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In Reply Refer To:  
AESO/SE  
22410-2006-F-0429

June 27, 2006

Mr. Robert E. Hollis  
Administrator, Arizona Division  
Federal Highway Administration  
400 East Van Buren Street  
One Arizona Center Suite 410  
Phoenix, Arizona 85004-2264

File Number: HA-AZ: BR-PPN-0(169)

Dear Mr. Hollis:

Thank you for your letter of May 23, 2006, received in person on the same date, requesting formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Your request amends your October 3, 2005, request for informal consultation and concerns the effects of your proposed construction of the Florence-Kelvin Bridge over the Gila River in Pinal County, Arizona. You have determined that the project may affect, and is likely to adversely affect the endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher). You have also requested concurrence that the proposed action may affect, but is not likely to adversely affect the threatened bald eagle (*Haliaeetus leucocephalus*), and endangered cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*; pygmy-owl).

This is a biological opinion on the proposed action's effects to the flycatcher and the species' critical habitat. We concur that the proposed action may affect, but is not likely to adversely affect, the bald eagle. Our concurrence for this species is contained in Appendix A. The pygmy-owl was removed from the endangered species list by a final rule effective May 15, 2006, and thus, requires neither analysis of effects nor concurrence herein. We have noted your determination that the proposed action will have no effect to the threatened spikedace (*Meda fulgida*) or the threatened loach minnow (*Tiaroga cobitis*) or their critical habitat. We recommend that you include the biological rationale for this determination in your administrative record.

This biological opinion is based on information contained in: (1) SWCA Environmental Consultants' (SWCA) November 2004 *Biological Evaluation for the Kelvin Bridge Replacement Project, Pinal County, Arizona* (BE) prepared on behalf of the Pinal County Public Works Department (Pinal County) for the Arizona Department of Transportation (ADOT); (2) the Arizona Game and Fish Department's (AGFD) *Southwestern Willow Flycatcher 2005 Survey and Nest Monitoring Report* (English *et al.* 2006); (3) our August 2002 *Southwestern Willow Flycatcher Recovery Plan* (flycatcher Recovery Plan); and (4) other published and unpublished sources of information. We have assigned file number 22410-2006-F-0429 to this consultation.. Please make reference to this number in any future correspondence on the project. A complete administrative record is on file at the Arizona Ecological Services Office (AESO).

## BIOLOGICAL OPINION

### Consultation History

- January 31, 2005: SWCA requested a Kelvin Bride site-specific deviation in the flycatcher survey protocol from the U.S. Fish and Wildlife Service (FWS). On February 22, 2005, after an exchange of electronic mail messages on the subject, we did not grant the requested deviation.
- October 4, 2005: We received an October 3, 2005, letter from ADOT requesting our concurrence with the determination that the propose action may affect, but is not likely to adversely affect the southwestern willow flycatcher, bald eagle, and cactus ferruginous pygmy-owl.
- December 2005: My staff and ADOT spoke via telephone regarding the anticipated January 2006 review completion time for your October 3, 2005, request. A second conversation occurred on January 9, 2006.
- March 16, 2006: My staff and ADOT spoke regarding the potential need to consult formally on the proposed action's effects to flycatcher critical habitat. A follow-up electronic mail message from my staff to ADOT discussed the project site's proposed critical habitat for the threatened spinedace (*Meda fulgida*) and loach minnow (*Tiaroga cobitis*). This concern did not warrant formal consultation.
- May 23, 2006: My staff met with you, ADOT, Pinal County, SWCA, and the project's consulting engineers to discuss the proposed action, including the need for formal consultation. At this meeting, Steve Thomas of your staff provided a request for formal consultation.
- May 30, 2006: Electronic mail messages were exchanged between SWCA and AGFD staff regarding the need to ensure clearing and grubbing at the project site does not occur during the flycatcher breeding season.
- June 13, 2006: A draft biological opinion on the propose action was transmitted to you.

June 20, 2006: Mr. Thomas and Jason Douglas, of my staff, spoke via telephone regarding the June 13, 2006, draft biological opinion. Mr. Thomas, speaking on behalf of your agency and Melissa Maiefski of ADOT, indicated that there were no concerns with the draft biological opinion and requested that we issue a final biological opinion.

### **Description of the Proposed Action**

The project area is located in the vicinity of the existing Florence–Kelvin Highway over the Gila River, just south of the Town of Kelvin, in Pinal County, Arizona. The Highway is a minor collector that serves traffic traveling between Florence and the towns of Kelvin, Kearny, and Riverside. It is located in the northwestern quarter of Section 12, Township 4 South, Range 13 East, Kearny USGS 7.5' Quadrangle (See Figures 1 and 2). Land ownership of this parcel includes Pinal County, Bureau of Land Management (BLM), and private landowners

