



United States Department of the Interior



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In Reply Refer to:
AESO/SE
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September 8, 2010

Dennis Rankin
Environmental Protection Specialist
United States Department of Agriculture
Rural Development Utilities Programs
Engineering and Environmental Staff
Mail Stop 1571, Room 2244-S
1400 Independence Ave, SW
Washington, DC 20250

RE: Programmatic Consultation on the Maintenance of Seven Transmission Line River Crossings in Arizona

Dear Mr. Rankin:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated August 24, 2009, and was received by us on August 26, 2009. At issue are effects that may result from the proposed ongoing maintenance of the Southwest Transmission Cooperative, Inc. (SWTC) transmission lines at seven river crossings in Graham, Cochise, Pinal, and Mojave counties, Arizona. Your letter concluded that the proposed action may adversely affect the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), the endangered razorback sucker (*Xyrauchen texanus*), and the species' respective critical habitat.

This biological opinion is based on information provided in: (1) the August 2009 Biological Assessment (BA) (WestLand 2009) transmitted with your letter; (2) verbal and written interactions among my staff, SWTC staff, and staff of WestLand Resources, Inc. (WestLand); and (3) other published and unpublished sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, the clearing of corridors within riparian vegetation and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Please note that this biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task Force v.*

U.S. Fish and Wildlife Service (No. 03-35279) to complete our analysis with respect to critical habitat.

Consultation History

July 24, 2006: We transmitted a concurrence letter (File number 22410-2006-I-0504) to you for SWTC's construction of the Hackberry Substation, access roads, and a new 7.5-mile-long fiber optic cable on the existing Dos Condados to Hackberry transmission line in Graham County, Arizona.

December 10, 2008: We transmitted a concurrence memorandum (File number 22410-2009-I-0060) to the Bureau of Land Management (BLM) for the issuance of a right-of-way (ROW) to SWTC for the construction of a sub-transmission line over the Gila River in Graham County, Arizona.

February 26, 2009: SWTC initiated contact with us via electronic mail to begin discussions regarding a programmatic consultation for electrical line crossings of rivers within southwestern willow flycatcher and/or razorback sucker critical habitat. We met with SWTC and WestLand staff to discuss the initial concept of programmatic consultation for transmission line maintenance activities.

March 30, 2009: We transmitted a technical assistance letter to SWTC regarding vegetation maintenance in a ROW near Hayden in Pinal County, Arizona.

June 4 and 5, 2009: SWTC and our staff discussed the potential for site restoration on lower San Pedro River parcels soon to be acquired by the Arizona Game and Fish Department (AGFD) to minimize the effects of the proposed action.

July 14, 2009: We received copies of electronic mail correspondence between SWTC and AGFD regarding the use of in-lieu fee mitigation as a method by which to accomplish riparian restoration.

August 26, 2009: We received your August 24, 2009, letter transmitting the BA for the proposed action.

February 24, 2010: We received SWTC's February 22, 2010, letter requesting that the critical right-of-way maintenance at the Apache-Hayden 4 crossing be permitted to proceed prior to completion of the programmatic consultation you requested in your August 24, 2009, letter.

February 25, 2010: We received clarification from SWTC, via electronic mail, that the eventual programmatic consultation initially requested on August 26, 2009, will also include the Apache-Hayden 4 site, thus superseding this biological opinion. We also transmitted a draft Description of the Proposed Action section to SWTC to ensure its accuracy and requested that a final biological opinion be transmitted without providing a draft in advance.

March 1, 2010: We received direction from SWTC to forego a draft biological opinion for the Apache-Hayden 4 crossing.

March 4, 2010: We received your March 4, 2010, letter requesting formal consultation on the proposed actions for both the expedited consultation at the Apache-Hayden 4 site as well as the program-scale action analyzed in this consultation.

August 9, 2010: We learned from SWTC staff that the ROW at the Hackberry-Thatcher crossing site had been employed as a firebreak during a wildfire suppression action, thus changing the vegetative characteristics.

August 19, 2010: We transmitted a draft biological opinion to you.

September 1, 2010: We received comments on the draft biological opinion from you and SWTC.

BIOLOGICAL OPINION

Description of the Proposed Action

A complete description of the proposed action is found in the BA transmitted with your August 24, 2009, letter. In brief, the proposed action consists of an ongoing program of right-of-way (ROW) maintenance at seven existing SWTC transmission line stream crossings. The maintenance program will also include a proposed framework for similar activities at future, not-yet-developed crossing sites, though the site-specific effects of such future actions are not specifically analyzed herein.

SWTC's existing maintenance activities include: (1) vegetation management to maintain sufficient clearance between conductors and vegetation to avoid arcing; (2) transmission line maintenance that includes routine inspections and the repair or replacement of system components; and (3) construction, use, maintenance, and/or repair of access roads.

The proposed action will be implemented at seven river crossing sites on three rivers in Arizona. Three crossings are on the upper Gila River: the Hackberry-Morenci line, the Dos Condados-Hackberry line, and the Hackberry-Thatcher line. The Apache-Hayden line crosses two tributary washes on the lower San Pedro River. The crossings are referred to as Apache-Hayden 1 and Apache-Hayden 2. The Apache-Hayden line also crosses the middle Gila River near Winkelman; this crossing is referred to as Apache-Hayden 4. The Parker-Bagdad line crosses the Big Sandy River.

The proposed vegetation management activities are described on pages 4 through 6 in the BA. A generalized cross section depicting a vegetation clearance corridor appears in Exhibit 1. Vegetation beneath transmission lines will be cleared in an inverted trapezoidal cross section, with narrow clearance limits beneath the wires and wider limits at the height of the conductors. Vegetation in the wire zone will be cleared mechanically with heavy equipment (backhoes, small bulldozers). The borders of the wire zone will be cleared with mechanical (i.e. chainsaws and non-mechanical hand tools). From the outer edge of the border zone to the top of the tree canopy, bucket trucks will be used to prune vegetation to a maximum distance of 19 feet from the nearest conductor.

Vegetation management will also be implemented at structures (utility poles and other static emplacements), with vegetation being cleared in a 50-foot radius via hand, mechanical, and/or chemical means.

SWTC has proposed to employ a flexible inspection schedule in order to accommodate changing conditions and varying plant growth rates. Route inspection cycles range from 180 to 365 days with a 60-day window on either side of each subsequent inspection date. Vegetation clearing is proposed to occur every 2 to 3 years, though local conditions may precipitate more-frequent visits. All clearing will be implemented in accordance with the action as described in this section as well as in the Description of the Proposed Conservation Measures section, below.

Transmission line maintenance activities are described on pages 6 and 7 in the BA. Transmission line maintenance activities pertain to the inspection, repair, and replacement of transmission system components. Inspections of system components occur from ground level twice annually, and more rigorous inspections from a bucket truck occur every five years. Replacement of structural components may include on-site assembly, excavation, cement mixing and pouring, and placement by crane. Replacement of wires may involve all-terrain vehicles, personnel on foot, helicopters, and truck-mounted tensioning devices. Laydown areas will be placed in previously disturbed lands.

Road maintenance activities are described on pages 7 and 8 in the BA, with a typical road cross section appearing in Exhibit 2 on page 8. Roads are located as close to the transmission ROW as possible, though they may diverge where terrain prevents the two corridors to be superimposed. Road maintenance may include grading with heavy equipment; removal of rocks, fallen trees, and other objects, and pruning of vegetation to permit large vehicles to pass undamaged. Equipment used to maintain roads will include backhoes, road graders, loaders, small bulldozers, and hand equipment.

Description of the Proposed Conservation Measures

The proposed avoidance, minimization, and conservation measures are described on pages 8 and 9 in the Programmatic BA. The measures consist of:

1. Seasonal Restrictions: initial clearing and continuing maintenance will occur outside of the southwestern willow flycatcher breeding season (May 1 to August 30)
2. Mechanical vegetation clearing activities will not occur within flowing portions of the river.
3. Herbicides will be applied by certified applicators and according to Environmental Protection Agency registration limits and requirements.¹
4. SWTC will provide annual reports of ROW activities to FWS.
5. Documentation of unanticipated, emergency ROW maintenance activities will be provided to FWS within 24 hours of the occurrence.
6. SWTC will, upon issuance of the programmatic biological opinion, provide \$10,000 to the Arizona Game and Fish Department for habitat restoration along the lower San Pedro River.

¹ Note that the Environmental Protection Agency is currently consulting on "label restrictions" and that the outcome of that consultation may alter the manner in which herbicides may be applied in habitat for threatened and endangered species.

Status of the Species – Southwestern Willow Flycatcher

The rangewide status of the southwestern willow flycatcher was described in detail in our July 17, 2008, biological opinion on right-of-way maintenance within utility corridors on National Forests in Arizona (File number 22410-2007-F-0365), and is incorporated herein via reference. Additional information can be found in the species' Recovery Plan (FWS 2002).

Southwestern willow flycatcher critical habitat is described in the Final Rule (70 FR 60886). The primary constituent elements (PCE) of critical habitat include the presence of riparian plant species in a dynamic (successional) riverine environment (for nesting, foraging, migration, dispersal, and shelter), a specific, suitable structure of this vegetation, and the presence of insect populations for food.

Environmental Baseline – Southwestern Willow Flycatcher

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Environmental Baseline at Hackberry-Morenci Gila River Crossing

The Hackberry-Morenci crossing is located near Safford in Graham County, Arizona, approximately 1.5 miles downstream of the Solomon Diversion Dam. The action area includes all areas within the 100-foot ROW between structures 117 and 124, as depicted in Figure 1 in the BA. The Gila River is separated from intensively farmed agricultural lands by small levees. The river's active channel varies in its course from year to year, and large-scale channel avulsions have occurred.

The environmental setting at the Hackberry-Morenci Gila River crossing site is described in detail in Section 3.1.2 of the BA. The Hackberry-Morenci crossing is within Sonoran Riparian Scrublands and Sonoran Riparian Deciduous Woodlands as described by Brown (1994). Where the action area crosses the Gila River Valley, the active floodplain is bounded by a series of artificial berms separating the surrounding agricultural fields from the floodplain. Throughout most of the year, perennial surface flows are generally restricted to a series of meandering channels varying from 60 to 150 feet in width.

