has rarely, if ever, been granted, although they have acknowledged that unauthorized hunting may have occurred (personal communication, John Felty, SRP, May 9, 2005).

Under the proposed action, surveys for willow flycatchers would be conducted on the subject property in 2006 and 2007. These surveys may increase the overall awareness of the number of willow flycatchers utilizing habitat in the general vicinity which could, in turn, increase the concern about land use activities, if any, that have the potential of taking flycatchers. It is anticipated that results (whether positive or negative) from these surveys would not measurably alter the interest in willow flycatchers and land use activities along the upper Gila River Valley, since it has already been determined willow flycatchers utilize areas both upstream and downstream of the subject property.

A Phase I Environmental Site Assessment was conducted on the subject property which concludes there is no evidence of a "recognized environmental condition" that would require a Phase II assessment or interfere with acquisition of the property for its intended purpose. SRP has recommended that automotive waste and limited amounts of other solid waste be removed from the property and properly disposed, and discarded concrete piping be sampled for potential asbestos content prior to disposal.

According to Graham County (see Appendix A, Comment Letter 2), its draft Graham County Community Wildfire Protection Plan identifies stretches of the Gila River floodplain in the vicinity of both the Ft. Thomas crossing and Eden Bridge as areas where action will be required to reduce fire risk and hazards. In preparing its land management plans, SRP routinely coordinates with local fire response agencies, assesses fire hazards, and proposes actions and maintenance duties to reduce fire risks. SRP will coordinate with Graham County and has requested a copy of the draft Community Wildfire Protection Plan.

Cumulative Impacts

It is anticipated that land use practices within the project area would not change substantially into the future.

Designation of Critical Habitat for the willow flycatcher, if approved, would not further constrain adjacent landowners' activities unless an action has a Federal tie or there is a take of a willow flycatcher (FWS 2000). Actions having a Federal tie include activities using Federal funding or activities requiring Federal approval or a Federal permit. As mentioned in Chapter 1, lands currently being farmed, or that have otherwise been developed, are not proposed for designation as Critical Habitat.

The program to be established pursuant to Title II of the AWSA will purchase and extinguish and/or sever and transfer the water rights associated with between 3,000 and 6,000 acres in the upper Gila River Valley that have been recently irrigated. This program will result in a reduced quantity of water for the canal companies and irrigation districts to pool and redistribute; however, it is to be implemented in cooperation with the various canal companies and irrigation districts, and the districts are to identify the lands associated with the water rights to be acquired. The Cooperative Program, under which lands not recently irrigated are to be acquired, would result in no change in current land use.

Implementation of the proposed action would not restrict local activities to control or eradicate saltcedar elsewhere within the river corridor. If future local efforts demonstrate large-scale success in transitioning from saltcedar to native riparian habitat which is suitable for willow flycatchers, Reclamation and SRP would be willing to consider implementing such a program on the property, contingent upon FWS approval and availability of funding.

SOCIOECONOMICS

Affected Environment

The population within Graham County has remained stable over the past 3 years, experiencing about a 3 percent increase from 2000 to 2003, as compared to an overall increase in State population of almost 10 percent over the same time period. Safford, which is located about 8 miles southeast of the project area, had a population of 9,410 in 2003; it is the largest city in Graham County (Arizona Department of Commerce 2004).

Graham County is composed primarily of persons of White or Hispanic racial and ethnic backgrounds (Table 6). Population density in the County is 7.2 persons per square mile versus 45.2 persons per square mile statewide in 2000.