A new bridge will be constructed in the area shown in Figure 1 of the BE. The new bridge will be constructed within the project footprint immediately upstream, i.e., east, of the existing Florence-Kelvin Bridge. The Florence-Kelvin Highway will be re-aligned within the project area, and the existing bridge will be left in place but will no longer be a part of the Florence-Kelvin Highway. The old span, however, will be available for pedestrian use, and if funding becomes available, it may be used in the future as part of the Arizona Trail system. The new bridge is being designed in such a way that it will span the portion of the Gila River that contains flowing water and wetlands. The proposed length of the new construction will be approximately 2,100 feet with 660 feet of that length as the new Florence-Kelvin Bridge. Milepost markers are not located on this portion of the Florence-Kelvin Highway. The project will commence approximately 800 feet south of the existing southern bridge abutment and terminate approximately 700 feet north of the existing northern bridge abutment. The construction of this project consists of realigning the old highway into one 12-foot lane and a 6-foot shoulder in each direction per ADOT design standards. Current design plans for this project do not include piers in the water or access through the water for construction, i.e., the project will avoid jurisdictional waters; therefore, the current design will not require a U.S. Army Corps of Engineers 404 Permit. Construction is slated to take at least one year, and is expected to begin in August or September 2006. The initial area surveyed for this project and evaluated for this report is approximately 8 acres. Figure 3 in the BE depicts the impacts that this proposed project will have within the 8-acre project area. Approximately 0.3 acre of permanent disturbance plus 0.9 additional acre of temporary disturbance are expected to occur. The permanent impacts will include a new permanent access road for residents, pillar footings, and one bridge support. The temporary impacts will include a temporary traffic route, fill areas, and temporary work space.

### **Description of the Proposed Conservation Measures**

The bridge will span the Gila River and the River itself will not be altered, plus in those areas of temporary impacts, the vegetation will grow back. Additionally, some of these to-be affected areas will overlap existing disturbed areas (e.g., an old road alignment that is currently fairly clear of vegetation is being used for the temporary traffic route, and one of the temporary work space areas is along the road and currently is devoid of vegetation). Heavy equipment will not be used in the Gila River channel itself.

The majority of the vegetation to be removed near the River for this project will be tamarisk, but may also include a few cottonwoods, willows, mesquite, grasses, and annuals (a total of 1.2 acre will be removed and 0.9 acre will be replaced or will grow back on its own). Because more than one acre of land will be disturbed, a 402 permit will be obtained from the Arizona Department of Environmental Quality (ADEQ). ADEQ also requires that a Storm Water Pollution Prevention Plan (SWPPP) will be prepared.

## **Status of the Species**

### Description

The southwestern willow flycatcher is a small grayish-green tyrant flycatcher and is one of four currently recognized willow flycatcher subspecies (Phillips 1948, Unitt 1987, Browning 1993). It is a neotropical migrant that breeds in the southwestern U.S. and migrates to Mexico, Central America, and possibly northern South America during the non-breeding season (Phillips 1948, Stiles and Skutch 1989, Peterson 1990, Ridgely and Tudor 1994, Howell and Webb 1995). The historical breeding range of the southwestern willow flycatcher included southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Utah, extreme southern Nevada, and extreme northwestern Mexico (Sonora and Baja) (Unitt 1987).

### Listing and critical habitat

The southwestern willow flycatcher was listed as endangered, without critical habitat on February 27, 1995 (FWS 1995). Critical habitat was later designated on July 22, 1997 (FWS 1997a). A correction notice was published in the Federal Register on August 20, 1997 to clarify the lateral extent of the designation (FWS 1997b).

On May 11, 2001, the 10<sup>th</sup> circuit court of appeals set aside designated critical habitat in those states under the 10<sup>th</sup> circuit's jurisdiction (New Mexico). The FWS decided to set aside critical habitat designated for the southwestern willow flycatcher in all other states (California and Arizona) until it could re-assess the economic analysis.

On October 19, 2005, the FWS re-designated critical habitat for the southwestern willow flycatcher (FWS 2005). A total of 737 river miles across southern California, Arizona, New Mexico, southern Nevada, and southern Utah were included in the final designation. The lateral extent of critical habitat includes areas within the 100-year floodplain. The primary constituent elements of critical habitat include riparian plant species in a successional riverine environment (for nesting, foraging, migration, dispersal, and shelter), specific structure of this vegetation, and insect populations for food. A variety of river features such as broad floodplains, water, saturated soil, hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these constituent elements (FWS 2005).

A final recovery plan for the southwestern willow flycatcher was signed by the FWS's Region 2 Director on August 30, 2002, and was released to the public in 2002 (FWS 2002). The Plan describes the reasons for endangerment, current status of the flycatcher, addresses important recovery actions, includes detailed issue papers on management issues, and provides recovery goals. Recovery is based on reaching numerical and habitat related goals for each specific

Management Unit established throughout the subspecies range and establishing long-term conservation plans (FWS 2002).

### Reasons for endangerment

Reasons for decline have been attributed primarily to loss, modification, and fragmentation of riparian breeding habitat, along with a host of other factors including loss of wintering habitat and brood parasitism by the brown-headed cowbird (*Molothrus ater*) (Sogge *et al.* 1997, McCarthy *et al.* 1998). Habitat loss and degradation are caused by a variety of factors, including urban, recreational, and agricultural development, water diversion and groundwater pumping, channelization, dams, and livestock grazing. Fire is an increasing threat to willow flycatcher habitat (Paxton *et al.* 1996), especially in monotypic saltcedar vegetation (DeLoach 1991) and where water diversions and/or groundwater pumping desiccates riparian vegetation (Sogge *et al.* 1997). Willow flycatcher nests are parasitized by brown-headed cowbirds, which lay their eggs in the host's nest. Feeding sites for cowbirds are enhanced by the presence of livestock and range improvements such as waters and corrals; agriculture; urban areas; golf courses; bird feeders; and trash areas. When these feeding areas are in close proximity to flycatcher breeding habitat, especially coupled with habitat fragmentation, cowbird parasitism of flycatcher nests may increase (Hanna 1928, Mayfield 1977a,b, Tibbitts *et al.* 1994).

