United States Department of the Interior

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In Reply Refer To:
AESO/SE
02-21-95-F-0303-R1 – Cross F
22410-2007-F-0075 – Chrysotile
02-22-03-F-366 – all allotments
22410-2007-F-0218- this consultation

August 17, 2009

Mr. Gene Blankenbaker
Forest Supervisor
Tonto National Forest
U.S. Forest Service
2324 East McDowell Road
Phoenix, Arizona 85006

Dear Mr. Blankenbaker:

Thank you for your February 6, 2007, letter received in our office on February 8, 2007, requesting formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act (Act) of 1973 (16 U.S.C. 1531-1544), as amended (Act). This consultation will address impacts that may result from the proposed "Ongoing Grazing for Three Allotments on the Tonto National Forest (NF)."

We received clarification and updated effects determinations for this project on March 30, 2007, January 11, 2008, and August 25, 2008. You also requested the addition of desert pupfish (*Cyprinodon macularius*) to this consultation on July 9, 2007.

This proposed project previously included the analysis of five grazing allotments. Since completion of the draft biological opinion (September 5, 2007), we have discussed additional informational needs and completed a separate consultation for the Bar V Bar and Campaign allotments (project number 22410-2009-I-0178). You submitted additional survey information for the Chiricahua leopard frog (*Rana chiricahuensis*) (CLF) in September 2008. As a result, there are now three allotments in this consultation (Boneyback, Chrysotile, and Cross F) on the Tonto Basin, Mesa, and Globe Ranger districts on the Tonto NF, Arizona.

From these three allotments, you asked for formal consultation for effects to listed species on the Chrysotile and the Cross F allotments. You concluded that the project "may affect, likely to adversely affect" the desert pupfish and Gila topminnow (*Poeciliopsis occidentalis*) on the Cross F Allotment, and the southwestern willow flycatcher (*Empidonax traillii extimus*) (WIFL) (flycatcher) on the Chrysotile Allotment.

You concluded that the project "may affect, but is not likely to adversely affect" some listed species and their designated critical habitat on these three allotments. You determined the project would "not likely adversely affect" the bald eagle (*Haliaeetus leucocephalus*) on the Boneyback and Chrysotile allotments. You also determined that the project would "not likely adversely affect" the Mexican spotted owl (MSO) (*Strix occidentalis lucida*) and its designated critical habitat on the Cross F and Chrysotile allotments. For the WIFL, you determined that the project would "not likely adversely affect" the subspecies on the Boneyback and Cross F allotments or its designated critical habitat on the Boneyback, Cross F, and Chrysotile allotments. You also determined that the project would "not likely adversely affect" the CLF on the Chrysotile Allotment. For the razorback sucker (*Xyrauchen texanus*), you concluded "not likely to adversely affect" for the species and its designated critical habitat on the Chrysotile Allotment. We concur with your determinations, and provide our rationales in an appendix (Appendix A) to this biological opinion.

This biological opinion is based on information provided in the February 6, 2007, biological assessment and evaluation, written correspondence between our agencies, telephone conversations with your staff, and other sources of information. Literature cited in this biological 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

- February 8, 2007: We received the Tonto NF's Biological Assessment and Evaluation for grazing on the Bar V Bar/Campaign, Boneyback, Chrysotile, and Cross F allotments.

- March 13, 2007: We responded to the Forest's request for consultation by sending a letter asking for clarification on the determination for flycatcher critical habitat and provided information on effects of grazing for the Boneyback Allotment established in Region 3's Land Resource Management Plan 2005 Biological Opinion.

- March 30, 2007: You confirmed that your determination for the flycatcher on the Chrysotile Allotment was "likely to adversely effect," and for flycatcher critical habitat on the Boneyback Allotment, it was "likely to adversely effect".

- July 9, 2007: You telephoned us and followed up with an electronic transmission requesting the addition of the desert pupfish to the consultation for the Cross F Allotment. We also discussed an extension of this consultation.

- August 1, 2007: You provided an electronic transmission with your evaluation and effects determination for desert pupfish on the Cross F Allotment.

- September 5, 2007**:** Draft biological opinion transmitted to Tonto NF for review, along with a request for extension of the consultation period.

- January 11, 2008: You provided comments on the draft biological opinion.

- February 7, 2008: Conference call between FWS staff Debra Bills and Greg Beatty, and FS staff Todd Willard, and Felipe Cano.

- February 26, 2008: Todd Willard and Greg Beatty met to work through additional consultation issues.

- July 25, 2008: Desert pupfish were stocked into Walnut Spring on the Cross F allotment.

- August 25, 2008: You provided clarification on your proposed project and updated effect determinations for species under consideration. Initial adverse effect determinations for the CLF, WIFL, and MSO were changed to "not likely to adversely affect" determinations.

- August/September 2008:

  We completed priority consultations on the H4, Bar T Bar, and Diamond allotments.

- September 2008: You provided additional CLF survey information from the Chrysotile Allotment.

- February 25, 2009: We completed priority consultation for the Campaign and Bar V Bar allotments.

- April 20, 2009: In an electronic message, you clarified your "may affect, likely to adversely affect" determination for Gila topminnow and desert pupfish on the Cross F Allotment and provided additional information on the placement of pupfish on this allotment in July 2008.

- April 21, 2009: We provided the Forest with an informal draft biological opinion for review.

- June 16, 2009: You provided us informal comments on the draft biological opinion with input from the Globe and Mesa Ranger districts.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

This biological opinion is for ongoing grazing occurring on the Chrysotile and Cross F allotments. A broader and more detailed assessment for a longer period of time (approximately 10 years) will occur when these allotments will be evaluated for National Environmental Policy Act (NEPA) compliance. The Chrysotile and Cross F alloment are expected to be re-evaluated in 2012 and 2010, respectfully. More detail on this proposed action can be found in the Biological Assessment submitted for this project (USFS 2007), and supplemental correspondence clarifying the proposed action and effects determinations.

The proposed action is to provide grazing opportunities and improve or maintain range and watershed conditions on these grazing allotments by employing conservative use and deferred or rest-rotation strategies. The objective of conservative use is to manage grazed vegetation for the maintenance of good to excellent, and enhancement of poor to fair watersheds and wildlife habitat. An adaptive management approach will be adopted as outlined in Chapter 90 of FSH 2209.13 to work toward this objective.

In September 2005, the U.S. Forest Service (USFS) adopted a policy of rangeland adaptive management in Chapter 90 of FSH 2209.13. Under this policy, limits on timing, intensity, frequency, and duration of livestock grazing are set in Environmental Assessments which reflect Allotment Management Plans (AMP). However, aspects such as specific dates, livestock numbers, and grazing system are administrative actions and do not require additional NEPA documentation. In addition, documents such as the Tonto NF Restocking Guidelines and Tonto NF Drought Policy will be incorporated into adaptive management strategies. These documents recognize the need for recovery following drought and as a general rule recommend a minimum of one growing season's rest following drought.

Conservative use is defined as forage utilization on key forage species between 30 and 40 percent (%) or less of annual forage production by weight for herbaceous perennials and 50 percent or less on woody browse species. Qualitative indicators of conservative use can be described by the following; forage plants with abundant seed stalks; areas more than a mile from water show little use; about one third to one half primary forage plants show grazing on key areas (Holechek and Galt 2000).

From a long-term perspective, conservative use will be achieved by maintaining forage utilization on key forage species between 30 and 40% or less of annual forage production for herbaceous perennials and 50% of woody browse. Measures are by weight as measured at the end of the growing season. These objectives are based on averages over time, entire pastures, and total forage production (Smith *et al.* 2005).

From a short-term (within-year) perspective, wildlife habitat and watershed condition may be gauged by monitoring seasonal utilization on key forage species during the grazing period. Seasonal utilization is important because the end of the growing season is not well-defined for all

plant communities on the Tonto NF. The warmer climate and mild winters provide an opportunity for yearlong or multiple growing seasons for many species. Therefore, the growing periods for plants are often more related to variable precipitation than seasons of the year. Additionally, seasonal monitoring provides an opportunity to assess range condition during periods of use when listed species are most likely to be adversely affected by grazing activities. Smith *et al.* (2005) points out that "seasonal utilization may be an important factor in deciding when to move cattle out of a particular pasture and utilization levels may be the primary influence when adjusting numbers for next year." Flexibility to adjust livestock numbers throughout the season or year is essential to a successful adaptive management strategy. Smith *et al.* (2005) notes that seasonal utilization data can be used as a guideline for moving livestock within an allotment with due consideration to weather conditions and the availability of forage and water in pastures scheduled for use during the same grazing season.

It is inherent in the term "conservative use" that watershed conditions and vegetative ground cover will be optimized as appropriate to various range sites. At no time will excessive use be considered acceptable. The goal is to achieve conservative use in the uplands over successive years. This strategy recognizes the importance of adaptive management. Management actions include but are not limited to adjustments of timing, intensity, frequency, and duration of grazing to reach resource objectives (FSH 2209.13 - Chapter 90).

Control features such as fences and cattle guards are designed to hold permitted livestock within the appropriate pastures. Livestock may occasionally access areas that are outside the area of planned use. In such cases, the USFS will work with permittees to assist in correcting situations through inspections and regular visits to occupied pastures and adjacent areas.

Monitoring is designed to provide for adaptive management of rangelands on the Tonto NF and consists of implementation and effectiveness monitoring. Implementation monitoring can be done using a variety of methods and is designed to provide information that will enable decision-makers to practice adaptive management and make necessary changes needed for plant development and recovery and assess physical improvements to allotments. Effectiveness monitoring documents whether management actions are having the expected progress towards achieving resource management objectives and is used to track upland vegetative and soil condition over the long-term.

A key area is "a relatively small portion of a range selected because of its location, use or grazing value as a monitoring point for grazing. Key areas should be located within a single ecological site or plant community, be responsive to management actions and be indicative of the ecological site or plant community they are intended to represent" (Society for Range Management 1989). Critical areas are those which must be treated with special consideration because of inherent site factors, size, location, condition, values, or significant potential conflicts among uses (Society for Range Management 1998). In general, riparian areas and locations where listed species occur are examples of critical areas on the Tonto NF. Range conservationists, biologists, other USFS personnel, and permittees will decide on critical areas for each allotment.

Monitoring will occur at key areas in a grazing unit as appropriate. Key area monitoring examines upland range sites and assesses changes in ground cover, relative composition of perennial forage plants, which indicates range condition and trend. Data will be collected in upland areas using a variety of methods on an annual basis to determine if adjustments are necessary. Range conservationists, biologists, other USFS personnel, and permittees will collect and provide data to district rangers. In addition, the USFS in conjunction with the permittee will conduct planned inspections.

Critical areas will also be monitored throughout the season or year. Monitoring these areas will be conducted during the grazing season, as it is important to ensure that sufficient residual vegetation and streambank integrity (where appropriate) are maintained to mitigate flood disturbance throughout the year. Monitoring will be conducted along key stream reaches within the riparian area, which should be selected with an interdisciplinary team (i.e. riparian ecologist, biologist, hydrologist, range staff, grazing permittee).

In uplands outside of critical areas, adaptive management will be conducted if utilization is exceeded or analyses indicate that range conditions are not improving due to management. This will be accomplished by adjusting one or more aspects of grazing (intensity, timing, frequency, or duration of grazing). Re-initiation of section 7 consultation with the FWS will be conducted if utilization levels are "consistently exceeded in critical areas."

Data will be collected in riparian areas using a variety of methods. Range conservationists, biologists, other USFS personnel, and permittees will collect and provide data to district rangers. Other data may be collected based on the Tonto NF Riparian Area Management Utilization Guidelines (USFS 2002) or the most current version of this document. This document identifies use levels in riparian areas that are not strict threshold benchmarks, but rather advisory information that informs managers and serves as a communications tool with grazing permittees and other partners to achieve better understanding and concurrence of grazing effects. USFS (2002) states:

- For obligate woody riparian species, limit use to < 50% of terminal leaders on the top third of plants that are accessible to livestock (< 6.0 ft tall).

- For herbaceous species within riparian habitats, limit use to < 50% of plant species biomass.

- Where alterable stream banks are present, limit physical impacts to <20% of the bank.