Table 6. Comparison of 2000 Population Statistics for Safford, Graham County, and the State of Arizona

Geographic Area	Total Population	White	African American	American Indian	Asian/ Native HI and other Pacific Islander	Other	Hispanic or Latino (of any race)
Arizona	5,130,632	3,873,611 Or 75%	158,873 Or 3%	255,879 Or 5%	98,969 Or 2%	596,774 Or 12%	1,295,617 Or 25%
Graham County	33,489	22,473 Or 67%	625 Or 2%	5,005 Or 15%	201 Or 0.6%	4,470 Or 13%	9,054 Or 27%
Safford	9,232	6,940 Or 75%	130 Or 1%	93 Or 1%	90 Or 1%	1,713 Or 19%	3,667 Or 40%

Source: U.S. Census Bureau

The 2000 median household income and per capita income for both the County and Safford were less than the State average. Poverty levels in Graham County are higher than the State average. The poverty level in Safford is 17.3% while the State's is 12.4%; Safford's rate of unemployment is about the same as that of the State, but below the County's (Table 7).

Table 7. Income and Poverty Statistics, Arizona

	Arizona	Graham County	Safford
Population, 2003	5,629,870	34,490	9,410
Population, percent change, 1990 to 2000	40.0%	26.1%	0%
Median household income, 2000	$41,994	$29,668	$29,899
Per capita income, 2000	$21,587	$12,139	$14,052
Percent of population below poverty level,[15] 2000	12.4%	23%	17.3%
Unemployment rate 2003	5.6%	6.8%	5.7%

Source: U.S. Census Bureau and Arizona Department of Commerce (2004)

According to the 2000 U.S. Census, in Graham County about half the work force 16 years or older is employed by the service sector. Agriculture, forestry, fishing, hunting, and mining as a group represents 13 percent of the County work force. Between 1990 and 2000, employment in the group that includes agriculture saw a slight decrease county-wide (Table 8).

[15] Based upon U.S. Census Bureau criteria and data

Table 8. Work Force by Sector in 1990 and 2000, for Graham County, Arizona

Sector	1990 Graham	2000 Graham
Total work force 16 years or older	7,701	10,692
Ag, forestry, fishing, hunting, mining	14%	13%
Construction	5%	9%
Manufacturing	4%	3%
Wholesale trade	3%	2%
Retail trade	19%	13%
Transportation & warehousing, utilities	5%	3%
Public administration	11%	11%
Other (service, finance, professional, education, recreation, etc.)	39%	46%

Source: U.S. Census Bureau

County revenues are somewhat difficult to characterize, since many of the sectors' revenues are not available at the County level.[16] For those sectors for which information is available, retail trade made up the vast majority of reported sales/receipts, bringing in over $205,435,000 in 1997 (U.S. Census Bureau, 1997 Economic Census). The market value of agricultural products sold in 1997 was identified as just over $56,005,000 (Cornell 2004).

Primary and secondary property taxes levied in 2004 for Graham County came to $2,350,581 (Arizona Department of Revenue 2004). The property tax associated with the project area cannot be determined. This is because the acreage within the project area is divided into several tax assessment parcels that also include additional acreage.

The Federal government does not pay local real estate property tax. To offset this loss of revenue to local governments, the Federal government makes "Payments in Lieu of Taxes" (PILT). Congress appropriates PILT payments each year, which are allocated to local governments according to a formula in the authorizing legislation (P.L. 97-258, as amended). The formula takes into account factors such as population, receipt sharing payments, and the amount of Federal land within an affected county. PILT payments to a State are in addition to other Federal revenues made to a State from activities such as oil and gas leasing, livestock grazing, or timber harvesting. In 2003, PILT payments were made to Graham County in the amount of $1,421,185, based upon 1,081,858 acres of Federal property. This represents 26 percent of the Federal property within the State of Arizona for which PILT payments were made and just over eight percent of the total PILT payments made to all the counties in the State (BLM 2003b).

[16] The sectors for which sales receipts information is not available at the county level include mining, utilities, construction, transportation and warehousing, information, finance and insurance, and management of companies/enterprises.

Environmental Consequences

No Action

Under the No Action alternative, it is anticipated the current socioeconomic trends within the County would continue.

Proposed Action

Construction of fencing and implementation of other stewardship start-up activities could provide a minor contribution to local area businesses but would not be expected to affect the local economy in a measurable way.

If the subject property is purchased by Reclamation, these acres would be added to the total for which PILT payments are made. This would partially offset the loss of property taxes paid to the County for this acreage.