### Habitat

The southwestern willow flycatcher breeds in dense riparian habitats from sea level in California to approximately 8500 feet in Arizona and southwestern Colorado. Historical egg/nest collections and species' descriptions throughout its range, describe the southwestern willow flycatcher's widespread use of willow (*Salix* spp.) for nesting (Phillips 1948, Phillips *et al.* 1964, Hubbard 1987, Unitt 1987, San Diego Natural History Museum 1995). Currently, southwestern willow flycatchers primarily use Geyer willow (*Salix geyeriana*), Coyote willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), boxelder (*Acer negundo*), saltcedar (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolius*), and live oak (*Quercus agrifolia*) for nesting. Other plant species less commonly used for nesting include: buttonbush (*Cephalanthus* sp.), black twinberry (*Lonicera involucrata*), cottonwood (*Populus* spp.), white alder (*Alnus rhombifolia*), blackberry (*Rubus ursinus*), and stinging nettle (*Urtica* spp.). Based on the diversity of plant species composition and complexity of habitat structure, four basic habitat types can be described for the southwestern willow flycatcher: monotypic willow, monotypic exotic, native broadleaf dominated, and mixed native/exotic (Sogge *et al.* 1997).

Tamarisk is an important component of the flycatchers's nesting and foraging habitat in Arizona and other parts of the bird's range. In 2001 in Arizona, 323 of the 404 (80 percent) known flycatcher nests (in 346 territories) were built in a tamarisk tree (Smith *et al.* 2002). Tamarisk had been believed by some to be a habitat type of lesser quality for the southwestern willow flycatcher, however comparisons of reproductive performance (FWS 2002), prey populations (Durst 2004) and physiological conditions (Owen and Sogge 2002) of flycatchers breeding in native and exotic vegetation has revealed no difference.

Open water, cienegas, marshy seeps, or saturated soil are typically in the vicinity of flycatcher territories and nests; flycatchers sometimes nest in areas where nesting substrates were in standing water (Maynard 1995, Sferra *et al.* 1995, 1997). However, hydrological conditions at a particular site can vary remarkably in the arid Southwest within a season and among years. At some locations, particularly during drier years, water or saturated soil is only present early in the breeding season (i.e., May and part of June). However, the total absence of water or visibly saturated soil has been documented at several sites where the river channel has been modified (e.g. creation of pilot channels), where modification of subsurface flows has occurred (e.g. agricultural runoff), or as a result of changes in river channel configuration after flood events (Spencer *et al.* 1996).

The flycatcher's habitat is dynamic and can change rapidly: nesting habitat can grow out of suitability; saltcedar habitat can develop from seeds to suitability in five years; heavy runoff can remove/reduce habitat suitability in a day; or river channels, floodplain width, location, and vegetation density may change over time. The flycatcher's use of habitat in different successional stages may also be dynamic. For example, over-mature or young habitat not suitable for nest placement can be occupied and used for foraging and shelter by migrating, breeding, dispersing, or non-territorial southwestern willow flycatchers (McLeod *et al.* 2005, Cardinal and Paxton 2005). That same habitat may subsequently grow or cycle into habitat used for nest placement. Because of those changes, flycatcher "nesting habitat" is often described as occupied, suitable, or potential (FWS 2002). Areas other than locations where nests are located (foraging, sheltering, territory defense, singing, etc.) can also be "occupied flycatcher habitat," and as a result, essential to the survival and recovery of the flycatcher (FWS 2002). The development of flycatcher habitat is a dynamic process involving maintenance, recycling, and regeneration of habitat. Flycatcher habitat can quickly change and vary in suitability, location, use, and occupancy over time (Finch and Stoleson 2000).

### Breeding Biology

Throughout its range the southwestern willow flycatcher arrives on breeding grounds in late April and May (Sogge and Tibbitts 1992, Sogge *et al.* 1993, Sogge and Tibbitts 1994, Muiznieks *et al.* 1994, Maynard 1995, Sferra *et al.* 1995, 1997). Nesting begins in late May and early June, and young fledge from late June through mid-August (Willard 1912, Ligon 1961, Brown 1988a,b, Whitfield 1990, Sogge and Tibbitts 1992, Sogge *et al.* 1993, Muiznieks *et al.* 1994, Whitfield 1994, Maynard 1995). Southwestern willow flycatchers typically lay three to four eggs per clutch (range = 1 to 5). Eggs are laid at one-day intervals and are incubated by the female for approximately 12 days (Bent 1960, Walkinshaw 1966, McCabe 1991). Young fledge approximately 12 to 13 days after hatching (King 1955, Harrison 1979). Typically one brood is raised per year, but birds have been documented raising two broods during one season and renesting after a failure (Whitfield 1990, Sogge and Tibbitts 1992, Sogge *et al.* 1993, Sogge and Tibbitts 1994, Muiznieks *et al.* 1994, Whitfield 1994, Whitfield and Strong 1995). The entire breeding cycle, from egg laying to fledging, is approximately 28 days.

Southwestern willow flycatcher nests are fairly small (3.2 inches tall and 3.2 inches wide) and their placement in a shrub or tree is highly variable (1.6 to 60 feet off the ground). Nests are open cup structures, and are typically placed in the fork of a branch. Nests have been found against the trunk of a shrub or tree (in monotypic saltcedar and mixed native broadleaf/saltcedar

habitats) and on limbs as far away from the trunk as 10.8 feet (Spencer *et al.* 1996). Typical nest placement is in the fork of small-diameter (e.g., 0.4 in), vertical or nearly vertical branches (FWS 2002). Occasionally, nests are placed in down-curving branches. Nest height varies considerably, from 1.6 to 60 feet, and may be related to height of the nest plant, overall canopy height, and/or the height of the vegetation strata that contain small twigs and live growth (FWS 2002). Most typically, nests are relatively low, 6.5 to 23 feet above ground (FWS 2002). Nests built in habitat dominated by box elders are placed highest in the tree (to almost 60 feet) (FWS 2002).

