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In Reply Refer To:  
AESO/SE  
02-21-04-F-0355

May 20, 2005

Ms. Elaine J. Zieroth  
Forest Supervisor  
Apache-Sitgreaves National Forests  
P.O. Box 640  
Springerville, Arizona 85938-0640

RE: 26 Bar Grazing Allotment Biological and Conference Opinion

Dear Ms. Zieroth:

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 July 12, 2004, and received by us on July 15, 2004. The project was modified by the Forest Service on November 30, 2004. At issue are impacts that may result from the proposed 10-year grazing permit for the Pool Corral, Cross Bar, and Rudd Knoll allotments (collectively known as the 26 Bar Allotments) located in Apache County, Arizona. The proposed action may affect threatened Apache trout (*Oncorhynchus apache*) and the endangered Southwestern willow flycatcher (*Empidonax trailli extimus*) and its proposed critical habitat.

In your letter, you requested our concurrence that the proposed action “may affect, is not likely to adversely affect” the Mexican spotted owl (MSO: *Strix occidentalis lucida*) and its critical habitat, the threatened loach minnow (*Tiaroga cobitis*), the threatened Little Colorado spinedace (*Lepidomeda vittata*), the threatened Chiricahua leopard frog (*Rana chiricahuensis*), and the endangered southwestern willow flycatcher. Additionally, the Forest determined that the proposed project is not likely to jeopardize the Mexican gray wolf (*Canis lupus baileyi*). Concurrences for the Mexican spotted owl and its critical habitat, the Mexican gray wolf, and the Chiricahua leopard frog were provided in a letter dated November 8, 2004. Concurrences for the loach minnow and the Little Colorado spinedace are included of Appendix A of this document.

On October 12, 2004, critical habitat for the southwestern willow flycatcher was proposed. We did not concur with the Forest’s determination that the proposed action “may affect, but is not likely to adversely effect” the southwestern willow flycatcher and its proposed critical habitat and at your request are including a formal biological and conference opinion for the species and its critical habitat. The Forest requested this formal consultation on February 10, 2005. Please see the consultation history for a more detailed record of events in the consultation.

This draft biological and conference opinion is based on information provided in the June 4, 2004, biological assessment, telephone conversations and emails with wildlife biologist Vicente Ordonez and fisheries biologist Kathryn McMillan, field investigations, and other sources of information. Literature cited in this biological and conference opinion is not a complete bibliography of all literature available on the species of concern, livestock grazing and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

## **CONSULTATION HISTORY**

- July 12, 2004: The Forest requested formal consultation for the proposed issuance of a 10-year grazing permit for the Pool Corral, Cross Bar, and Rudd Knoll allotments (collectively known as the 26 Bar Allotment).
- September 22, 2004: We conducted a site visit to the 26 Bar Allotments to assess southwestern willow flycatcher habitat.
- October 12, 2004: Critical habitat for the southwestern willow flycatcher was proposed (USFWS 2004).
- October 28, 2004: We had a phone conversation with Vicente Ordonez regarding the Southwestern willow flycatcher and proposed critical habitat. The Forest Service requested our concurrence with your “not likely to adversely affect” determination; however, we recommended that the Forest formally conference on proposed critical habitat and formally consult on effects to the species, since the proposed action does not meet the March 31, 2004, Framework for Streamlining Informal Consultation for Livestock Grazing Activities (Guidance Criteria). The Forest agreed to initiate formal conference and consultation; however, they are not changing their original determinations.
- November 8, 2004: We sent a 30-day letter initiating consultation. Included in the letter were concurrences for the Mexican spotted owl and its critical habitat, the Mexican gray wolf, and the Chiricahua leopard frog. The letter requested a 60-day extension and noted that under the revised schedule the consultation period would end on January 27, 2005.
- November 30, 2004: We received an email from the Forest requesting that all range improvements be removed from the proposed project description. The following range improvements were removed from the proposed action as described in the July 2004 Biological Assessment:

1. Move salt or mineral block to areas of light use or move them frequently.
2. Day herding – Move cattle out of the riparian areas to light use areas on the uplands.
3. Develop new waters –
  - a. In SU Pasture – Develop Spence Cabin spring, extend pipeline outside the fenced area and setup float box and a trough. This will provide water on the upland and alleviate grazing pressure in the Black River for watering.
  - b. Develop unnamed spring ½ mile north of Spence Cabin Spring in SU Pasture. Construct elk proof enclosure (approximately 2-5 acres) to protect willows, construct spring box, pipe water outside the enclosure, setup drinkers and install floatbox to drinkers.
  - c. In Dipping Vat Pasture – Improve existing spring, relocate the trough.
  - d. In Dipping Vat Pasture – Improve existing spring, replace pipeline and the trough.
  - e. In Miller (7 Springs) Pasture of Rudd Knoll Allotment – Develop Seven Spring spring and construct a collection box and setup a trough.
  - f. In Pool Knoll Pasture – Develop Spence Spring, install pipeline, setup float box and a trough.
4. Maintain existing range improvements.
  - a. Clean out stock tanks when necessary.
  - b. Repair fences listed on maintenance responsibility list.

The Forest Service indicated that these strategies may be used to improve grazing distribution with the preferred alternative and help achieve the desired management goals; however, they also may choose not to utilize these strategies during the life of the project. The Forest requested that we consult on the proposed project as though these range improvements will not occur over the life of the project.

- December 15, 2004: We sent a letter indicating that we believed the change in proposed action was a major change. Therefore, the dates for completion of the consultation will be re-set. Additionally, without the range improvements, we are unable to concur with the Forest Service's determination of "may effect, not likely to adversely affect" for loach minnow and Little Colorado spinedace.

- January 31, 2005: The Forest sent a letter clarifying their decision to remove all range improvements from the proposed action. Range Improvement #1 concerning salting is not mandatory, but rather a tool that may be used. If salting is used then the District will follow the Apache-Sitgreaves Forests Plan standard and guideline which indicates that salting in, or within ¼ mile of, riparian areas for livestock management is prohibited. Additionally, they further explained role of day herding in the management of the 26 Bar Allotment. The Forest would like to include day herding as a management technique to be utilized on the 26 Bar Allotments, but prefers that it be included in the Annual Operating Instructions to the permittee, as a requirement, rather than analyzed as part of the proposed action in the Biological Assessment. The Forest asserts that herding is just one of several management tools that can maximize the permittee's use of the pasture. The District prefers not to be limited to the use of only herding since there could be occasions when other tools would be utilized in lieu of herding. Whether or not the permittee utilizes day herding should not affect aquatic habitats as long as forage utilization standards are in place and are being monitored. Due to this letter we are able to concur with the Forest's determination of "may effect, not likely to adversely affect" for loach minnow and Little Colorado spinedace. Concurrence for these species can be found in Appendix A.
- February 18, 2005: A draft biological and conference opinion was sent to the Forest.
- May 9, 2005: The Forest responded to the draft biological opinion and conference opinion.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to issue a new 10-year grazing permit for the subject allotments beginning in 2005. The new grazing permit would balance permitted livestock use with forage capacity and address the unsatisfactory riparian conditions which occur on portions of the allotments. The three new Term Grazing Permits would authorize:

Allotment	Number and Class	Planning Season of Use	Planning AUMs
Cross Bar	474 C	June 15 to October 31	2,196*
Pool Corral	372 C	June 15 to October 31	1,724*
Rudd Knoll	304 C	June 15 to October 31	1,409*
Total	1,150 C		5,328

\* Animal Unit Factor of 1.0 was used because there is a mixed class of livestock.

The proposed action area consists of the footprint of the action and all areas that would be directly or indirectly affected by the proposed action. The 26 Bar Allotment encompasses 33,313 acres of National Forest land, as well as 48 acres of private land, and is located on the Springerville Ranger District, Apache County, Arizona (Appendix B, Maps 1 and 2). The action area for this consultation is defined as the boundaries of the 26 Bar Allotment (Cross Bar, Pool Corral, and Rudd Knoll allotments) and sections of stream to a point 25 miles downstream of the respective watersheds and subwatersheds. For example, the effects of grazing on the Allotment to the South Fork Little Colorado River are herein evaluated from where that stream exits the complex in the West Mexican Hay pasture to a point downstream 25 miles. This methodology is consistent with the Forest Service's methods of evaluating effects of grazing to streams and watersheds. Additionally, the Greer nesting site for the southwestern willow flycatcher is within the action area since actions on the allotment will affect that site.

A 16 pasture rest-rotation grazing system with two herds will be implemented. Four or more pastures per year over the next ten years will be rested. The allotment management will emphasize full season rest in pastures with unsatisfactory riparian conditions. A total of 5,328 AUMs will be divided among the cow/calf and yearling herds according to the livestock operation. Permittees will enter pastures when the range is ready. Pastures that are entered first in the grazing season will not be entered at the same time the following year.

The allowable use standard for the allotments will range from 25%-40%. Allowable use of 25% will be applied to stream bottoms in SU Pasture (Cross Bar Allotment) and other riparian areas classified as functional at risk. Other utilization standards are 40% in the uplands and 35% on the remaining key areas based on range condition.

Entry date and season of use will be determined annually based on range readiness and management needs of the allotment. Entry date is expected to vary annually due to temperatures and elevation ranges, but is generally expected to occur between June 15 for the low-elevation rangeland and July 1 for the high-elevation rangeland. Livestock removal will occur on or prior to utilization of forage capacity but not later than October 31.

**Table 1:** Comparison of current grazing management and the proposed action

<b>Action</b>	<b>Proposed Action</b>	<b>Current Management</b>
<b>Permittee Operation Period</b>	6/16 – 10/31	Cross Bar: 5/16 – 10/20 Pool Corral: 6/1 – 10/20 Rudd Knoll: 5/16 – 10/31
<b>Livestock Numbers</b>	Cross Bar: 474 cow Pool Corral: 372 cow Rudd Knoll: 304 cow Total: 1,150 cow	Cross Bar: 401 cow/calf Pool Corral: 409 cow/calf Rudd Knoll: 399 cow/calf Total: 1,209 cow/calf
<b>Grazing System</b>	Rest Rotation	Deferred/Rest Rotation
<b>Utilization Standard</b>	25% Riparian 35-45% Uplands	35%
<b>AUM's</b>	5,328	8,310

## STATUS OF THE SPECIES

### APACHE TROUT

Apache trout (*Oncorhynchus gilae apache*, formerly called *Salmo apache*) is one of two salmonid species native to Arizona (the other is Gila trout, *Oncorhynchus gilae gilae*), and is currently listed as threatened (40 FR 29864) with a special rule that permits limited recreational fishing. At least 20 unhybridized and uncompromised (i.e., no non-native trout) populations exist within historical range in Gila, Apache, and Greenlee counties of Arizona, on lands of the Fort Apache Indian Reservation (FAIR) and Apache-Sitgreaves National Forests. These 20 populations represent 13 discrete natural stocks (lineages) of pure Apache trout.

An additional three populations contain pure Apache trout coexisting with brook trout (*Salvelinus fontinalis*) (Lee Valley Creek) or brown trout (*Salmo trutta*) (Hayground, and Stinky creeks). Nine populations were introduced beyond what is now considered the historic range; however, only one of those nine (Coleman Creek, on the Apache-Sitgreaves) was recently confirmed as pure (Tom Turner, New Mexico State University, personal communication). North Canyon Creek is suspected as pure, but is unconfirmed. Seven streams within historical range on Apache-Sitgreaves and four streams on FAIR have been confirmed as having introgressed populations of Apache trout [e.g., crossed with rainbow trout (*Oncorhynchus mykiss*) or cutthroat trout (*Oncorhynchus clarki*)]. Recovery and management efforts for Apache trout have been ongoing since the 1940s. A revised Recovery Plan is under development.

Apache trout evolved in low-to-moderate/high gradient mountain streams primarily above 5,900 feet (ft) elevation, within mixed conifer and ponderosa pine forests. Apache trout generally require water temperatures below 25° C (77° F). Adequate stream flow and/or shading is required to prevent lethal temperatures. Apache trout prefer cover in the form of woody debris, pools, boulders, undercut streambanks, or overhanging vegetation at stream margins. Ample stream flow will also help maintain pools that are used frequently during periods of drought and temperature extremes. Apache trout require coarse gravel substrates for spawning. Stream requirements are generally characterized by unregulated flow and functional riparian and watershed conditions that produce a natural hydrograph. Recovery streams that are subject to common multiple land-use factors such as timber harvest/thinning and livestock grazing should be managed to maintain healthy riparian corridors that promote sufficient habitat conditions to allow for all life functions including spawning, rearing, foraging, and over-wintering. Apache trout feed mostly on invertebrates, which are typically abundant in healthy streams. Recovery streams (or portions thereof) must be void of non-native salmonids due to the potential for hybridization, competition, and/or predation.

#### Effects of Grazing on Apache trout

Extrapolations of general hydrologic and biological principles and site-specific research data provide a large body of evidence linking degradation of watersheds, stream channels, aquatic and riparian communities, and fish habitat and populations in western North America to past grazing and some current grazing management (Leopold 1924, Leopold 1951, York and Dick-Peddie

1969, Hastings and Turner 1980, Dobyms 1981, Kauffman and Krueger 1984, Skovlin 1984, Kinch 1989, Chaney *et al.* 1990, Platts 1990, Armour *et al.* 1991, Bahre 1991, Meehan 1991, Fleischner 1994). The effects of livestock grazing to perennial and intermittent streams containing Apache trout, tributaries to these streams, and upland portions of the watershed may occur through four mechanisms: 1) watershed alteration; 2) alteration of the riparian vegetation and aquatic communities; 3) alteration of the faunal community; and 4) direct effects to Apache trout from livestock accessing occupied habitat. These mechanisms have varying effects to Apache trout.