The first segment of the action area that passes through southwestern willow flycatcher critical habitat is located between structures 119 and 120 and runs roughly east to west along the southern edge of the active floodplain. The area contains elements of Sonoran Riparian Scrublands and Sonoran Riparian Deciduous Woodlands with no saturated and/or moist soils. The vegetative community is variable across the eastern section of this segment. The western end of this segment

contains a dense stand of mixed cottonwood (*Populus fremontii*) and tamarisk (*Tamarix* spp.). The trees are of the same age and are approximately 80 to 100 feet in width and 30 to 50 feet in height. The remainder of this segment is relatively open and is dominated by burrobrush (*Ambrosia dumosa*), seep willow (*Baccharis salicifolia*), and tamarisk.

The second segment of the ROW that passes through southwestern willow flycatcher critical habitat begins just west of structure 121 and continues westward along the southern edge of the active perennial channel for approximately 600 feet until it reaches structure 122. In this area, the southern bank is perched 10 to 15 feet above the active perennial channel. The vegetation is patchy across this portion of the easement and varies with respect to the proximity of the perennial flows. Vegetation along the channel with perennial flows is dominated by Goodding's willow (*Salix gooddingii*) and tamarisk. This band of vegetation is approximately 10 feet wide by 30 to 50 feet in height. Vegetation located away from the perennial channel is dense but more xeric and scrubby in nature, and 10 to 20 feet in height. This vegetation is dominated by tamarisk, tree tobacco (*Nicotiana glauca*), burrobrush, and velvet mesquite (*Prosopis velutina*). At structure 122, the easement turns northwest and crosses the entire width of the floodplain, which terminates just past structure 123. At this site, the active perennial stream channel splits in two branches and creates a small island at the southern edge of the floodplain. A dense stand of coyote willow (*Salix exigua*), 20 to 35 feet in width and 10 to 20 feet in height, covers this island. Where the easement crosses the central portion of the active floodplain, the habitat is noticeably open and sparsely vegetated with only a few scattered trees and shrubs. Species include tamarisk, desert broom, and burrobrush. Vegetation along the northern edge of the active floodplain consists of a dense stand of tamarisk and some scattered willows and cottonwoods. This stand of tamarisk-dominated vegetation is approximately 50 to 80 feet in width and 15 to 30 feet in height. There were no pools or wetlands present at the crossing. Saturated and wet soils are present only in the active perennial channel located at the southeastern end of the action area. Soils across the remainder of the active floodplain are dry and only seasonally saturated in response to high flow events. Additional plants noted within the riparian community include mesquite, white-thorn acacia (*Acacia constricta*), desert broom, saltbush species (*Atriplex* spp.), and burrobrush.

WestLand, Inc. measured vegetation cover at seven transects within this reach of the Gila River using aerial photographs. One transect was located at the crossing, three were located upstream of the crossing, and three were located downstream of the crossing. The average canopy-cover within this segment of the Gila River is 35 percent. Within the portions of the action area, critical habitat vegetation cover averaged 47.9 percent.

Southwestern willow flycatchers occur in the Gila River within the action area. Recent survey data were compiled from the Ellis *et al.* (2008) annual survey and nest monitoring report for 1993 to 2006 summarizing the AGFD survey efforts and information reported by the Heritage Data Management System (HDMS) for southwestern willow flycatcher occurrences (see BA Appendix B).

Both Ellis *et al.* (2008) and AGFD (2008) report 21 different survey locations located within the area of the Gila River extending from Bonita Creek downstream to Simon Spring, a distance of approximately nearly 30 river miles. Southwestern willow flycatcher territories were recorded at

eight of those locations. All of the locations where territories were detected were surveyed in multiple years, but only at the Pima East site were territories found during each year of survey.

Data compiled from AGFD's yearly survey and nest monitoring reports and data supplied by HDMS (Sabra Schwartz, AGFD, pers. comm., as referenced in the BA) indicate that no southwestern willow flycatcher surveys have been conducted at the action area. Outside of the action area, a survey site occurring 2 miles to the southwest referred to as "San Jose" was surveyed from 1995 through 2001 for southwestern willow flycatchers. A single bird was detected at the site in 1998, but nesting was not confirmed. Two additional survey sites, "Solomon NW" and "Sanchez Rd," occur within 5 miles of the action area. The "Solomon NW" site was surveyed from 1996 through 1998, and again in 2006. In 1996 and 1998, three resident adults and three territories were verified at the "Solomon NW" site and in 1998, a single nest was detected. At the site named "Sanchez Road", surveys were conducted from 1995 through 1998, and resident birds were noted during the first 3 years of survey. Nests were identified and nesting confirmed in 1996 and 1997. Four pairs of southwestern willow flycatcher and six nests were detected at this site in 1996, but only a single pair of birds and a single nest were detected in 1997.

The 1,054-acre Fort Thomas Preserve, in part co-owned and held under easement by the Salt River Project (SRP) and Bureau of Reclamation (BOR), is located approximately 25 river miles downstream of the Hackberry-Morenci crossing, and has been surveyed more recently than the sites listed above. Data collected in 2009 indicate the site supported 86 southwestern willow flycatcher territories. Surveyors detected 159 adult birds, 73 pairs, and 77 nests at the site. The Fort Thomas site is too far from the Hackberry-Morenci site to be directly or indirectly affected by implementation of the proposed action, but the survey results indicate that suitable habitat in the Gila Valley can support sizeable densities of southwestern willow flycatchers.

The Hackberry-Morenci crossing site is situated within the Upper Gila Management Unit of the southwestern willow flycatcher's critical habitat. Examination of the aerial photograph of the crossing site (Figure 1 in the BA) indicates that it contains the PCEs of southwestern willow flycatcher critical habitat. Most of the site consists of active channel features such as open cobble bars; relatively little riparian vegetation is present, and the patch sizes appear too narrow to support breeding at present. Over time, it is likely that variation in peak and flood-flow hydrology, ongoing geomorphic adjustment, and riparian successional processes (Stromberg *et al.* 1991, 2007; Wittler and Klawon 2004) will result in the formation of new stands of riparian vegetation and the removal or senescence of existing stands. The action area at the Hackberry-Morenci site may thus exhibit varying proportions of the PCEs and transition into and out of the conditions capable of supporting southwestern willow flycatcher breeding activities.

Environmental Baseline at Dos Condados-Hackberry Gila River Crossing

The Dos Condados-Hackberry Crossing of the Gila River is located in Graham County near the city of Safford (Township 7 South, Range 27 East, portions of Sections 17, 8; Figure 2). The crossing site is approximately 4.3 miles downstream from the Solomon Diversion Dam. The action area includes all areas within the 100-foot-wide easement between structures 23 and 26, as depicted in BA Figure 2.

The environmental setting at the Dos Condados-Hackberry Gila River crossing site is described in detail in Section 3.2.2 of the BA. The Dos Condados-Hackberry Crossing occurs within habitat consistent with Brown's (1994) classification of Sonoran Riparian Scrublands and Sonoran Riparian Deciduous Woodlands. Where the action area crosses the Gila River Valley, the active floodplain is approximately 1,000 feet in width and is bound by a series of artificial berms separating the surrounding agricultural fields from the floodplain. Within the action area, the Gila River is a perennial stream that supports strands of Sonoran Riparian Deciduous Woodland habitat. Throughout most of the year perennial surface flows are generally restricted to a meandering channel varying from 20 to 50 feet in width.

The ROW includes the active perennial channel at the southwestern end of the floodplain. At the crossing, the active perennial channel was bordered on the north side by a stinger of coyote willow approximately to 6 to 20 feet in width and 30 to 50 feet in height. Where the action area crosses the central portion of the active floodplain, the habitat is noticeably open and sparsely vegetated. Vegetation within the central portion of the action area consists of tamarisk, cottonwood, burrobrush, desert broom, and willow occurring in scattered stands or stingers generally 6 to 30 feet in size. Vegetation near structure 25 consists of denser stands of younger coyote willow, tamarisk, and a few scattered cottonwood trees. No evidence of wet or saturated soils was noted on the northern side of the floodplain or near structure 25. In addition, there were no pools or wetlands noted at the crossing. Saturated and wet soils are present only along the perennial channel located on the southern edge of the active floodplain. Soils across the remainder of the active floodplain are dry and only seasonally saturated in response to high flow events.

The average percentage of vegetation cover measured is 40 percent along seven transects perpendicular to the Gila River (one at the crossing and three upstream and three downstream of the crossing). WestLand has delineated the extent of the vegetated portions of the 1,735 feet of the easement that is located within critical habitat. Approximately 720 feet (41.5 percent) of this area contain riparian vegetation.

Southwestern willow flycatchers occur in the Gila River within the action area. Data compiled from AGFD's yearly survey and nest monitoring reports and data supplied by HDMS (Sabra Schwartz, AGFD, pers. comm.) indicate that no southwestern willow flycatcher surveys have been conducted within the Dos Condados-Hackberry action area. A survey site occurring 0.5 mile to the northeast referred to as "San Jose" was surveyed from 1995 through 2001. A single bird was detected at the site in 1998, but nesting was not confirmed. Two additional survey sites, "Solomon NW" and "Sanchez Road", occur within 2 miles of the action area. The "Solomon NW" site was surveyed from 1996 through 1998 and again in 2006. In 1996 and 1998, three resident adults and three territories were verified at the "Solomon NW" site, and in 1998 a single nest was detected. At the site named "Sanchez Road" surveys were conducted from 1995 through 1998 and resident birds were noted during the first three years of survey. Nests were identified, and nesting confirmed in 1996 and 1997. Four pairs of southwestern willow flycatcher and six nests were identified in 1996, and only a single pair of birds and a single nest was detected in 1997 at the Sanchez Road site.