The Tonto NF Plan (USFS 1985) states that use will not exceed 20% annual growth by volume in woody species within all riparian areas. Limiting use to < 50% of terminal leaders on the top third of plants that are accessible to livestock (<6 feet tall) is used as surrogate guideline because use by volume is extremely difficult to measure, where use on terminal leaders is quick and repeatable. Use of 50% of terminal leaders on the top third of plants is equivalent to approximately 20% of annual growth by volume.

Boneyback Allotment

The Boneyback Allotment (Appendix B, Figure 1) encompasses 5,713 acres with maximum permitted numbers of 1,844 AUMs on the Tonto Basin Ranger District. The Boneyback Allotment has a Holistic Resource Management System of grazing that includes 11 paddocks with a holding pasture. Each paddock receives 90 days of rest each year, average time grazed is 3.7 days at a time, and 33 total days grazing per year. The concurrences for species associated with the Boneyback Allotment are found in Appendix A.

Chrysotile Allotment

The Chrysotile Allotment (Appendix B, Figure 1, 2, & 3) on the Globe Ranger District is 44,764 acres in size and is the furthest upstream within the Tonto NF on the Salt River. The allotment occurs in the northeast part of the Globe Ranger District and is bounded on the east by the San Carlos Apache Reservation and on the north by the Salt River. The Carol Pasture is 7,035 acres in size and lies in the southeastern portion of the allotment. The Carol Pasture is bordered on the north and west by the Timber Pasture, on the south by the Poverty Pasture, and on the east by the San Carlos Apache Reservation. The maximum permitted number of livestock is 3,258 AUMs. The Chrysotile Allotment consists of eight pastures that are grazed under a rest-rotation system of management where each pasture will receive one year growing season rest in a four-year grazing cycle. Due to the complexities of moving cattle across US 60, the allotment may be managed in two herds, one on each side of the highway. The Salt River corridor is excluded from grazing either by fencing, herding, or by topography (USFS 2007, C.L. Woods, USFS, pers. comm.). The permittee plans to construct several riparian fences on the allotment which will prevent livestock from accessing portions of Ash Creek, but it may not occur during the life of this consultation.

Cross F Allotment

The Cross F Allotment (Appendix B, Figure 1, 2, and 4) on the Mesa Ranger District is northwest of Tonto Basin within the southern part of the Mazatzal Mountains and covers 29,138 acres. The maximum permitted number of livestock is 5,704 AUMs. The allotment was not stocked in 2002 or 2003.

The grazing on the Cross F Allotment includes the Alder, Sheep Creek, Iron Dike, Cottonwood, and Mazatzal pastures. The Alder Pasture receives livestock use one summer (May-October) period out of three consecutive calendar years. This pasture also receives one winter use (November-April) period out of three consecutive calendar years. After each of these use periods, there is a 12-month period of complete rest.

The Sheep Creek, Iron Dike, Cottonwood and Mazatzal Pastures are used in a modified rest-rotation system. Each of these pastures receives one summer (May-October) use period out of three years. Summer use for these pastures is alternated with the Alder Pasture. Each of these pastures also receives one winter (November-April) use period out of three years, again alternating with the Alder Pasture. During the summer and winter use periods, two of these pastures are combined for the livestock use period.

Action Area

We consider the action area, for the purposes of this section 7 consultation, to be larger than the footprint of boundaries of each grazing allotment. We consider the indirect effects of how grazing may influence function of streams or associated sedimentation of streams within the watershed because these allotments are large sections of the landscape encompassing from approximately 30,000 to 45,000 acres apiece. Similarly, the potential effects of cowbirds associated with cattle feeding areas on nesting southwestern willow flycatchers can extend miles beyond the boundary of a grazing allotment.

Therefore, the action area for these two allotments involves not only the boundary of the allotment, but for the Chrysotile Allotment, the Salt River down to its entrance to Roosevelt Lake (Appendix B). We estimate that the 30 miles of the Salt River downstream from the Chrysotile Allotment (including Gleason Flat) are included as a result of potential watershed impacts. Watershed impacts are dispersed when the Salt River enters into Roosevelt Lake and when water is stored, the impact effectively ends. Gleason Flat on the upper Salt River and the exposed Salt River arm of Roosevelt Lake are included in the action area as result of the potential association between cowbird feeding areas from the Chrysotile Allotment and nesting areas of flycatchers. The boundary for the Cross F Allotment is the estimated action area for that allotment.

Conservation Measures

Southwestern Willow Flycatcher
Under this proposed action, cattle will not be allowed to graze in potential, suitable, or occupied habitat flycatcher habitat along the Salt River (Chrysotile Allotment).

STATUS OF THE SPECIES

Desert Pupfish

In Arizona, the genus Cyprinodon is comprised of three species, desert pupfish (*Cyprinodon macularius)*, Quitobaquito pupfish (*C. eremus*, Echelle *et al.* 2000), and an extinct form, the Santa Cruz pupfish (*C. arcuatus*, Minckley *et al.* 2002). The desert pupfish and Quitobaquito pupfish were listed as endangered species (as *C. macularius*) with critical habitat on April 30, 1986 (USFWS 1986 [51 FR 10842]). Critical habitat for the Quitobaquito pupfish was designated in Arizona at Quitobaquito Springs, Organ Pipe Cactus National Monument, Pima County. The Mexican government has also listed the desert pupfish as endangered [Secretaria de Desarrollo Urbano y Ecologia (SEDUE) 1991].

A small fish, the desert pupfish is less than 3 inches long (Minckley 1973). The body is thickened, chubby or strongly laterally compressed in males; coloration is a silvery background with narrow dark vertical bars on the sides. Males are larger than females and become bright blue during the breeding season. Spawning occurs from spring through autumn, but reproduction may occur year-round depending on conditions (Constanz 1981). The desert pupfish appears to go through cycles of expansion and contraction in response to natural

climatological variation (USFWS 1986, 1993; Weedman and Young 1997). In very wet years, populations can rapidly expand into new habitats (Hendrickson and Varela 1989). In historical times, this scenario would have led to panmixia among populations over a very large geographic area (USFWS 1993).

Historical distribution of desert pupfish in Arizona included the Gila, San Pedro, Salt, and Santa Cruz rivers, and likely the Hassayampa, Verde, and Agua Fria rivers, although collections are lacking for the latter three drainages. The desert pupfish is also found in the lower Colorado River, Salton Sink basin, and Laguna Salada basin (Eigenmann and Eigenmann 1888, Garman 1895, Gilbert and Scofield 1898, Evermann 1916, Thompson 1920, Jordan 1924, Coleman 1929, Jaeger 1938, Miller 1943, Minckley 1973 and 1980, Black 1980, Turner 1983, Hendrickson and Varela 1989, Echelle *et al.* 2000). Historical collections occurred in Baja California and Sonora, Mexico, and in the United States in California and Arizona.

Since the 19th century, desert pupfish habitat has been impacted by streambank erosion, the construction of water impoundments that dewatered downstream habitat, excessive groundwater pumping, the application of pesticides to nearby agricultural areas, and the introduction of non-native fish species (Matsui 1981, Hendrickson and Minckley 1985, Minckley 1985, Schoenherr 1988). The non-native bullfrog may also prove problematic in the management of desert pupfish. The bullfrog is an opportunistic omnivore with a diet that includes fish (Frost 1935, Cohen and Howard 1958, Brooks 1964, McCoy 1967, Clarkson and deVos 1986). There is also a concern that introduced salt cedar (*Tamarisk* spp.) next to pupfish habitat may cause a lack of water at critical times (Bolster 1990, R. Bransfield, FWS, pers. comm. 1999). Evapotranspiration by luxuriant growths of this plant may impact smaller habitats where water supply is limited and woody vegetation is not naturally abundant. Recent scientific information contradicts the long-held belief that tamarisk consumes more water than native trees (Glenn and Nagler 2005). The remaining populations continue to face these threats.

Naturally occurring populations of desert pupfish are now restricted in the United States to California in two streams tributary to, and in shoreline pools and irrigation drains of, the Salton Sea (Lau and Boehm 1991). The species is found in Mexico at scattered localities along the Colorado River Delta and in the Laguna Salada basin (Hendrickson and Varela-Romero 1989, Minckley 2000). About 20 transplanted populations exist in the wild (USFWS 1993). The range-wide status of desert pupfish is poor but stable. The future of the species depends heavily upon future developments in water management of the Salton Sea and Santa Clara Cienega in Mexico. Additional life history information can be found in the recovery plan (USFWS 1993).

Recent completion of Safe Harbor Agreements for the pupfish with The Nature Conservancy and Arizona Game and Fish Department provide opportunities to quickly expand desert pupfish distribution on non-federal lands. Additional re-introduction and recovery projects have occurred and others are being planned for this species.

Several Federal actions affect this species every year. A complete list of all formal consultations affecting this species in Arizona can be found on our website (http://www.fws.gov/southwest/es/arizona/) by clicking on the "Document Library" tab and then on the "Section 7 Biological Opinions" tab. Survey work and recovery projects are summarized in the appropriate land-management agency or AGFD documents.

Gila Topminnow

Gila topminnow was listed as endangered in 1967 without critical habitat (USFWS 1967). The species was later revised to include two subspecies, *P. o. occidentalis* and *P. o. sonoriensis* (Minckley 1969, 1973). *P. o. occidentalis* is known as the Gila topminnow, and *P. o. sonoriensis* is known as the Yaqui topminnow. *Poeciliopsis occidentalis*, including both subspecies, is collectively known as the Sonoran topminnow. Both subspecies are protected under the Act.

Only Gila topminnow populations in the United States, and not in Mexico, are listed under the Act. The reasons for decline of this fish include past dewatering of rivers, springs and marshlands, impoundment, channelization, diversion, regulation of flow, land management practices that promote erosion and arroyo formation, and the introduction of predacious and competing non-native fishes (Miller 1961, Minckley 1985). Other listed fish suffer from the same impacts (Moyle and Williams 1990). Life history information can be found in the 1984 recovery plan (USFWS 1984), the draft revised Gila topminnow recovery plan (Weedman 1999), and references cited in the plans.

Gila topminnows are highly vulnerable to adverse effects from non-native aquatic species (Johnson and Hubbs 1989). Predation and competition from non-native fishes have been a major factor in their decline and continue to be a major threat to the remaining populations (Meffe *et al.* 1983, Meffe 1985, Brooks 1986, Marsh and Minckley 1990, Stefferud and Stefferud 1994, Weedman and Young 1997). The native fish fauna of the Gila basin and of the Colorado basin overall, was naturally depauperate and contained few fish that were predatory on or competitive with Gila topminnow (Carlson and Muth 1989). In riverine backwater and side-channel habitats that formed the bulk of Gila topminnow natural habitat, predation and competition from other fishes was essentially absent. Thus Gila topminnow did not evolve mechanisms for protection against predation or competition and is predator-and-competitor-naive. With the introduction of many predatory and competitive non-native fish, frogs, crayfish, and other species, Gila topminnow could no longer survive in many of their former habitats, or the small pieces of those habitats that had not been lost to human alteration. Both large (Bestgen and Propst 1989) and small (Meffe *et al.* 1983) non-native fish cause problems for Gila topminnow as can non-native crayfish (Fernandez and Rosen 1996) and bullfrogs.

Historically, the Gila topminnow was abundant in the Gila River drainage and was one of the most common fishes of the Colorado River basin, particularly in the Santa Cruz system (Hubbs and Miller 1941). This was reduced to only 15 naturally occurring populations. Recently, only 12 of the 15 recent natural Gila topminnow populations were considered extant (Weedman and Young 1997).

The status of the species is poor and declining. Gila topminnow has gone from being one of the most common fishes of the Gila basin to one that exists at not more than 30 localities (12 natural and 18 stocked). Many of these localities are small and highly threatened. Recent completion of Safe Harbor Agreements for the Gila topminnow with The Nature Conservancy and Arizona Game and Fish Department provide opportunities to quickly expand its distribution on non-federal lands. Several recovery and reintroduction projects have occurred and others are also being planned.

We concluded in our biological opinion for the Southwestern Regional Land Resource Management Plan (LRMP) (USFWS 2005, #2-22-03-F-366) that implementation of ongoing livestock grazing on the Tonto National Forest would result in incidental take through harm and harassment of the Gila topminnow.