### **Watershed Alteration**

Livestock grazing may cause long-term changes to the watershed and its functions. The extent of these changes to the watershed varies with watershed characteristics, grazing history, and cumulative effects from other human uses and natural watershed processes. Watershed changes due to grazing are more difficult to document than direct livestock impacts to the riparian and aquatic communities due to their long-term, incremental nature, the time lag and geographic distance between cause and effect, and numerous variables. Despite this, the relationship between livestock grazing in a watershed and effects to river systems is widely recognized and documented (Leopold 1946, Blackburn 1984, Skovlin 1984, Chaney *et al.* 1990, Platts 1990, Bahre 1991, Meehan 1991, Fleischner 1994, Myers and Swanson 1995). Sayre (2001) notes that the emphasis in livestock grazing should be on “managing for the whole,” and that “What gets eaten by livestock is a function of numerous processes involving water, soils, decomposers, other plants, and so on.” Similarly, Naiman (1992) notes the connectivity of the watershed with riverine and riparian conditions, indicating that water flows down through the watershed, “...integrating influences of natural and human disturbances within the catchment.” Although watershed effects vary depending upon the number and type of livestock, the length and season of use, and the type of grazing management, the mechanisms remain the same and the effects vary only in extent of area and severity (Blackburn 1984, Johnson 1992).

Livestock grazing may alter the vegetative composition of the watershed (Savory 1988, Vallentine 1990, Papolizio *et al.* 1994). It may cause soil compaction and erosion, alter soil chemistry, and cause loss of cryptobiotic soil crusts (Harper and Marble 1988, Marrs *et al.* 1989, Orodho *et al.* 1990, Bahre 1991). Cumulatively, these alterations contribute to increased erosion and sediment input into streams (Johnson 1992, Weltz and Wood 1994). They also contribute to changes in infiltration and runoff patterns, thus increasing the volume of flood flows while decreasing their duration and decreasing the volume of low flows while increasing their duration (Brown *et al.* 1974, Gifford and Hawkins 1978, Johnson 1992). Groundwater levels may decline and surface flows may decrease or cease (Chaney *et al.* 1990, Elmore 1992).

### **Aquatic and Riparian Habitats**

The effects of livestock grazing on riparian and aquatic habitats have been well documented and discussed in recent years (e.g., Platts 1990, Fleischner 1994, Belsky *et al.* 1999). Potential effects can be categorized into upland/watershed effects, streambank effects, streamflow and channel effects, water column effects, and effects to riparian vegetation. Grazing in the uplands can reduce the roughness coefficient of watersheds, which in turn results in more surface runoff,

soil erosion, and flooding, which have effects on the water column, as discussed below. Resulting changes to watercourses can include changes in the hydrograph such as decreased base flows, increased flood flows, and increased sediment (Gifford and Hawkins 1978, Kauffman and Krueger 1984, Chaney *et al.* 1990, Platts 1990, Fleischner 1994).

The potential effects of grazing on streambanks include the shearing or sloughing of streambank soils by either hoof or head action; elimination of streambank vegetation; erosion of streambanks following exposure to water, ice, or wind due to loss of vegetative cover; and an increased streambank angle which increases water width and decreases stream depth. In other areas, damage begins to occur almost immediately upon entry of cattle onto the streambanks and use of riparian zones may be highest immediately following entry of cattle into a pasture (Platts and Nelson 1985, Goodman *et al.* 1989). Vegetation and streambank recovery from long rest periods may be lost within a short period following grazing reentry (Duff 1979). Bank configuration, soil type, and soil moisture content influence the amount of damage, with moist soil being more vulnerable to damage (Marlow and Pogacnik 1985, Platts 1990).

Following streambank alteration, potential effects to the channel itself can include changes in channel morphology and altered sediment transport processes (Platts 1990). Within the stream itself, there can be changes to pools, riffles, runs, and the distribution of backwater areas, a reduction in cover for fishes, elevated water temperatures, changes in nutrient levels, and increased sedimentation (Platts 1990, Belsky *et al.* 1999).

Effects to riparian vegetation can include changes in plant species composition, such as a transition from brush to grass to forbs; a reduction of floodplain and streambank vegetation, including vegetation which overhangs banks or is found within the water column; decreases in plant vigor; alteration of plant growth form, such as lateral branching; changes in the timing and amount of organic energy leaving the riparian zone; and elimination of riparian plant communities, which may occur as a result of lowering of the water table so that xeric plants replace riparian plants (Platts 1990, Fleischner 1994).

According to Wada (1991), the presence of instream cover and bankcuts are important variables in defining Apache trout habitat. In addition, undercut banks, solid debris piles, and logs in contact with the water are very important as cover for Apache trout. As described above, cattle will influence these variables by grazing within the stream corridor.

Cattle presence on streambanks destabilizes them through chiseling, sloughing, compaction, and collapse, and results in wider and shallower stream channels (Platts and Nelson 1985, Platts 1990, Meehan 1991). This may change the way in which flood flows interact with the stream channel and may exacerbate flood damage to banks, channel bottoms, and riparian vegetation. These impacts occur at all levels of cattle presence, but increase as the number of livestock and the length of the grazing season increase (Marlow and Pogacnik 1985).

Cattle grazing in and on riparian vegetation may cause changes in the structure, function, and composition of the riparian community (Szaro and Pase 1983, Warren and Anderson 1987, Platts 1990, Schulz and Leininger 1990, Schulz and Leininger 1991, Stromberg 1993). Plant species diversity and structural diversity may be substantially reduced and nonnative species may be

introduced through spread in cattle feces. Reduction in riparian vegetation quantity and health and shifts from deep-rooted to shallow-rooted vegetation contribute to bank destabilization and collapse and production of fine sediment (Meehan 1991). Loss of riparian shade results in increased fluctuation in water temperatures with higher summer and lower winter temperatures (Karr and Schlosser 1977, Platts and Nelson 1985). Litter is reduced by trampling and churning into the soil thus reducing cover for soil, plants, and wildlife (Schulz and Leininger 1990). The capacity of the riparian vegetation to filter sediment and pollutants to prevent their entry into the river and to build streambanks is reduced (Lowrance *et al.* 1984, Elmore 1992). Channel erosion in the form of downcutting or lateral expansion may result (Heede *et al.* 1990, USBLM 1990).

### **Faunal Alteration**

Livestock use of the riparian corridor causes changes in species composition and community structure of the aquatic and riparian fauna, in addition to floral changes already addressed. The aquatic invertebrate community may be degraded because of altered stream channel characteristics, sediment deposition, or nutrient enrichment (Meehan 1991, Li *et al.* 1994). Since Apache trout feed on aquatic and terrestrial insects, any changes in composition could effect feeding requirements of Apache trout.

### **Direct Effects**

The effects of animals wading in stream courses are of particular concern in reaches of streams where Apache trout occur. Documentation of livestock directly impacting fish or fish eggs is mostly through personal observation, and not very well documented in the literature. However, there are a few citations available that have documented livestock and humans trampling fish and/or fish eggs. Minckley (1973) noted that Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*) were eliminated from Astin Spring by livestock trampling. A study that examined the effects of anglers on trout egg and fry survival found that wading anglers had detrimental effects on trout redds through trampling (Roberts and White 1992). The authors also speculated that livestock trampling may have similar adverse effects. In California, an entire population of Owens pupfish (*Cyprinodon radiosus*) (a few hundred individuals) were rescued from a drying site where they were stranded in cattle hoofprints (Miller and Pister 1971). In addition, documentation from a Bonneville cutthroat trout (*Oncorhynchus clarki utah*) project on the Goshute Reservation (UT/NV west desert, south of Wendover, UT) stated that livestock destroyed an estimated 50% of the spawning redds within an enclosure due to trampling and mucking around in the streambed (J. Stefferud, pers. comm. 2003).

### **SOUTHWESTERN WILLOW FLYCATCHER AND ITS PROPOSED CRITICAL HABITAT**

The southwestern willow flycatcher was listed as endangered, without critical habitat, on February 27, 1995 (USFWS 1995). Section 4(a)(1) of the ESA lists five factors that must be considered when determining if a species should be designated as threatened or endangered. The southwestern willow flycatcher was determined to be endangered by numerous threats causing extensive loss of habitat, lack of adequate protective regulations, and other natural or manmade factors including brood parasitism by the brown-headed cowbird (USFWS 1995). Critical

habitat was later designated on July 22, 1997, (USFWS 1997a) but subsequently set aside as a result of a court finding. On October 12, 2004, the Fish and Wildlife Service re-proposed designation of critical habitat for the southwestern willow flycatcher (USFWS 2004).

A final Recovery Plan for the southwestern willow flycatcher was signed by the U.S. Fish and Wildlife Service's Region 2 Director on August 30, 2002 (USFWS 2002). The Plan describes the reasons for endangerment, discusses the current status of the flycatcher, addresses important recovery actions, includes detailed issue papers on management, and provides recovery goals.

### BIOLOGY AND HABITAT

The southwestern willow flycatcher is a small, grayish-green passerine bird (Family Tyrannidae) measuring approximately 5.75 inches. It has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish belly. The song is a sneezy "fitz-bew" or a "fit-a-bew", the call is a repeated "whitt".

A detailed account of the taxonomy, biology, and reproductive characteristics of the southwestern willow flycatcher is found in the Final Rule listing the southwestern willow flycatcher as an endangered species (USFWS 1995) and in the Recovery Plan (USFWS 2002). The information provided in those documents is included herein by reference.

Declining southwestern willow flycatcher numbers have been attributed to loss, modification, and fragmentation of riparian breeding habitat, loss of wintering habitat, and brood parasitism by the brown-headed cowbird (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 (*Molothrus ater*), 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).

The flycatcher's habitat is dynamic and can change rapidly: nesting willow 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. Because of those changes, flycatcher "habitat" is often defined as either suitable or potential (USFWS 2002). This demonstrates that areas other than existing occupied locations can be considered flycatcher "habitat," and as a result, essential to the survival and recovery of the flycatcher (USFWS 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, and occupancy over time (Finch and Stoleson 2000).

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.

#### Rangewide distribution and abundance

Unitt (1987) estimated that the total flycatcher population at 500 to 1000 pairs. In 2002, there were 221 known southwestern willow flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites from 1993 to 2001 where a resident flycatcher has been detected) including approximately 986 territories (Sogge *et al.* 2002, USFWS 2002). 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 consistent with the upper end of Unitt's 1987 estimate. About 40 to 50 percent of the 986 territories (Table 2) currently known throughout the subspecies' range are found at three locations (Cliff/Gila Valley - NM, Roosevelt Lake - AZ, San Pedro/Gila confluence - AZ).

Table 2

Table 2. Rangewide population status for the southwestern willow flycatcher based on 1993 to 2001 survey data for Arizona, California, Colorado, New Mexico, Nevada, Utah, and Texas <sup>1</sup> .				
State	Number of sites with WIFL territories 1993-01 <sup>2</sup>	Percentage of sites with WIFL territories 1993-01	Number of territories <sup>3</sup>	Percentage of total territories
Arizona	95	43 %	359	36 %
California	77	35 %	256	26 %
Colorado	5	1 %	37	4 %
Nevada	10	5 %	73	7 %
New Mexico	32	15 %	258	26 %
Utah	2	1 %	3	0.3%
Texas	?	?	?	?
Total	221	100 %	986	100 %

<sup>1</sup>Sogge *et al.* 2002.  
<sup>2</sup>Site boundaries are not defined uniformly throughout the bird's range.  
<sup>3</sup>Total territory numbers recorded are based upon the most recent years survey information from that site between 1993 and 2001.

Past Consultations

Since listing in 1995 until 2003, at least 80 Federal agency actions have undergone (or are currently under) formal section 7 consultation throughout the flycatcher's range (Appendix C, Table 1). Six actions have resulted in jeopardy decisions. 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 adversely affect the distribution and extent of flycatcher habitat.

Reasonable and Prudent Alternatives (RPA) accompanied a jeopardy opinion developed by the FWS (1996a) for Phelps Dodge's Verde Valley Ranch development near Clarkdale, AZ. This development was adjacent to the only one to two pairs of flycatchers on the Verde River at that time. The land has not yet been developed, but the flycatcher site (Tuzigoot Bridge) has been unoccupied by flycatchers since 1996 (Paradzick *et al.* 2001). One RPA directed Phelps Dodge

(in cooperation with State Parks, AGFD, and National Park Service) to manage a two-mile stretch of river at the Tuzigoot Bridge for the flycatcher (within the Verde Greenway). A management plan was completed by SWCA, Inc. (2000).

Anticipated or actual loss of occupied flycatcher habitat due to Federal or federally permitted projects (modification of Roosevelt Dam, operation of Lower Colorado River dams, etc.) has resulted in biological opinions that led to acquisition of otherwise unprotected property specifically for the southwestern willow flycatcher. 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. In 2002, about 20 flycatcher territories were detected on this property (S. Sferra, U.S. Bureau of Reclamation, pers. comm.). 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), Verde River (Mingus Ave. Bridge), Tonto Creek and Salt River (raising of Roosevelt Dam) in AZ, and Lake Isabella, CA (operation of dams).