The Dos Condados-Hackberry site is located in close proximity to the Hackberry-Morenci crossing site (discussed above) and thus, is located in similar proximity to southwestern willow flycatcher survey sites on the SRP/BOR Fort Thomas Preserve. The Fort Thomas site is too far from the Dos

Condados-Morenci site to be directly or indirectly affected by implementation of the proposed action, but the survey results indicate that suitable habitat in the Gila Valley can support sizeable densities of southwestern willow flycatchers.

The Dos Condados-Hackberry crossing site is situated within the Upper Gila Management Unit of the southwestern willow flycatcher's critical habitat. Examination of the aerial photograph of the crossing site (Figure 2 in the BA) indicates that it contains the PCEs of southwestern willow flycatcher critical habitat; it is located in an area geomorphically similar to the Hackberry-Morenci crossing (Wittler and Klawon 2004). Most of the Dos Condados-Hackberry site consists of active channel features such as open cobble bars; relatively little riparian vegetation is present, and the patch sizes appear too narrow to support breeding at present. Over time, it is likely that variation in peak and flood-flow hydrology, ongoing geomorphic adjustment, and riparian successional processes (Stromberg *et al.* 1991, 2007; Wittler and Klawon 2004) will result in the formation of new stands of riparian vegetation and the removal or senescence of existing stands. The action area at the Dos Condados-Hackberry site may thus exhibit varying proportions of the PCEs and transition into and out of the conditions capable of supporting southwestern willow flycatcher breeding activities.

Environmental Baseline at Hackberry-Thatcher Gila River Crossing

The Hackberry Thatcher Crossing of the Gila River is located in southeastern Arizona in Graham County within the Gila Valley near the city of Safford (Township 6 South, Range 25 East, portions of Section 26, 27, 34 and 35). The Hackberry-Thatcher Crossing is located immediately adjacent on the upstream side of the Reay Lane Bridge across the Gila River. The action area for the Hackberry Thatcher Crossing includes all areas within the 70-foot-wide easement between structures 23 and 32, as depicted in Figure 3 in the BA.

The environmental setting at the Hackberry-Thatcher Gila River crossing site is described in detail in Section 3.3.2 of the BA. The Hackberry-Thatcher crossing occurs within habitat classified by Brown's (1994) of Sonoran Riparian Scrublands and Sonoran Riparian Deciduous Woodlands. The action area was visited on April 16, 2009, for an evaluation of the vegetative communities. The action area occurs within the Gila River 100-year floodplain. At the crossing site, the Gila River is bound by a series of artificial berms separating the surrounding agricultural fields from the active floodplain. At the bridge crossing, the channel is artificially constricted and the observed dominance of younger trees at this spot suggests a high level of flood scouring and recruitment. The riparian community at the action area crossing consists of a mix of tamarisk, coyote willow, seepwillow, Gooding's willow, and Fremont cottonwood.

The ROW crosses the active perennial stream channel at the southwestern end of the floodplain. The perennial stream channel at the ROW crossing was approximately 20 to 30 feet wide and lined with dense vegetation. Dense hedges or stingers of predominantly coyote willow with some Gooding's willow, tamarisk, and seep willow, approximately 10 to 20 feet in width and 6 to 10 feet in height, line the channel within the action area. Where the action area crosses the central portion of the active floodplain, the habitat was noticeably open and sparsely vegetated with only a few scattered bushes and shrubs (desert broom and burrobrush). Vegetation along the northern edge of the active floodplain consisted of a stinger of willows, tamarisk, and cottonwood trees

approximately 30 to 50 feet in width and 10 to 15 feet in height. This stand of riparian vegetation is supported by ephemeral discharges from an upstream drainage that flow into the Gila River approximately 1,600 hundred feet to the east of the action area and by subsurface irrigation runoff from the adjacent fields. There were no pools or wetlands present at the crossing. Saturated or wet soils are present only in the active perennial channel located at the southwestern end of the action area. Soils across the remainder of the active flood plain are dry and only seasonally saturated in response to high flow events. Additional plants noted within the riparian community include mesquite, white-thorn acacia, desert broom, saltbush species, and burrobrush.

The average percentage of vegetation cover measured is 44 percent along seven transects perpendicular to the Gila River (one at the crossing and three upstream and three downstream of the crossing). WestLand has delineated the extent of the vegetated portions of the 1,379 linear feet of easement that is located within critical habitat. Approximately 570 feet (41.3 percent) of this area contain riparian vegetation. You have informed us that the Hackberry-Thatcher site experienced a wildfire and/or was employed as a fuel break by parties other than SWTC during the summer of 2010. We anticipate that the site will recover most of the aforementioned vegetative and physical characteristics during the life of the proposed action.

The Hackberry-Thatcher crossing site is located in close proximity to the Hackberry-Morenci and Dos Condados-Hackberry crossing sites (discussed above) and thus, is located in similar proximity to southwestern willow flycatcher survey sites on the SRP/BOR Fort Thomas Preserve. The Fort Thomas site is too far from the Hackberry-Thatcher crossing site to be directly or indirectly affected by implementation of the proposed action, but the survey results indicate that suitable habitat in the Gila Valley can support sizeable densities of southwestern willow flycatchers.

The Hackberry-Thatcher crossing site is situated within the Upper Gila Management Unit of the southwestern willow flycatcher's critical habitat. Examination of the aerial photograph of the crossing site (Figure 3 in the BA) indicates that it contains the PCEs of southwestern willow flycatcher critical habitat; it is located in an area geomorphically similar to the Hackberry-Morenci and Dos Condados-Hackberry crossings (Wittler and Klawon 2004). Most of the Hackberry-Thatcher site consists of active channel features such as open cobble bars; relatively little riparian vegetation is present, and the patch sizes presently appear too narrow to support breeding at present. Over time, it is likely that variation in peak and flood-flow hydrology, ongoing geomorphic adjustment, and riparian successional processes (Stromberg *et al.* 1991, 2007; Wittler and Klawon 2004) will result in the formation of new stands of riparian vegetation and the removal or senescence of existing stands. The action area at the Hackberry-Thatcher site may thus exhibit varying proportions of the PCEs and transition into and out of the conditions capable of supporting southwestern willow flycatcher breeding activities.

Prior Consultations - Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings

Within the last 5 years, we have completed two formal consultations within the Upper Gila Management Unit, one for the replacement of the 8th Avenue Bridge near Safford (File number 22410-2006-F-0428) and the other for the construction of the Arizona Eastern Railroad Bridge over

the Gila River near the San Simon River confluence (22410-2008-F-0474). Incidental take of southwestern willow flycatchers was not anticipated in either of these consultations.

Environmental Baseline at Apache-Hayden 1 - Crossing of Teran Wash near the San Pedro River

The portion of the San Pedro Valley in which this crossing occurs is privately owned, vacant ranch land utilized for grazing purposes. A complete description of the environmental setting at this site is found in BA section 3.4.2. The ROW is situated within vegetation corresponding to Brown's (1994) description of Sonoran Riparian Scrubland. Dominant vegetation within and surrounding the ROW consists of mesquite, Engelmann prickly pear (*Opuntia engelmannii*), creosote bush (*Larrea tridentata*), and fourwing saltbush (*Atriplex canescens*). Only a few species of shrubs, subshrubs, forbs, succulents and grasses were noted, including wolfberry (*Lycium* spp.), desert marigold (*Baileya multiradiata*), desert senna (*Senna covesii*), fluffgrass (*Dasyochloa pulchella*), burrobrush, and snakeweed (*Gutierrezia sarothrae*).

The Apache Hayden 1 Crossing is situated on Teran Wash just upstream from the San Pedro River confluence. The crossing spans both the active channel and the floodplain of the stream. No vegetation is present in the active channel, and vegetation in the floodplain is sparse and widely scattered. The crossing occurs at the terminus of the Teran Wash just upstream from its confluence with the San Pedro. The observed sparseness of vegetation at this location suggests a high level of flood scouring. The dominant plant species across this section of the action area are velvet mesquite and Engelmann prickly pear. Mesquite trees in the action area are generally 6 to 15 feet in height and are widely spaced (6 to 30 feet between individual trees). No surface water or saturated soils are present within the action area.

Southwestern willow flycatchers are unlikely to occur within the action area of the Apache-Hayden 1 Crossing site. Teran Wash is ephemeral and xeroriparian vegetation dominates the site. The closest known southwestern willow flycatcher breeding site is on the mainstem San Pedro River at Three Links Farm, approximately 6 miles upstream of the Teran Wash confluence.

The Apache-Hayden 1 crossing site is situated within the Middle Gila/San Pedro Management Unit of the southwestern willow flycatcher's critical habitat. Examination of the aerial photograph of the crossing site (Figure 4 in the BA) indicates that it does not presently contain the PCEs of southwestern willow flycatcher critical habitat; Teran Wash is ephemeral and velvet mesquite dominates the woody, xeroriparian overstory. The site is, however, located within southwestern willow flycatcher critical habitat. We anticipate a relatively low potential for the Apache-Hayden 1 site to develop the full suite of PCEs, particularly those associated with the presence of surface water and mesoriparian vegetation.

Environmental Baseline at Apache-Hayden 2 Crossing of Hot Springs Canyon near the San Pedro River

The Apache Hayden 2 Crossing is located in Cochise County in southeastern Arizona. This crossing is within the San Pedro River Valley near the community of Cascabel and east of the San Pedro River (Township 13 South, Range 19 East, portions of Sections 14 and 23). The action area includes Hot Springs Canyon Wash approximately 0.48 mile upstream from the confluence of the

San Pedro River and can be accessed from Cascabel Road. The action area for the Apache Hayden 2 Crossing includes all areas within the 100-foot-wide easement between structures 220 and 222, as depicted in BA Figure 5.

A complete description of the environmental setting at this site is found in BA section 3.5.2. The Apache-Hayden 2 crossing occurs within habitat matching Brown's (1994) description of Sonoran Riparian Scrubland. Dominant vegetation in and surrounding the action area consists of mesquite, Engelmann prickly pear, creosote bush, and fourwing saltbush. Only a few species of shrubs, sub-shrubs, forbs, succulents and grasses were noted, including wolfberry, desert marigold, desert senna, fluffgrass, burrobrush, and snakeweed.