Several Federal actions affect this species every year. Biological opinions resulting from formal consultations affecting this species in Arizona can be found on our website (http://www.fws.gov/southwest/es/arizona/) by clicking on the "Document Library" tab and then on the "Section 7 Biological Opinions" tab. Survey work and recovery projects are summarized in the appropriate land-management agency or AGFD documents as well as in the BA associated with this project.

Southwestern willow flycatcher

Description
The southwestern willow flycatcher is a small grayish-green passerine bird (Family Tyrannidae) measuring approximately 5.75 inches. The song is a sneezy "fitz-bew" or a "fit-a-bew", the call is a repeated "whitt". It is one of four currently recognized willow flycatcher subspecies (Phillips 1948, Unitt 1987, Browning 1993). It is a neotropical migrant that breeds in the southwestern U.S. and migrates to Mexico, Central America, and possibly northern South America during the non-breeding season (Phillips 1948, Stiles and Skutch 1989, Peterson 1990, Ridgely and Tudor 1994, Howell and Webb 1995). The historical breeding range of the southwestern willow flycatcher included southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Utah, extreme southern Nevada, and extreme northwestern Mexico (Sonora and Baja) (Unitt 1987).

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

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

On October 19, 2005, the FWS re-designated critical habitat for the southwestern willow flycatcher (USFWS 2005). A total of 737 river miles across southern California, Arizona, New Mexico, southern Nevada, and southern Utah were included in the final designation. The lateral extent of critical habitat includes areas within the 100-year floodplain.

A final recovery plan for the southwestern willow flycatcher was signed by the FWS Region 2 Director and released to the public in March, 2003 (USFWS 2002). The Plan describes the reasons for endangerment, current status of the flycatcher, addresses important recovery actions, includes detailed issue papers on management issues, and provides recovery goals. Recovery is based on reaching numerical and habitat related goals for each specific Management Unit established throughout the subspecies range and establishing long-term conservation plans (USFWS 2002).

Habitat

The southwestern willow flycatcher breeds in dense riparian habitats from sea level in California to approximately 8,500 feet in Arizona and southwestern Colorado. Historical egg/nest collections and species' descriptions throughout its range describe the southwestern willow flycatcher's widespread use of willow (*Salix* spp.) for nesting (Phillips 1948, Phillips *et al.* 1964, Hubbard 1987, Unitt 1987, San Diego Natural History Museum 1995). Currently, southwestern willow flycatchers primarily use Geyer willow (*Salix geyeriana*), coyote willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), boxelder (*Acer negundo*), saltcedar (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolio*), and live oak (*Quercus agrifolia*) for nesting. Other plant species less commonly used for nesting include: buttonbush (*Cephalanthus* sp.), black twinberry (*Lonicera involucrata*), cottonwood (*Populus* spp.), white alder (*Alnus rhombifolia*), blackberry (*Rubus ursinus*), and stinging nettle (*Urtica* spp.). Based on the diversity of plant species composition and complexity of habitat structure, four basic habitat types can be described for the southwestern willow flycatcher: monotypic willow, monotypic exotic, native broadleaf dominated, and mixed native/exotic (Sogge *et al.* 1997).

Tamarisk is an important component of the flycatcher's nesting and foraging habitat in Arizona and other parts of the bird's range. In 2001 in Arizona, 323 of the 404 (80 percent) known flycatcher nests (in 346 territories) were built in a tamarisk tree (Smith *et al.* 2002). Tamarisk had been believed by some to be a habitat type of lesser quality for the southwestern willow flycatcher, however comparisons of reproductive performance (USFWS 2002), prey populations (Durst 2004) and physiological conditions (Owen and Sogge 2002) of flycatchers breeding in native and exotic vegetation has revealed no difference (Sogge *et al.* 2005).

The flycatcher's habitat is dynamic and can change rapidly: nesting habitat can grow out of suitability; saltcedar habitat can develop from seeds to suitability in five years; heavy runoff can remove/reduce habitat suitability in a day; or river channels, floodplain width, location, and vegetation density may change over time. The flycatcher's use of habitat in different successional stages may also be dynamic. For example, over-mature or young habitat not suitable for nest placement can be occupied and used for foraging and shelter by migrating, breeding, dispersing, or non-territorial southwestern willow flycatchers (McLeod *et al.* 2005, Cardinal and Paxton 2005). Flycatcher habitat can quickly change and vary in suitability, location, use, and occupancy over time (Finch and Stoleson 2000).

Table 1. Estimated rangewide population for the southwestern willow flycatcher based on 1993 to 2007 survey data for Arizona, California, Colorado, New Mexico, Nevada, Utah, and Texas[1].

State	Number of sites with WIFL territories 1993-07[2]	Percentage of sites with WIFL territories 1993-07	Number of territories[3]	Percentage of total territories
Arizona	124	43.1 %	459	35.3 %
California	96	33.3 %	172	13.2 %
Colorado	11	3.8 %	66	5.1 %
Nevada	13	4.5 %	76	5.9 %
New Mexico	41	14.2 %	519	40.0 %
Utah	3	1.0 %	7	0.5%
Texas	?	?	?	?
Total	288	100 %	1,299	100 %

[1]Durst *et al.* 2008.
[2]Site boundaries are not defined uniformly throughout the bird's range.
[3] Total territory numbers recorded are based upon the most recent years survey information from that site between 1993 and 2007.

Rangewide distribution and abundance

There are currently 288 known southwestern willow flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites from 1993 to 2007 where a territorial flycatcher has been detected) holding an estimated 1,299 territories (Durst *et al.* 2008). It is difficult to arrive at a grand total of flycatcher territories since not all sites are surveyed annually. Numbers have increased since the bird was listed and some habitat remains unsurveyed; however, after nearly a decade of intense surveys, the existing numbers are just past the upper end of Unitt's (1987) estimate of 20 years ago (500-1000 pairs). About 50 percent of the 1,299 estimated territories (Table 1) throughout the subspecies range are located at four general locations (Cliff/Gila Valley – New Mexico, Roosevelt Lake - Arizona, San Pedro River/Gila River confluence – Arizona, Middle Rio Grande, New Mexico).

Arizona distribution and abundance
While numbers have significantly increased in Arizona (145 to 459 territories from 1996 to 2007) (English *et al.* 2006, Durst *et al.* 2008), overall distribution of flycatchers throughout the state has not changed much. Currently, population stability in Arizona is believed to be largely dependent on the presence of two large populations (Roosevelt Lake and San Pedro/Gila River confluence). Therefore, the result of catastrophic events or losses of significant populations either in size or location could greatly change the status and survival of the bird. Conversely, expansion into new habitats or discovery of other populations would improve the known stability and status of the flycatcher.

Critical habitat
The primary constituent elements of critical habitat are based on riparian plant species, structure and quality of habitat and insects for prey. A variety of river features such as broad floodplains, water, saturated soil, hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these constituent elements (USFWS 2005). The primary constituent elements are:

1. Riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) that comprises:

    a. Trees and shrubs that include, but are not limited to, willow species, box elder, tamarisk, Russian olive, cottonwood, stinging nettle, alder, ash, poison hemlock, blackberry, oak, rose, false indigo, Pacific poison ivy, grape, Virginia creeper, Siberian elm, and walnut.

    b. Dense riparian vegetation with thickets of trees and shrubs ranging in height from 2 to 30 meters (m) (6 to 98 feet (ft.). Lower-stature thickets (2 to 4 meters or 6 to 13 feet tall) are found at higher elevation riparian forests, and tall-stature thickets are found at middle- and lower-elevation riparian forests;

    c. Areas of dense riparian foliage at least from the ground level up to approximately 4 m (13 ft) above ground or dense foliage only at the shrub level, or as a low, dense tree canopy;

    d. Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground) (*i.e.*, a tree or shrub canopy with densities ranging from 50 percent to 100 percent); or

    e. 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 0.1 ha (0.25 ac) or as large as 70 ha (175 ac).

2. A variety of insect prey populations found within or adjacent to riparian floodplains or moist environments, including: flying ants, wasps, and bees; dragonflies; flies; true bugs; beetles; butterflies/moths and caterpillars; and spittlebugs.

A variety of river features such as broad floodplains, water, saturated soil, hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these constituent elements (USFWS 2005).

Past Consultations

Since listing in 1995, at least 182 Federal agency actions have undergone (or are currently under) formal section 7 consultation throughout the flycatcher's range. This list of consultation can be found in the administrative record for this consultation. We concluded in our biological opinion for the Southwestern Regional Land Resource Management Plan (LRMP) (USFWS 2005a, #2-22-03-F-366) that ongoing upland grazing associated with Management Area 6J (Code 1423) of Tonto Creek on the Tonto National Forest would cause a sub-lethal response (-2) to the flycatcher. The conclusion in the LRMP that continued grazing can facilitate decreased bank stabilization, increased run-off, increased sedimentation, increased erosion, and reduced capacity of soils to hold water. These factors would reduce the occurrence, longevity, and quality of the habitat-based Primary Constituent Elements of flycatcher critical habitat. The LRMP was completed prior to the USFS adopting a policy of rangeland adaptive management in Chapter 90 of FSH 2209.13. Since flycatcher critical habitat was finalized in 2005, at least 26 formal opinions have been completed in Arizona (within and outside designated critical habitat). While many opinions were issued for the previous critical habitat designation, the stream reaches and constituent elements have changed.

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.). Introduced tamarisk eating leaf beetles were first detected within the breeding habitat of the flycatcher in 2008 along the Virgin River near the Town of St. George, Utah. Stochastic events also continue to change the distribution, quality, and extent of flycatcher habitat.

Conservation measures associated with some consultations and Habitat Conservation Plans have helped to acquire lands specifically for flycatchers on the San Pedro, Verde, and Gila rivers in AZ and the Kern River in CA. Additionally, along the lower Colorado River, the U.S. Bureau of Reclamation is currently attempting to establish riparian vegetation to expand and improve the distribution and abundance of nesting flycatchers. A variety of Tribal Management Plans in CA, AZ, and NM have been established to guide conservation of the flycatchers. Additionally, during the development of the recent critical habitat rule, management plans were developed for some private lands along the Owens River in CA and Gila River in NM. These are a portion of the conservation actions that have been established across the subspecies' range.

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.

The accounts of overgrazing throughout the Southwest at the turn of the past century are well known. Hanes (1996) cites Luna Leopold in his book, *A View of the River* (1994) stating that the late 1800s are viewed by geomorphologists as a period of "arroyo cutting" throughout the west. The cause is generally attributed to overgrazing combined with climatic events (drought followed by rain events) (Hanes 1996). Watershed condition has been a past and continues to be a present concern over most of the Tonto National Forest, which was originally established for the purpose of watershed protection.

Reviews of grazing specifically on the Tonto National Forest were published by Croxen (1926) and Alford (1993). Cattle were moved into the area that is now the Tonto Forest after the Civil War and the ranges were fully stocked by 1890. In 1900, an estimated 1.5 to 2.0 million cattle were on what is now the Tonto Forest; which is more than 50 times the currently permitted stocking rate. Croxen (1926) documents extreme resource degradation at that time. Once resources were depleted, cattle died by the thousands and rangelands were damaged for many years thereafter. Croxen (1926) documented loss of grasslands, invasion of shrubs, gullying, and deterioration of riparian areas. In regard to Tonto Creek and other streams, Croxen (1926) notes: "There were perennial grasses on the mesas along Tonto Creek where only brush grown (sic) at the present time. Mr. Packard (a long time resident) says that Tonto Creek was timbered with the local creek bottom type of timber from bluff to bluff, the water seeped rather than flowed down a series of sloughs, and fish over a foot in length could be caught with little trouble. Today, this same creek bottom is little more than a gravel bar from bluff to bluff. Most of the old trees are gone, some have been cut for fuel, many others cut down for the cattle during droughts and the winter when the feed was scarce on the range, and many have been washed away during the floods that have rushed down this stream nearly every year since the range started to deplete. The same condition applies to practically every stream of any size on the Tonto." With establishment of the National Forest in 1905, resource management improved, but many years were needed to construct the livestock waters, fences, and other improvements necessary to adequately manage cattle (Alford 1993). Forest planning and increased interest in rangeland improvement in the 1970s initiated a series of changes that have resulted in dramatic improvement of overgrazed rangelands. Nevertheless, a long history of poor management has created long-term changes on the landscape that are still healing. Alford (1993) acknowledged that resource management problems remain, but positive results have been achieved in recent years.