Much of the increase in the flycatcher's numbers in central Arizona and the subspecies range can be attributed to the rapid growth in vegetation at Roosevelt Lake; however, much of that occupied habitat is expected to be lost in the future due to inundation. Reclamation consulted on the new area of inundation around the perimeter of Roosevelt Lake as a result of raising the dam (USFWS 1996b). The Fish and Wildlife Service Biological Opinion provided to the Bureau of Reclamation anticipated the incidental take of 45 pairs (or 90 flycatchers) around the perimeter of Roosevelt Lake. However, an additional 96 territories (for a total of 141 territories representing 14% of all territories in the subspecies range and 40% of all known territories in Arizona) were found at Roosevelt Lake by 2001. Nearly all are located in the center of the conservation pool surrounded by the area consulted on by Reclamation, but not addressed by that consultation. Thus, the first large storm runoff that enters Roosevelt Lake is expected to inundate large areas of habitat used by breeding flycatchers. The Salt River Project, operators of Roosevelt Dam, have obtained a incidental take permit for all southwestern willow flycatchers and their habitat at Roosevelt Lake by developing a Habitat Conservation Plan.

#### Critical Habitat

Stream segments within 21 Management Units found in five Recovery Units were proposed as critical habitat. Stream segments occur in southern California, southern Nevada, southwestern Utah, Arizona, New Mexico, and south-central Colorado. In Arizona there are critical habitat segments proposed in Apache, Cochise, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, Yavapai, and Yuma counties. The areas proposed for designation as critical habitat are expected to provide sufficient riparian habitat for breeding, non-breeding, dispersing and migrating southwestern willow flycatchers and to sustain southwestern willow flycatchers across their range. The primary constituent elements essential to the conservation of the southwestern willow flycatcher as described in the rule are:

1. Nesting habitat with trees and shrubs that include, but are not limited to, willow species and boxelder;

2. Dense riparian vegetation with thickets of trees and shrubs ranging in height from 6 to 98 ft. Lower-stature thickets of 6-13 ft tall found at higher elevation riparian forests and tall-stature thickets found at middle- and lower-elevation riparian forests;
3. Areas of dense riparian foliage at least from the ground level up to approximately 13 ft above ground or dense foliage only at the shrub level, or as a low, dense tree canopy;
4. Sites for nesting that contain a dense tree and/or shrub canopy;
5. Dense patches of riparian forests that are interspersed with small openings of open water or marsh or shorter/sparser vegetation, that creates a mosaic that is not uniformly dense. Patch size may be as small as .25 acre or as large as 175 acres; and
6. A variety of insect prey populations, including but not limited to, wasps and bees (Hymenoptera); flies (Diptera); beetles (Coleoptera); butterflies/moths and caterpillars (Lepidoptera); and spittlebugs (Homoptera).

Placed in the context of the subspecies' wide geographic distribution, the disjunct nature of the populations, the dynamic aspects of its habitat, its endangered status, and its recovery goals, each stream segment identified within the Management Units is essential for the conservation of the southwestern willow flycatcher (USFWS 2002). Segments are distributed throughout a large portion of the subspecies' range in order to help avoid catastrophic losses and to provide metapopulation stability, gene flow, and connectivity. Each segment is essential because it contains one or more of the primary constituent elements and, as a result, provides flycatcher habitat for breeding, feeding, sheltering, and migration that subsequently provide metapopulation stability, gene flow of the subspecies, and connectivity between neighboring Management Units and Recovery Units. Each segment contributes to the conservation role of critical habitat by providing for the numerical and habitat-related goals identified in the Recovery Plan (USFWS 2002). Each segment was identified in the Recovery Plan as an area that sustains flycatcher habitat. The distribution and abundance of territories and habitat within each segment are expected to shift over time as a result of natural disturbance events such as flooding that reshape floodplains, river channels, and riparian habitat. The factors affecting proposed critical habitat within all Management Units are similar to the listing factors described above.

#### Livestock Grazing and Southwestern Willow Flycatchers

In the final rule listing the flycatcher as endangered, the FWS described activities that could potentially harm the flycatcher and result in take of the subspecies. The activities listed that involve livestock grazing are: 1) livestock grazing that results in direct or indirect destruction of riparian habitat; and 2) activities such as continued presence of livestock and fragmentation of flycatcher habitat that facilitate brood parasitism by the brown headed cowbird (USFWS 1995). On National Forest lands, the main cause of decline in flycatcher habitat can be attributed to the disturbance, modification, and in some cases fragmentation of flycatcher habitat. Nest parasitism by brown-headed cowbirds is also partly responsible for declines in flycatcher populations. Individual populations are threatened by small size, nest parasitism by brown-headed cowbirds, and nest predation. A critical season (April 1 through July 31) within the breeding season, has been identified as the period in which brown-headed cowbird parasitism is a concern. The removal of cowbird-attracting activities by the beginning of the critical season in

April allows a period of approximately one month for cowbirds to depart from the area before flycatchers arrive for breeding. Restricting activities until July 31 has minimized the presence of cowbirds during the egg-laying and incubation period (mid-June to end of July) and has decrease the potential for nest parasitism.

Livestock grazing in occupied areas may pose a direct threat to flycatchers by physically disturbing or damaging the nest, or spilling contents of the nest as they walk by (USFWS 1995). This is especially true in single-story or regenerating stands. Livestock grazing in potential flycatcher habitat can retard the growth of woody vegetative species, slowing or arresting progression towards suitable habitat.

Improper livestock grazing in riparian areas indirectly affects the flycatcher through habitat degradation and modification of habitat (USFWS 1995). If given the opportunity, livestock can first overuse the herbaceous component and, if they are not removed or redirected, they will begin feeding on riparian shrubs and young trees. This results in changes in plant structure and reduction of plant diversity and density (Bock *et al.* 1992). Year-round or summer livestock grazing appear to be particularly damaging to riparian habitats (Bock *et al.* 1992). During these periods, regeneration of critical tree species such as willow, boxelder, and cottonwood may be curtailed (USFWS 1995). In addition to direct herbivory of woody species, livestock can destroy riparian habitat by trampling and trailing through it. These effects can be significant if livestock concentrate in areas and the plants are small.

Other impacts that improper livestock grazing has on riparian habitats include compaction of surface soil that reduces infiltration and increases surface runoff, reduction of bank stability which leads to accelerated erosion and increased sedimentation, and removal of organic material due to reduction in plant vigor and density (Verde Natural Resources Conservation District 1993). These impacts result in increased susceptibility to destruction of a riparian area during heavy flow events. Livestock grazing during the sprouting and regeneration of the cottonwood/willow community after these flood events has led to increased fragmentation, reduced or eliminated recruitment, and ultimately, total degradation. As native plant species try to compete with non-natives, livestock's preference for native plants favors establishment of non-natives. Changes in riparian areas as a result of improper livestock grazing are often linked to more widespread changes in watershed hydrology.

Poor watershed conditions in the uplands can have adverse indirect effects on flycatcher habitat. Livestock grazing (as well as other activities such as timber harvesting, road and trail construction, off-road-vehicle use, heavy recreational use in concentrated areas, large-scale fires, resource extraction, and other ground-disturbing activities) can contribute to poor watershed conditions. Such activities result in the removal of organic material on the soil surface. Removal of vegetation cover can lead to compaction and decreased water infiltration of the soil, which results in increased silt loads, increased turbidity, decreased water quality, increased scouring during high flows, and altered pH levels. All of these impacts can have an indirect adverse effect to riparian areas, including flycatcher habitat.

## 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 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.

### A. STATUS OF THE SPECIES AND CRITICAL HABITAT WITHIN THE ACTION AREA

#### Apache trout

Apache trout are currently stocked in the EFLCR, approximately two miles downstream from the allotments. Additionally, both the EFLCR and the SFLCR are scheduled for Apache trout reintroductions from their headwaters to the planned migration barriers from 2005-2007. Perennial sections of both the EFLCR and SFLCR occur on the Pool Corral Allotment. These perennial reaches include approximately one mile of the EFLCR and three miles of the SFLCR. All three allotments contain the intermittent headwaters of the SFLCR drainage, while the Pool Corral Allotment contains three intermittent lateral tributaries to the EFLCR drainage. Apache trout are also stocked in the East Fork of the Black River, approximately 20 miles downstream from the allotment. All three allotments contain the upper headwaters of the EFBR system, of which some of the drainages are perennial.

#### Southwestern Willow Flycatcher and its proposed critical habitat

There are two known Southwestern willow flycatcher breeding sites on the Springerville Ranger District. Both of these sites are located in the Greer basin. The closest nesting territory is approximately one mile from the western boundary of the Pool Corral allotment at River Reservoir. In 2004, there were three territories at this site. The occupied nesting habitats are in broad, flat drainage bottoms with dense broad willow stands at about 8,200 ft elevation. Vegetation consists of patches of densely growing shrubs averaging 15-20 ft tall. The vegetative component is composed mainly of Geyer willow (*Salix geyeriana*) and dense herbaceous ground cover. Where present, alders (*Alnus spp.*) comprise a very minor portion of the shrub community. Pools and marshes created by beaver dams, wet meadows, or saturated soil are usually present in the immediate vicinity. Nests typically are built in Geyer willows, although in 1995 one nest was found in black twinberry (*Lonicera involucrate*). Cowbird trapping is currently being conducted during the flycatcher breeding season to try and improve willow flycatcher nesting success at this site.

There are two reaches of proposed critical habitat on the allotment. The two reaches are the South Fork of the Little Colorado River (SFLCR) from the Little Colorado River upstream to Joe Baca Draw and the East Fork of the Little Colorado River (EFLCR) from the Little Colorado River upstream to Forest Road 113. The role of this proposed critical habitat is to provide the

continuity within the Little Colorado Management Unit, which is part of the Basin and Mohave Recovery Unit.

There is a southwestern willow flycatcher nesting territory in the action area approximately one mile from the western boundary of the Pool Corral allotment at River Reservoir. In 2004, there were three territories at this site. Cowbird trapping is currently being conducted during the flycatcher breeding season to try and improve willow flycatcher nesting success at this site.

The Recovery Plan concludes that excessive grazing is harmful to riparian habitat needed by the flycatcher. The Recovery Plan further concludes that evidence and field examples indicate that, with respect to livestock grazing, southwestern willow flycatcher recovery would be most assured, and in the shortest time, with total exclusion of livestock grazing from those riparian areas deemed necessary to recover the flycatcher and where grazing has been identified as a principal stressor. The plan also provides recommendations to Federal land managers on conservation planning for the flycatcher. The focus of these recommendations is on identifying riparian areas that pose the best opportunities for recovering flycatcher habitat (within the context of economic and other constraints) and excluding them from grazing (see Appendix G of the Recovery Plan). Both the South and the East forks of the Little Colorado River are mentioned as areas to focus recovery efforts. Additionally, grazing recommendations for both of these areas is for no grazing during any season according to the Recovery Plan (USFWS 2002) and the March 31, 2004, Framework for Streamlining Informal Consultation for Livestock Grazing Activities.

## **B. FACTORS AFFECTING SPECIES' ENVIRONMENT AND CRITICAL HABITAT WITHIN THE ACTION AREA**

### Vegetation

Table 3 below shows the different vegetative types in each allotment.

Table 3: Acres by vegetative types.

<b>Vegetative Type</b>	<b>Cross Bar</b>	<b>Pool Corral</b>	<b>Rudd Knoll</b>
Aspen	32	76	-
Montane and Subalpine Grasslands	5,879	4,049	3,824
Mixed Conifer Forest	588	2,481	608
Ponderosa Pine Forest	3,287	7,179	2,890
Pinon-Juniper Woodland	957	923	-
Wetland/Riparian	20	197	65
Water	4	185	69
Total National Forest	10,767	15,090	7,456

Approximately 41% of the allotments are grassland interspersed with timbered knolls and forested stringers. There are a significant number of wet meadows, cienegas, reservoirs, and drainages within the allotments. Riparian areas are restricted to the stream corridors, cienegas, wet meadows, and springs.

### Watershed

A general assessment of watershed condition of the Forest was completed as part of the Environmental Assessment for the Forest Land Management Plan. The allotments are located within the Upper Little Colorado fifth code watershed which is rated satisfactory and the Upper Black River Watershed which is also rated satisfactory. Areas within the ponderosa pine and mixed conifer vegetation types are generally in satisfactory watershed condition, primarily due to an accumulation of pine litter, which adds hydraulic roughness to the surface and protects topsoil from runoff and accelerated erosion. Watershed conditions within the high-elevation grasslands are generally satisfactory except for a few localized areas of concentrated ungulate use. Unsatisfactory watershed conditions are associated primarily with the pinyon-juniper vegetation type and with the transition between pinyon-juniper and ponderosa pine types in areas having moderate to heavy tree canopy cover. Areas with heavy canopy cover (greater than 40%) within the transition between ponderosa pine and pinyon-juniper vegetation types are unsatisfactory on moderately steep and steep slopes as found on the north end of the Cross Bar allotment and on steep canyon sideslopes.

Recent watershed/riparian surveys indicate some bank cutting and head cutting are occurring in open drainage bottoms in the headwaters of both the Little Colorado and Black rivers. Utilization of upland meadows reduces their hydraulic roughness, increases runoff rates during large storms, leads to decreasing water tables, and changes the composition of herbaceous species.

In 2003, as a result of drought and concentration of ungulate use, drainage bottoms received heavier-than-normal impacts from combined wild and domestic ungulates, reducing residual vegetation needed to protect streams from snow melt runoff. Most of Arizona is experiencing drought conditions. If drought conditions continue without adjustments to grazing use, the condition of protective vegetation will decline resulting in loss of stream bank stability and increased vertical cutting.