The southwestern willow flycatcher is an insectivore, foraging in dense shrub and tree vegetation along rivers, streams, and other wetlands. The bird typically perches on a branch and makes short direct flights, or sallies to capture flying insects. Drost *et al.* (1998) found that the major prey items of the southwestern willow flycatcher (in Arizona and Colorado), consisted of true flies (Diptera); ants, bees, and wasps (Hymenoptera); and true bugs (Hemiptera). Other insect prey taxa included leafhoppers (Homoptera: Cicadellidae); dragonflies and damselflies (Odonata); and caterpillars (Lepidoptera larvae). Non-insect prey included spiders (Araneae), sowbugs (Isopoda), and fragments of plant material.

### Territory and Home Range Size

Southwestern willow flycatcher territory size likely fluctuates with population density, habitat quality, and nesting stage. Estimated territory sizes are 0.59 to 3.21 acres for monogamous males and 2.72 to 5.68 acres for polygynous males at the Kern River (Whitfield and Enos 1996), 0.15 to 0.49 acres for birds in a 1.48 to 2.22 acre patch on the Colorado River (Sogge 1995b), and 0.49 to 1.24 acres in a 3.71 acre patch on the Verde River (Sogge 1995a). Territories are established within a larger patch of appropriate habitat sufficient to contain several nesting pairs of flycatchers.

### Movements

The site and patch fidelity, dispersal, and movement behavior of adult, nestling, breeding, non-breeding, and migratory southwestern willow flycatchers are just beginning to be understood (Kenwood and Paxton 2001, Koronkiewicz and Sogge 2001). From 1997 through 2000, 66 to 78 percent of flycatchers known to have survived from one breeding season to the next returned to the same breeding site; conversely, 22 to 34 percent of returning birds moved to different sites (Luff *et al.* 2000). A large percentage (75%) of known surviving 2000 adults returned in 2001 to their same breeding site (Kenwood and Paxton 2001). Just considering Roosevelt Lake in its entirety, all but three surviving birds (n=28) banded at Roosevelt Lake returned to Roosevelt Lake (Kenwood and Paxton 2001). Although most southwestern willow flycatchers return to former breeding sites, flycatchers can regularly move among sites within and between years (Kenwood and Paxton 2001). Within-drainage movements are more common than between-drainage movements (Kenwood and Paxton 2001). Year-to-year movements of birds have been detected between the San Pedro/Gila river confluence and Roosevelt Lake, the Verde River near Camp Verde and Roosevelt Lake, and the Little Colorado River near Greer and Roosevelt Lake (Kenwood and Paxton 2001). Typical distances moved range from 1.2 to 18 miles. However, long-distance movements of up to 137 miles have been observed on the lower Colorado River and Virgin River (McKernan and Braden 2001). Breeding groups of southwestern willow flycatchers act as a meta-population (Busch *et al.* 2000).

### Rangewide distribution and abundance

Unitt (1987) documented the loss of more than 70 southwestern willow flycatcher breeding locations rangewide (peripheral and core drainages within its range) estimating the rangewide population at 500 to 1000 pairs. Since 1993, a total of 122 sites once known to have breeding flycatchers, are no longer occupied by nesting birds. There are currently 265 known southwestern willow flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites from 1993 to 2004 where a resident flycatcher has been detected) holding an estimated 1256 territories (Durst *et al.* 2005). It is difficult to arrive at a grand total of flycatcher territories since not all sites are surveyed annually to determine the actual abundance of birds. Also, sampling errors may bias population estimates positively or negatively (e.g., incomplete survey effort, double-counting males/females, composite tabulation methodology, natural population fluctuation, and random events) and it is likely that the total breeding population of southwestern willow flycatchers fluctuates. Numbers have increased since the bird was listed, and some habitat remains unsurveyed; however, after nearly a decade of intense surveys, the existing numbers are just past the upper end of Unitt's 1987 estimate. About 40 percent of the 1256 territories are currently estimated throughout the subspecies range are located at three locations (Cliff/Gila Valley - NM, Roosevelt Lake - AZ, San Pedro/Gila confluence - AZ). A table displaying the flycatcher's rangewide population status is included in this consultation's administrative record.

### Arizona distribution and abundance

Unitt (1987) concluded that "...probably the steepest decline in the population level of *E.t. extimus* has occurred in Arizona..." Historic records for Arizona indicate the former range of the southwestern willow flycatcher included portions of all major river systems (Colorado, Salt, Verde, Gila, Santa Cruz, and San Pedro) and major tributaries, such as the Little Colorado River and headwaters, and White River.

In 2004, 522 territories were known from 40 sites along 12 drainages in Arizona (Munzer *et al.* 2005). The lowest elevation where territorial pairs were detected was 98 feet along the Lower Colorado River; the highest elevation was in eastern Arizona in the White Mountains (8329 feet).