Dominant vegetation in the habitat surrounding the action area consists of creosote bush and mesquite. Only a few species of shrubs, sub-shrubs, forbs, succulents and grasses were noted, including wolfberry, desert marigold, barrel cactus (*Ferocactus wislizeni*), saguaro (*Carnegiea gigantea*), desert senna, fluffgrass, and snakeweed.

The action area includes both the active channels and the floodplain. No vegetation is present in the active channels and vegetation in the floodplain is sparse and widely scattered. The crossing occurs at the terminus of the Hot Springs Canyon Wash drainage just upstream from its confluence with the San Pedro. The observed sparseness of vegetation at this spot suggests a high level of flood scouring. In the active channel, desert broom and burrobrush are the dominant species, while mesquite trees tend to be restricted to the edges of the active channel and the floodplain. Mesquite trees in the action area are generally 6 to 15 feet in height and are widely spaced (6 to 30 feet between individual trees). No surface water or saturated soils are present within the action area.

Southwestern willow flycatchers are unlikely to occur at the Apache-Hayden 2 Crossing site. Hot Springs Canyon Wash is ephemeral in this location and xeroriparian vegetation dominates the site. The closest known southwestern willow flycatcher breeding site is on the mainstem San Pedro River at Three Links Farm, approximately 7 miles upstream of the Hot Springs Canyon Wash confluence.

The Apache-Hayden 2 crossing site is situated within the Middle Gila/San Pedro Management Unit of the southwestern willow flycatcher's critical habitat. Examination of the aerial photograph of the crossing site (Figure 5 in the BA) indicates that it does not presently contain the PCEs of southwestern willow flycatcher critical habitat; Hot Springs Canyon Wash is ephemeral and velvet mesquite dominates the woody, xeroriparian overstory. The site is, however, located within southwestern willow flycatcher critical habitat. We anticipate a relatively low potential for the Apache-Hayden 2 site to develop the full suite of PCEs, particularly those associated with the presence of surface water and mesoriparian vegetation.

Environmental Baseline at Apache-Hayden 4 Gila River Crossing

The Apache Hayden 4 Crossing is in Pinal County within the Gila River Valley, immediately east of the Town of Winkelman (Township 5 South, Range 15 East, portions of Section 13; Figure 6). The Apache Hayden 4 Crossing spans the Gila River approximately 2.4 miles upstream from the confluence of the San Pedro River. This crossing can be accessed from State Route 77 south of

Winkelman to Roach Road, then east to the powerlines, and north along the powerline access road to the Gila River.

The action area for the Apache Hayden 4 Crossing includes all areas within the 100-foot-wide easement between structures 568 and 570 as well as portions of an access road outside the easement that occurs within critical habitat, as depicted in BA Figure 6.

A complete description of the environmental setting at this site is found in BA section 3.6.2. The Apache-Hayden Number 4 crossing occurs within habitat matching Brown's (1994) description of Sonoran Riparian Scrublands and Sonoran Riparian Deciduous Woodlands. The action area was visited on April 15, 2009, to describe the vegetative communities.

Where the Apache-Hayden line crosses the Gila River Valley, the active floodplain is bound on the east side by steep hills and on the west side by State Route 77. Throughout most of the year, perennial surface flows are generally restricted to a meandering channel that varies from 70 to 100 feet in width. At present, large scouring floods are uncommon in this section of the Gila River, and flows tend to be predictable due to the Coolidge Dam and reservoir located upstream. The first segment of the Apache Hayden 4 action area contains an unpaved access road that runs along the southern edge of the floodplain in Sonoran Riparian Deciduous Woodlands for approximately 787 feet. An unnamed drainage empties into the Gila River at this point, augmenting the dense vegetation present. The vegetative community is relatively homogeneous across this portion of the action area. The habitat here can be characterized as mesquite bosque with a subcomponent of tamarisk, reticulated hackberry (*Celtis reticulata*), blue-paloverde (*Parkinsonia florida*) and cottonwood. A dense understory of graythorn (*Ziziphus obtusifolia*), cat-claw acacia (*Acacia greggii*) and white-thorn acacia is present along the edges of this habitat. The mesquite, palo verde, tamarisk, and hackberry are approximately 20 to 50 feet in height. Where present, cottonwood trees are 60 to 100 feet in height.

The second segment of the Apache Hayden 4 action area includes the easement where it crosses the Gila River. Along the eastern bank of the river, a dense stand of tamarisk with some mesquite and cottonwood is perched 10 to 20 feet above the active floodplain. Soils on this perched secondary shelf are dry and consist of fine silts and sand. It is probable that flood waters only rarely reach this secondary shelf. Trees within this area are 6 to 10 feet in height except for some of the older cottonwoods, which are 50 to 70 feet in height. Where the action area crosses the western section of the active channel, the habitat is noticeably open and less heavily vegetated than along the eastern side of the river. Vegetation along the western section of the active floodplain consists of stands and stringers of tamarisk, willows, cottonwood, mesquite, seepwillow, and burrobrush. The stringer of vegetation adjacent to the perennial channel is narrow (10 to 15 feet in width) and short in stature (15 to 25 feet in height). A larger stringer of vegetation 80 feet in width and 15 to 45 feet in height is located approximately 50 feet west of the perennial channel. There were no pools or wetlands present at the crossing. Saturated or wet soils are present only in the perennial channel. Soils across the remainder of the active floodplain are dry and only seasonally saturated in response to high flow events. The average percentage of vegetation cover measured is 66 percent along seven transects perpendicular to the Gila River (one at the crossing and three upstream and three downstream of the crossing). WestLand has delineated the extent of the vegetated portions of the

1,000 feet of easement that is located within critical habitat. Approximately 770 feet (77 percent) of this area contain riparian vegetation.

Southwestern willow flycatchers are abundant at certain locations within the Gila/San Pedro Critical Habitat Unit, though the majority of the territories are in locations along the lower San Pedro River and the middle-to-upper reaches of the Gila River below Coolidge Dam. Coolidge Dam, which impounds the river to form San Carlos Reservoir, regulates flows in the middle Gila River to a great extent. The Bureau of Indian Affairs operates the reservoir to meet the agricultural water needs of downstream users such as the Gila River Indian Community and the San Carlos Irrigation and Drainage District (collectively, the San Carlos Irrigation Project). Water releases occur year-round with the highest generally occurring during summer months (FWS 2004).

The hydrology of the Gila River reach downstream of Coolidge Dam exhibits a highly altered magnitude, frequency, duration, and rate of change. These changes to the base and flood flow hydrographs have contributed to appreciable alterations in the riparian community within the critical habitat, which consists largely of tamarisk (FWS 2002, USBR 2003). The Arizona Game and Fish Department (AGFD) performed a long-term study (1996-2007) within an area located downstream of Coolidge Dam (Ellis *et al.* 2008). AGFD examined the influence of variation in streamflow on the abundance of flycatcher territories detected in the Gila River study area; all linear regressions showed a positive relation between Gila River streamflow and the number of southwestern willow flycatcher territories (Ellis *et al.* 2008). The 1996-2007 territory abundance data (Ellis *et al.* 2008; Appendix I) represent the baseline status of southwestern willow flycatchers in the action area, and are incorporated herein via reference. In summary, the number of territories has varied from as low as 10 in 1996, when four sites were surveyed, to as high as 64 in 2007, when 22 sites were surveyed.

While the abundance of southwestern willow flycatcher territories is linked to the artificial hydrograph of Coolidge Dam, we hypothesize that longer-term riparian successional processes may also influence the abundance of territories over time. Regardless, hydrologic variability does account for variation in the numbers of territories and thus, the overall abundance of southwestern willow flycatchers on the Gila River within the action area is similarly variable.

Southwestern willow flycatchers are not specifically surveyed within the Apache-Hayden 4 action area, but have been detected both up- and downstream from the crossing. The closest survey sites are located at GRN004 and GRS003, approximately 3 river miles downstream and at the Dripping Springs Campground and Wash, approximately 3 to 4 river miles upstream (SWCA 2009). Three southwestern willow flycatcher pairs were detected at GRS003 and none at GRN004 (SWCA 2009). Eleven southwestern willow flycatcher pairs were detected at the Dripping Springs Campground site and 14 at Dripping Springs Wash site (SWCA 2009).

The SWCA (2009) report notes that brown-headed cowbird parasitism was not observed at any known nest site and also that middle Gila River southwestern willow flycatcher territories have been increasing, possibly in response to predictable river releases from Coolidge Dam.

The Apache-Hayden 4 crossing site is situated within the Middle Gila/San Pedro Management Unit of the southwestern willow flycatcher's critical habitat. The Gila River within this crossing site's

action area exhibits all of the PCEs of southwestern willow flycatcher critical habitat in at least some locations, including the presence of riparian plant species in a dynamic riverine environment; a specific, suitable structure of this vegetation; and the presence of insect populations for food. The operations of Coolidge Dam, however, do affect the dynamism of the riparian ecosystem by altering the magnitude, frequency, duration, and rate of change of the middle Gila River hydrograph. The primary manifestation of this effect is that the middle Gila River has a relatively high proportion of tamarisk within its riparian community. Regardless, the critical habitat along the Gila River below Coolidge Dam is, and may continue to be utilized extensively for breeding (Ellis *et al.* 2008) and will continue to serve as a migration corridor for additional occupied reaches of the Gila River upstream.

Prior Consultations - Apache-Hayden 1 - Crossing of Teran Wash near the San Pedro River, Apache-Hayden 2 Crossing of Hot Springs Canyon near the San Pedro River, and the Apache-Hayden 4 Gila River Crossing

Within the last 5 years, we have completed four formal consultations within the Middle Gila/San Pedro Management Unit, including (1) the replacement of the Kelvin Bridge (File number 22410-2006-F-0429); (2) your Apache-Hayden 4 crossing (superseded by this BO (File number 22410-2010-f-0258); (3) the San Manuel Interconnect (File number 22410-2009-F-0354); and (4) the Middle Gila Canyons Travel Management Plan (File number 22410-2009-F-0353). Incidental take of southwestern willow flycatchers was not anticipated in any of these consultations.