Recently, stocking levels on the Tonto NF are much lower than the levels that have caused watershed damage in the past. The Tonto NF has instituted a drought policy which reduces stocking during drought. Many allotments were de-stocked at some point over the past decade,

while others had reduced numbers. This has provided protection or minimized further damage for many of the watersheds. Cattle are only recently being re-stocked on many of the allotments.

Chrysotile Allotment

The Chrysotile Allotment ranges from 2,800 to 6,500 feet in elevation. The Chrysotile Allotment lies within three 5th code watersheds: Salt River, Ash Creek, and Hess Canyon. The allotment consists of desert scrub, pinyon/juniper, chaparral, and ponderosa pine habitat. The allotment was destocked for the last six years. Due to steep cliffs of the Salt River Canyon, most of the Salt River is not used as part of this allotment but there may be some trespass cattle. Soil conditions are 59%, 24%, and 17% satisfactory, impaired, and unsatisfactory, respectively. No reliable range trend information is available. However, due to six years of no use, USFS personnel have noted that the vegetation on the allotment is in good condition with excellent grass cover.

The Chrysotile Allotment is located within the Central Highlands. The vegetation is variable, occurring mostly within the woodland zone but extending into the ponderosa pine zone at higher elevations and to the Sonoran Desert at lower elevations. The dominant vegetation types are pinyon-juniper woodlands, chaparral, and semi-arid grasslands. Small areas of riparian vegetation occur in drainages. Topographical features range from nearly level valley and elevated plains to very steep mountains and canyons. Based on Terrestrial Ecosystems (TES) gradient analysis the mean annual precipitation ranges from about 16 to 28 inches.

The Tonto National Forest reports that overall within the Chrysotile Allotment, 21.6 perennial stream miles and 25.25 intermittent stream miles exist, with 10.4 of those stream miles having riparian vegetative cover exceeding 30 percent.

Ash Creek originates from the north side of Timber Camp Mountain within the Chrysotile Allotment at approximately 6,000 feet elevation and runs north and then west for approximately 14 miles until it drains into the Salt River. The first six miles of Ash Creek, from the headwaters to the upper private land boundary with the former Chrysotile Mine, are above 4,800 feet in elevation. Perennial sections make up 5.2 miles of the total stream. In addition to perennial sections, intermittent sections with significant amounts of riparian vegetation are 3.6 miles for a total of 8.8 miles of riparian out of the 14 miles of stream from the head of the stream to the Salt River. Length of perennial and intermittent streams with riparian vegetation that is inaccessible to livestock is 2.3 miles.

The Tony Pasture and lower end of the Timber Pasture contain the bulk of the perennial and intermittent sections with riparian habitat. Downstream from the private land, which used to be the Chrysotile Mine, all the perennial flows of Ash Creek including the tributaries to Butte Creek and Bronson Canyon are below 5,000 feet in elevation.

Within the Carol Pasture, 1.6 miles of intermittent streams with high riparian vegetation cover, 1.5 miles of intermittent stream with no or low riparian vegetation cover, and five spring sources have been identified. The Tonto NF reports that five stock tanks are within the Carol Pasture. Our additional review of maps indicated a total of seven stock tanks within the boundaries of this pasture.

Cross F Allotment

The Cross F Allotment on the Mesa Ranger District is northwest of Tonto Basin within the southern part of the Mazatzal Mountains and covers 29,138 acres, ranging from 3,600 to 7,000 feet in elevation. Habitat types include Sonoran desert, semi-desert grassland, chaparral, pinyon/juniper, and some ponderosa pine. A portion of the Cross F Allotment was impacted by the Willow Fire. The following characterization of vegetation and soils on the Cross F Allotment was derived from summary data compiled following four years of data collection (2002-2005). These data were collected by the permittee in conjunction with the University of Arizona Cooperative Extension and Forest Service personnel.

The Sheep Creek, Iron Dike, Cottonwood and Mazatzal Pastures are used in a modified rest-rotation system. Each of these pastures receives one six-month (May-October) use period out of three years. Summer use for these pastures is alternated with the Alder Pasture. Each of these pastures also receives one six-month (November-April) use period out of three years that also alternates with the Alder Pasture. During the summer and winter use periods, two of these pastures are combined for the livestock use period.

The Cottonwood Pasture is located in semi-desert grassland. The diversity of perennial species at this site is low, but the density and distribution of plants provides adequate ground cover. Common species include curly mesquite (42%), snakeweed (21%), shrubby buckwheat (8%), turbinella oak (5%) and sideoats grama (5%). Threeawn (<1%), squirreltail (1.3%) and junegrass (<1%) occur infrequently, and there are no perennial forb species. Curly mesquite is the dominant perennial forage species available to livestock. However, in 2005 cool season grasses comprised 10% of the overall vegetation community – providing additional seasonal forage. Ground cover composition consists of 5% bare ground, 40% gravel and rock, 16% live vegetation, 36% ephemeral litter (<0.75 inch deep) and 5% persistent litter (>0.75 inch deep or woody material). The ground cover composition for bare ground and live vegetation has remained stable for the past four years, in spite of fluctuations in drought conditions. This may be attributable to the stable population of curly mesquite at this site.

The Iron Dike Pasture is located in semi-desert grassland. Similar to the Cottonwood Pasture, this area has a low diversity of perennial grasses and forbs, and moderate cover and production. The dominant forage species are curly mesquite and shrubby buckwheat, which make up 27% and 19% of the vegetation composition respectively. Ground cover composition consists of 20% bare ground, 20% gravel and rock, 8% live vegetation, 46% ephemeral litter (< 0.75 inch deep) and 5% persistent litter (> 0.75 inch deep or woody material). Other common perennial plant species in this area include snakeweed (24%), prickly pear (6%), sideoats grama (2%) and Utah juniper (1%). This site was significantly affected by the drought in 2002, which caused a decline in curly mesquite, and an increase in snakeweed. However, the sideoats grama population has remained stable throughout the past four years.

The key area for the Sheep Creek Pasture is situated in semi-desert grassland, but the overall management unit includes some steep and higher elevation country. As a result of the varied soils and topography, the structure and composition of the vegetation is diverse. In addition, there are several key stream reaches in Sheep Creek and Norm's Creek supporting herbaceous and woody riparian species. Dry-weight rank and ground cover data were not collected at this site in 2005. In 2004, the cover of perennial grasses was limited but diverse, including curly mesquite (11%), sideoats grama (5%), hairy grama (<1%), plain's lovegrass (<1%), three-awn (<1%), bull muhly (<1%) and squirreltail (<1%). This area seemed to be heavily impacted by drought, as all of the grasses had declined since 2002. Common shrubs included beargrass (2%), turbinella oak (9%), shrubby buckwheat (8%), snakeweed (7%) and mountain mahogany (1%). Ground cover composition consisted of 10% bare ground, 29% gravel and rock, 4% live vegetation, 46% ephemeral litter (< 0.75 inch deep) and 10% persistent litter (>0.75 inch deep or woody material).

This key area for the Mazatzal Pasture is located directly north of the Cross F Ranch, on a south-facing slope above the confluence of the West and East Forks of Sycamore Creek. There are transects outside and inside of a long-term study plot that have been excluded from livestock grazing. This area has historically been heavily impacted by livestock grazing due to the proximity of this site to the riparian area and the ranch. In addition, this area is also heavily disturbed by dispersed camping and recreation. As a result, the vegetation and ground cover are sparse. Curly mesquite and shrubby buckwheat, along with annual grasses and forbs, are the dominant forage. Curly mesquite is significantly less frequent inside of the exclosure, and shrubby buckwheat has about the same abundance and distribution inside and outside. The exposure of this site also exaggerated the effects of the drought, particularly on half shrubs such as shrubby buckwheat which declined from 43% to 7% frequency between 2004 and 2005. There are some notable differences in ground cover inside and outside of the exclosure. Inside of the exclosure, ground cover consists of 9% bare ground, 16% rock and gravel, 5% live vegetation, 63% ephemeral litter (<0.75 inch deep) and 10% persistent litter (> 0.75 inch deep or woody material). Outside of the exclosure, ground cover consists of 12% bare ground, 34% rock and gravel, 9% live vegetation, 36% ephemeral litter (<0.75 inch deep) and 10% persistent litter (>0.75 inch deep or woody material).

The southern portion of the Alder Pasture is located in a transitional zone between desert scrub and semi-desert grassland communities. Common species include turpentine bush, prickly pear, jojoba, mesquite, range ratany, snakeweed, fairy duster, catclaw, juniper, perennial three-awn species, sideoats, and curly mesquite. Ground cover is mostly comprised of small to large sized cobble. Litter is mainly restricted to under shrub canopies. No cool season annuals have grown in 2007. The dominant forage species in this portion of the pasture are jojoba and perennial grasses. The effects of drought are most prominent on the shrub species, with some dying limbs and leaf loss. High mortality is notable on turpentine bush, but this appears to have occurred several years prior. Mature, healthy individuals are still common. The mid and northern portions of the Alder Pasture are situated in semi-desert grassland. The key area (KA5) representative of this community has maintained a fairly stable population of several grass species over the past 4 years including curly mesquite (7%), sideoats grama (4%), three-awn (2%) and squirreltail (0.3%). Common overstory species include prickly pear (18%), shrubby buckwheat (11%), snakeweed (8%) and turpentine bush (6%). Cool and warm season annuals contribute a

significant percentage to the vegetation and forage base, such as red brome (9%) and sprangletop (11%). Globemallow (3%) and rattlesnake weed (2%) are also common perennial forbs. Ground cover composition consists of 12% bare ground, 25% gravel and rock, 9% live vegetation, 41% ephemeral litter (<0.75 inch deep) and 14% persistent litter (>0.75 inch deep or woody material).

Salt River

The 30-mile portion of Salt River (from approximately Gleason Flat at the Chrysotile Allotment to Roosevelt Lake), can be affected by watershed conditions from upland grazing, and is a part of the action area. This stretch of river is remote and comprises much of the Salt River Canyon Wilderness Area. The river is primarily lined with canyon walls, difficult to access, and due to its wilderness designation, receives little human use. The Gleason Flat and Horseshoe Bend/Redmond Flat area consist of wider floodplain where more abundant amounts of riparian vegetation can develop. The Salt River opens up into the Tonto Basin where Roosevelt Lake exists and is then regulated by a collection of dams. The primary use occurring in this area is boating and camping. Grazing is limited along the Salt River in this stretch due to natural boundaries and the removal of grazing from the mainstem Salt River.

Status of the Desert Pupfish in the Action Area

Cross F Allotment
The Tonto NF consulted with us in 2004 (02-21-95-F-0303-R1) on the effects of re-established pupfish into Walnut Spring on the Cross F Allotment (conducted by Arizona Game and Fish Department), and continued livestock activities and spring enhancement (for fish) on the grazing allotment. On July 25, 2008, 106 desert pupfish were placed in Walnut Spring, and are believed to be persisting (R. Calamusso, Tonto NF, pers. comm.).

Status of Gila Topminnow in the Action Area

Gila topminnow populations are known to be at Walnut Spring and its associated unnamed drainage associated with Alder Creek (Cross F Allotment) within the action area.

Cross F Allotment
The Walnut Spring population on the Cross F Allotment has persisted in an isolated tank with periodic maintenance and has extended into an unnamed drainage associated with Alder Creek. The fenced area around the spring and pond is very small in size (less than 0.5 acre). Gila topminnow were released into the pond in 1982 (USFWS 1982, Brooks 1986). Improvements to the pond to increase water levels (that had decreased over time) and address maintenance of the pond in perpetuity were consulted on in 2004 (USFWS 2004).