As reported by Munzer *et al.* (2005), the largest concentrations of breeding willow flycatchers in Arizona in 2004 were at the Salt River and Tonto Creek inflows to Roosevelt Lake (374 flycatchers, 209 territories); near the San Pedro/Gila river confluence (352 flycatchers, 186 territories); Gila River, Safford area (6 flycatchers, 3 territories); Alamo Lake on the Bill Williams River (includes lower Santa Maria and Big Sandy river sites) (51 flycatchers, 31 territories); Topock Marsh on the Lower Colorado River (57 flycatchers, 34 territories); Big Sandy River, Wikieup (54 flycatchers, 28 territories); Horseshoe Lake, Verde River (28 flycatchers, 19 territories), and Alpine/Greer on the San Francisco River/Little Colorado River (7 flycatchers, 4 territories). Combined, Roosevelt Lake and the San Pedro/Gila confluence make up 395 (76%) of the 522 territories known in the state.

## Fire

The evidence suggests that fire was not a primary disturbance factor in southwestern riparian areas near larger streams (FWS 2002). Yet, in recent time, fire size and frequency has increased on the lower Colorado, Gila, Bill Williams, and Rio Grande rivers. The increase has been attributed to increasing dry, fine fuels and ignition sources. The spread of the highly flammable plant, tamarisk, and drying of river areas due to river flow regulation, water diversion, lowering of groundwater tables, and other land practices is largely responsible for these fuels. A catastrophic fire in June of 1996, destroyed approximately a half mile of occupied tamarisk flycatcher habitat on the San Pedro River in Pinal County. That fire resulted in the forced dispersal or loss of up to eight pairs of flycatchers (Paxton *et al.* 1996). Smaller fires have occurred along the upper most portion of the San Pedro River closer to the Mexico Border and another large fire occurred on the lower San Pedro River at the Nature Conservancy's San Pedro Preserve between Winkelman and Dudleyville in 2004. Recreationists cause over 95 percent of the fires on the lower Colorado River (FWS 2002). In California, Brothers (1984) attributed increased fire along the Owens River to more use of the riparian zones by campers and fishermen in the past 30 years.

## Mortality and Survivorship

There are no extensive records for the actual causes of adult southwestern willow flycatcher mortality. Incidents associated with nest failures, human disturbance, and nestlings are typically the most often recorded due to the static location of nestlings, eggs, and nests. As a result, nestling predation and brood parasitism are the most commonly recorded causes of southwestern willow flycatcher mortality. Also, human destruction of nesting habitat through bulldozing, groundwater pumping, and aerial defoliants has been recorded in Arizona (T. McCarthey, AGFD, pers. comm.). Human collision with nests and spilling the eggs or young onto the ground have been documented near high use recreational areas (FWS 2002). A southwestern willow flycatcher from the Greer Town site along the Little Colorado River in eastern Arizona, was found dead after being hit by a vehicle along SR 373. This route is adjacent to the breeding site (T. McCarthey, AGFD, pers. comm.).

Band returns associated with the long-term banding and re-sighting effort occurring in central Arizona at Roosevelt Lake, determined for this location, the average return rate and survivorship of adult and nestling flycatchers. The average adult return rate from 1998 to 2004 was 60 percent with survivorship estimated at 65 percent (Newell *et al.* 2005). From 1998 to 2004, the average nestling return rate was 28 percent and survivorship estimated at 35 percent (Newell *et al.* 2005).

## Past Consultations

Since listing in 1995 to 2005, at least 146 Federal agency actions have undergone (or are currently under) formal section 7 consultation throughout the flycatcher's range. A complete list of these consultations is included in this biological opinion's administrative record. Since critical habitat was finalized in October 2005, one formal opinion has been issued for southwestern willow flycatcher critical habitat in Arizona. While many opinions were issued for the previous critical habitat designation, the stream reaches and constituent elements have changed. Many activities continue to adversely affect the distribution and extent of all stages of flycatcher habitat

throughout its range (development, urbanization, grazing, recreation, native and non-native habitat removal, dam operations, river crossings, ground and surface water extraction, etc.). Stochastic events also continue to change the distribution, quality, and extent of flycatcher habitat.

Anticipated, actual, and/or temporary loss of flycatcher habitat due to Federal or federally permitted projects (i.e. modification of Roosevelt Dam, operation of Lower Colorado River dams, etc.) has resulted in biological opinions and Habitat Conservation Plans that led to acquisition, development, and protection of property specifically for the southwestern willow flycatcher to remove jeopardy, and mitigate, reduce and/or minimize take or adverse affects. A small portion of the lower San Pedro River was acquired by the Bureau of Reclamation as a result of raising Roosevelt Dam and is now currently under the management of The Nature Conservancy. Commitments to acquire and manage unprotected habitat specifically for breeding flycatchers have been made for loss of flycatcher habitat along the Lower Colorado River (Operations of Colorado River dams and 4.4 Plan/Change in Points of Diversion, Lower Colorado River MSCP), Tonto Creek and Salt River (raising of Roosevelt Dam, operation of Roosevelt Dam) in AZ, and Lake Isabella, CA (operation of dams). The Roosevelt Lake HCP completed by Salt River Project (SRP) has resulted in acquisition of over 1,000 acres along the Verde River, San Pedro River, and Gila River. The Army Corps of Engineers has acquired approximately 1,000 acres along the South Fork Kern River as a result of operations of Isabella Dam. Various Regional HCPs have been developed in southern California that have protected southwestern willow flycatcher habitat (San Diego MSCP, Western Riverside County HCP, Carlsbad HMP).