There would be no disproportionately high and adverse human health or environmental effects on minority populations and low-income populations from the proposed action.

Cumulative Impacts

It is anticipated Reclamation and SRP would continue efforts to purchase additional parcels of private land in accordance with the 1996 Opinion and 2002 RHCP. The priority locations for these additional acquisitions likely would be along the lower San Pedro River and in the Verde Valley; however, if additional lands were acquired in the Safford Valley, it is assumed additional reductions in property taxes would occur, although associated PILT payments would be made to the County to partially offset this reduction.

There would be no economic limitations on the development of surrounding properties as a result of implementing the proposed action. Anecdotal evidence indicates one prior purchase in the general vicinity for habitat conservation purposes did result in an increase in land values, as evidenced by the agreed-upon purchase price for the proposed action (personal communication, Shawn Redfield, National Business Center, March 4, 2005). Given continued habitat mitigation measures being required for Federal actions or actions requiring Federal approval/permits and a limited amount of available land that meets the habitat criteria, the price of suitable land would be expected to increase.

CULTURAL RESOURCES

Affected Environment

A review of the AZSite database[17] was undertaken to provide background information on the archaeological and cultural resources within the project area. A Class I archaeological survey overview of the project area and a 1-mile buffer surrounding it was undertaken by Archaeological Consulting Services, Ltd. (ACS), for Reclamation (Fangmeier 2004). The overview involved a literature review and site records check to determine what cultural resource studies have occurred in the project area or the area of potential effect (APE) and if any cultural resource sites have been identified. The following discussion is taken from Fangmeier (2004).

> ACS's literature review for the Southwest willow flycatcher project revealed that while very few archaeological surveys have occurred in the review area, there is a good potential for additional cultural resources. Eight previously recorded sites are located within the review area, although only one occurs within the proposed APE. The historic Fort Thomas Canal (AZ W:13:16(ASM)), built in 1876 to divert water from the Gila River to agricultural fields, crosses the very southern extent of the proposed APE. The canal was previously recommended potentially eligible [for the National Register of Historic Places] under Criterion A (properties that are associated with events that have made a significant contribution to the broad patterns of history) for its association with the settlement of Fort Thomas and the development of irrigation agriculture along this portion of the Gila River. In addition, the 'Road to Pueblo Viejo' dating to the late 1800s (1876 GLO plat) is projected to cross the proposed APE, although its location has not been verified.
>
> Cultural resources located within the review area, but outside the proposed APE, include three prehistoric sites, an extensive system of [Civilian Conservation Corps]-era agricultural features, a historic highway, a historic railroad, and a historic schoolhouse listed on the State Register. These properties suggest the potential for additional cultural resources to occur in the APE. Evidence of other historic trails and wagon and military roads also may be present in the review area. Some of these sites played an important role in the region's history of transportation and settlement, while others may be related to important persons; therefore, they may be eligible [for the National Register of Historic Places] under Criteria A and/or B (properties that are associated with the lives of persons significant in our past). Prehistoric sites may also be present; thus, they could be eligible under Criterion D (properties that have yielded, or may be likely to yield , information important in prehistory or history).

[17] AZSite is a computer database developed and maintained by a consortium consisting of the State Historic Preservation Office (SHPO), the Arizona State Museum, Arizona State University, and the Museum of Northern Arizona. The database was conceived as a way to facilitate the integration, management, and sharing of cultural resource data for Arizona.

The Class I Overview also identified the Hopi, Zuni, Apache, and Tohono O'odham as having cultural ties to the area. Prehistoric sites, as well as other natural features, may be considered traditional cultural properties by one or more of these tribes, potentially increasing the cultural sensitivity of the APE.

Environmental Consequences

No Action

There would be no change in existing conditions. No specific protection would be afforded to any sites that may be located on these lands. It is assumed that current land use and management practices would continue.