The tank was cleaned in 2004 and visits since then indicate that the population is doing well (USFS 2007). Fish from this population now occupy a perennial stretch of the drainage for approximately 100 feet below Walnut Spring within the action area. This drainage is an unnamed tributary of Alder Creek. Alder Creek is dry or intermittent for most of its length. Walnut Spring and the associated drainage with Alder Creek, are occupied habitat. While the

distribution of fish has changed from our previous consultation (02-21-95-F-0303-R1), grazing actions have not changed from that Biological Opinion (USFWS 2004).

Status of Southwestern Willow Flycatcher and Critical Habitat in the Action Area

Riparian areas within the floodplain along portions of the Salt River (at Gleason Flat and from Horseshoe Bend downstream to Roosevelt Lake) and within the exposed conservation space of Roosevelt Lake have habitat for breeding southwestern willow flycatchers and are believed to be able to develop additional breeding locations (USFWS 2002, 2005). Habitat along the length of these streams also exists for migrating, foraging, sheltering, and dispersing southwestern willow flycatchers (USFWS 2002, 2005).

Gleason Flat
On the Chrysotile Allotment, outside of critical habitat, further upstream from the Horseshoe Bend/Redmond Flat area on the Salt River at Gleason Flat, large stands of salt cedar were detected in early 2007 that appear to be suitable for nesting (G. Beatty, FWS, pers. observation). Protocol surveys for nesting flycatchers at Gleason Flat have yet to occur (C. Woods and S. Torrence, Tonto NF, pers. comm.).

Horseshoe Bend/Redmond Flat
Along the Salt River upstream of Roosevelt Lake, there is WIFL habitat that appears to be suitable for nesting. At the Horseshoe Bend/Redmond Flat area in 2007, a WIFL was detected in the early breeding season, but it did not persist. At least one WIFL territory was found near Coon and Chalk creeks in 2009 (S. Torrence, Tonto NF, pers. comm.).

Roosevelt Lake/Salt River inflow
The greatest number of flycatcher territories exists along the arms of Roosevelt Lake which includes the Salt River arm. The water level at Roosevelt Lake rose from a relatively empty 28% full in 2004 to 96% full in 2005, and following a little recession in elevation, climbed back up to 100% full during the winter of 2008/2009. These fluctuations caused a change in habitat, flycatcher abundance, and distribution. This rise of 67 feet inundated nesting habitat closest to the middle of Roosevelt Lake, and partially inundated habitat near the perimeter. Inundation had greater negative impact on habitat availability on the Salt River side of Roosevelt compared to the Tonto Creek side. This quick change in habitat availability and quality caused flycatchers to move from nesting areas previously used to different areas on the perimeter of the lake partially inundated and areas further upstream on Tonto Creek near Punkin Center and Bar X crossing (English *et al.* 2006). The total number of territories on the Tonto Creek side of Roosevelt Lake (including Bar X) increased from 58 in 2004 to 84 in 2005, but decreased to 61 in 2006 (Graber *et al*. 2007). The number of territories on the Salt River side of Roosevelt Lake has steadily declined from 137 in 2004 to 67 in 2005, and 50 in 2006 (Graber *et al.* 2007). It is not exactly known how the distribution and abundance of the current population of birds will be influenced by the increased water levels in 2008/2009.

Migrant/dispersing/foraging flycatchers
In addition to nesting within the action area, flycatchers are also expected to migrate and disperse along major drainages. Due to the proximity of the large flycatcher breeding population at

Roosevelt Lake, and the known behavior of migrating, territory seeking, foraging, and dispersing flycatchers, it would be expected that flycatchers would use, for a short period of time, habitat along the Salt River and Tonto Creek. Migrant flycatchers have been detected as far upstream of Tonto Creek near the Rye Creek/Tonto Creek confluence.

Critical habitat

Critical habitat within the action area was designated for the flycatcher along the Salt River immediately upstream from Roosevelt Lake (USFWS 2005). On the Salt River, critical habitat was designated from Cherry Creek downstream to the Roosevelt Lake boundary. The Salt River segment along with an additional segment along Tonto Creek, are all the designated segments within the Roosevelt Management Unit (as described in the Recovery Plan). Critical habitat was proposed for the area within the conservation space of Roosevelt Lake, but due to Forest Service and Salt River Project management, the lake was excluded from critical habitat. Therefore, there is no designated critical habitat within the high water mark of Roosevelt Lake.

The Chrysotile Allotment is part of the watershed of the critical habitat segments on the Salt River. No critical habitat exists within the allotment boundaries, but critical habitat is included in the action area. Actions outside of critical habitat boundaries are evaluated if they diminish the value of the primary constituent elements. In the flycatcher critical habitat rule (USFWS 2005), degradation of watershed and soil characteristics are described as an example of possible indirect effects to critical habitat.

We expect that flycatcher habitat will be dynamic within the action area (including designated critical habitat), including habitat at the Salt River Arm of Roosevelt Lake. The amount of flycatcher nesting habitat increased with the gradual drawdown of Roosevelt Lake beginning in 1995. That habitat was nearly all impacted in 2005 when the lake rose to near capacity. Periodic recycling of habitat within the conservation space of Roosevelt will be necessary to regenerate and maintain quality flycatcher habitat for the long-term. Based upon flycatcher presence and distribution in 2005 and habitat conditions in 2006, the most significant changes in site occupancy appear to have occurred the second season following inundation. In 2005, while habitat was significantly altered, plants were still alive and green vegetation was still present. However, after continued inundation in 2006, nearly all of the salt cedar located within the lake had died.

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 or will result from the proposed action and are later in time, but are still reasonably certain to occur.

Gila Topminnow and Desert Pupfish

Cross F Allotment
There is a reasonable certainty that some adverse effects to Gila topminnow and desert pupfish will occur because the distribution of these fish at the Walnut Spring/unnamed tributary to Alder Creek location are restricted to a small area and cattle can occur in topminnow and pupfish habitat. Due to similar life histories and habitat use, we are combining the effects for both fish together. These fish are small and can exist in small amounts of water and in a wide variety of extreme habitat and water quality conditions. However, because of the scarcity of water and tendency for cattle to congregate in watered areas (Walnut Spring pond and shallow creek areas along the unnamed tributary to Alder Creek), these fish are exposed to stressors that can be exacerbated by cattle. Low water conditions combined with cattle grazing/watering/hoof action can lead to additional reductions in water, bank trampling, fragmentation of contiguous water, and isolation/stranding of fish. Different than the live-bearing topminnow, pupfish lay eggs that can similarly be impacted by cattle. Long-term or seasonal drought can also exacerbate these conditions. As a result we anticipate that cattle will cause mortality of fish and/or pupfish eggs, particularly at the perimeter of the tank and shallow areas of the creek, further reducing distribution and abundance of water that can isolate fish/eggs into inhospitable areas.

Because Walnut Springs is a small pond near the top of a small drainage, and is in a relatively confined area due the surrounding steep topography and existing fencing, livestock can congregate in the area surrounding the pond leading to impacts in a relatively short period of time. However, perhaps more importantly, livestock grazing on the Cross F allotment has continued to be managed in the immediate area of Walnut Springs in a consistent manner for over 20 years, and during that time, the Gila topminnow population at Walnut Spring has flourished. We anticipate similar success for the pupfish.

Thus, while ongoing grazing as proposed, may impact surrounding habitat indirectly affecting the quality of the pond and stream, and as described above, is reasonably expected to result in some mortality of Gila topminnow and desert pupfish, we do not expect there to be an overall or long-term negative effect on the populations at Walnut Spring. Some benefits from periodic cattle grazing at Walnut Spring tank/pond may occur. Topminnow/pupfish in isolated ponds can be susceptible to loss of habitat if vegetation becomes overgrown. Periodic grazing can prevent vegetation from becoming overgrown. In addition, the Forest Service and the permittee for the Cross F allotment have been actively involved in the management of Walnut Spring for both livestock grazing and Gila topminnow/desert pupfish conservation, which we believe will continue to ultimately benefit these fish.

Southwestern Willow Flycatcher

Chrysotile Allotment
Cattle grazing is not anticipated to occur within the riparian area of the Salt River floodplain on the Chrysotile Allotment. Riparian vegetation, primarily salt cedar, has developed in the Gleason Flat area that appears to be suitable for nesting flycatchers (G. Beatty, FWS, pers. observation). As a result, we do not anticipate cattle directly impacting habitat or southwestern willow flycatchers.

All known nesting flycatchers are located approximately 25-30 miles downstream within the exposed conservation space of the Salt River arm of Roosevelt Lake and near Chalk/Coon creeks. Within the Salt River arm of Roosevelt Lake, flycatcher habitat is spread out across a broad area of the flooplain and conservation space. As a result, any possible impact from watershed effects due to upland grazing are minimized as a result of water storage. Additionally, the Tonto NF has restricted grazing along the Salt River, which likely offsets some potential impact from effects of upland grazing. Therefore, any contribution from watershed effects to flycatchers and flycatcher habitat as a result of upland grazing on the Chrysotile Allotment is believed to be insignificant.

Cattle grazing is anticipated to occur in the uplands just outside to the Salt River floodplain during the flycatcher breeding season. Livestock grazing adjacent to riparian habitat may provide brown-headed cowbirds with improved foraging opportunities and establish foraging areas closer to flycatcher nesting areas (USFWS 2002). Cowbirds can impact flycatcher productivity even when grazing is remote (>5 miles) from flycatcher nesting areas (Curson *et al.* 2000, Rothstein *et al.* 1984). The proximity of cattle could attract and therefore increase the population of cowbirds, subsequently causing increased levels of brood parasitism. Brood parasitism impacts tend to be variable and site specific (USFWS 2002). However, because the area has not been surveyed, we are uncertain whether nesting flycatchers are present on the Chrysotile Allotment. Therefore, we are unable to conclude that livestock use adjacent to the riparian area during the breeding season will or will not result in incidental take.

There is no critical habitat designated for the southwestern willow flycatcher within the Chrysotile Allotment, however critical habitat does exist about 20 miles downstream beginning at the Cherry Creek/Salt River confluence. Under the proposed action, grazing is expected to be maintained within conservative use standards and monitored to prevent excessive use. We do not believe there will be adverse effects to the habitat-based primary constituent elements of flycatcher critical habitat through indirect watershed effects because of the reported “good” condition of grasses on the allotment, non-use of the allotment over the last six years, the relatively short time-frame of this consultation, the long distance to downstream designated critical habitat, and the absence of cattle from the Salt River floodplain.

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.

Since nearly all lands within the action area are managed by the Tonto NF, most activities that could potentially affect listed species are Federal activities and subject to additional section 7 consultation. But there are some non-federal lands within the action area that may generate cumulative impacts. For example, downstream of the Chrystotile Allotment along the Salt River near Redmond Flat, a small private inholding is anticipated to continue to graze cattle within the riparian area. Also, where Tribal land is grazed by cattle adjacent to Forest lands, cattle can be

expected to periodically extend onto the Forest. Both of these instances could have local impacts to quality of riparian vegetation within the action area.

CONCLUSION

Gila topminnow

After reviewing the current status of the Gila topminnow, the environmental baseline for the action area, the effects of the proposed livestock grazing and the potential for cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Gila topminnow. No critical habitat has been designated for this species; therefore, none will be affected.

We base these conclusions on the following:

- Topminnow have persisted on the Cross F Allotment at Walnut Spring for 20 years with continued livestock grazing and cooperative management.
- Proposed livestock grazing on the Cross F Allotment is similar to previous strategies.
- Mortality of individual fish on the Cross F Allotment in the past has not caused the population to be lost.
- Some livestock grazing on the Cross F Allotment could improve habitat by reducing overgrown vegetation around Walnut Spring to prevent loss of open water.

Desert pupfish

After reviewing the current status of the desert pupfish, the environmental baseline for the action area, the effects of the proposed livestock grazing and the potential for cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the desert pupfish. No critical habitat exists within the action area; therefore, it will not be affected.

We base these conclusions on the following:

- Pupfish were recently placed within the action area on the Cross F Allotment.
- We anticipate that, similar to the population of topminnow that have persisted for approximately 20 years, the proposed grazing practices will allow the fish to persist, even with the periodic loss of individual fish.