### Riparian

The Proper Functioning Condition (PFC) methodology is an ecological analysis procedure utilized to evaluate hydrologic, soil, and vegetative conditions of riparian systems. PFC is defined when “riparian areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and groundwater recharge.” It is not, however, a measure of fish habitat quality. Several streams and wetlands were evaluated during the analysis of the three allotments. A complete description of all Proper Functioning Condition surveys completed on the allotments can be found in the Biological Assessment. Riparian condition is summarized by stream reach as follows:

### South Fork, Little Colorado River and unnamed tributaries

Of the three reaches inventoried, the majority of the South Fork of the Little Colorado River (SFLCR) is rated Functional at Risk (reaches 1 and 3). Reach 2 is rated as Satisfactory. Riparian reaches were evaluated from the headwater areas within the open grasslands to the closed canyons where alder and willow are abundant. The upper reaches are characterized as having “seasonal” riparian areas, wet during spring runoff and during summer precipitation periods. Species recorded include those in the *Carex* and *Juncus* genus, along with Kentucky bluegrass, tufted hairgrass, spike muhly as well as invading upland species, including sheep fescue, and Arizona fescue. Surveys of reach 1 indicate a downward apparent trend based upon areas of active headcutting and bank cutting. Plant species show low vigor and density, and protective cover is deficient on stream banks. Field observations indicate localized bank damage from livestock hoof action in that portion of reach 1 north of FR 409 and active headcuts are observed in the uppermost section of reach 1. Existing riparian condition is strongly attributed to ungulate grazing impacts to vegetation and mechanical damage to streambanks. Reach 3 is also rated as Functional at Risk but with trend not apparent. Reach 3 is in better condition than reach 1, but riparian species are not vigorous or present in sufficient quantity to protect streambanks. Woody riparian species are heavily browsed by ungulates.

### Bill Riley Draw and tributaries

Bill Riley Draw is a tributary to the SFLCR. Two reaches were evaluated within the Draw, and each was found to be at Proper Functioning Condition. Two tributaries to Bill Riley Draw were also evaluated and found to be at Proper Functioning Condition. Ungulate impacts in the surveyed portion of these drainages are low. There are closed roads within Bill Riley Draw watershed that are receiving some off highway vehicle (OHV) use which is resulting in localized sediment input to the streams. There are also three stock tanks within this tributary which are trapping sediment from past timber harvest activities. Lower reaches are canyon confined, heavily armored by rock, and stable. Woody riparian vegetation is dominated by alder species. More diversity in age classes and addition of willow species would be desirable. Upper reaches are well vegetated with *Carex*/*Juncus* species and retention of stubble height at the end of the growing season would help maintain stability during spring runoff events.

### Joe Baca Draw

Joe Baca Draw was evaluated from below SH 261 to its confluence with SFLCR. This riparian area is in Proper Functioning Condition. Numerous springs were observed within this drainage, ensuring a perennial flow, even during dry years such as 2002 and 2003. Three sets of cattle enclosures around some of the springs have reduced animal impact to the areas. Alder species are the dominant woody vegetation. More diverse woody vegetation is desirable.

### East Fork, Little Colorado River

This riparian area is rated as being in Proper Functioning Condition. This section of the EFLCR is in stable condition with few impacts observed on riparian vegetation.

### Unnamed tributary to EFLCR near Pool Corral

This unnamed tributary to the EFLCR area is rated as Functional at Risk, trend not apparent. The riparian area is found within the open grasslands, and is dominated by *Carex*/*Juncus*, with

upland species encroaching into the area. Ungulate use appears to be light. The narrow riparian area is being impacted by a spur road to FR 409, but could be easily fixed with improvements to the road crossing. The area above the surveyed reach has some riparian species, but is dominated by upland grasses and forbs. Some rill erosion was noted in an ephemeral drainage leading to this riparian area caused by failure of a water transfer ditch leading to Pool Corral Lake.

#### North Fork, East Fork Black River and unnamed tributaries

Of the three reaches inventoried, the majority of the North Fork of the East Fork of Black River (NFEFBR) is rated at Functional at Risk (reaches 1 and 3). Trend was not apparent for reach 1 and estimated as upward for reach 3. Reach 2 is rated as Nonfunctional. Reach 1 currently has very low sinuosity, with a narrow, undeveloped floodplain. Riparian vegetation is not continuous and lacks vigor, allowing for stream bank erosion. Reach 2 is chiefly affected by a culvert crossing under State Road 273 which was installed below the natural channel gradient, lowering the base level of the stream, thereby causing the channel to headcut upstream through an existing meadow. The riparian vegetation is not vigorous or continuous on the streambanks. These banks are still actively cutting with gravel and silt substrate making the channel bottom very unstable. Ungulate grazing has contributed to a deterioration of riparian vegetation, destabilization of streambanks, and compaction of soils in the riparian area. A cattle enclosure of less than 5 acres is in place on a portion of this reach. Ungulate impacts to this enclosure are reduced.

#### Southwestern Willow Flycatcher Proposed Critical Habitat

There are two reaches of proposed critical habitat within the action area, SFLCR from the Little Colorado River upstream to Joe Baca Draw and the EFLCR from the Little Colorado River upstream to Forest Road 113. Proposed critical habitat includes the stream reach not exceeding the 100-year floodplain. These two segments are within the Little Colorado Management Unit. This Management Unit is greater than the action areas which also includes segments of the Little Colorado River and portions of the East, West, and South Forks of the Little Colorado River proposed as critical habitat. The conservation role of this Management Unit is essential to the overall distribution and connectivity of the species. Southwestern willow flycatchers have been detected nesting at single sites on both the Little Colorado and West Fork of the Little Colorado since 1993. In 1996, a high of 11 territories were detected at both locations on the West Fork and Little Colorado Rivers. In 2004, four territories were detected on these segments. No territories have been detected on the South or East Forks of the Little Colorado River. While no territories are known from these segments, they are determined to be essential to the conservation of the southwestern willow flycatcher because these segments fall within an 18 mile radius of a large southwestern willow flycatcher population.

The South Fork of the Little Colorado River is relatively narrow and confined and is unlikely to develop into potentially suitable habitat, even with extensive management. Currently suitable habitat, as defined by the Recovery Plan, is a riparian area with all the components needed to provide conditions suitable for breeding flycatchers. These conditions are generally dense, mesic riparian shrub and tree communities 0.25 acre or greater in size within floodplains large enough to accommodate riparian patches at least 33 feet wide (measured perpendicular to the channel).

The section of the South Fork of the Little Colorado River on the allotment is probably not wide enough to support the dense riparian vegetation necessary for breeding southwestern willow flycatchers. However, the stream section may provide an important migratory link between other suitable habitats in the area.

The East Fork of the Little Colorado River is currently lacking many of the constituent elements defined in the proposed critical habitat rule. Currently the small section of the East Fork Little Colorado River on the allotment does not contain dense riparian vegetation. The area has a wide floodplain that will likely develop into nesting habitat with proper management.

## **EFFECTS OF THE ACTION**

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

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 the *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete the following analysis with respect to critical habitat.

### **Apache Trout**

Arizona Game and Fish Department is planning to stock Apache trout into streams in the Little Colorado River beginning in 2005 [for further information on this project, refer to the Apache Trout Reintroduction Environmental Assessment (U.S. Forest Service 2002)]. The goal of stocking Apache trout is to secure reproductive, self-sustaining populations of pure Apache trout within their historical range which will help recover the threatened species. The EFLCR could be stocked this year, while the SFLCR is scheduled to be renovated in 2006 with stocking a year later (Scott Gurtin, AGFD, pers comm. November 29, 2004). This effects analysis is based on the understanding that pure Apache trout populations are reasonably certain to be placed within the action area during the life of the project.

Impacts of livestock grazing to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects contribute to the immediate loss or harm to individual fish or embryos (*e.g.*, directly stepping on young fish, trampling a redd (spawning nest) that results in the actual destruction of embryos, or dislodging the embryos from the protective nest and ultimately destroying eggs). Indirect effects includes those impacts which occur at a later time and will result in the loss of specific habitat features (*e.g.*, loss of undercut banks, sedimentation of spawning beds, loss of riparian vegetation, changes in channel stability and structure). Livestock grazing on the 26 Bar Allotment has the potential to cause both direct and indirect effects to Apache trout.

Direct effects of livestock grazing will occur when livestock enter or cross the streams occupied by Apache trout. On the 26 Bar Allotment cattle have direct access to the South Fork Little Colorado River and the East Fork Little Colorado River which are both occupied by Apache trout. During the early phases of their life cycle, Apache trout have little or no capacity for mobility, and large numbers of embryos or young are concentrated in small areas. Livestock entering fish-spawning areas can trample redds, and destroy or dislodge embryos and alevins. Belsky *et al.* (1997) provide a review of these direct influences on stream and riparian areas. Wading in streams by livestock can be assumed to induce mortality on eggs and pre-emergent fry at least equal to that demonstrated for human wading (Roberts and White 1992). In Roberts and White's (1992) investigation, a single wading incident upon a simulated spawning bed induced 43 percent mortality of pre-hatching embryos. Similar results could be expected in either the South Fork or East Fork Little Colorado River when livestock have access to critical spawning areas during critical times for Apache trout.

Avoidance of direct impacts to Apache trout spawning areas can be achieved by scheduling grazing in pastures containing spawning habitat to occur after July 15, or by excluding known spawning areas from livestock access. Apache trout spawn from March through mid-June and construct redds at downstream ends of pools in a variety of depths, velocities, and gravel compositions and only after water temperatures reach 46.4 degrees F. Eggs hatch in 30 days. Fry emerge from redds after another 30 days, then move downstream at night (USFWS 1983). The period during which spawning Apache trout adults may be susceptible to harassment, or eggs and pre-emergent fry susceptible to trampling by livestock, is from June 15 to July 15 in the Little Colorado River basin streams. Cattle enter the allotments on June 15, resulting in one month of critical time in which eggs and fry will not be protected from the effects of grazing management. Other forms of direct take, for example harassment of Apache trout by livestock when livestock enter or are adjacent to occupied habitat, resulting in Apache trout behavioral modifications, are more difficult to assess. Take in the form of harassment can be reduced in the long-term by rangeland management that results in better riparian and in-channel habitat conditions, and that creates more cover and other important habitat features conducive to Apache trout survival and recovery.

Cattle wading into a stream or crossing the stream have the potential to disturb juvenile Apache trout from streamside cover. Once these juveniles are removed from cover and swim into open water, they become more susceptible to predation from larger fish and avian predators. However, we believe that the risk of mortality of juvenile Apache trout due to flushing from cover by watering cattle is minimal.

Numerous symposia and publications have documented the detrimental effects of livestock grazing on stream and riparian habitats as summarized earlier in this document (Platts 1981, Kauffman and Krueger 1984, Clary and Webster 1989, Kinch 1989, Chaney *et al.* 1990, Belsky *et al.* 1997). Some of these effects are already evident on the 26 Bar Allotment. The PFC surveys indicate that sections of the SFLCR have plant species which show low vigor and density, and protective cover is deficient on stream banks. Additionally, field observations indicate localized bank damage from livestock hoof action and active headcuts. Furthermore,

these surveys indicate that existing riparian conditions are strongly attributed to ungulate grazing impacts to vegetation and mechanical damage to streambanks.

Effects of livestock grazing on riparian and instream habitats will likely include compacting stream substrates, collapse of undercut banks, destabilized streambanks, localized reduction or removal of herbaceous and woody vegetation along streambanks and within riparian areas, increased width/depth ratio, reduced pool frequency, promotion of incised channels, and lowering water tables as described in Platts (1991). Belsky *et al.* (1997) provides a review of these influences on stream and riparian areas and resulting indirect effects on fish. Riparian areas in poor condition are unable to buffer the effects of accelerated runoff. Two sections of the South Fork of the Little Colorado River rated as Functional at Risk and already have conditions affected by ungulate use. Accelerated runoff can cause unstable stream channels to downcut or erode laterally, accelerating erosion and sediment production (Chaney *et al.* 1990). Lateral erosion results in progressively wider and shallower stream channels that have warmer water temperatures, less structure, and are less productive, thus adversely affecting fish populations. Streambank hoof shearing, bank sloughing, and inadequate carry-over vegetation reduces bank stability and silt filtration capacity (Kinch 1989).

Based on plant phenology, the only grazing strategies generally considered to have a good chance for rehabilitating degraded streams and riparian areas are light or tightly controlled uses such as winter-only grazing, or riparian pastures with short, early-spring use periods, and certain strategies incorporating a full-season of rest (Platts 1991). The East Fork Little Colorado River riparian areas have a utilization standard of 35% while the South Fork Little Colorado River has a utilization standard of 25%. Most tributaries to the South Fork Little Colorado River have a utilization standard of 35%. There are no riparian enclosure fences to keep livestock out of riparian areas. Two reaches of the SFLCR are rated as Functional at Risk. Existing riparian condition is strongly attributed to ungulate grazing impacts to vegetation and mechanical damage to streambanks. This is expected to continue in the action area where cattle have access to streams, and may change the way in which flood flows interact with the stream channel and may exacerbate flood damage to banks, channel bottoms, and riparian vegetation. These impacts occur at all levels of cattle presence, but increase as the number of livestock and the length of the grazing season increase (Marlow and Pogacnik 1985).

Without the use of on-the-ground range improvements, concentrated livestock use can be expected to occur in some areas. According to the biological assessment four or more pastures per year will be rested. There will also be full-season rest in pastures with unsatisfactory riparian conditions.