### Summary

Historically, the southwestern willow flycatcher declined in extent of range occupied and population size as a result of habitat loss, modification, and fragmentation. Known numbers of flycatcher territories have increased to over 1,200 pairs throughout its range since the bird was listed in 1995, surpassing the high end of the 1,000 pairs estimated by Unitt (1987). About 40 percent of all the known breeding pairs are found at three locations throughout the subspecies range (Cliff/Gila Valley - New Mexico, Roosevelt Lake and Gila/San Pedro river confluence, Arizona). Water diversions, agriculture return flows, groundwater pumping, habitat clearing, flood control projects, development, livestock grazing, dam operations, and changes in annual flows due to off stream uses of water have affected the ability of the riverine communities to support native fish, plants, and wildlife. Riparian communities within fluvial systems are dynamic, with their distribution in time and space governed mostly by flood events and flow patterns. Current conditions along southwestern rivers and streams are such that normal flow patterns have been greatly modified, flood events are more catastrophic as a result of degraded watershed conditions, stream channels are highly degraded, floodplains and riparian communities are reduced in extent, wildfires in riparian habitats are increasing, and the species composition of riparian communities are modified with exotic plant species. Habitat loss and fragmentation can lead to increased brood parasitism and nest predation. These conditions have significantly diminished the potential for southwestern rivers and streams to develop suitable nesting habitat for the southwestern willow flycatcher and for those habitats to remain intact and productive for nesting flycatchers.

## **Environmental Baseline**

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 that 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. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). In this case, the action area includes the area to be shaded by the bridge and all areas of temporary and permanent disturbance. Downstream areas are not included as the spanned design of the bridge is not anticipated to result in geomorphic changes to the Gila River.

The Gila River within the action area experiences wide variations in discharge due to operations at Coolidge Dam, though the dam's deleterious effects to the hydrograph are moderated somewhat by the relatively unmodified discharges from the San Pedro River. Regardless, the Gila River's diminished, and in some years, non-existent spring peak flows combined with relatively higher late-spring and summer flows tend to disfavor the establishment and/or maintenance of native cottonwood/willow forests while creating the conditions under which nonnative tamarisk thrives. It is the extensive tamarisk stands in the lowermost reaches of the Gila River above the Ashurst-Hayden Diversion Dam that provide the greatest amount of habitat for flycatchers.

The Florence-Kelvin Bridge site is situated within the flycatcher's Middle Gila-San Pedro Critical Habitat Management Unit. The San Pedro River segment extends for 97.4 km (60.5 mi) to the Gila River. The Gila River segment begins at Dripping Springs Wash and extends for 72.4 kilometers (45 miles) downstream past the San Pedro/Gila confluence and the Towns of Winkelman and Kelvin to the Ashurst-Hayden Diversion Dam near the Town of Cochran in Gila and Pinal Counties, Arizona. Flycatchers have been detected nesting along these segments since 1993.

In 2003, 167 territories from 19 sites (12 on San Pedro and 7 on the Gila) were detected on the stream segments within this Management Unit. In 2004, a total of 157 territories were detected from these sites (Munzer *et al.* 2004). Degradation of habitat quality due to an apparent reduction in river flow has dropped the number of territories on the Gila River segment from 68 in 1999, 26 in 2003, to 14 in 2004. In 2005, the Gila River experienced a 100% increase in flycatcher territories; 28 were detected in this most-recent survey year. English *et al.* (2006) attribute these increases to increased releases from Coolidge Dam throughout the breeding season. Flycatcher territories on the lower San Pedro River have steadily increased in recent years, most likely due to improved habitat conditions, themselves resulting from retirement of consumptive water uses by owners and managers of conservation lands within the reach (The Nature Conservancy on behalf of the Bureau of Reclamation and Resolution Copper Company, and the Salt River Project) This Management Unit, along with the Cliff-Gila Valley, New Mexico, have the most flycatcher territories known in the species' range.

The Middle Gila-San Pedro Management Unit encompasses 6,897 hectares (17,043 acres) of land along 62 river kilometers (101 river miles) of rivers and streams within Gila, Pinal, and

Pima counties, Arizona. The current abundance of flycatchers within this unit is described in Table 1, below.

<b>Table 1: Flycatcher 2005 survey results from the Middle Gila-San Pedro Management Unit (English <i>et al.</i> 2006).</b>			
<b>Middle Gila River</b>			
<b>Site Name</b>	<b>Resident Adult Flycatchers</b>	<b>Territories</b>	<b>Pairs</b>
GRSN022	0	0	0
GRN020	0	0	0
GRS020	0	0	0
GRN018	12	6	6
GRS018	18	9	9
GRS016	2	1	1
Kearny	6	3	3
GRS012	0	0	0
GRS011	0	0	0
GRN010	0	0	0
GRS010	2	1	1
GRN009	0	0	0
GRN008	0	0	0
GRS007	11	6	5
GRN004	0	0	0
Dripping Springs Campground	1	1	1
Dripping Springs Wash	2	1	1
<b>Gila Subtotals</b>	<b>54</b>	<b>28</b>	<b>27</b>
<b>Middle and Lower San Pedro River</b>			
<b>Site Name</b>	<b>Resident Adult Flycatchers</b>	<b>Territories</b>	<b>Pairs</b>
CB Crossing Southeast	2	1	1
Indian Hills	0	0	0
Dudleyville Crossing	24	15	9
Malpais Hill	0	0	0
PZ Ranch	0	0	0
PZ Ranch West	2	1	1
Cook's Lake Cienega/Seep	17	11	6
Aravaipa Inflow North	32	18	14
San Pedro/Aravaipa Confluence	19	10	9
Aravaipa Inflow South	32	16	16
Wheatfields	24	12	12
Wheatfields South	28	14	14
Capgage Wash	0	0	0
San Manuel Crossing	107	55	52
Catalina Wash	7	4	3
Bingham Cienega	0	0	0
Three Links	14	7	6
<b>San Pedro Subtotal</b>	<b>308</b>	<b>164</b>	<b>143</b>
<b>Management Unit Total</b>	<b>362</b>	<b>192</b>	<b>170</b>