Southwestern Willow Flycatcher

After reviewing the current status of the flycatcher, the environmental baseline for the action area, the effects of the proposed livestock grazing and the potential for cumulative effects, it is

our biological opinion that the proposed action is not likely to jeopardize the continued existence of the flycatcher. Within the action area of this proposed project, critical habitat for the flycatcher has been designated along the Salt River above Roosevelt Lake. However, critical habitat will not be adversely affected along the Salt River (Appendix A). We base this no jeopardy conclusion on the following:

- One of the largest statewide and rangewide nesting populations of flycatchers has persisted along the Salt River arm of Roosevelt Lake with the general grazing strategies proposed in this consultation.

- The proposed action's land management strategies are anticipated to help sustain existing flycatcher habitat and potentially improve and increase flycatcher habitat quality/abundance.

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.

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.

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 applicant, 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 applicant 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 or applicant 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)).

The FWS anticipates that there is a reasonable likelihood that continued livestock grazing on the Cross F Allotment will result in incidental take of Gila topminnow and desert pupfish. The incidental take anticipated will be in the form of harm, death, or injury. Livestock will continue to have access to Walnut Spring/unnamed tributary to Alder Creek area, so we anticipate that incidental take of Gila topminnow and desert pupfish would be primarily in the form of injury/death to the both species through trampling, physiological effects of reduced water quality, and harm from the loss of habitat through sedimentation or de-watering.

We anticipate that any take of Gila topminnow or desert pupfish will be difficult to detect and quantify because they have a small body size and they are highly fecund; thus rapid reproduction may mask population decline resulting from the incidental take. Also, stream flow can send dead individuals or eggs downstream, eggs are difficult to detect, and/or poor water clarity/visibility and scavengers can reduce the ability to detect dead fishes/eggs. Therefore, we believe it is not possible to provide precise numbers of fish and/or eggs that could be harmed, injured, or killed from the proposed action. In such instances where take is otherwise difficult to detect and/or quantify, we may quantify take in terms of some aspect of the species' habitat that may be diminished or removed by the action.

We do not anticipate incidental take of the flycatcher.

AMOUNT OR EXTENT OF TAKE

Desert Pupfish and Gila Topminnow

On the Cross F Allotment, we will consider incidental take to have been exceeded if the pond depth is reduced to six inches or less and this water decline is due to cattle grazing activities.

Southwestern Willow Flycatcher

Based upon the information presented by to us, we do not have reasonably certainty the proposed action will incidentally take flycatchers for the following reasons:

- No grazing is proposed to occur in known occupied or suitable southwestern willow flycatcher nesting habitat.

- Indirect watershed effects to flycatchers and flycatcher habitat downstream on the Salt River, as a result of upland grazing, are minimized as a result of no grazing in occupied and suitable flycatcher habitat, distant location of nesting birds from the proposed action, implementation of conservative use, and the relatively short-duration of the proposed action (i.e. three years).

- We do not know the distribution or abundance of flycatchers on the Chrysotile Allotment, thus limiting our analysis at this location.

EFFECT OF TAKE

In this biological opinion, we determined that this level of anticipated incidental take is not likely to result in jeopardy to the Gila topminnow or desert pupfish. This is primarily due to the short duration of the proposed action, the persistence of fishes in these locations with similar levels of grazing in the past, and the contribution toward recovery with the introduction of a new population of pupfish.

REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS

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

The following reasonable and prudent measures and terms and conditions are necessary and appropriate to minimize the effects of take of Gila topminnow and desert pupfish.

1. Conduct proposed actions in a manner that will minimize take of Gila topminnow and desert pupfish.

    a. The Tonto NF shall inspect and repair appropriate fencing in pastures surrounding fish habitat to reduce and minimize effects to these fish and their habitat.

    b. The Tonto NF shall coordinate/work with the permittees to monitor the distribution of cattle, and shall as quickly as possible, remove cattle that have gained access to closed pastures within these fishes habitat.

2. Monitor fishes and habitat at the Walnut Spring/unnamed tributary to Alder Creek area (Cross F Allotment) to document amount or extent of incidental take, and report the findings to our office.

    a. The Tonto NF shall coordinate with AGFD to describe presence/absence of these fish and a visual estimate of abundance and distribution. At Walnut Spring an estimate of pond depth, surface area, and quantitative estimate of pond volume, at a minimum, shall be recorded.

    b. Copies of the information described above shall be reported annually to AESO by September 1.

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, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

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

Desert Pupfish/Gila Topminnow

1. We recommend that your agency continue to implement recovery actions described in Recovery Plans for these fishes.

2. We recommend that your agency continue to work with AGFD and FWS in re-introducing these fishes.

3. We recommend that your agency work with AGFD and FWS in controlling and/or eradicating exotic aquatic species that predate upon native fishes and eggs.

Southwestern Willow Flycatcher

1. We recommend that your agency continue to implement recovery actions described in Recovery Plan.

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

REINITIATION NOTICE

This concludes formal consultation on the action outlined herein. 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 Tonto NF's efforts to identify and minimize effects to listed species from this project. We encourage you to coordinate review of this project with the Arizona Game and Fish Department. For further information please contact Greg Beatty at (x247) or Debra Bills at (x239). Please refer to consultation number, 22410-2007-F-0218 in future correspondence concerning this project.

Sincerely,

/s/Debra Bills for

Steven L. Spangle
Field Supervisor

cc:
(electronic copies)
Jim Rorabaugh, Fish and Wildlife Service, Phoenix, AZ
Shaula Hedwall, Fish and Wildlife Service, Phoenix, AZ
(hard copies)
Fred Wong, Forest Biologist, Tonto National Forest, Phoenix, AZ
District Ranger, Mesa Ranger District, Tonto National Forest, Mesa, AZ
District Ranger, Globe Ranger District, Tonto National Forest, Globe, AZ
District Ranger, Tonto Basin Ranger District, Tonto National Forest, Roosevelt, AZ
Habitat Branch Chief, Arizona Game and Fish Department, Phoenix, AZ

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APPENDIX A
Concurrences

Bald Eagle

We concur with your determination that the proposed action "may affect, but is not likely to adversely affect" the bald eagle. We base our concurrence on the following:

Chrysotile and Boneyback Allotments
Bald eagles are present within the action area of the Chrysotile (Cibecue, Canyon, Redmond, Pinal Breeding areas) and Boneyback (Sheep and Tonto Breeding areas) grazing allotments. These Breeding Areas are found on the Salt River (Cibecue, Canyon, Redmond, Pinal, and Pinto) and Tonto Creek (Sheep and Tonto) watersheds.

None of these allotments will have livestock grazing within the Salt River or Tonto Creek where bald eagles place their nests and are dependent on foraging. As a result, no direct effects or indirect effects to bald eagle nesting or foraging habitat from alteration or destruction of current or developing habitat are anticipated to occur.

No livestock management actions (fencing, herding, and other livestock management activities) are anticipated to occur within 0.25 mile of a bald eagle nest between January and June. As a result, no indirect effects as a result of disturbance are anticipated to occur.

Conservative use of upland ranges is anticipated to occur during the short time-frame of this biological opinion. As a result, it is not anticipated that any potential indirect watershed impacts from upland grazing could measurably be detected to negatively affect bald eagle nesting and/or foraging habitat.

Mexican Spotted Owl and Critical Habitat

We concur with your determination that the proposed action "may affect, but is not likely to adversely affect" the MSO and its designated critical habitat (there is no designated MSO critical habitat on the Chrysotile Allotment). We base our concurrence on the following:

Cross F Allotment
No MSO PACs are designated and MSO is not known to nest on the Allotment. As a result, we do not anticipate that there will be any direct or indirect effects to MSO as a result of the proposed action.

The primary constituent element of MSO critical habitat that could be impacted by the proposed action is "adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration." The 611 acres of critical habitat on the Cross F Allotment are located at the most northern third of the allotment, with minimal protected or restricted habitat. The ponderosa pine and mixed conifer vegetation types are relatively inaccessible to livestock due to steep topography and thick stands of brush. Therefore, as a result of the relatively short duration of this consultation and the expected inaccessibility of this area to grazing, we do not anticipate that

there will be adverse effects to “residual plant cover” for adequate prey species. Therefore, we concur with your “not likely to adversely effect” determination for MSO critical habitat.

Chrysotile Allotment

The nesting habitat for the MSO within the Ash Creek PAC is limited to the canyon itself, while the rugged environment limits human access. There is no restricted or protected habitat outside of the Ash Creek PAC and this PAC is not located within a designated critical habitat unit. Elsewhere, the majority of the habitat that MSO might use is comprised of pinyon/juniper trees and a meadow. The broadleaf riparian forest is believed to be the best foraging habitat for the owl. In many areas there is substantial herbaceous cover. Cattle have not grazed this allotment since 2000 and no grazing or livestock management activities are expected to occur during the breeding season within the PAC. The Tonto NF (USFS 2007) reports that after six years of non-use, the allotment appears to be in “good” condition, with “excellent” grass cover.

Much of this PAC is located within a rocky canyon inaccessible to livestock grazing and managers. As a result, it is not anticipated that livestock will have access to primary areas where owls are nesting in Ash Creek. Also, no grazing or livestock management activities are proposed to occur within the PAC during the MSO breeding season. Therefore within the Ash Creek PAC, we do not anticipate any direct impacts to nesting MSO from cattle grazing or cattle management actions.

In areas along Ash Creek that cattle can access, efforts will be made to distribute livestock such that grazing intensity in the riparian area is minimized. Although it is not part of this proposed action, a fence along Ash Creek is planned to be built in the future to provide added protections to the riparian habitat. Ash Creek will also be chosen as a critical area for grazing management/monitoring, and through conservative use efforts, will be made to manage for levels that provide the woody and herbaceous vegetation necessary for cover for rodent prey species, and maintain the residual biomass that would reduce the risk of high severity wildfire, and regeneration of riparian trees. The canyon of Ash Creek opens up into a fairly wide meadow (approximately 600 feet) that could provide MSO foraging opportunities. Use of this meadow habitat by cattle could reduce use of vegetation within the riparian area. Through conservative use grazing standards and monitoring, the reported good condition of this allotment’s range, and the relatively short time-frame of this consultation, we anticipate continued management will maintain vegetation for MSO prey species along Ash Creek. As a result, we determine that any potential indirect effect to MSO survivorship or productivity from grazing impacts to prey species is considered insignificant.

Livestock management activities (herding or fence building) will occur during the daytime and outside of the Ash Creek Canyon where owls are expected to be nesting and more frequently roosting. Because MSO territories can cover many acres, there is the possibility that livestock management actions could disrupt a foraging or roosting MSO. We anticipate that these instances would be rare, and the effect of any disruption in their behavior would be insignificant.

Razorback Sucker and Critical Habitat

We concur with your determination that the proposed action "may affect, but is not likely to adversely affect" the razorback sucker and its designated critical habitat. We base our concurrence on the following:

Chrysotile Allotment
There is no proposed grazing within the Salt River or surrounding riparian area, as a result we do not anticipate any direct effects from the proposed action.

Conservative use of upland ranges is anticipated to occur during the short time-frame of this action. Also, there is no proposed grazing within the Salt River floodplain. As a result of proposed conservative use in the upland ranges of the allotment combined with no use within the floodplain, we do not anticipate that any potential indirect watershed impacts from upland grazing could measurably be detected to adversely affect razorback sucker critical habitat.

Southwestern Willow Flycatcher and Critical Habitat

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the flycatcher and its designated critical habitat. The primary constituent elements of critical habitat are described in the body of this biological opinion in the status of the species. We base our concurrence on the following:

Boneyback Allotment
The proposed actions meet the "May Affect, Not Likely to Adversely Affect" criteria for southwestern willow flycatcher in the March 31, 2004, Framework for Streamlining Informal Consultation for Livestock Grazing Activities (USFS 2005).

There is no identified or suspected suitable flycatcher breeding habitat within the boundaries of this grazing allotment. The Tonto NF identified that portions of Greenback Creek might be potential breeding habitat, but you clarified in your August 25, 2008 letter, the riparian area was too narrow. We agree that riparian habitat along Greenback Creek on this allotment has a low likelihood of developing into suitable habitat for breeding flycatchers due to the fact that birds are typically found on larger streams with wider floodplains such as the Verde, Salt, Gila, San Pedro, and Lower Colorado rivers. As a result, we do not anticipate that there will be any direct effects to breeding southwestern willow flycatchers on this allotment.