### **Southwestern willow flycatcher and its proposed critical habitat**

The BAE states that there is no occupied, unoccupied suitable, or potential willow flycatcher habitat on the allotments. The FWS has proposed critical habitat on the Pool Knoll Allotment in the East Fork Little Colorado River and the South Fork Little Colorado River. Additionally, the Recovery Plan mentions these two reaches as streams with substantial recovery value with currently or potentially suitable habitat (USFWS 2002). Livestock grazing will be permitted within the East and South forks of the Little Colorado River as part of the proposed action;

therefore, cattle will be permitted to graze in potential habitat. Additionally, cattle will be permitted to graze other riparian portions of the allotment during both the dormant and growing seasons on the allotments.

The overuse of riparian areas by livestock has been a major factor in degradation and decline of willow flycatcher habitat (Tibbitts *et al.* 1994). Grazing in the riparian area during the growing season of willows and cottonwoods will likely preclude their regeneration. These trees, particularly willows, are favored by flycatchers. The length of the growing season can vary depending on a site's elevation, climate, and amount of yearly precipitation received. Livestock grazing during the growing season in riparian areas can reduce the diversity and density of riparian plant species, especially cottonwood and willows. Livestock will likely reduce the suitability of riparian areas by reducing canopy cover especially at the lower levels preferred by flycatchers. On the 26 Bar Allotment there are no fences to prevent cattle from congregating in riparian areas. The management of the allotment does not include any measures to relieve cattle pressure in sensitive riparian areas, including during the growing season. It can be expected that cattle will congregate in these riparian areas. When livestock grazing is reduced or eliminated, southwestern willow flycatcher numbers can rebound. Direct destruction of nests, eggs, and nestlings by foraging livestock has also been documented (Tibbitts *et al.* 1994), but is unlikely to occur on the 26 Bar Allotment due to the lack of dense vegetation and probable lack of flycatcher occupancy in areas accessible to cattle.

Flycatchers are generally not found nesting in confined floodplains where only a single narrow strip of riparian vegetation less than approximately 33 feet wide develops, although they may use such vegetation if it extends out from larger patches, and during migration (USFWS 2002). The South Fork of the Little Colorado River, which is more confined than typical flycatcher habitat may be more important as a migration corridor than as a potential breeding site.

According to the proposed rule for critical habitat designation, the East and South forks of the Little Colorado have potential for supporting southwestern willow flycatchers. We believe that, due in part to proposed utilization levels, the proposed grazing strategy will delay improvement of the primary constituent elements and conservation contribution for flycatchers. Cows would graze in the West Mexican Hay and Pool Knoll pastures in both the dormant and growing season at a proposed utilization rate of 25 to 35 percent. Soil conditions in these pastures range from fair to excellent while range conditions on the Pool Corral Allotment range from excellent grassland (1%), good grassland (29%), fair grassland (7%), fair woodland (47%), water (2%), and no capacity (14%). According to the March 31, 2004, "Framework for Streamlining Informal Consultation for Livestock Grazing Activities" no grazing should occur in these high-elevation potential southwestern willow flycatcher sites. This is also the recommendation within the Recovery Plan (USFWS 2002).

Continued grazing of proposed critical habitat will continue to limit development of willow species, slow development of dense riparian vegetation, and limit nesting habitat. Additionally, the species will be adversely affected by the loss of this breeding, feeding, and nesting habitat. This breeding, feeding, and nesting habitat is the basis for the constituent elements of proposed critical habitat. These constituent elements will be destroyed by cattle eating the vegetation.

Components of the constituent elements will also not be able to develop because of livestock grazing within proposed critical habitat.

The one occupied site in the action area, River Reservoir will benefit from the ongoing cowbird trapping, and is not likely to experience any changes during the life of this project.

The status of the species and its proposed critical habitat and the effects of the proposed grazing action can be summarized in the following points:

1. The flycatcher is endangered, and loss of riparian habitat is the primary cause.
2. Potential habitat exists as proposed critical habitat within the action area on portions of the East Fork of the Little Colorado River and occupied habitat occurs approximately one mile away at the Greer nesting site.
3. The environmental baseline throughout the action area is in part degraded, with grazing being a significant contributor to riparian conditions.
4. Riparian habitat is, at least in part, unsatisfactory within the action area.
5. One occupied site in the action area is expected to be sustained if cowbird trapping continues.

## **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.

AGFD has obtained a scientific collecting permit 10(a)(1)(A) to transfer Apache trout from fish hatcheries directly into the EFLCR and the SFLCR. Since the project area occurs within the jurisdiction of the Apache-Sitgreaves National Forests, it is not likely that actions that might affect listed species within the project area would not be considered a Federal action. Ongoing monitoring of the fish community is expected to occur. Permitted fishing by anglers for Apache trout within streams in the area may occur. Actions by individuals whose land is adjacent to the Forest or its tributaries may or may not be considered Federal actions.

Grazing by cattle and elk also occurs on private land inholdings on the Apache-Sitgreaves National Forests. Cattle and elk grazing also occurs on private land parcels upstream of the allotments along the Little Colorado River. Impacts from that grazing can influence stream conditions within the allotments under consultation. The effects of this grazing would be the same as those described for this consultation, and are cumulative to those effects occurring on federally-managed lands.

## CONCLUSION

### Apache Trout

After reviewing the current status of Apache trout, the environmental baseline for the action area, the cumulative effects, and the anticipated effects of the proposed action, it is the FWS biological opinion that the proposed action is not likely to jeopardize the continued existence of Apache trout. The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design. No critical habitat has been designated for this species; therefore, none will be affected. We present this conclusion for the following reasons:

1. There have been recent efforts by the National Forest to ameliorate some of the erosion and sedimentation problems aggravated by ongoing livestock grazing activities on many of these allotments within the watershed.
2. In general, there is an upward trend in Apache trout numbers due to recovery efforts by the Forest, and Arizona Game and Fish Department, and other parties.

### Southwestern willow flycatcher and its proposed critical habitat

After reviewing the status of the southwestern willow flycatcher, the environmental baseline for the action area, the cumulative effects, and the anticipated effects of the 26 Bar Allotment Management plan, it is our biological opinion that the proposed action is neither likely to jeopardize the continued existence of the southwestern willow, nor result in the destruction or adverse modification of proposed critical habitat. The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design. We present this conclusion for the following reasons:

1. Cowbird trapping will continue at the nearby River Reservoir site in response to another grazing allotment.
2. Only about ¼ mile of proposed critical habitat on EFLCR will be affected by the proposed action. Proposed critical habitat on the SFLCR will likely never develop into suitable flycatcher nesting habitat due to the lack of a wide floodplain. This is a very small section of the Little Colorado Management Unit.
3. The effects of the action on the primary constituent elements are not such that the value of proposed critical habitat for conservation of willow flycatcher is permanently significantly reduced.

## **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 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**

We anticipate that the grazing actions covered by this Biological Opinion are reasonably certain to result in incidental take of Apache trout. Some level of incidental take is expected to occur within the action area as a result of livestock grazing due to the potential for cattle to trample Apache trout redds, disturbance of spawning adult Apache trout, or harassment of Apache trout due to habitat alterations. Because of the inherent biological characteristics of aquatic species such as Apache trout, however, the likelihood of discovering take attributable to these actions is very small. The anticipated level of incidental take cannot be directly quantified because of the unknown numbers of Apache trout in the project area and the difficulty detecting Apache trout due to eggs, fry, and fish being small, blending into their environment, and occurring underwater in a flowing river. Therefore, we define incidental take in terms of habitat conditions, and use surrogate measures to identify when take has been exceeded. We anticipate that take will occur throughout those portions of the EFLCR and SFLCR and their tributaries included within the proposed action area. The authorized level of incidental take of Apache trout from the proposed action will be exceeded if any of the following conditions occur:

1. There are declines in riparian conditions measured by Proper Functioning Condition Surveys (PFC) which are attributable to livestock grazing. A decline will be defined as a change in condition class or a change in trend within the same condition class. Riparian conditions are an acceptable surrogate measure for determining incidental take because: 1) they can be measured; 2) they are defined in the baseline for the allotment; and 3) they relate to effects to Apache trout, as described in the effects section. PFC surveys shall occur in 2010 and 2015, or sooner, on Apache trout streams.

Monitoring will be accomplished by using established methodologies or other agreed upon monitoring methods to be described in a mutually developed monitoring plan.

2. Forage utilization objectives are exceeded, resulting in a decrease in ground cover due to livestock grazing.

#### Southwestern willow flycatcher

The allotment contains potential habitat that could develop into suitable habitat with proper management. Southwestern willow flycatchers are known to occur approximately one mile to the west of the Allotment and, for this reason, we believe that the continued use of this area in the future is possible. The Forest Service is already implementing cowbird trapping at the occupied site to ensure that adverse effects to that site are minimized. However, we do not believe that additional sites on the allotment are currently occupied by southwestern willow flycatchers. Additionally, cowbird trapping is already occurring at the closest known flycatcher breeding area. We do not anticipate take of individual flycatchers will result from the proposed action if cowbird trapping continues.

#### **EFFECT OF THE TAKE**

In the accompanying biological opinion, the FWS determined that this level of anticipated take is not likely to result in jeopardy to the Apache trout. No take is anticipated for the southwestern willow flycatcher.

#### **REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS**

The measures described below are non-discretionary, and must be undertaken by the Forest Service so that they become binding conditions of any grant or permit issued to the permittee, as appropriate, for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest Service (1) fails to assume and implement the terms and conditions or (2) fails to require the permittee to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Forest Service must report the progress of the action and its impact on the species to the FWS as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

In order to be exempt from the prohibitions of section 9 of the Act, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described below and the reporting/monitoring requirements. These terms and conditions are non-discretionary.

#### Apache Trout

The following reasonable and prudent measure(s) and terms and conditions are necessary and appropriate to minimize take of Apache Trout:

1. Protect riverine and riparian habitat from significant grazing and trailing effects within the EFLCR, SFLCR, and their tributaries.

- A. Appropriate management actions shall be taken to ensure that cattle are not congregating within stream corridors. Methods to be used can include, but are not limited to, temporary drift fences, gap fences, and herding cattle.
  - B. The Forest Service shall identify suitable Apache trout spawning sites and notify the permittee of these areas. The permittee shall minimize the time that cattle have access to these sites during the critical spawning season (June 15 - July 15).
2. Implement the proposed action in a manner that will result in a stable or upward trend for all pastures within the allotment. Verify the upward trend through monitoring.
    - A. Soil/watershed or ecological condition, at a minimum, shall be assessed by evaluating plant density, crown and litter cover, stubble height, and other soil-stability characteristics. Monitoring to document changes in watershed and soil health shall be conducted in a manner consistent with a mutually developed monitoring plan.
    - B. The monitoring plan shall be developed by utilizing information collected by the Forest Service and Arizona Game and Fish Department. Additional sources of information can and should be used to assess ecosystem health of the allotments.
  3. The Forest Service shall conduct necessary monitoring of the incidental take associated with this proposed action.
    - A. The Forest Service shall closely monitor utilization and physical damage levels to banks and existing vegetation within EFLCR and SFLCR during periods of cattle use.
    - B. Records of enclosure and gap fence monitoring and maintenance shall be maintained. A brief summary on enclosure maintenance, repair, livestock intrusion, and other relevant information will be furnished in the annual report (see below).
    - C. In the annual report, briefly summarize for the previous calendar year: 1) implementation and effectiveness of the terms and conditions, 2) documentation of take, if any, and 3) actual livestock use (head, animal months, dates of pasture use, utilization measurements, etc.) with a description of any variations from the proposed action. If other monitoring or research is completed pertaining to Apache trout or conditions of rangeland, riparian areas, or soil, a copy of the relevant reports shall be included.

Review requirement: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Forest Service must immediately provide an explanation of the causes of the taking and review with the AESO the need for possible modification of the reasonable and prudent measures.

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

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202, telephone: 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.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

#### Apache Trout

1. Consider reducing or eliminating planned livestock grazing in all riparian pastures with Apache trout habitat.
2. Identify, reconstruct, or close unneeded roads on the allotments to reduce this source of sediment inflow to the stream.

#### Southwestern willow flycatcher

1. Implement Forest-specific actions the Southwestern Willow Flycatcher Recovery Plan, including recommendations for grazing management.
2. A monitoring plan should be implemented to better determine when the actual growing season occurs in the action area to help alleviate overuse of riparian areas by livestock in the project area.

### **CONFERENCE CONCLUSION**

This concludes the section 7 conference on effects of the issuance of a 10-year grazing permit for the 26 Bar Allotment on southwestern willow flycatcher proposed critical habitat. You may ask us to confirm the conference opinion as a biological opinion issued through formal consultation if critical habitat is designated. The request must be in writing. If we review the proposed action

and finds there have been no significant changes in the action as planned or in the information used during the conference, we will confirm the conference opinion as the biological opinion for the project and no further section 7 consultation will be necessary.

After listing as threatened or endangered and any subsequent adoption of this conference opinion, you should request reinitiation of consultation if: 1) new information reveals effects of your action that may affect the species in a manner or to an extent not considered in the conference opinion; 2) your action is subsequently modified in a manner that causes an effect to the species that was not considered in this opinion; or 3) a new species is listed or critical habitat designated that may be affected by your action.

### REINITIATION NOTICE

This also concludes formal consultation on the effects of proposed issuance of a 10-year grazing permit for the 26 Bar Allotment as outlined in the Forest Service's July 12, 2004, letter on the Apache trout and southwestern willow flycatcher. 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.