Environmental Baseline at Parker-Bagdad Big Sandy River Crossing

The Parker-Bagdad Crossing is located in southeast Mohave County within the Big Sandy River valley (Township 14 North, Range 13 West, Section 12). Access to the Parker-Bagdad transmission line at the Big Sandy River crossing is provided by Signal Road off State Route 93. Structure 268 is located adjacent to the Signal Road on the river-left bank approximately 280 feet from the edge of designated critical habitat. Structure 267 is accessed via an existing dirt road on the river-right bank that is located at the edge of designated critical habitat. This road travels upslope from its junction with Signal Road. After approximately 200 feet the road is no longer at the edge of critical habitat or riparian vegetation and is within an upland area. This road was built to access structure 267 and ends at the structure. The Signal Road crossing of the Big Sandy River is an at-grade dirt road. The action area for the Parker-Bagdad Crossing includes all areas within the 100-foot-wide easement between structures 267 and 268, as depicted in BA Figure 7.

A complete description of the environmental setting at this site is found in BA section 3.7.2. Along this reach of the Parker-Bagdad transmission line, upland vegetation is typical of the Arizona Upland Subdivision of the Sonoran Desertscrub (Brown 1994) and is variously dominated by foothill palo verde, teddy bear cholla (*Opuntia bigelovii*), other succulents and shrubs such as brittle bush (*Encelia farinosa*) and bursage (*Ambrosia dumosa*). Saguaros are visually dominant but occur at moderate to low density.

The Parker-Bagdad crossing site is situated within the Bill Williams Management Unit of southwestern willow flycatcher critical habitat. The riparian corridor along this reach of the Big Sandy River is dominated by relatively short-statured tamarisk and mesquite. On the river left

bank, mesoriparian habitat is approximately 300 feet wide along the easement before abruptly transitioning to upland habitat at a steep bluff. On the river's right bank, the riparian vegetation is approximately 70 feet in width. The riparian strand is approximately 300 feet wide, relatively flat and not incised. When the site was visited on May 14, 2009, the river was flowing. The site may not be perennial, but it is critical habitat for the southwestern willow flycatcher and does contain PCEs related to vegetation presence and structure.

The nearest southwestern willow flycatcher territories are located approximately 2 miles upstream where the Big Sandy River passes beneath the Highway 93 bridge; two sites at this location have supported as many as 22 territories (Durst *et al.* 2008). The BLM (2010) has surveyed four patches of riparian vegetation in areas near Signal Road and the Burro Creek confluence, all in close proximity to the action area. No flycatchers were detected but one patch, near the second Signal Road crossing, appears to be evolving through successional processes and may soon support breeding.

Prior Consultations - Parker-Bagdad Big Sandy River Crossing

Within the past five years, we have completed no formal consultations within the Big Sandy River portion of the Bill Williams Management Unit that affect the action area for the proposed action. We are presently in formal consultation with the BLM on the permit renewal for the Greenwood Community Allotment, which surrounds the action area.

Effects of the Proposed Action – Southwestern Willow Flycatcher

The Environmental Baseline for the southwestern willow flycatcher was described on a site-by-site basis to facilitate a complete description of the existing conditions at the respective sites. The effects of the proposed action to southwestern willow flycatchers, however, are presented based on combinations of sites, rather than on a site-by-site basis. Sites were combined based on their proximity, recovery unit, and presence of critical habitat. A summary of the proposed action's total effects appear in the section entitled Conclusion – Southwestern Willow Flycatcher, below.

Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings (Upper Gila Critical Habitat Management Unit)

Southwestern willow flycatchers are not known to nest within the proposed Vegetation Clearance Corridors (VCC) at the Hackberry-Morenci, Dos Condados-Hackberry, or Hackberry-Thatcher Gila River crossing sites; we do not anticipate that there will be direct effects to the species (i.e. mortality or nest-tree removal).

Indirect effects will result from clearance and ongoing maintenance within the respective VCCs. Riparian ecosystems are successional by nature, and exist in dynamic equilibrium with hydrologic processes. Portions of the Gila River are likely to transition into and out of conditions suitable for southwestern willow flycatcher nesting. These riparian successional processes will be continually suppressed to varying degrees, reducing the likelihood that riparian vegetation within the VCCs will ever attain the species composition, structure, and/or density suitable for nesting. Maintenance of

the VCCs' will perpetually affect the interior-edge ratio of the riparian patches the respective rights-of-way bisect, further impeding the patches' ability to support nesting and potentially favoring edge-oriented species, such as the nest-parasitic brown-headed cowbird (*Moluthrus ater*). Further, the entire Gila River upstream, downstream, and between the three sites supports southwestern willow flycatcher migration and dispersal. Clearance of the VCCs thus constitutes a small, but measurable, effect to forage and cover resources for the birds.

Clearance and maintenance of the Hackberry-Morenci, Dos Condados-Hackberry, or Hackberry-Thatcher Gila River crossing sites will also affect PCEs, and/or the future potential for PCEs to be present, within approximately 12.4 acres of southwestern willow flycatcher critical habitat (see Table 1, below). This represents a minute effect at the Management Unit scale (0.07 percent of the 17,043-acre Upper Gila Management Unit). The limited extent of these impacts to the PCEs of critical habitat render the proposed action unlikely to measurably affect the recovery of the southwestern willow flycatcher within the Upper Gila Management Unit.

Table 1: Summary of effects to southwestern willow flycatcher critical habitat in the 17,043-acre Upper Gila Management Unit

Crossing	Linear feet of transmission line and access road in action area	Acreage of transmission line and access road within action area	Linear feet of transmission line and access road in critical habitat	Acreage of transmission line and access road in critical habitat
Hackberry-Morenci	7,167	16.5	2,695	6.2
Dos Condados-Hackberry	2,989	6.9	1,735	4.0
Hackberry-Thatcher	6,178	9.9	1,379	2.2
Unit Impact Totals	16,334	33.3	5,809	12.4

The proposed conservation measures are anticipated to be effective in reducing the adverse effects of the proposed action. Restricting VCC clearance and maintenance activities to September 1 to April 30 will avoid effects to nesting and breeding. The 50-foot wide VCC is sufficiently narrow as to not pose a barrier to migrating birds. We also anticipate that the firm commitment of \$10,000 to AGFD will result in riparian restoration on the lower San Pedro River, which will benefit southwestern willow flycatchers; AGFD has recently acquired three parcels through a Natural Resource Damage Assessment settlement, and restoration planning and design are already underway². The funding could, in part or full, contribute to the creation of the PCEs of critical habitat where they do not presently exist, such as soon-to-be-abandoned agricultural parcels.

Beneficial effects of the proposed action include a reduced need for unplanned, emergency maintenance activities that may occur during nesting season. We anticipate that the proposed action will result in a reduced fire risk; the opportunity for vegetation to contact a conductor and ignite will be minimized.

Apache-Hayden 1 - Crossing of Teran Wash near the San Pedro River, Apache-Hayden 2 Crossing of Hot Springs Canyon near the San Pedro River, and Apache-Hayden 4 Gila River Crossing (Middle Gila/San Pedro Critical Habitat Management Unit)

² SWTC will notify FWS when the funding has been transferred to AGFD; this action will conclude SWTC's responsibility to ensure restoration occurs. The FWS is a co-Trustee in the Natural Resource Damage Assessment process and thus, will be able to verify that the conservation measure has been implemented.

Southwestern willow flycatchers are not currently known from the Apache-Hayden 1 (Teran Wash) or Apache-Hayden 2 (Hot Springs Canyon) sites, and the examination of aerial photography indicates that these sites presently lack the habitat structure to support breeding activities. This lack of nominal habitat equates with a present-day absence of the PCEs of critical habitat. The sites are, however, adjacent to the lower San Pedro River, which has exhibited an increasing abundance of southwestern willow flycatchers (Ellis *et al.* 2008). Moreover, riparian ecosystems are dynamic, and either or both sites could eventually begin to display suitable habitat characteristics except for where VCC corridors are maintained in a cleared state.

The Apache-Hayden 4 crossing, however, is located on the mainstem Gila River, between sites and reaches occupied by southwestern willow flycatchers. Southwestern willow flycatchers are abundant at certain locations within the Gila/San Pedro Critical Habitat Unit, though the majority of the territories are in locations along the lower San Pedro River and the middle-to-upper reaches of the Gila River below Coolidge Dam. Coolidge Dam, which impounds the river to form San Carlos Reservoir, regulates flows in the middle Gila River to a great extent. The Bureau of Indian Affairs operates the reservoir to meet the agricultural water needs of downstream users such as the Gila River Indian Community and the San Carlos Irrigation and Drainage District (collectively, the San Carlos Irrigation Project) (USBR 2003). Water releases occur year-round with the highest generally occurring during summer months (FWS 2004).

The hydrology of the Gila River reach downstream of Coolidge Dam exhibits a highly altered magnitude, frequency, duration, and rate of change. These changes to the base and flood flow hydrographs have contributed to appreciable alterations in the riparian community within the critical habitat, which consists largely of tamarisk (FWS 2002, USBR 2003). The Arizona Game and Fish Department (AGFD) performed a long-term study (1996-2007) within an area located downstream of Coolidge Dam (Ellis *et al.* 2008). AGFD examined the influence of variation in streamflow on the abundance of flycatcher territories detected in the Gila River study area; all linear regressions showed a positive relationship between Gila River streamflow and the number of southwestern willow flycatcher territories (Ellis *et al.* 2008). The 1996-2007 territory abundance data (Ellis *et al.* 2008; Appendix I) represent the baseline status of southwestern willow flycatchers in the action area, and are incorporated herein via reference. In summary, the number of territories has varied from as low as 10 in 1996, when four sites were surveyed, to as high as 64 in 2007, when 22 sites were surveyed.