The proposed project site is located along a reach of the Gila River dominated by tamarisk-dominated stands of intermediate density. These tamarisk stands are interspersed with Fremont cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), and velvet mesquite (*Prosopis velutina*). Given the project area's status as nominal flycatcher habitat, the site was surveyed by SWCA, Inc. and AGFD staff on during 2005. No breeding flycatchers were detected in 2005. Surveys for the 2006 season are ongoing as of this writing and 2006; no breeding flycatchers have been detected to date.

AGFD's survey site GRN020 is situated 100 to 200 meters upstream of the Florence-Kelvin Bridge (see Table 1, above). GRN020 has been surveyed by AGFD since 1996; it contained two flycatcher territories from 1996 to 1998, and five in 1999. No breeding flycatchers were detected at GRN020 from the 2000 to 2005 survey seasons, though one breeding pair persists on the site at this writing. Two sites bracket the project area and GRN020: GRSN022 downstream and GRN018 upstream. Surveys conducted at GRN018 in 2005 yielded detections of 12 resident adult flycatchers (6 pairs, nests, and territories). The GRN018 site is within the supposed 18-mile interannual flycatcher movement distance used to delineate critical habitat units. Given the dynamic nature of riparian vegetation in a dynamic fluvial system such as the Gila River and the apparent subreach-scale site fidelity of the species, it is probable that the project site at one time, and will again, contain flycatcher breeding habitat. The site presently exhibits nominal migration, stopover foraging, dispersal, and feeding habitat, and is also designated as critical habitat for the species.

Since the listing of the flycatcher as an endangered species in 1995, we have completed five formal consultations within the Middle Gila-San Pedro Management Unit. Some of these consultations have been amended through reinitiation, though not all amendments necessarily pertain to changes made to management actions within the Middle Gila/San Pedro region.

Our March 8, 2004, biological opinion on the San Carlos Apache Tribe's proposed exchange of Central Arizona Project water with the Gila River Indian Community (File number R2:TS/TE 02-02-04-F-0001) to increase the conservation pool within San Carlos Reservoir authorized a specific amount of incidental take (expressed in terms of non-exceedence of a supposed nest failure rate). The proposed action analyzed in the San Carlos consultation did not reach fruition and thus, the anticipated incidental take did not occur.

Our October 23, 2003, biological opinion on the BLM's ongoing program of permitting livestock grazing on 18 allotments along the middle Gila River (02-21-00-F-0029) authorized incidental take in three forms: (1) degradation of no more than 5 flycatcher territories during the life of the project in occupied habitat in the riparian pasture of the Rafter Six allotment; (2) brown-headed cowbird that results in annual nest failure of more than 10 percent of flycatcher nests within 5 miles of the Kearny and Rafter Six allotments; and (3) harassment of more than 5 southwestern willow flycatcher nests from fence construction and maintenance in occupied habitat in the Rafter Six and Kearny allotments.

Other consultations included less-specific measures of incidental take. Our August 18, 1998, biological opinion on the Town of Kearney's relocation of municipal facilities (File number 02-21-98-F-0247) authorized incidental take in the form of vegetation clearing within the non-breeding season; incidental take of individual flycatchers was not anticipated. Our September

26, 1997, consultation on the BLM's Tucson and Safford Field Office's livestock grazing program (02-21-96-F-0160) also anticipated an indeterminate, non-numeric level of incidental take, as did our October 2, 1997, consultation with the BLM on the Lower Gila Resource Area Management Plan Amendment (02-21-95-F-269).

### **Effects of the Proposed Action**

Implementation of the proposed action will involve the clearing of up to 1.2 acre of riparian vegetation from areas adjacent to the Gila River. Of this, 0.9 acre will be restored and 0.3 acre permanently lost (BE: 2). Later discussions indicated that permanent habitat loss would amount to approximately 0.5 acre. You have proposed to limit this removal of this riparian vegetation to the flycatcher non-breeding season; clearing and grubbing is anticipated to begin in September 2006 (or subsequent first-year of construction) and conclude prior to the following April 15. Once the vegetation has been cleared, we do not anticipate that ongoing construction will affect flycatchers.

Your proposed confinement of the proposed action to the non-breeding season, combined with the baseline near-absence of breeding habitat within the project area, the small magnitude of the temporary and permanent impacts, and the revegetation of the affected areas, will avoid direct effects to the flycatcher. We thus do not anticipate that individuals of the species will be harmed or harassed. Effects to critical habitat, however, must be considered. Though small in magnitude, the temporary and permanent effects on flycatcher critical habitat cannot be discounted. Flycatcher critical habitat will therefore be adversely affected.

### **Cumulative Effects – Southwestern Willow Flycatcher**

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.