We appreciate the Forest Service's efforts to identify and minimize effects to listed species from this project. For further information please contact Jennifer Graves (x232) or Debra Bills (x239). Please refer to the consultation number, 02-21-04-F-0355, in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle  
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES) (Attn: Sarah Rinkevich)  
District Ranger, Springerville Ranger District, Springerville, AZ  
Bob Broscheid, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ  
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM  
Project Leader, Arizona Fishery Resources Office, Pinetop, AZ  
Shaula Hedwall, US Fish and Wildlife Service, Flagstaff, AZ  
Mary Richardson, US Fish and Wildlife Service, Phoenix, AZ

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**APPENDIX A:  
CONCURRENCES**

## **CONCURRENCES**

### **Little Colorado Spinedace**

The spinedace is still found in the watersheds it was known from historically (Chevelon, Silver, Nutrioso, East Clear Creek, and the LCR proper). Spinedace are currently found in the Little Colorado River near Saint Johns, upstream of its confluence with Nutrioso Creek. Other locations include East Clear Creek, Leonard Canyon, the lower eight miles of Chevelon Creek, 40 miles of the Little Colorado River upstream of St. Johns, and the lower eight miles of Nutrioso Creek. Populations are generally small and the population size for any occupied stream is unknown due to the yearly fluctuations and difficulty in locating fish. Spinedace detection varies in some sampling sites from one year to the next and they may not be found for several years.

Little Colorado spinedace do not occur on the allotments. The closest population occurs approximately four miles downstream from the allotments in Rudd Creek. The uppermost portion of the Rudd Creek watershed occurs on Rudd Knoll Allotment, with an estimated 0.1 mile of upper Rudd Creek drainage originating in Little George Pasture. Critical habitat for Little Colorado spinedace also occurs approximately four miles downstream in Rudd Creek.

Occupied habitat in the Little Colorado River (LCR) occurs approximately 13 miles downstream from the Pool Corral Allotment boundary. The South Fork Little Colorado River and East Fork Little Colorado River are the only perennial drainages on the allotments that drain into the LCR. All other tributaries to the LCR found on the allotments are ephemeral, with the majority of flows rarely reaching the LCR. This is due to the seasonal nature of the streamflows and the presence of irrigation diversions for the communities of Eagar and Springerville.

Little Colorado spinedace do not occur on the allotment so there will be no direct effects to species resulting from allotment management. However, there may be indirect effects to the species from livestock grazing throughout the allotment. Indirect effects to the species could include maintenance of elevated levels of sedimentation within the drainages from grazing impacts to streambanks and upland vegetation. Indirect effects related to sedimentation within the Rudd Creek system are predicted to be minimal, given the presence of stock tanks within Rudd Creek and the proposed management on the allotments. Two impoundments occur above critical habitat in Rudd Creek, approximately 1.4 and 2.9 miles downstream from Rudd Knoll Allotment. The presence of these impoundments limits sediment movement into occupied spinedace habitat in the Rudd Creek drainage.

Little Colorado spinedace also occur 13 miles downstream of the allotment within the Little Colorado River. The majority of the South Fork of the Little Colorado River is rated as Functional at Risk (FAR) according to PFC. The South Fork of the Little Colorado River was surveyed in three reaches. Surveys of reach 1 indicate a downward apparent trend based upon areas of active headcutting and bank cutting. Plant species show low vigor and density, and protective cover is deficient on stream banks. The biological assessment notes that field observations indicate localized bank damage from livestock hoof action in that portion of reach 1 north of FR 409 and active headcuts are observed in the uppermost section of reach 1. Existing

riparian condition is strongly attributed to ungulate grazing impacts to vegetation and mechanical damage to streambanks. Reach 3 is also rated as Functional at Risk according to PFC surveys but with trend not apparent. Reach 3 is in better condition than reach 1, but riparian species are not vigorous or present in sufficient quantity to protect streambanks. Woody riparian species are heavily browsed by ungulates.

Even though the majority of the South Fork of the Little Colorado River is rated as Functional at Risk according to PFC, the watershed is in satisfactory conditions and there are good range conditions on the allotment. Additionally, there are several stock tanks in the upper portion of the SFLCR drainage which aid in capturing displaced sediment from this portion of the drainage. Of the lower 4 miles of drainage below FR 409, livestock have limited access to the uppermost 0.5 mile found within West Mexican Hay Pasture (Reach 2 of the PFC survey is rated PFC). This is due to the steep terrain associated with this section of canyon confined drainage. The remaining 3.5 miles of stream below FR 409 (rated FAR) are easily accessible by livestock. These easily assessed reaches currently contain unsatisfactory riparian habitat that will be improved by the lowered utilization standard and pasture rests. Increased bank stability and riparian vigor in the SFLCR drainage will minimize downstream sedimentation effects to spinedace from livestock grazing.

The maintenance of satisfactory watershed conditions and good range conditions (including both vegetative and soil conditions) in the headwaters of the South Fork Little Colorado (SFLCR) drainage, combined with the proposed pasture rests/utilization standards in both the uplands and in the riparian areas will minimize downstream sedimentation impacts to Little Colorado spinedace to an insignificant level.

The Forest is using a combination of management techniques to reduce livestock impacts in unsatisfactory riparian areas. First, the Forest is implementing a reduction in allowable use of forage from 35% to 25% which should benefit riparian habitat. Allowable use standards are generally based upon range conditions and generally vary from 25% to 45% on Springerville District allotments. Allowable use ranges from 25% utilization in areas rated as poor range condition; 35% in areas rated as fair; and 45% in areas rated as good range condition. Although range condition in areas associated with unsatisfactory riparian is fair or better, a 25% allowable use standard was applied to accelerate riparian condition. Because of this lowered allowable use standard, livestock will spend less time in these sensitive areas before consuming the allowable forage. Mechanical impacts to riparian habitat from livestock grazing should be reduced from current levels due to livestock spending less time in these areas before allowable use of forage is reached. Localized bank damage from livestock hoof action should occur less frequently. Adverse impacts to riparian vigor due to livestock grazing should decrease with less forage consumed. Decreased riparian soil compaction is expected with shorter periods of livestock concentrations in riparian habitats.

The Forest may include day herding as a management technique to be utilized on the 26 Bar Allotments, but prefer it be included in the Annual Operating Instructions to the permittee, as a requirement, rather than analyzed as part of the proposed action in the Biological Assessment. The Forest asserts that herding is just one of several management tools that can maximize the permittee's usage of the pasture. The District prefers not to be limited to the use of only herding

since there could be occasions when other tools would be utilized in lieu of herding. Whether or not the permittee utilizes day herding should not affect aquatic habitats as long as forage utilization standards are in place and are being monitored.

Additionally, the scheduled pasture rests will accelerate riparian recovery when combined with utilization standards. The eight pastures with unsatisfactory riparian condition related to livestock grazing impacts, will have an average of 3 in 10 years of complete rest. The remaining pastures will have 1 in 10 years of complete rest. Complete pasture rest in areas with unsatisfactory riparian condition will expedite the recovery of those areas.

We concur with the Forest's determination that the proposed action on the 26 Bar Allotment "may affect, but is not likely to adversely affect," the Little Colorado spinedace and its critical habitat due to management of livestock on the allotment, lowered utilization levels, and pasture rests. Should project plans change, information on the distribution or abundance becomes available, or utilization is exceeded, this determination may need to be reconsidered.

### **Loach minnow**

According to the biological assessment, loach minnow do not occur on the allotment. The closest population occurs approximately 11 miles downstream from the allotments in the East Fork of the Black River.

Loach minnow were first documented in the Black River in 1996 at the Three Forks Crossing (Bagley *et al.* 1996). The discovery of this remnant population in such a relatively heavily sampled location points out the difficulty in locating populations of loach minnow and other small native fishes and identifying the extent of their occupied area. Not only are loach minnow usually one of the least numerous of the species found in an area, they are also somewhat secretive, difficult to sample effectively, and are often confused with the more common native speckled dace (Marsh *et al.* 2003).

The loach minnow population in the East Fork (EFBR) and NFEFBR of the Black River is known to extend from Diamond Rock upstream to about 2 miles above Boneyard Creek (USFWS 1986) and may actually extend further upstream and most probably extends downstream, at least during years of good hydrologic conditions. It is also known to occupy the lower reaches of Boneyard Creek.

This population of loach minnow occupies habitat that appears to be somewhat different than that occupied by other remaining populations. It is substantially higher in elevation than other known populations. The gradient is also much steeper than that found in other occupied habitats. In addition, the substrate is substantially larger at this location. These factors make it difficult to predict the extent of the population and it may extend throughout the action area.

On the 26 Bar Complex, three reaches of the North Fork East Fork Black River and unnamed tributaries were assessed using Proper Functioning Condition. Of the three reaches inventoried, the majority of the North Fork East Fork Black River were rated at Functional at Risk. Trend was not apparent for reach 1 and estimated as upward for reach 3. Reach 2 is rated as

nonfunctional. Reach 1 currently has very low sinuosity, with a narrow, undeveloped floodplain. Riparian vegetation is not continuous and lacks vigor, allowing for stream bank erosion. Reach 2 is chiefly affected by a culvert crossing under State Road 273 which is installed below the natural channel gradient, lowering the base level of the stream, thereby causing the channel to headcut upstream through an existing meadow. The riparian vegetation is not vigorous or continuous on the streambanks. These banks are actively cutting with gravel and silt substrate making the channel bottom very unstable. Ungulate grazing has contributed to a deterioration of riparian vegetation, destabilization of streambanks, and compaction of soils in the riparian area. A small cattle exclosure, less than 5 acres, is in place on a portion of this reach. Ungulate impacts to this section have been reduced.

As described in the Biological Assessment and the Environmental Assessment, current watershed and range conditions are rated as good overall on the 26 Bar Allotment. According to the January 31, 2005, Forest Service letter, this is primarily due to the proactive livestock management that has occurred over the past decade. The allotments have been assigned low to moderate forage utilization levels and have been stocked below permitted numbers. A variety of management tools including day herding and pasture rests have been utilized in order to meet assigned utilization standards and to further minimize livestock effects to both the uplands and riparian areas. Unsatisfactory watershed conditions are associated primarily with the pinyon-juniper vegetation type and with the transition between pinyon-juniper and ponderosa pine types in areas having moderate to heavy tree canopy cover. The existing canopy cover, soil types, and steep slopes that occur in this vegetation type are primarily responsible for the unsatisfactory conditions, rather than livestock grazing.

According to the Biological Assessment, indirect effects to the species from livestock grazing throughout the allotment will, or is likely to, include maintenance of elevated levels of sedimentation within the drainages from grazing impacts to streambanks and upland vegetation. Indirect effects are predicted to be minimal given the proposed management on the allotments. Within the Upper Black River drainage corridors, forage utilization standards range from 25%-35% in riparian areas, depending upon current riparian condition which is based on PFC surveys from 1998-2003. Upland utilizations will range from 35%-40% based upon current range conditions. A 25% maximum utilization standard will be applied on most of the North Fork of the East Fork of the Black River due to the existing riparian condition of Functional at Risk indicated in the PFC surveys. In order to ensure that utilization is not exceeded, the Forest has established key areas, designated as utilization monitoring sites, in all unsatisfactory drainages to monitor forage utilization. Additionally, key areas are identified for satisfactory riparian reaches.

The Forest may include day herding as a management technique to be utilized on the 26 Bar Allotments, but prefer it be included in the Annual Operating Instructions to the permittee, as a requirement, rather than analyzed as part of the proposed action in the Biological Assessment. The Forest asserts that herding is just one of several management tools that can maximize the permittee's usage of the pasture. The District prefers not to be limited to the use of only herding since there could be occasions when other tools would be utilized in lieu of herding. Whether or not the permittee utilizes day herding should not affect aquatic habitats as long as forage utilization standards are in place and are being monitored.

Additionally, the scheduled pasture rests will accelerate riparian recovery when combined with utilization standards. The eight pastures with unsatisfactory riparian conditions related to livestock grazing impacts will have an average of 3 in 10 years of complete rest. The remaining pastures will have 1 in 10 years of complete rest. Complete pasture rest in areas with unsatisfactory riparian condition will expedite the recovery of those areas.

We concur with the Forest's determination that the proposed action on the 26 Bar Allotment "may affect, but is not likely to adversely affect," the Little Colorado spinedace and its critical habitat due to management of livestock on the allotment and lowered utilization levels. Should project plans change, information on the distribution or abundance becomes available, or utilization is significantly exceeded, this determination may need to be reconsidered.