Proposed Action

The proposed purchase of this property with Federal (public) funds constitutes an undertaking under the National Historic Preservation Act (NHPA) of 1966, as amended (P.L. 89-6650), and therefore requires a Class III archaeological survey under the NHPA. The survey is an intensive on-the-ground examination intended to identify all cultural resources within the subject property; impacts to cultural resources within the subject property cannot be determined until a Class III survey is completed and the number, kind, and significance of cultural resources are evaluated. Additional archival research on the historic features identified during the Class I survey must also be undertaken. Once these studies have been completed, survey data would be used to evaluate the significance of cultural resources identified and develop plans to avoid, minimize, or otherwise mitigate adverse effects to cultural resources from direct and indirect impacts from the proposed project. With purchase of the land for conservation habitat, any sites that might be present would potentially be protected from development. No substantial impacts to cultural resources are anticipated since the land management activities (primarily fence construction) would result in minimal disturbance.

Reclamation would also need to undertake consultation with potentially affected American Indian tribes to identify traditional cultural properties.

The following cultural resource mitigation measures would be implemented as part of the proposed action:

(1) Class III intensive surveys would be undertaken for the subject property, much of which is located within the historic active flood channel. The lack of access and rugged topography of the existing riparian habitat may necessitate a stratified, random sample for this area resulting in less than 100 percent coverage. A report would be prepared evaluating all identified sites and recommending those sites considered significant that are eligible or potentially eligible for nomination to the National Register of Historic Places as per the NHPA. Mitigation options for sites determined to be significant would also be discussed.

(2) Consultation with the SHPO as required by Section 106 of the NHPA would be completed prior to commencement of any land disturbing activities, such as fence construction. If necessary, appropriate mitigation measures would be developed in consultation with the SHPO and, for significant prehistoric sites, with interested Indian tribes such as Hopi Tribe, Pueblo of Zuni, Apache Tribes, and Tohono O'odham Nation.

(3) Pursuant to Section 106 of the NHPA, Reclamation mailed requests for consultations regarding the presence of traditional cultural properties that would be affected by the proposed action to the following tribes on May 16, 2005: Hopi Tribe, Gila River Indian Community, Salt River Pima-Maricopa Indian Community, Fort McDowell Yavapai Nation, and San Carlos Apache Tribe. None of the tribes indicated the presence of traditional cultural properties.

(4) If previously unidentified cultural resources, especially human remains or burials, are encountered during future development in either parcel, work shall cease immediately at the location, and personnel from Reclamation's Cultural Resource Branch shall be notified.

Cumulative Impacts

It is anticipated Reclamation and SRP would continue efforts to purchase additional parcels of private land in accordance with the 1996 Opinion and 2002 RHCP. The priority locations for these additional acquisitions likely would be along the lower San Pedro River and in the Verde Valley; however, if additional lands were acquired in the Safford Valley as part of any future acquisitions, Reclamation would conduct cultural resources surveys to identify any sites that would be considered eligible or potentially eligible for nomination to the National Register of Historic Places as per the NHPA.

CHAPTER 4 - MITIGATION MEASURES

The following mitigation measures have been identified in the EA. These measures would be undertaken as an integral part of the proposed action.

1. Reclamation would finalize a Cooperative Agreement with SRP to manage the property in perpetuity for the benefit of the willow flycatcher. The Cooperative Agreement would require the establishment of a Management Plan within 1 year of purchase.

2. Upon purchase, Reclamation would be responsible for installing fences needed to manage human use of the property and exclude livestock, providing or improving access as needed, providing signage, and removing trash and debris from the property.

3. Prior to purchase or shortly thereafter, Reclamation would undertake Class III intensive surveys on the project area and prepare a report evaluating all identified sites and recommending those sites considered significant that are eligible or potentially eligible for nomination to the National Register of Historic Places as per the NHPA.

4. Reclamation would consult with the SHPO as required by Section 106 of the NHPA prior to commencement of any land-disturbing activities. If necessary, Reclamation would develop appropriate mitigation measures in consultation with the SHPO and, for significant prehistoric sites, with interested Indian tribes such as Hopi Tribe, Pueblo of Zuni, Apache Tribes, and Tohono O'odham Nation.