While the abundance of southwestern willow flycatcher territories is linked to the artificial hydrograph of Coolidge Dam, we hypothesize that longer-term riparian successional processes may also influence the abundance of territories over time. Regardless, hydrologic variability does account for variation in the numbers of territories and thus, the overall abundance of southwestern willow flycatchers on the Gila River within the action area is similarly variable.

Southwestern willow flycatchers are not specifically surveyed within the Apache-Hayden 4 action area, but have been detected both up- and downstream from the crossing. The closest survey sites are located at GRN004 and GRS003, approximately 3 river miles downstream and at the Dripping Springs Campground and Wash, approximately 3 to 4 river miles upstream (SWCA 2009). Three southwestern willow flycatcher pairs were detected at GRS003 and none at GRN004 (SWCA 2009). Eleven southwestern willow flycatcher pairs were detected at the Dripping Springs

Campground site and 14 at Dripping Springs Wash site (SWCA 2009). The SWCA (2009) report notes that brown-headed cowbird parasitism was not observed at any known nest site and also that middle Gila River southwestern willow flycatcher territories have been increasing, hypothetically in response to predictable river releases from Coolidge Dam.

The proposed conservation measures are anticipated to be effective in reducing the adverse effects of the proposed action. The effects at the Apache-Hayden 1, 2, and 4 sites, including to PCEs, are similar as those described for the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings, above. We also note that the expenditure of SWTC’s \$10,000 by AGFD is likely to occur in the lower San Pedro River in relatively close proximity to the Apache-Hayden 1, 2, and 4 sites and within the same critical habitat management unit.

The Gila River within the Apache-Hayden 4 action area exhibits all of the PCEs of southwestern willow flycatcher critical habitat in at least some locations, including the presence of riparian plant species in a dynamic riverine environment; a specific, suitable structure of this vegetation; and the presence of insect populations for food. The operations of Coolidge Dam, however, do affect the dynamism of the riparian ecosystem by altering the magnitude, frequency, duration, and rate of change of the middle Gila River hydrograph. The primary manifestation of this effect is that the middle Gila River has a relatively high proportion of tamarisk within its riparian community. Regardless, the critical habitat along the Gila River below Coolidge Dam is, and may continue to be utilized extensively for breeding (Ellis *et al.* 2008) and will continue to serve as a migration corridor for additional occupied reaches of the Gila River upstream.

Regardless of the differing status of PCEs at the Apache-Hayden 1, 2, and 4 sites, implementation of the proposed action will nevertheless affect critical habitat. Table 2, below, summarizes the effects to southwestern willow flycatcher critical habitat at the Apache-Hayden 1, 2, and 4 crossings. This represents a minute effect at the Management Unit scale (0.03 percent of the 23,949-acre Middle Gila/San Pedro Management Unit). The limited extent of these impacts to the PCEs of critical habitat render the proposed action unlikely to measurably affect the recovery of the southwestern willow flycatcher within the Middle Gila/San Pedro Management Unit.

Table 2: Summary of effects to southwestern willow flycatcher critical habitat in the 23,949-acre Middle Gila/San Pedro Management Unit

Crossing	Linear feet of transmission line and access road in action area	Acreage of transmission line and access road within action area	Linear feet of transmission line and access road in critical habitat	Acreage of transmission line and access road in critical habitat
Apache-Hayden 1	1,256	2.9	69	0.2
Apache-Hayden 2	1,824	4.2	785	1.8
Apache-Hayden 4	2,673	4.8	1,754	4.5
Unit Totals	5,753	11.9	2608	6.5

Parker-Bagdad Big Sandy River Crossing

Southwestern willow flycatchers are not presently known to breed at the Parker-Bagdad crossing site. The BA includes a personal communication between B. Brattstrom and J. Tress indicating a bird was detected near Signal Road crossing, but breeding was not confirmed. The site is likely used as a stopover site during migration. Direct effects to individual southwestern willow flycatchers are thus unlikely to occur.

Indirect effects and effects to the PCEs of critical habitat are similar to those described in the effects analysis for the crossing sites in the Upper Gila and Middle Gila/San Pedro management units, above.

The Big Sandy River exhibits the PCEs of southwestern willow flycatcher critical habitat in various locations, including the presence of riparian plant species in a dynamic riverine environment; a specific, suitable structure of this vegetation; and the presence of insect populations for food. Implementation of the proposed action at the Parker-Bagdad crossing will affect critical habitat. Table 3, below, summarizes the effects to southwestern willow flycatcher critical habitat at the Apache-Hayden 1, 2, and 4 crossings. This represents a minute effect at the Management Unit scale (0.05 percent of the 4,654-acre Bill Williams Management Unit). The limited extent of these impacts to the PCEs of critical habitat renders the proposed action unlikely to measurably affect the recovery of the southwestern willow flycatcher within the Bill Williams Management Unit.

Crossing	Linear feet of transmission line and access road in action area	Acreage of transmission line and access road within action area	Linear feet of transmission line and access road in critical habitat	Acreage of transmission line and access road in critical habitat
Parker-Bagdad	1,325	2.5	887	2.2
Unit Totals	1,325	2.5	887	2.2

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Within the action area, cumulative effects result from activities on Private, State, and Federal lands. The primary cumulative effects affecting southwestern willow flycatchers and critical habitat in the action area are related to livestock grazing (on State and private lands) and off highway vehicle use within and adjacent to rivers and streams.

Cumulative effects resulting from upland, land-disturbing activities (livestock grazing, road use) will continue to deliver sediment to the action area. Upstream water withdrawals for agricultural, industrial, and residential use will continue to reduce baseflows, and impairments to water quality from past and present mining activities are also anticipated to continue.

Conclusion – Southwestern Willow Flycatcher

After reviewing the current status of the southwestern willow flycatcher, the environmental baseline for the action area, the effects of the proposed clearing and maintenance activities at the affected crossing sites, and the cumulative effects, it is our biological opinion that the action, as proposed, is neither likely to jeopardize the continued existence of the southwestern willow flycatcher, nor likely to destroy or adversely modify critical habitat for the species. We present these conclusions for the following reasons:

- Southwestern willow flycatchers are known to breed within riparian vegetation along the Gila River near the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher crossing sites; the San Pedro River near the Apache-Hayden 1, 2, and 4 crossing sites; and on the Bill Williams River downstream from the Parker Bagdad crossing of the Big Sandy River. Breeding is not, however, known from within the specific patches of riparian vegetation in which ROW maintenance activities will be conducted.
- The proposed action will result in direct effects (vegetation clearing, trimming, and road maintenance) to 12.4 acres (0.07%) of the 17,043 acres of critical habitat in the Upper Gila Management Unit, 6.5 acres (0.03%) of the 23,949 acres of critical habitat in the Middle Gila/San Pedro Management Unit, and 2.2 acres (0.05%) of the 4,654 acres of critical habitat in the Bill Williams Management Unit. The 21.1 acres of combined direct effects represent an impact to 0.02% of the 120,824 acres of critical habitat designated rangewide.
- While vegetative cover (one of the PCEs) varies from 35 to 66 percent within the selected crossings within critical habitat, indirect effects such as habitat fragmentation and increases in edge-interior ratio will occur beyond the directly affected acreage. This effect to the PCEs within individual riparian patches is small in scale at both the critical habitat unit and rangewide scales, and is unlikely to result in the adverse modification or destruction of the critical habitat. We anticipate that there will be no measurable change in the ability of the individual management units and the overall critical habitat to contribute to the recovery of the southwestern willow flycatcher.
- The proposed action is anticipated to reduce the threat of catastrophic wildfire along the upper and middle reaches of the Gila River and the Bill Williams River by reducing the threat of wildfire from unmaintained ROWs.
- Implementation of the conservation measures (see the Description of the Proposed Conservation Measures section, above, and Section 2.4 in the BA) would greatly minimize negative impacts to nesting willow flycatchers, as well as occupied, suitable, and potential habitat, although flycatchers may still experience some minor residual effects from the proposed management activities.
- Restriction of VCC maintenance from September 1 to April 30 will avoid direct effects to (and minimize indirect effects to) flycatcher breeding activities.
- The transfer of funding to the Arizona Game and Fish Department will be applied to riparian restoration activities within the range of the southwestern willow flycatcher. Restoration may be conducted on recently-acquired, unrestored parcels situated within the boundaries of critical habitat on the lower San Pedro River. Restoration at nearby sites appears to have increased the presence of the PCEs of critical habitat.

Status of the Species – Razorback Sucker

The razorback sucker was listed as an endangered species October 23, 1991 (56 FR 54957). The Razorback Sucker Recovery Plan was released in 1998 (U.S. Fish and Wildlife Service 1998). The Recovery Plan was updated with the Razorback Sucker Recovery Goals in 2002 (U.S. Fish and Wildlife Service 2002).

Critical habitat was designated in 15 river reaches in the historical range of the razorback sucker on March 21, 1994 (56 FR 13374). Critical habitat includes portions of the Colorado, Duchesne,

Green, Gunnison, San Juan, White, and Yampa rivers in the Upper Colorado River Basin, and the Colorado, Gila, Salt, and Verde rivers in the Lower Colorado River Basin.

The razorback sucker was once abundant in the Colorado River and its major tributaries throughout the Basin, occupying 3,500 miles of river in the United States and Mexico (U.S. Fish and Wildlife Service 1993). Records from the late 1800's and early 1900's indicated the species was abundant in the lower Colorado and Gila river drainages (Krisch 1889, Gilbert and Scofield 1898, Minckley 1983, Bestgen 1990).

Since 1997, significant new information on recruitment to the wild razorback sucker population in Lake Mead has been developed. Holden *et al.* (2000) determined that some degree of successful recruitment is occurring. This degree of recruitment has not been documented elsewhere in the species' remaining populations.