As a result of the proximity of this allotment to Tonto Creek and Roosevelt Lake where flycatchers nest, it is reasonable to anticipate that migrating or dispersing southwestern willow flycatchers will briefly use riparian habitat along Greenback Creek within the allotment boundaries. Because of the short period of time that migratory/dispersing birds are anticipated to use this habitat, the broad quality of habitat conditions believed to be used by migratory/dispersing flycatchers, and the expected maintenance of riparian habitat through conservative grazing standards, we anticipate that any adverse effect from livestock grazing and livestock grazing management activities will be insignificant.

During the flycatcher breeding season from April through July, cattle on the Boneyback Allotment will be at least three miles from known flycatcher nesting sites. Cowbirds can be attracted to feeding areas created by livestock activity. As a result, the Southwestern Willow Flycatcher Recovery Plan (USFWS 2002) recommended that increasing the distance between cowbird foraging and flycatcher nesting areas during the breeding season through livestock management could minimize cowbird nest parasitism. During the last few years (2003 to 2005) of comprehensive flycatcher nest monitoring in Tonto Basin, parasitism of flycatcher nests was less than four percent annually. While cowbirds are a native and natural part of the landscape, its location and abundance can be manipulated by man-made actions such as housing, agriculture, livestock, corrals, etc. Therefore, we expect some parasitism of flycatcher nests will occur. We anticipate that cattle being present at the proposed distance from occupied flycatcher nesting habitat during the breeding season will not measurably contribute to the observed low parasitism rate of known flycatcher nests at Tonto Basin and that the effect of livestock on the Boneyback Allotment on the parasitism rate of nearby nesting flycatchers will be insignificant.

The Boneyback Allotment is a relatively small allotment (7,000 acres) that encompasses a portion of upper Greenback Creek (part of the Tonto Creek watershed), but is primarily north of Roosevelt Lake. Within the Roosevelt Lake conservation space, flycatcher habitat is spread out across the broad area of the lake. As a result, the potential impact of watershed effects due to upland grazing are minimized as a result of the storage of water. Additionally, the Tonto NF has restricted grazing within the exposed conservation space of Roosevelt Lake, which likely offsets some potential impact from effects of upland grazing. Because of the relatively small amount of acreage on this allotment that influences the Tonto Creek watershed, proposed upland conservative grazing standards, reported high quality soil conditions, and restriction of grazing within Tonto Creek, we anticipate that watershed impacts on nesting flycatchers and their habitat on Tonto Creek will be insignificant. Therefore, we anticipate that any adverse watershed effects to flycatcher and its habitat as a result of upland grazing on this allotment are insignificant.

There is no critical habitat designated for the southwestern willow flycatcher within the Boneyback Allotment, therefore we do not anticipate any direct effects to designated critical habitat from the proposed action.

The Boneyback Allotment is a part a small portions of the lower Tonto Creek watershed where flycatcher critical habitat is designated. Watershed quality can influence and impact river flow and riparian areas, and subsequently the habitat-based primary constituent elements of designated flycatcher critical habitat (USFWS 2002, 2005).

As described above, while the Boneyback Allotment contains a small portion of the Tonto Creek watershed (Greenback Creek), the allotment is located due north of Roosevelt Lake. As a result, the allotment is partially comprised of streams and/or watersheds that run-off into Roosevelt Lake (where there is no designated critical habitat) and do not influence the Primary Constituent Elements found on Tonto Creek. Greenback Creek enters Tonto Creek less than 0.5 mile above the downstream end of critical habitat (the full pool elevation of Roosevelt Lake). Additionally, the Tonto NF has restricted grazing from lower Tonto Creek. As a result, due to the small contribution of this allotment to the watershed of Tonto Creek, proposed conservative use grazing standards, and restriction of grazing within Tonto Creek, we anticipate that any adverse

watershed effects to flycatcher critical habitat as a result of upland grazing on this allotment are insignificant.

Chrysotile Allotment
Our concurrence for flycatcher critical habitat is included in the body of this biological opinion.

Cross F Allotment
There is no known southwestern willow flycatcher breeding habitat, suitable or potential flycatcher breeding habitat on the Cross F Allotment. Approximately 12 miles away is the closest nesting pairs of flycatchers at Horseshoe Lake. As a result of the long distance grazing will be from flycatcher nesting areas, we do not anticipate that adverse effects to breeding flycatchers could reasonably be attributed to any potential increase in cowbird populations from the proposed grazing activity. Therefore, we do not anticipate that the proposed grazing action will adversely affect any flycatchers or flycatcher habitat.

There is no designated southwestern willow flycatcher critical habitat affected by the proposed action. The Cross F Allotment is part of the Verde River watershed and tributaries that flow into the Verde River near Bartlett Lake. All designated critical habitat is upstream of Bartlett Lake. As a result, we do not anticipate that the proposed grazing action will adversely affect flycatcher critical habitat.

Chiricahua Leopard Frog

Chrysotile Allotment
The Chrysotile Allotment contains many streams, springs, and tanks that provide CLF habitat. Locations at or above 4,800 feet were selected for surveys based upon proximity to historical records in the area. Protocol surveys for CLF occurred in 2003 and 2006 (Table 2), and in 2007. In 2007, 56 different sites on the allotment (representing 78 surveys) were comprised of 25 stream reaches 22 livestock tanks, 4 springs, 1 well, and 1 wildlife drinker within the Timber, Tony, Carol, and Horse pastures. No CLF were detected during any visit or survey. However, unsurveyed CLF habitat on the allotment persists.

Some of the surveyed areas on the Chrysotile Allotment are occupied by non-native predatory species and as a result, appeared to be unsuitable for CLF. Non-native predators such as crayfish and warm-water fishes were found at six of the 56 sites. Lowland leopard frogs were detected at five locations on Ash Creek. No bullfrogs were detected on the allotment which is an encouraging result for potential future occupation of CLF.

Due to: 1) the amount and variety of surveys and habitat visited from 2003 to 2007 that found no CLF; 2) the low likelihood of cattle using remote and rugged unsurveyed areas; and 3) the relatively short duration of this proposed action and implementation of conservative use, we believe that the effects of the proposed action on CLF and its habitat are insignificant.

As a result of the abundance and variety of aquatic habitats on this allotment and adjacent lands, and the ability of frogs to disperse overland and along drainages, we encourage continued surveys to re-assess the status of CLF, particularly in new locations.

Table 2. Surveys for Chiricahua leopard frog in suitable aquatic habitat on the Chrysotile Allotment, Globe Ranger District, Tonto National Forest, Arizona, 2003 and 2006.

Aquatic Habitat	Ranid frogs detected?	Predators detected?	Pasture	Comments
Ash Creek	Yes	No	Timber and Tony	2003 surveys. 60% of the habitat is in an inaccessible canyon. Thousands of lowland leopard frogs present as well as canyon treefrogs.
Black Jack Tank	No	No	SW Tony	2003 surveys. No herpetofauna.
Timber Camp Tank	No	No	NW Timber	2003 surveys. No herpetofauna.
Pine Tank	No	Yes	Timber	2003 surveys. Large number of tiger salamanders.
Pine Tree Tank	No	Yes	W Carol	2003 and 2006 surveys. Large number of tiger salamander larvae.
Carol Tank/Spring	No	Yes, in tank	Carol/Horse #1	2003 surveys included springs and detected a Woodhouse's toad. 2006 surveys were of the tank only and detected belostomatids, giant water scavenger beetles, dragonflies, boatman/backswimmers.
Carol Tank #1	No	Yes	Horse #1	2006 surveys detected a Woodhouse's toad. Predators included crayfish, belostomatids, giant water scavenger beetles, dragonflies, boatman/backswimmers, leeches.
Carol Tank #2	No	Yes	Horse #2	2006 surveys detected only belostomatids, giant water scavenger beetles, dragonflies, boatman/backswimmers.

APPENDIX B

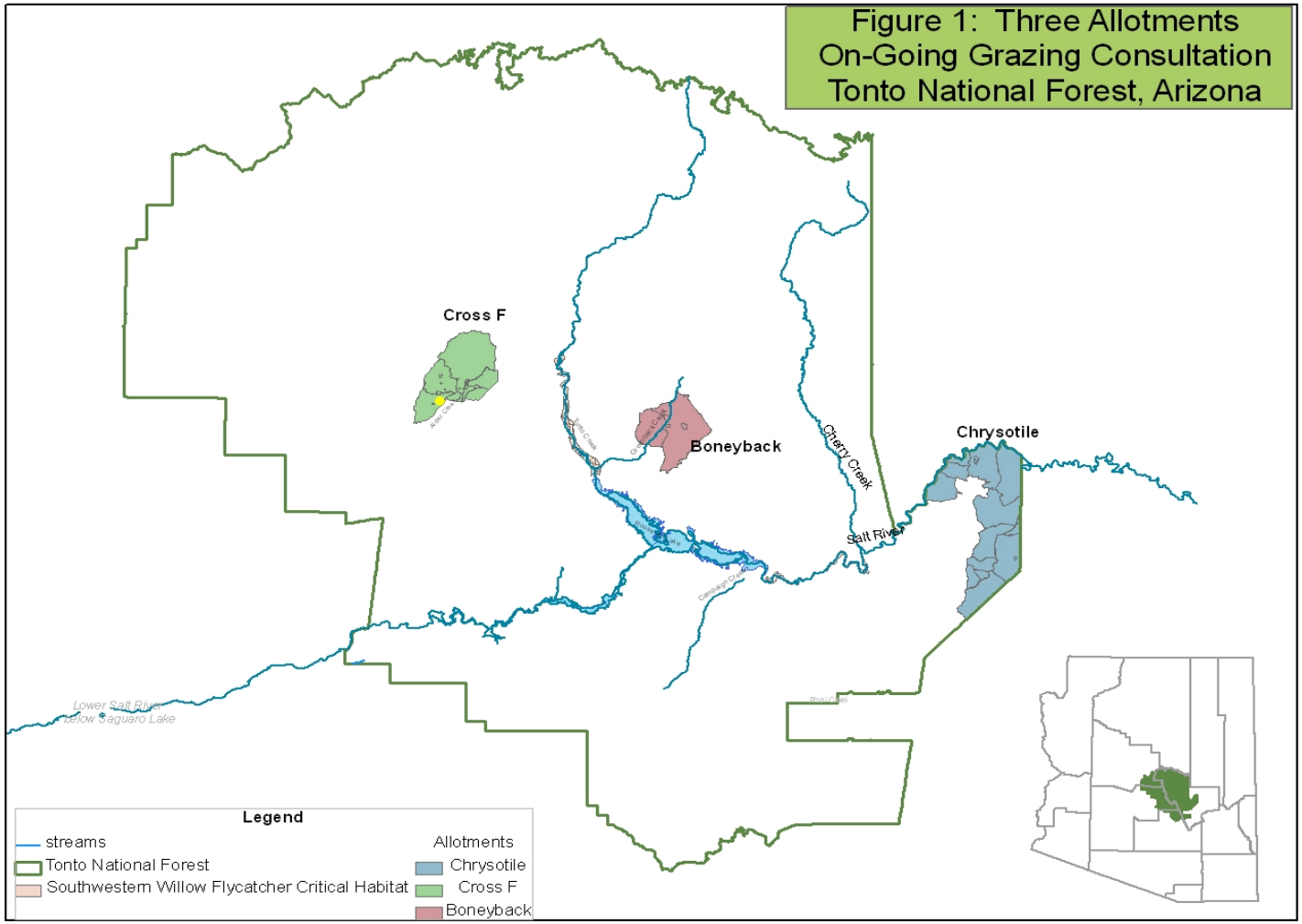
Figure 1: Three Allotments
On-Going Grazing Consultation
Tonto National Forest, Arizona
Cross F
Boneyback
Chrysotile
Cherry Creek
Salt River
Lower Salt River
Below Saguaro Lake
Legend
streams
Tonto National Forest
Southwestern Willow Flycatcher Critical Habitat
Allotments
Chrysotile
Cross F
Boneyback