5. SRP would develop and implement the Management Plan, which would include but would not be limited to the following types of activities: Completion of baseline inventory studies for targeted species; vegetation monitoring and targeted bird surveys; on-site management, including regular patrols of the property and fence lines, repairs to fencing as needed, identification and removal of potential fire hazards, and removal of trespass livestock; and coordination with neighbors and community.

6. As part of the Management Plan, SRP would establish a wildfire plan that would address containment of any fires and protection of native riparian vegetation. SRP would coordinate development of its fire management practices with Graham County and would make the plan available to local firefighting agencies.

7. If previously unidentified cultural resources, especially human remains or burials, are encountered during future land-disturbing activities that may be required on the project area, Reclamation would require that work cease immediately at the location, and that personnel from Reclamation's Cultural Resource Branch be notified.

8. Automotive waste and limited amounts of other solid waste would be removed from the property and properly disposed at a licensed disposal facility; discarded concrete piping would be sampled for potential asbestos content prior to disposal.

CHAPTER 5 - RELATED ENVIRONMENTAL LAWS AND DIRECTIVES

The following is a summary of selected Federal laws, regulations, and Executive Orders that provide information relevant to this EA.

National Environmental Policy Act of 1969, as amended (P.L. 91-190) - This law requires Federal agencies to evaluate the potential environmental consequences of major Federal actions. NEPA also requires full public disclosure about the proposed action, accompanying alternatives, impacts, and mitigation.

This EA was prepared in accordance with the requirements of NEPA. Reclamation's public scoping period began on January 26, 2005, and officially ended on February 8, 2005, although public comments continued to be accepted after this date. The draft EA was circulated for a 36-day public review and comment period from May 26 until July 1, 2005. Six letters were received. Copies of these letters, and Reclamation's responses to the comments contained therein are provided in Appendix A to this final EA.

Fish and Wildlife Coordination Act (FWCA) (P.L. 85-624) - The FWCA provides a procedural framework for the consideration of fish and wildlife conservation measures in Federal water resource development projects. Coordination with the FWS and State wildlife management agencies is required on all Federal water development projects. The effects of regulatory storage of Central Arizona Project water behind Roosevelt Dam were originally addressed in an amended FWCA report prepared by the FWS in 1989. Acquisition and preservation of willow flycatcher habitat do not involve actions that are subject to the reporting requirements of the FWCA.

Endangered Species Act of 1973 (P.L. 93-205) - The ESA provides protection for plants and animals that are currently in danger of extinction (endangered) and those that may become so in the foreseeable future (threatened). Section 7 of this law requires Federal agencies to ensure that all federally associated activities do not have adverse impacts on the continued existence of threatened or endangered species or designated areas (Critical Habitat) that are important in conserving those species.

Reclamation complied with Section 7 of the ESA by formally consulting with the FWS regarding the effects of the modified Roosevelt Dam on the willow flycatcher. Numerous strategies for minimizing effects to willow flycatchers were examined during the consultation process. The 1996 Opinion and 2002 RHCP issued by FWS requires Reclamation and SRP to acquire and ensure long-term protection of replacement habitat. Properties subject to acquisition as mitigation for Roosevelt Dam modifications would require the approval of the FWS to ensure compliance with component 1c of the RPA in the Opinion and the stipulation in Section IV(c)(1)(a) of the RHCP. Consistent with this requirement, FWS attended a preliminary site visit of the proposed mitigation site in the Fall of 2004, where they verbally concurred with the project.

Reclamation has determined that the proposed project may affect, and is likely to benefit the continued existence of the willow flycatcher. This determination and FWS' concurrence with this determination are provided in Appendix B.

Wild and Scenic Rivers Act of 1968 (P.L. 90-542) – This Act designated the initial components of the National Wild and Scenic River System and established procedures for including other rivers or reaches of rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and preserving them in a free-flowing condition. Designated wild and scenic rivers, or rivers recommended for designation as wild and scenic within Graham County, include portions of the Gila River (Gila Box) and Aravaipa Creek and all of Bonita Creek. None of these specified rivers or tributaries is within the project area.