Adult razorback suckers use most of the available riverine habitats, although there may be an avoidance of whitewater. Main channels used by razorback suckers tend to be low velocity ones such as pools, eddies, nearshore runs, and channels associated with sand or gravel bars (Bestgen 1990). Adjacent to the main channel, backwaters, oxbows, sloughs, and flooded bottomlands are also used by this species. From studies conducted in the upper Colorado River basin, habitat selection by adult razorback suckers changes seasonally. They move into pools and slow eddies from November through April; runs and pools from July through October; runs and backwaters during May; and backwaters, eddies, and flooded gravel pits during June. In early spring, adults move into flooded bottomlands. They use relatively shallow water (approximately 3 feet deep) during spring and deeper water (5 to 6 feet) during winter.

Data from radio-telemetered razorback suckers in the Verde River showed they used shallower depths and slower velocities than in the upper basin. They avoided depths greater than 1.3 feet, but selected depths between 2.0 and 3.9 feet, which likely reflected a reduced availability of deeper waters compared to the larger upper basin rivers. However, use of slower velocities (mean = 0.1 foot/sec) may have been an influence of rearing in hatchery ponds. Similar to the upper basin, razorback suckers were found most often in pools or runs over silt substrates, and avoided substrates of larger material (Clarkson *et al.* 1993).

Habitat needs of larval and juvenile razorback sucker are reasonably well known. In reservoirs, larvae are found in shallow backwater coves or inlets (FWS 1998). In riverine habitats, captures have involved backwaters, creek mouths, and wetlands. These environments provide quiet, warm water where there is a potential for increased food availability. During higher flows, flooded bottomland and tributary mouths may provide these types of habitats.

Razorback sucker diet varies depending on life stage, habitat, and food availability. Larvae feed mostly on phytoplankton and small zooplankton, and in riverine environments, on midge larvae. Diet of adults taken from riverine habitats consisted chiefly of immature mayflies, caddisflies, and midges, along with algae, detritus, and inorganic material (FWS 1998).

The primary constituent elements determined necessary for razorback sucker survival include, but are not limited to:

Water – This includes a quantity of water of sufficient quality (i.e. temperature, dissolved oxygen, lack of contaminants, nutrients, turbidity, etc) that is delivered to a specific location in accordance with a hydrological regime that is required for a particular life stage.

Physical Habitat – This includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use for spawning, nursery, feeding, and rearing, or corridors between these areas. In addition to river channels, these areas also include bottomlands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year flood plain, which when inundated provide spawning, nursery, feeding, and rearing habitats, or access to these habitats.

Biological -- Food supply, predation, and competition are important elements of the biological environment. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to the introduced non-native fish species in many areas.

The appropriate and desirable level of these factors may vary seasonally and is highly influenced by site-specific circumstances. Therefore, assessment of the presence/absence, level, or value of the constituent elements must include consideration of the season of concern and the characteristics of the specific location. The constituent elements are not independent of each other and must be assessed holistically, as a functioning system, rather than individually. In addition, the constituent elements need to be assessed in relation to larger habitat factors, such as watershed, floodplain, and streambank conditions, stream channel geomorphology, riparian vegetation, hydrological patterns, and overall aquatic faunal community structure.

Razorbacks persist on the Colorado River in Lakes Mead, Mohave, and Havasu and in the mainstem between the reservoirs and downstream of Lake Havasu. In the Gila, Salt, and Verde rivers of interior Arizona, stocking activities have created small populations but no recruitment of wild-born young has been observed in these populations. The wild adults in the Mohave population were estimated at 9,087 individuals in 1999 with an additional 3,104 repatriated sub-adults captured on the spawning grounds with the adults (Pacey and Marsh 1999). The Lake Mead population is estimated at 100-200 individuals (Welker and Holden 2003). Population estimates of wild or stocked individuals for other Colorado River sites are not available, but populations are very small.

Spawning by razorback suckers has been documented in Lakes Mead and Mohave. Large recruitment events after Lakes Mead and Mohave filled (in the 1930's and 1950's respectively), created the adult populations found there (summarized in Minckley *et al.* 1991). Recruitment into the Lake Mohave population has not occurred since that time, resulting in the decline from an estimated 60,000 adults in the 1980's to 2,698 in 2002 (Marsh *et al.* 2003) and an estimated 475 fish in 2004 (Marsh 2004). Wild populations in Lake Havasu and the river between Parker and Imperial dams are extremely small, and past stocking activities with marked fish, especially in the Parker Dam to Imperial Dam reach, confuse the identification of fish captured there. Recent declines in wild fish numbers are a result of the old adults that comprise these populations dying of old age. None of the populations are confirmed to be self-sustaining, with recent recruitment of wild-bred young only documented in Lake Mead (Welker and Holden 2003). Captures of small razorback suckers in a canal below Parker Dam may also represent some recruitment occurring in this area. The normal pattern seen for razorback populations in reservoirs is to die out approximately 40-50 years after formation of the reservoir as fish reach the end of their life span.

Environmental Baseline – Razorback Sucker

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Please note that multiple crossing sites within close proximity to one another have been grouped based on the relative probability of razorback sucker's occurrence and on the presence of critical habitat.

Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings

Physical habitat condition within the Gila River is largely undetermined, but Minckley and Sommerfeld (1979) stated that the Gila River through the Gila Box (upstream from the Hackberry-Morenci crossing site) "...is one of the last, low-desert unmodified streams in the American Southwest." The biological component of the habitat has been altered by the loss of co-occurring native fishes, and the addition of predatory and competitive non-native fishes (Minckley *et al.* 1991, Marsh and Brooks 1990), however, the Gila River's natural hydrograph remains unimpaired by large dams (FWS 1993). Flooded bottomland is not a common habitat feature along the Gila or San Francisco rivers or Bonita Creek, but such a condition occurs irregularly in the mainstem Gila River in the Safford Valley, including in the vicinity of the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher crossing sites.

Historically, the razorback sucker was found in the Gila River upstream to the New Mexico border (Bestgen 1990), but was likely extirpated in the mainstem by the late 1970s. Razorback suckers were re-introduced into the Gila River and its tributaries between 1981 and 1989. The BLM reported a large razorback sucker found in Bonita Creek in 1991; however, there is no evidence that introductions have established self-sustaining populations. These transplants were not formally monitored until 2001, when a baseline fisheries inventory was conducted in the Gila Box portion of the Gila River. The inventory found no razorback suckers. No razorback suckers were found during depletion surveys of a plunge pool below the Eagle Creek diversion dam (upstream of the Gila Box) in 1996 (SWCA 1997). Fish surveys have been conducted regularly within the Upper Gila River in Arizona since 1998 (BLM, pers. comm. in WestLand 2009). The Bureau of Land Management (BLM) and Arizona Game and Fish Department (AGFD) inventoried the Gila Box Riparian National Conservation Area (RNCA) in 2001, and the BLM, Safford Field Office monitors the fish community in the Gila Box RNCA and a site near Duncan, Arizona annually (BLM, pers. comm. in WestLand 2009). No razorback suckers were detected during these surveys. Benthic fishes occurring at exceedingly low abundance are difficult to detect (Marsh *et al.* 2003) and thus, we feel that small or very small numbers of released razorback suckers may survive in the Gila River and Bonita and Eagle creeks. Fish may have also moved upstream into the San Francisco River. Given said uncertainty, there is a small, but finite, possibility that razorback suckers may occur in intermittently and in immeasurably small numbers in the Gila River in the project area.

Razorback critical habitat on the Gila River extends from the Arizona-New Mexico border to Coolidge Dam and includes the river and its 100-year floodplain and thus, is present at the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher crossing sites. This reach was identified as needed for delisting. The critical habitat designation and its supporting documentation (Maddux *et al.* 1993) identified the following PCEs and additional selection criteria for the Gila River unit:

- Water: despite significant diversions, the Gila River through the Safford Valley maintains a hydrograph capable of supporting aquatic communities. Flood- and low-flow hydrology and water quality are within the range of tolerance for razorback suckers.
- Physical habitat: Geomorphic features remain suitable for razorback suckers. Pools, runs, and riffles are present and these features, as well as depths and water velocities, vary spatially and temporally. Spawning gravels are present and flooded vegetation and tributary streams serve as backwater areas for rearing.
- Biological environment: Nutrient levels are adequate to support aquatic communities. Periodic floods can reduce the proportions of nonnative fishes.

The razorback sucker Recovery Goals (FWS 2002) describe the criteria, in terms of physical habitat, that need to be met for the species to be delisted. We determined that certain flow regimes were necessary for all life stages of razorback sucker to support recovered populations in the mainstem, floodplain, and tributaries (Factor A1 in the Recovery Plan). Specific flow regime requirements are as follows:

- Adequate spawning habitat and appropriate spawning cues (e.g., flow patterns and water temperatures) are available to maintain self-sustaining populations [Factor A1(a)], as reflected by delisting demographic criteria in section 5.3.2.1.2 of the Recovery Plan.
- Adequate nursery habitat is available to maintain self-sustaining populations [Factor A1(b)], as reflected by delisting demographic criteria in section 5.3.2.1.2 of the Recovery Plan.
- Adequate juvenile and adult habitat (e.g., cover, resting, and feeding areas) is available to maintain self-sustaining populations [Factor A1(c)], as reflected by delisting demographic criteria in section 5.3.2.1.2 of the Recovery Plan.

In terms of minimizing the entrainment of subadult and adult razorback sucker (Factor A2), we also determined that the installation of devices and/or implementation of measures at problematic diversion and/or out-take structures were necessary. The Safford Valley portion of the Gila River contains several diversion structures capable of impeding the movement of and entraining razorback suckers. Lastly, we determined that riverside sites should be acquired in fee or protected by conservation easements (Factor A3).

Prior Consultations- Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings

Within the last 5 years, we have completed six formal consultations within the upper Gila, including (1) rehabilitation of wells in the Gila Box Riparian National Conservation Area (RNCA) (File

number 02-21-05-F-0576); (2) tamarisk and mesquite removal in the Gila Box RNCA (File number 02-21-05-F-0727); (3) the replacement of the Kelvin Bridge (File number 22410-2006-F-0429); (4) your Apache-Hayden 4 crossing (superseded by this BO (File number 22410-2010-F-0258); (5) the San Manuel Interconnect (File number 22410-2009-F-0354); and (6) the Middle Gila Canyons Travel Management Plan (File number 22410-2009-F-0353). Incidental take of razorback suckers was not anticipated in any of these consultations.