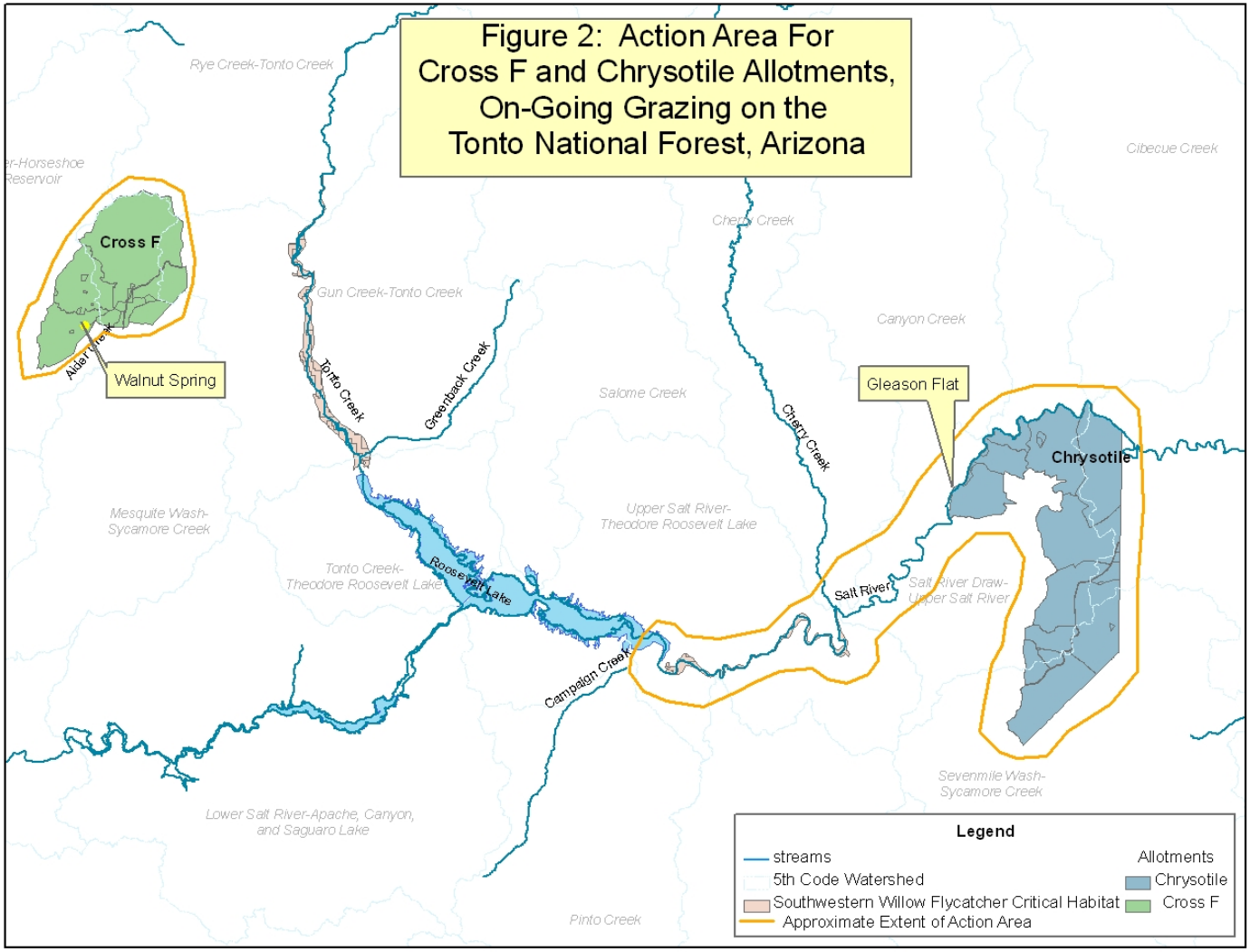
Figure 2: Action Area For
Cross F and Chrysotile Allotments,
On-Going Grazing on the
Tonto National Forest, Arizona
Rye Creek-Tonto Creek
Cibecue Creek
Cherry Creek
Cross F
Gun Creek-Tonto Creek
Canyon Creek
Walnut Spring
Tonto Creek
Greenback Creek
Salome Creek
Gleason Flat
Cherry Creek
Chrysotile
Mesquite Wash-
Sycamore Creek
Upper Salt River-
Theodore Roosevelt Lake
Tonto Creek-
Theodore Roosevelt Lake
Roosevelt Lake
Salt River
Salt River Draw-
Upper Salt River
Campaign Creek
Sevenmile Wash-
Sycamore Creek
Lower Salt River-Apache, Canyon,
and Saguaro Lake
Pinto Creek
Legend
streams
5th Code Watershed
Southwestern Willow Flycatcher Critical Habitat
Approximate Extent of Action Area
Allotments
Chrysotile
Cross F

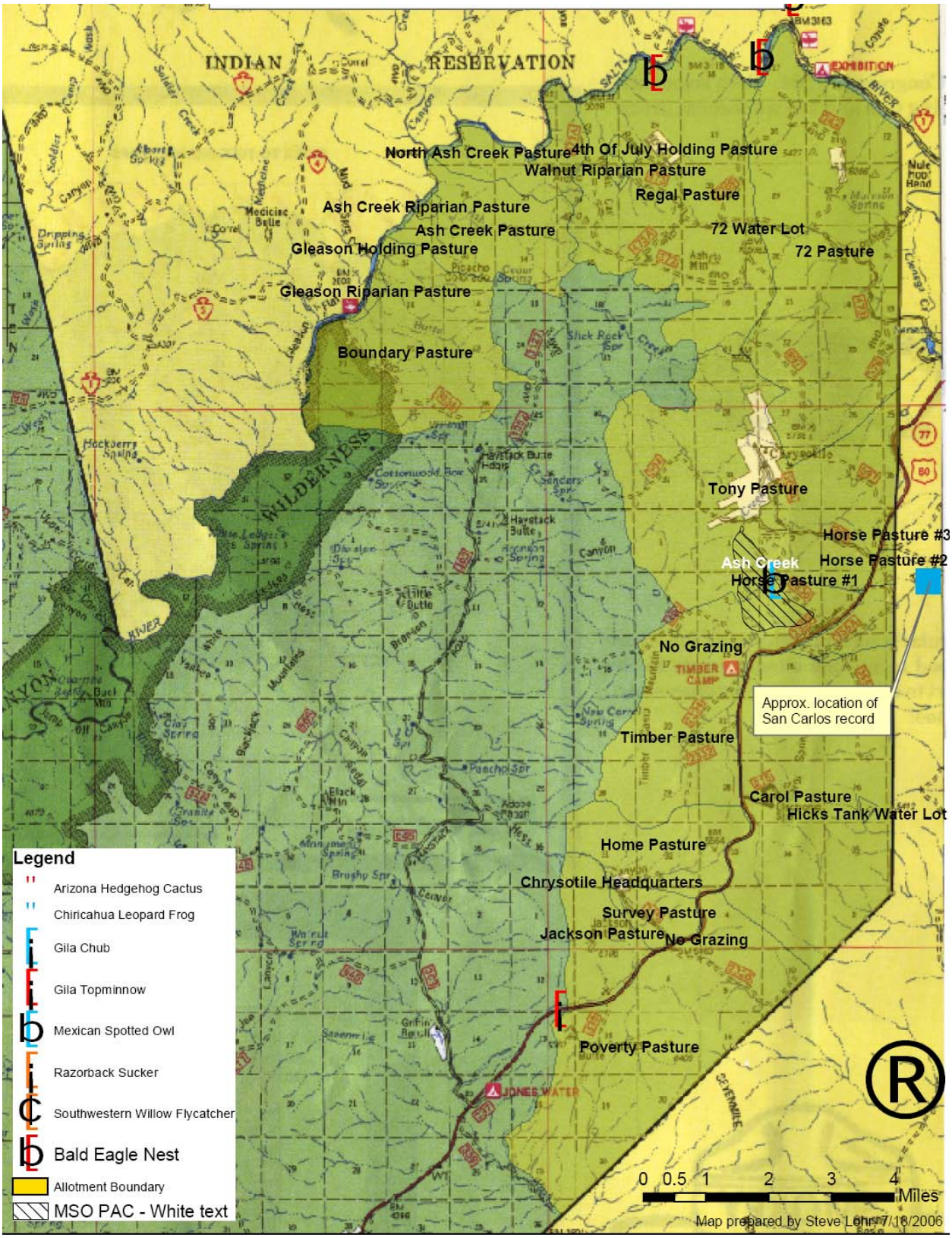

Figure 3. Chrysotile Allotment

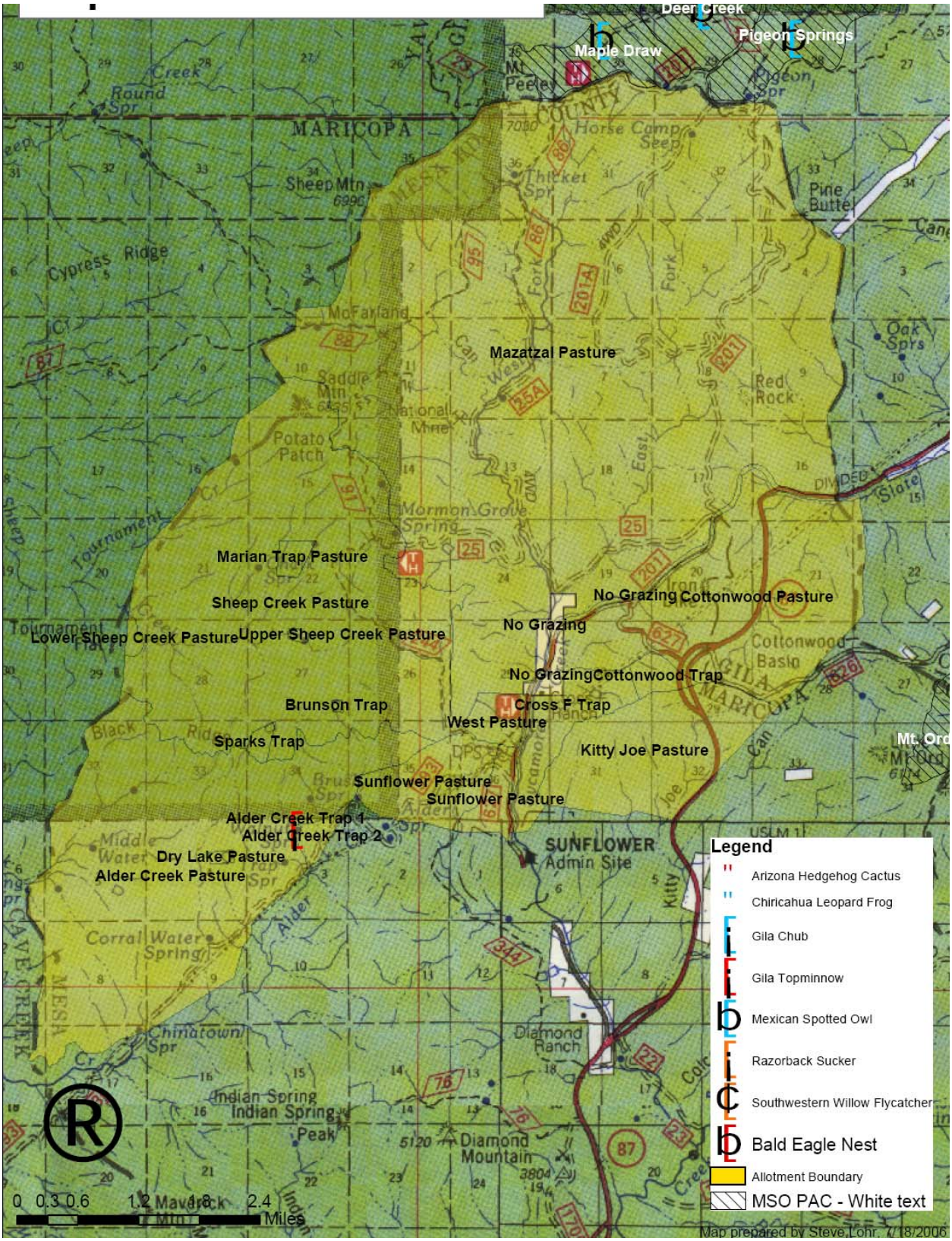

Figure 4. Cross F Allotment