Clean Water Act (P.L. 92-500, as amended) (CWA) - The CWA strives to restore and maintain the chemical, physical, and biological integrity of the nation's waters by controlling discharge of pollutants. The basic means to achieve the goals of the CWA is through a system of water quality standards, discharge limitations, and permits. Section 404 of the CWA identifies conditions under which a permit is required for actions that result in placement of fill or dredged material into waters of the United States (U.S.). In addition, a 401 water certification and 402 National Pollutant Discharge Elimination System permit are required for activities that discharge pollutants to waters of the U.S.

Acquisition and preservation of willow flycatcher habitat are not likely to introduce CWA-compliance issues. Nonetheless, any site-specific management activity resulting in a regulated discharge or fill would require CWA compliance. Use of any herbicides within the project area that may be applied to control noxious weeds would comply with all labeling instructions.

National Historic Preservation Act (P.L. 89-665) - This law establishes as Federal policy the protection of historic sites and values in cooperation with States, tribes, and local governments. Cultural resource investigations of acquired properties will be performed by Reclamation. If sites are present, Reclamation will consult with the SHPO, pursuant to Section 106 of the National Historic Preservation Act, SRP, and other appropriate entities to develop suitable protection strategies.

Farmland Protection Policy Act (P.L. 97-98) - This law requires identification of proposed actions that would adversely affect any lands classified as prime and unique farmlands, to minimize the unnecessary and irreversible conversion of farmland to nonagricultural uses. The U.S. Department of Agriculture's Natural Resources and Conservation Service administers this act. No prime farmlands have been designated in the project area, although such lands have been designated east of the subject property. The proposed action would not impact any lands classified as prime and unique farmlands.

Executive Order 11988 (Floodplain Management) - This Presidential directive encourages Federal agencies to avoid, where practicable alternatives exist, the short- and long-term adverse impacts associated with floodplain development. Federal agencies are required to reduce the risk of flood loss, minimize the impacts of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains in carrying out agency

responsibility. The proposed action would preserve and enhance existing riparian plant communities, restore historic riparian habitat, and discourage potential floodplain development or modification.

Executive Order 12898 (Environmental Justice) - Executive Order 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of Federal actions on minority populations and low-income populations. Low-income populations include communities or individuals living in close geographic proximity to one another, identified by U.S. Census Bureau statistical thresholds for poverty. Minority populations are identified where the percentage of minorities in the affected area exceeds 50 percent, or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage of a much broader area. Neither of these conditions exists within either Graham County or the local area. No disproportionately high and adverse human health or environmental effects on minority populations and low-income populations would result from the proposed project. Properties would be acquired from willing sellers.

Executive Order 11990 (Wetlands) - Executive Order 11990 requires Federal agencies, in carrying out their land management responsibilities, to take action that will minimize the destruction, loss, or degradation of wetlands and take action to preserve and enhance the natural and beneficial values of wetlands. The riparian habitat within the project area would benefit from this proposed action through preservation and conservation. In addition, implementation of the proposed project would be consistent with and would encourage wetland creation and preservation. Standing water and saturated soils are important characteristics of willow flycatcher habitat that would be maintained. Any effect that may come from this Federal action would be minimal, related to fencing and road access upkeep.

Department of Interior, Secretarial Order, Indian Trust Assets (ITAs) - ITAs are legal interests in assets held in trust by the U.S. Government for Indian tribes or individual Indians. These assets can be real property or intangible rights, including lands, minerals, water rights, hunting rights, money, and other natural resources. The trust responsibility requires that all Federal agencies take actions reasonably necessary to protect ITAs. No ITAs are currently known to be present within the project area or that could be affected by implementation of the proposed action. Consultation with appropriate tribes and the Bureau of Indian Affairs would be undertaken should it be determined there could be ITAs affected by land acquisition under the proposed action.

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