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**APPENDIX B:  
MAPS**

Figure 1: General Location of 26 Bar Allotment Complex

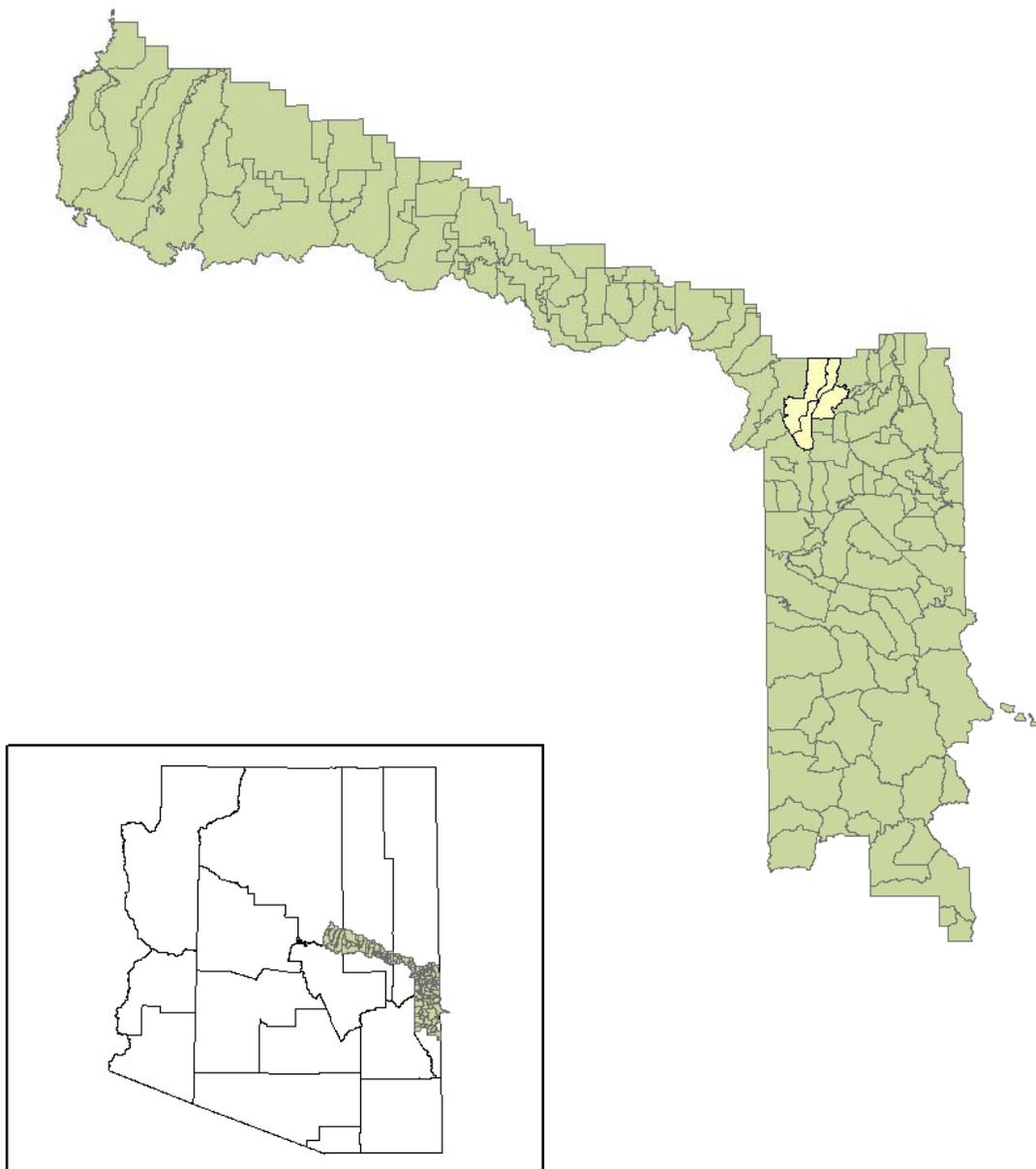
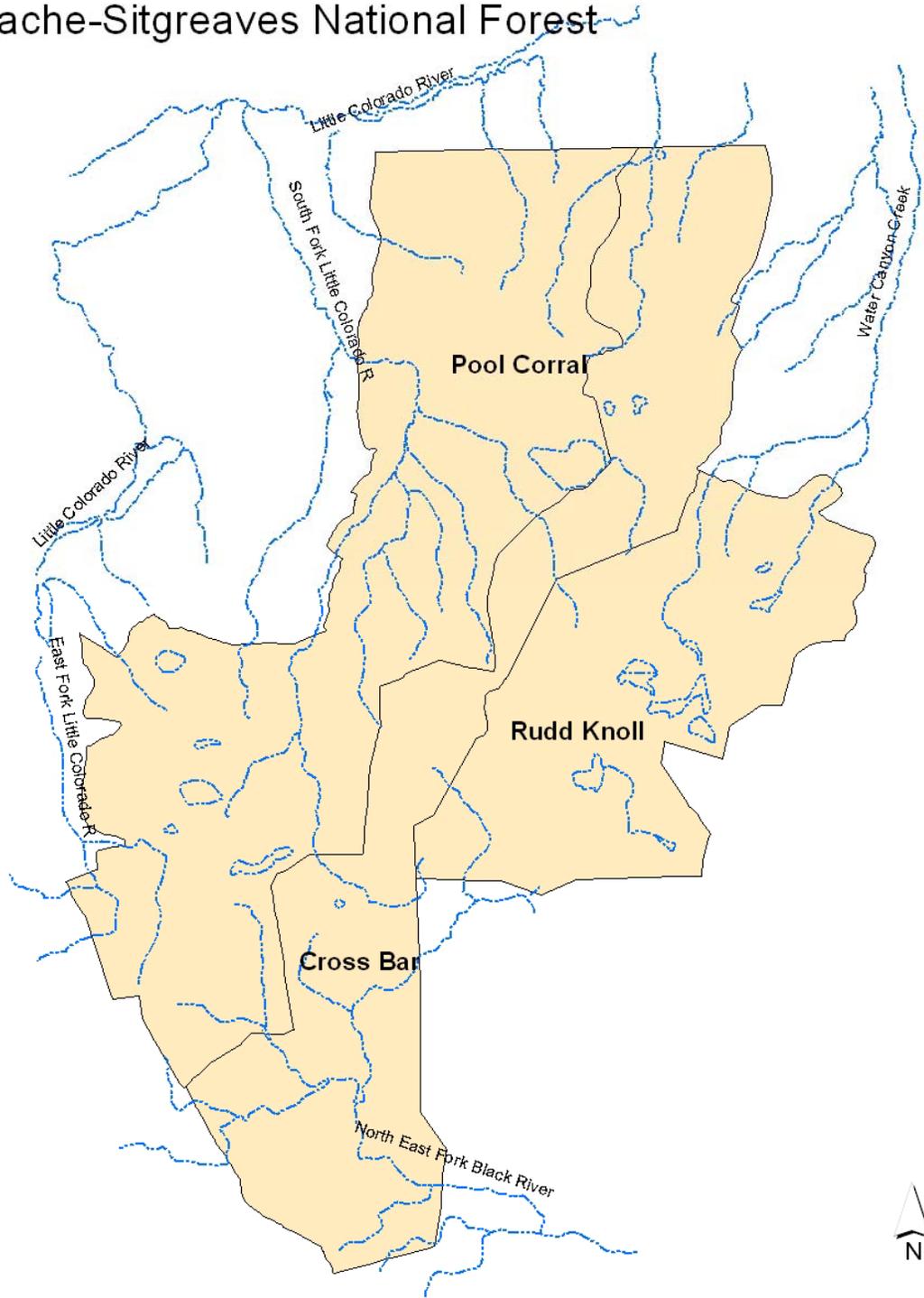


Figure 2: 26 Bar Allotment Complex,  
Springerville Ranger District  
Apache-Sitgreaves National Forest



**APPENDIX C:  
TABLES**

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Action (County)	Year	Federal Agency <sup>1</sup>	Incidental Take Anticipated
<b>Arizona</b>			
Apache Maid Allotment (Yavapai, Coconino)	1995	USFS	None
Tuzigoot Bridge (Yavapai)	1995	NPS	Take of 1 WIFL each year the site is occupied
Windmill Allotment (Yavapai)	1995	USFS	Take of 1 WIFL nest annually for 2 years due to parasitism
Solomon Bridge (Graham)	1995	FHWA	Take of 2 territories
Tonto Creek Riparian Unit (Maricopa)	1995	USFS	Take unquantifiable. Take as a result of parasitism, disturbance, modification of nesting habitat, loss of nesting sites.
Eastern Roosevelt Lake Watershed Allotment (Maricopa)	1995	USFS	Take unquantifiable. Take as a result of parasitism, disturbance, modification of nesting habitat, loss of nesting sites.
Cienega Creek (Pima)	1996	BLM	Take of 1 WIFL nest annually by cowbird parasitism
Glen Canyon Spike Flow (Coconino)	1996	USBR	Take unquantifiable. Take of WIFL habitat, loss of riparian understory habitat
Verde Valley Ranch Development (Yavapai)	1996*	Corps	Take of 2 flycatcher territories

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Modified Roosevelt Dam (Gila, Maricopa)	1996*	USBR	Take of 45 territories through habitat removal; take of 90 birds via reduced productivity/survivorship.
Removal of unauthorized fill from Virgin River at Hidden Valley Hunting Preserve (Mohave County)	1997	EPA	none
Lower Colorado River Operations and Maintenance - Lake Mead to Southerly International Border - AZ/CA/NV (Mohave, La Paz, Yuma)	1997*	USBR	Take unquantifiable. Take as a result of riparian habitat loss and degradation, inundation, reduced productivity and survivorship, nest loss/abandonment, parasitism, recreation, fire, predation.
Blue River Road (Greenlee)	1997	USFS	Take unquantifiable. Take of WIFL habitat, feeding, sheltering, increased rates of mortality, starvation, predation.
Skeleton Ridge - Cedar Bench Allotments (Yavapai)	1997	USFS	Take unquantifiable. Take of WIFL habitat.
White Canyon Fire – Emergency Consultation (Pinal)	1997	BLM	Take of 4 WIFL pairs from harassment
U.S. Hwy 93 Wickenburg (Mohave, Yavapai)	1997	FHWA	Harassment of 6 birds in 3 territories and 1 bird killed/decade

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Safford District Grazing Allotments (Greenlee, Graham, Pinal, Cochise & Pima)	1997	BLM	Take unquantifiable. Take as a result of parasitism, disturbance, modification of nesting habitat, loss of nesting sites.
Lower Gila Resource Plan Amend. (Maricopa, Yavapai, Pima, Pinal, La Paz, Yuma)	1997	BLM	Take unquantifiable. Take of WIFL habitat. through loss of cottonwood and willow seedlings, bark stripping, and trailing.
Storm Water Permit for Verde Valley Ranch (Yavapai)	1997	EPA	Take unquantifiable. Take in the form of degraded watershed and riparian WIFL habitat, and loss of WIFL habitat due to groundwater pumping and pollutants.
Gila River Transmission Structures (Graham)	1997	AZ Electric Power Coop. Inc.	Take from harassment or harm due to habitat modification, reduced productivity, disturbance, parasitism.
Land and Resource Management Plans for the 11 National Forests and National Grasslands of the Southwestern Region of the U.S. Forest Service (Various AZ and NM)	1997	USFS	None
Phoenix Resource Management Plan (Apache, Navajo, Gila, Maricopa, Pinal, Pima, Santa Cruz, Yavapai)	1998	BLM	None

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Yuma Resource Management Plan (Yuma, La Paz, Mohave)	1998	BLM	None
Arizona Strip Resource Mgmt Plan Amendment (Mohave)	1998	BLM	Take of 1 nesting attempt every 3 years. Take through parasitism, habitat loss from fire, recreation, development
CAP Water Transfer Cottonwood/Camp Verde (Yavapai, Maricopa)	1998	USBR	Take unquantifiable. Take through parasitism, disturbance, modification of nesting habitat, loss of nesting sites
Cienega Creek Stream Restoration Project (Pima)	1998	BLM	Take of 1 WIFL through harrassment
Kearny Wastewater Treatment (Pinal)	1998	FEMA	Take unquantifiable. Take through WIFL habitat loss, modification, harassment.
Bridge Fire, San Pedro National Conservation Area, Emergency Consultation (Graham)	1998	BLM	None
Reintroduction of Beaver into the San Pedro NCA (Cochise)	1998	BLM	Take of 1 WIFL nest every 5 years due to beaver, and 1 WIFL nest every 5 years due to flooding increased predation/parasitism

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
SR 260 Cottonwood to Camp Verde (Yavapai)	1999	FHWA	Take unquantifiable. Take as a result of harm, injury, and death as a result of the loss of nesting sites, disturbance, modification of habitat, reduced productivity and survivorship, parasitism, and collision with vehicles.
Fort Huachuca Programatic (Cochise)	1999	DOD	None
Alamo Dam Reoperation (LaPaz, Mohave)	1999	ACOE	Take of a WIFL nest with 2 eggs/fledglings every 20 years due to inundation
Duncan HWY 75 Bridge over Gila River (Greenlee)	2000	FHWA	None
Red Creek Grazing Allotment (Gila)	2000	USFS	None
Re-initiation of 1997 BO for vegetation trimming at Gila River transmission structures (Graham)	2000	USDA/AZ Electric Power Coop. Inc.	No additional incidental take anticipated
Lower Colorado River, Interim Surplus Criteria Criteria/4.4 Plan	2001	USBR	Take of 372 acres of flycatcher habitat
Mingus Ave Extension, Bridge over Verde River (Yavapai)	2001	ACOE	Take of 3.34 acres of flycatcher habitat

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Pleasant Valley Grazing Allotment, Apache (Greenlee)	2001	USFS	None
Peck Canyon Scour HWY I-19 protection	2001	Corps	None
The Homestead at Camp Verde Development	2001	EPA	None
20 grazing allotments on Tonto National Forest (Various)	2002	USFS	None
Eagle Creek watershed grazing allotments -Tule, Mud Springs, Double Circle, East Eagle, Baseline - Horse Spring and Dark Canyon (Greenlee)	2002	USFS	None
Dos Pobres -San Juan project (Graham)	2002	BLM	None
Re-initiation of Lower Colorado River Operations and Maintenance - Lake Mead to Southerly International Border - AZ/CA/NV (Mohave, La Paz, Yuma)	2002	USBR	None
Re-initiation of Fort Huachuca Programmatic (Cochise)	2002	DOD	None

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Las Cienagas NCA RMP (Pima and Santa Cruz)	2002	BLM	Harassment of 6 flycatchers due to maintenance of road and trail crossings, recreational use, livestock management actions, fence maintenance and mortality of 1 due to increased cowbird parasitism
Lake Mead NRA Management Plan (Mohave County, AZ and Clark County NV)	2002	NPS	harassment to nesting and migrating birds due to recreationists. Harm as result of the loss of >5% of occupied/suitable habitat as a result of recreational activities (fire, etc.)
Issuance of Section 10 permit for Operation of Roosevelt Dam at Roosevelt Lake HCP (Gila, Maricopa)	2003	USFWS/SRP	take of up to 1,250 acres of occupied habitat in a single year 2-3 times over a 50-year period. Loss of nesting habitat, nestlings and eggs due to habitat modification
Livestock grazing on 18 allotments along the Middle Gila River Ecosystem	2003	BLM	harm, harassment, injury and/or death resulting in degradation of 5 territories, greater than 10 percent parasitism, harassment of 5 pairs due to livestock management activities.