Apache-Hayden 1 - Crossing of Teran Wash near the San Pedro River, Apache-Hayden 2 Crossing of Hot Springs Canyon near the San Pedro River, and the Apache-Hayden 4 Gila River Crossing

Razorback sucker were historically present in the San Pedro River (Minckley 1973, 1999) and throughout much of the Gila River, including the middle reaches between Coolidge Dam and the Ashurst-Hayden Diversion Dam and the upper reaches, which include the portion flooded by San Carlos Reservoir upstream into New Mexico. Recent fish surveys targeting spinedace (*Meda fulgida*) have failed to detect razorback suckers in the San Pedro River (BLM 2009). Though surveys for spinedace do not effectively sample waters occupied by larger fish such as razorback suckers, the latter species is likely to have been extirpated from the San Pedro River and the middle portions of the Gila River below Coolidge Dam (Desert Fishes Team 2003).

No razorback sucker critical habitat has been designated on the San Pedro River or on the middle Gila River between Coolidge Dam and the Ashurst-Hayden Diversion Dam.

Parker-Bagdad Big Sandy River Crossing

Razorback sucker were present in the lower reaches of the Colorado River into the early twentieth century but have been extirpated (Mueller and Marsh 2002) from the mainstem, free-flowing portions of the river. In the local area, the species persists only as reproducing populations in Lake Mead and a regulated, experimental population in the High Levee Pond on the Cibola National Wildlife Refuge. Razorback sucker likely occurred historically in the lower reaches of the Bill Williams River, but the completion of Alamo Dam at the Big Sandy and Santa Maria river confluence in 1968 has eliminated any possibility of the species reaching the Parker-Bagdad crossing. Razorback sucker critical habitat is not present at the site.

Effects of the Proposed Action – Razorback Sucker

Please note that the effects of the proposed action to razorback suckers are presented based on combinations of sites, rather than on a site-by-site basis. Sites were combined based on their relative probability of razorback sucker occurrence and the presence of critical habitat. A summary of the proposed action's total effects appear in the section entitled Conclusion – Razorback sucker, below.

Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher Gila River Crossings

The proposed action will, at a small scale, destabilize stream banks, reduce cover and nutrient input, increase water temperatures, and remove or deplete the filtering capacity of the riparian zone for

sediment and pollutants. These effects are unlikely to affect individual razorback suckers due to their extreme rarity. The physical and biological attributes of critical habitat, however, will be affected.

The Gila River within the action area is critical habitat for the species, and is geomorphically active, with near-perennial flow existing in a limited low-flow channel flanked by both vegetated and open cobble bars subject to scour and deposition during overbank flows. The depth to the alluvial water table varies spatially and temporally but is sufficient to support xero- and mesoriparian plants. The relatively wide floodplains at these sites thus, at times, contain the PCEs of razorback sucker critical habitat. Despite the availability of floodplain and backwater habitat, razorback suckers are likely rare in the upper Gila and subject to Allee Effects (low reproduction associated with low species abundance), rendering the use of overbank areas for reproduction and rearing unlikely.

The proposed action would degrade or eliminate 0.06 mile of razorback sucker critical habitat at three sites (0.18 mile total) along the upper Gila River. The effects to razorback sucker critical habitat will occur primarily in vegetated areas prone to being inundated by overbank flood events. These effects will reduce the amount of critical habitat available for refuge during floods and for the rearing of juvenile fish. This small loss of rearing habitat is inconsequential given the amount of such habitat remaining intact in the upper Gila River and the ongoing successional processes which cause it to continually form and degrade. The proposed action will not affect PCEs pertaining to the overall geomorphic character of the Gila River (i.e. proportion of pools, riffles and runs; water quantity and quality; and the presence of nonnative fishes). The proposed action will therefore not appreciably reduce the conservation value of critical habitat on the upper Gila River and thus, critical habitat will not be adversely modified or destroyed.

Apache-Hayden 1 - Crossing of Teran Wash near the San Pedro River and Apache-Hayden 2 Crossing of Hot Springs Canyon near the San Pedro River, and the Apache-Hayden 4 Gila River Crossing

Razorback suckers are not currently known to occur in the San Pedro River or the middle Gila River between Coolidge Dam and the Ashurst Hayden Diversion Dam, and no critical habitat has been designated in these river reaches.

Parker-Bagdad Big Sandy River Crossing

Razorback suckers are not currently known to occur in the Big Sandy River, nor has critical habitat been designated there.

Cumulative Effects

Within the action area, cumulative effects result from activities on Private, State, and Federal lands. The primary cumulative effects affecting razorback suckers and critical habitat in the action area are related to livestock grazing (on State and private lands) and off highway vehicle use within and adjacent to rivers and streams.

Cumulative effects resulting from upland, land-disturbing activities (livestock grazing, road use) will continue to deliver sediment to the action area. Upstream water withdrawals for agricultural, industrial, and residential use will continue to reduce baseflows, and impairments to water quality from past and present mining activities are also anticipated to continue.

Conclusion – Razorback Sucker

After reviewing the current status of the razorback sucker, the environmental baseline for the action area, the effects of the proposed clearing and maintenance activities at the affected crossing sites, and the cumulative effects, it is our biological opinion that the action, as proposed, is neither likely to jeopardize the continued existence of the razorback sucker, nor likely to destroy or adversely modify critical habitat for the species. We present these conclusions for the following reasons:

- Razorback suckers may be present at the upper Gila River near the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher crossing sites, but if so, they would exist in immeasurably small numbers. Direct effects to individuals of the species from implementation of the proposed action are thus unlikely. Razorback suckers are likely to have been extirpated from the middle Gila and San Pedro Rivers in the vicinity of the Apache-Hayden 1, 2, and 4 sites, and are not presently known to occur in the Big Sandy River at the Parker-Bagdad crossing site.
- The proposed actions effects to the cover-related PCEs of razorback sucker critical habitat at the Hackberry-Morenci, Dos Condados-Hackberry, and Hackberry-Thatcher crossing sites will be small in magnitude (estimated at 0.06 mile for three-100-foot wide crossings; 0.18 mile in total) compared to the availability of PCEs and acreage of critical habitat in Arizona (517 river miles, with an additional 133 river miles of the Colorado River adjoining California) and rangewide (1,724 river miles). We note that the reduced risk of catastrophic wildfires may help minimize future losses of cover-related PCEs. The PCEs related to the quantity and quality of water will be largely unaffected.
- The minute effects to razorback sucker critical do not rise to the level where recovery of the species would be affected in the upper Gila River. Moreover, the proposed action will not affect PCEs related to the upper Gila River's quantity or quality of water or the presence of competitive and/or predatory, nonnative fish.
- No razorback sucker critical habitat has been designated on the San Pedro, Middle Gila, or Big Sandy Rivers; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the

purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Amount or Extent of Take – Southwestern Willow Flycatcher

As demonstrated in the Environmental Baseline and Effects of the Proposed Action sections, above, southwestern willow flycatchers are unlikely to be directly or indirectly affected by implementation of the proposed action. We, therefore, do not anticipate that implementation of the proposed action will result in the incidental take of any individuals of the species.

Amount or Extent of Take – Razorback Sucker

As demonstrated in the Environmental Baseline and Effects of the Proposed Action sections, above, razorback suckers are unlikely to be directly or indirectly affected by implementation of the proposed action. We, therefore, do not anticipate that implementation of the proposed action will result in the incidental take of any individuals of the species.

Reporting Requirements/Disposition of Dead or Injured Listed Animals

Upon finding a dead or injured threatened or endangered animal, initial notification must be made to the FWS's Division of Law Enforcement, 2450 West Broadway, Mesa, Arizona (480-967-7900) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of listed animal species shall be submitted as soon as possible to the nearest FWS or Arizona Game and Fish Department office, educational, or research institutions (e.g., University of Arizona in Tucson) holding appropriate state and Federal permits.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution before implementation of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any treated listed animal survive, the FWS should be contacted regarding the final disposition of the animal.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Rural Utilities Service and its designated, non-Federal representative, SWTC, continue to implement the southwestern willow flycatcher recovery plan.

2. We recommend that the Rural Utilities Service and its designated, non-Federal representative, SWTC, continue to implement the razorback sucker recovery plan.

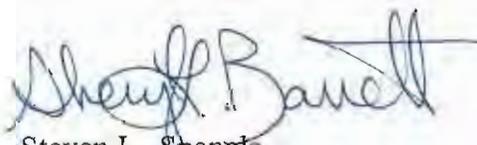
For us to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitat, we request notification of the implementation of any conservation recommendations.

REINITIATION AND CLOSING STATEMENT

This concludes formal consultation on the Rural Utilities Service's proposed implementation of maintenance at seven transmission line river crossings in Arizona. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may adversely affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by this action.

We appreciate the Rural Utilities Service's efforts to identify and minimize effects to listed species from this project. For further information please contact Jason Douglas (520) 670-6150 (x226) or Sherry Barrett (520) 670-6150 (x223). Please refer to the consultation number, 22410-2009-F-0510 in future correspondence concerning this project.

Sincerely,


for Steven L. Spangle
Field Supervisor

cc (hard copy):

- Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona (2)
- Assistant Field Supervisor, Fish and Wildlife Service, Tucson, Arizona
- Assistant Field Supervisor, Fish and Wildlife Service, Tucson, Arizona
(Attn: Jason Douglas)
- Assistant Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona
(Attn: Greg Beatty, Lesley Fitzpatrick)
- Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, Arizona
(Attn: Brian Wooldridge)

cc (electronic copy):

- Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, Arizona
- Regional Supervisor, Arizona Game and Fish Department, Tucson, Arizona
- Kevin Barnes, Southwest Transmission Cooperative, Inc., Benson, Arizona

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