Further economic development of private lands near the Gila River will, in some cases, occur in the absence of discretionary actions on the part of the Federal government. This increased development would lead to more public use of the rivers and shoreline areas. Increases or changes in cowbird foraging areas (corrals, domestic stock, and bird feeders) and habitat fragmentation may increase the parasitism rate and decrease flycatcher productivity. Continued and future conversion of floodplains and near-shore lands would eliminate opportunities to restore floodplains for flycatcher habitats. Increased recreation, camping, off-road vehicle use, or river trips, may harass and disturb breeding birds or impact nesting habitats. This increased recreation also increases wildfire potential in these areas. As these areas develop, demands will increase for groundwater pumping. The water budgets of the San Pedro and lower Gila valleys may already be in deficit; increased pumping would accelerate loss of river flow and increase associated loss of riparian habitats along those rivers. Inadvertent wildfires in the region, exacerbated by dense stands of tamarisk and their associated high fuel loads, continue to degrade flycatcher habitat there. Yearlong livestock grazing on private and State lands in these areas may be negatively affecting regeneration of native tree species used for nesting.

The projects authorized in the 2004 Arizona Water Settlement Act will likely affect flows in the Gila River through the action area. Although the specifics are not yet known, these projects may affect flycatchers and their habitats. Proponents of these projects are also unknown, but we believe most will be Federal agencies, or the projects will have a Federal nexus, resulting in section 7 consultations. Some projects may not have a Federal nexus; the effects of those projects would be cumulative effects.

### **INCIDENTAL TAKE STATEMENT**

We do not anticipate that implementation of the proposed action will result in the incidental take of any flycatchers.

#### **Disposition of Dead or Injured Listed**

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 West Broadway Road, Suite 113, Mesa, Arizona, 85202 (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 if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible state.

### **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. We hereby recommend that the Administration carry out, and report to us on the progress of, the following Conservation Measures.

- You should monitor the reestablishment of tamarisk and native riparian vegetation in all disturbed areas to determine the rate of recolonization and recruitment.
- You should research, develop, and construct bridge designs that permit the passage of overbank discharge events through culverts situated on floodplain terraces.
- You should assist Pinal County in developing cooperative ecosystem restoration projects for the Gila and San Pedro rivers and surrounding areas.

### **REINITIATION NOTICE- CLOSING STATEMENT**

This concludes formal consultation on the proposed replacement of the Florence-Kelvin Bridge over the Gila River in Pinal County, 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 retained (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 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 the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Any questions of comments concerning this biological opinion should be directed to Jason Douglas (520) 670-6144 (x226) or to Sherry Barrett (x223) of my Tucson staff.

Sincerely,

/s/ Steven L. Spangle  
Field Supervisor

cc: Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ  
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ  
Regional Manager, Arizona Game and Fish Department, Tucson, AZ  
Arizona Department of Transportation, Tucson, AZ (Attn: Melissa Maiefski)  
SWCA, Inc., Tucson, AZ (Attn: Eleanor Gladding)

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## **Appendix A: Concurrence for the Bald Eagle:**

### Status of the Species

The rangewide status of the bald eagle is described in our July 6, 1999, proposed rule to remove the bald eagle in the lower 48 states from the List of Endangered and Threatened Wildlife (64 FR 36454) and our February 16, 2006, proposed rule with reopening of public comment period with new information (71 FR 8238). Please note that we are presently evaluating a petition to list the southern bald eagle (*H. l. leucocephalus*) as a distinct vertebrate population segment with critical habitat.

### Environmental Baseline

Five bald eagle breeding areas are located in the general vicinity of the Florence-Kelvin Bridge, including the Suicide, Coolidge Dam, San Carlos, Granite Basin, and Winkelman breeding areas. Of these, we feel that only the Granite Basin and Winkelman breeding areas are close enough to the Florence-Kelvin Bridge to warrant consideration herein.

The Granite Basin nest area is located approximately 6.2 km (10 miles) downstream of Coolidge Dam. The nest is positioned on a pinnacle cliff adjacent to the Gila River. The Winkelman breeding area is located approximately 18.6 km (30 miles) downstream of Coolidge Dam at the confluence of the San Pedro and Gila rivers. The Granite Basin Breeding Area was discovered in 1999, and is believed to be dependent solely on the Gila River. The Granite Basin pair failed to hatch eggs in 1999 and 2001. The pair was present, but did not lay eggs in 2000, 2002, and 2003. No bald eagles have been detected in the Granite Basin breeding area since 2004 (Greg Beatty pers. comm., Jacobson *et al.* 2005). The Winkelman Breeding Area was discovered in 1995, and failed to hatch eggs in their only nesting attempts in 1996 and 1997. The Winkelman Breeding Area has been unoccupied since 1999 (Greg Beatty pers. comm., Jacobson *et al.* 2005).

A more detailed summary of the factors affecting the species' environment within the action area can be found in our March 28, 2004, Biological Opinion on the Bureau of Reclamation's Approval of Water Exchange by the San Carlos Apache Tribe for Retention in San Carlos Reservoir (File number R2/ES-TE: 02-02-04-F-0001).

### Conclusion

We concur that implementation of the proposed action may affect, but is not likely to adversely affect the bald eagle. Our concurrence is based upon the following:

- The two bald eagle breeding areas in the vicinity of the project area, Granite Basin and Winkelman, have been unoccupied for the past two seasons.
- Construction-related disturbance is thus not anticipated to harm or harass any individual bald eagles.
- Construction of the new span is not anticipated to have an appreciable effect on fish and thus, will no measurable effect on the prey base of the next-closest eagles at San Carlos.

**Literature Cited – Appendix A:**

Jacobson, K.V., J.S. Canaca, and J.T. Driscoll. 2005. Arizona bald eagle management program 2005 summary report. Nongame and Endangered Wildlife Program Technical Report 237. Arizona Game and Fish Department, Phoenix, Arizona.