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Issuance of permit for Safe Harbors Agreement for 60 acres at EC Ranch (Apache County)	2003	USFWS/J.W. Crosswhite	baseline is 0, ability to take all flycatchers at end of 50 year agreement by removing habitat
Re-initiation of U.S. Hwy 93 (Mohave, Yavapai)	2003	FHWA	harassment and harm of 2 pairs of flycatcher through reduced productivity and survivorship as a result of permanent loss of nesting habitat, 2 birds killed or injured per decade to collision, and harassment and harm from increased predation and parasitism as a result of habitat modification, fragmentation
Approval of CAP water exchange by San Carlos Apache Tribe for retention in San Carlos Reservoir (Gila and Pinal counties)	2004	USBR	Harm to flycatchers below Winkelman on the Gila River resulting in failure of 43 percent of all nests due to dam operations
Biological and conference opinion for BLM Arizona Statewide Land Use Plan Amendment for fires, fuels, and air quality management	2004	BLM	Harm, harassment and death of up to 5 pairs and their young/eggs due to fire suppression activities over next 10 years.
<b>California</b>			
Prado Basin (Riverside/San Bernardino)	1994	Corps	None
Orange County Water District (Orange)	1995	Corps	None

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Temescal Wash Bridge (Riverside)	1995	Corps	Take of 2 flycatchers
Camp Pendleton (San Diego)	1995	DOD	Take 4 flycatcher territories
Lake Isabella Operations 1996 (Kern)	1996	Corps	Inundation 700 acres critical habitat; reduced productivity 14 pairs
Lake Isabella Long-Term Operations (Kern)	1997	Corps	Annual inundation of 1,100 ac critical habitat
H.G. Fenton Sand Mine and Levee near Pala on the San Luis Rey River (San Diego)	1997	Corps	None
Re-initiation of Lake Isabella Dam Operation (Kern)	2000	Corps	inundation of 1,100 ac critical habitat and reduced survival and productivity of all nesting pairs and young
Questar's southern trails pipeline, CA, AZ, UT (various)	2000	FERC	?
Mill Creek Diversion, Prado Basin (Riverside)	2000	Corps	None
Level 3 long haul fiber optic network, San Diego CA to CA/AZ state line (San Diego, Imperial)	2000	BLM	?
Land and Resource Plans for 4 southern CA National Forests	2001	USFS	Take as described in 1-6-99-F-21, riparian species biological opinion

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
San Timoteo Creek Reach 3B Flood Control Project (San Bernardino)	2001	Corps	Take of 1 pair of flycatchers and 16.2 ac of flycatcher habitat
CA FDA 5-year permit for malathion use (Imperial, Riverside)	2001	BLM	2 flycatchers
Prado mainstem and Santa Ana River flood control and Norco Bluffs stabilization project (Orange, Riverside, San Bernardino)	2001	Corps	None
Four grazing allotments on San Bernardino NF (San Bernardino)	2001	USFS	None
Cleveland NF grazing program (Orange, Riverside, San Diego)	2001	USFS	Two parasitized nests/year. Take through parasitism, nest abandonment, loss of eggs/young, degradation of nesting habitat
Highway 71 widening amendment (Riverside)	2002	FHWA	None
<b>Colorado</b>			
AB Lateral - Hydroelectric - Hydropower Facility, Gunnison River to Uncompahgre River (Montrose)	1996	USBR	None

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
TransColorado Gas Transmission Line Project (Meeker, Colorado to Bloomfield, New Mexico)	1998	BLM	None
Control of non-native fishes in floodplain ponds of upper Colorado and Gunnison rivers.	1998	USFWS	Take of 1 pair nesting flycatchers to harassment and harm to 1 pair through loss of prey
Amendment for control of non-native fishes in floodplain ponds of upper Colorado and Gunnison rivers.	1998	USFWS	None
Development of Alexander off-channel cold-water fish ponds (Montrose County)	1998	Corps	None
Pagosa Area Water and Sanitation District Water Intake (Archuleta County)	2000	Corps	1 pair of flycatchers
US Highway 160/County Road 501 widening - realignment, Bayfield (La Plata County)	2001	FHWA	2 pairs of flycatchers
Archuleta County Rd 119 widening/realignment, Pagosa Springs (Archuleta County)	2001	Corps	1 pair of flycatchers
Creation of defensible space by private land owners in habitat occupied by Federally listed species (various counties)	2002	USFWS/State of Colorado	harm and harassment of flycatchers by loss of 10 acres of habitat

Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.			
Los Pinos Bridge replacement (La Plata County)	2003	FHWA	harm to 1 pair of flycatchers due to loss/deterioration of habitat
<b>Nevada</b>			
Gold Properties Resort (Clark)	1995	BIA	Take of 1 flycatcher from habitat loss
Las Vegas Wash, Pabco Road Erosion Control Structure	1998	Corps	Take of 2-3 pairs of flycatchers
Clark County Multiple Species Habitat Conservation Plan	2000	USFWS	Conditional upon actions not yet completed by Clark County
Crystal Springs Exotic Vegetation Removal Project (Lincoln County)	2002	USFWS	Take of 1 pair of flycatchers due to habitat loss
<b>New Mexico</b>			
Corrales Unit, Rio Grande (Bernalillo)	1995	Corps	None
Rio Puerco Resource Area (Various)	1997	BLM	None
Taos Resource Area (Various)	1997	BLM	1 pair of flycatchers
Caballo Resource Area (Various)	1997	BLM	None
Farmington District Resource Management Plan (Various)	1997*	BLM	None
Mimbres Resource Area Management Plan (Various)	1997*	BLM	1 pair of flycatchers
Discretionary actions related to water management on the Middle Rio Grande River (various)	2001*	USBR/Corps	None

<p>Table 1. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide.</p>			
<p><b>Utah</b></p>			
<p>Reclamation of Atlas Mill Tailings Site (Moab)</p>	<p>1998</p>	<p>Nuclear Regulatory Commission</p>	<p>one pair of flycatchers as a result of harm and harassment</p>
<p>BIA = Bureau of Indian Affairs; BLM = Bureau of Land Management; Corps = Army Corps of Engineers; DOD = Dept. of Defense; EPA = Environmental Protection Agency; FEMA = Federal Emergency Management Agency; FHWA = Federal Highway Administration; NF = National Forest; NPS = National Park Service; USBR = U.S. Bureau of Reclamation; USFS = U.S. Forest Service; WAPA =Western Area Power Administration.</p>			
<p>* Jeopardy opinions.</p>			

Table 2: Formal consultations on Little Colorado spinedace.

Consultation #	Date	Name	Anticipated Incidental Take
02-21-88-F-0029	May 22, 1989	US Route 180/Arizona 666	Yes, death to approximately 8% of the population and loss of 500 linear feet of habitat
02-21-88-F-0029 R1	April 30, 1991	Reinitiation of US Route 180/Arizona 666	Yes, death to approximately 8% of the population and loss of 275 linear feet of habitat
02-21-92-F-0403	August 2, 1995	Federal Aid's Transfer of Funds to the Arizona Game and Fish Department for Exotic Fish Stocking in Nelson Reservoir, Blue Ridge Reservoir, and Knoll Lake	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-92-F-0403	November 20, 1995	Federal Aid's Transfer of Funds to the Arizona Game and Fish Department for Exotic Fish Stocking in Nelson Reservoir, Blue Ridge Reservoir, and Knoll Lake	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-96-F-339	July 31, 1996	Greer River Reservoir Dam	None anticipated
02-21-01-F-0425	May 6, 1997	Buck Springs Range Allotment Management Plan	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-88-F-167	March 30, 1998	Phoenix Resource Management Plan for the Bureau of Land Management	None anticipated
02-21-97-F-343	March 31, 1998	Bank Stabilization on the Little Colorado River South of St. Johns, Arizona	Yes, take of 5 adults or juveniles Little Colorado spinedace anticipated
000089RO	February 2, 1999	Regional ongoing grazing activities on allotments (Buck Springs, Colter Creek, Limestone, South Escudilla)	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
2-21-96-F-422 and 423	April 16, 1999	Amendment No 1 Phoenix District Az Grazing EIS Upper Gila San Simon	None anticipated
02-21-99-F-0167	July 1, 1999	McCain and Sears Whip Bank Stabilization on the Little Colorado River	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided

02-21-92-F-0403	May 25, 2001	Federal Aid's Transfer of Funds to the Arizona Game and Fish Department for Exotic Fish Stocking in Nelson Reservoir, Blue Ridge Reservoir, and Knoll Lake	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
2-21-01-F-218	August 21, 2001	Upper Little Colorado River Riparian Enhancement Demonstration Project	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-02-0220	October 4, 2002	Crayfish Study in Nutrioso Creek *	Yes, take of 10 Little Colorado spinedace anticipated
02-21-01-101	April 19, 2002	Apache trout reintroduction	None anticipated
2-21-01-F-0425	April 30, 2003	Buck Springs Allotment Management Plan	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-03-0369	October 16, 2003	Replacement of Little Colorado River Bridge #1184 State Route 87	Yes, take anticipated; however, take is not quantifiable so surrogate measures are provided
02-21-03-F-0210	September 3, 2004	BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management	None anticipated

\* The project "Crayfish Study in Nutrioso Creek" never occurred.



Site Conditions		Site-specific Guidelines		
Habitat Status	Flycatcher Status	Grazing Season	Low-stature Habitat: 3-4 m shubby willow	All other habitat types ≤ 1830 m or 6,000 ft elevation
1. Restorable or Regenerating Habitat <sup>1</sup>	1A. Unoccupied	Growing Season <sup>2</sup>	No grazing	No grazing
	1B. Unoccupied	Non-Growing Season	No grazing	Provisional grazing <sup>3</sup> (assumes grazing is not a major stressor).
2. Suitable Habitat	2A. Unoccupied	Growing Season	No grazing	No grazing, but at discretion of USFWS, provision for a limited number of small-scale, well-designed experiments to determine levels of pre-breeding season grazing that do not adversely affect southwestern willow flycatcher habitat attributes. Grazing not to exceed 35% utilization of palatable, perennial grass, or grass-like plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use <sup>4</sup> not to exceed 10%.
	2B. Unoccupied	Non-Growing Season	Conservative grazing with average utilization not to exceed 35% of palatable, perennial grasses and grasslike plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use not to exceed 10%. Woody utilization not to exceed 40% on average.	Conservative grazing with average utilization not to exceed 35% of palatable, perennial grasses and grass-like plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use not to exceed 10%. Woody utilization not to exceed 40% on average.
	2C. Occupied	Growing Season	No grazing.	No grazing until research in comparable unoccupied habitat demonstrates no adverse impact; if unoccupied habitat becomes occupied habitat, continue existing management (grazing should not exceed 35% of palatable, perennial grasses and grass-like plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use not to exceed 10%)
	2D. Occupied	Non-growing Season	No grazing	Conservative grazing with average utilization not to exceed 35% of palatable, perennial grasses and grass-like plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use not to exceed 10%. Woody utilization not to exceed 40% on average.
3. Uplands & Watershed Conditions	3. Occupied and Unoccupied	For any season of use	Average utilization of palatable, perennial grasses and grass-like plants not to exceed 30-40%. Use stubble height guidelines: 3" for short grass, 6" for midgrass, 12" for tall grass. Determine monitoring species prior to grazing.	Average utilization of palatable, perennial grasses and grass-like plants not to exceed 30-40%. Use stubble height guidelines: 3" for short grass, 6" for midgrass, 12" for tall grass. Determine monitoring species prior to grazing.

<sup>1</sup>: “Restorable” means riparian systems that are degraded but have the appropriate hydrological and ecological setting to be restored to suitable flycatcher habitat, and could be resorted with reasonable costs and actions. Lack of regeneration due to grazing is one factor contributing to habitat degradation; conditions in each habitat should include adequate plant regeneration to ensure habitat sustainability into the future. At these sites flycatcher habitat is precluded largely or solely by livestock impacts. “restorable” habitats are those that would be suitable if not for grazing, alone or in combination with other major stressors. This means cessation of grazing is necessary, but not necessarily a sufficient action.

<sup>2</sup>: Growing season is defined as bud break to leaf drop for cottonwood and willow species. Non-growing season is defined as leaf drop to bud break for cottonwood and willow species.

<sup>3</sup>: Grazing should only be conducted if it is not a major stressor and does not preclude satisfactory progress toward suitability.

<sup>4</sup>: Damage to stream banks from livestock use includes: bank chiseling, trampling, trailing, soil compaction, breakage of vegetation, bank sloughing, etc.

<sup>5</sup>: Alterable stream banks are those portions of banks containing exposed soil or vegetation and not composed of bedrock, boulders, or large cobbles.

<sup>6</sup>: Uplands and watershed, or portions of watershed, associated with areas identified as restorable, regenerating, or suitable southwestern willow flycatcher habitat. General guidelines should be implemented unless site-specific data clearly indicate that deviation from the guidelines will not prevent or slow progression toward suitability and/or maintenance of suitable habitat conditions.