LESLIE CANYON WATERSHED
(Bar Boot Ranch /99 Bar Ranch)
SAFE HARBOR AGREEMENT

Prepared by:

U.S. Fish and Wildlife Service

Leslie Canyon National Wildlife Refuge

And

Arizona Ecological Services Office

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LESLIE CANYON WATERSHED SAFE HARBOR AGREEMENT

1. INTRODUCTION

This Safe Harbor Agreement (Agreement) is made and entered into by and among Alysa F. Bennett, 99 Bar Ranch Limited Liability Limited Partnership, (Participant 1), Mr. Josiah and Mrs. Valer Austin, owners of the Bar Boot Ranch (Participant 2); and the U.S. Department of the Interior, Fish and Wildlife Service (FWS); hereinafter collectively called the "Parties." The purpose of this Agreement is to implement recovery activities for the covered species, through the reestablishment of covered species and the restoration and maintenance of suitable habitat for these species by improving watershed conditions upstream from Leslie Canyon National Wildlife Refuge (LCNWR) and provide for the natural expansion of covered species into improving species habitats in the upper watershed. Translocation of covered species will be pursued during the Agreement with appropriate coordination with and permitting from the Arizona Game and Fish Department. This Agreement follows the FWS's Safe Harbor Agreement final policy (64 FR 32717), final regulations (64 FR 32706), amendments (69 FR 24084) and implements the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the Endangered Species Act (ESA).

This Agreement covers the threatened Chiricahua leopard frog (*Rana chiricahuensis*), endangered Yaqui chub (*Gila purpurea*), endangered Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*), threatened Yaqui catfish (*Ictalurus pricei*), threatened beautiful shiner (*Cyprinella formosa*), and endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*). The enrolled properties (Figure 1) include 24,585 acres in the upper Leslie Canyon watershed downstream from the Coronado National Forest Boundary and upstream from the LCNWR. Under this Agreement, the Participants will work to enhance and maintain the portion of the Leslie Canyon watershed on the enrolled properties. This will be accomplished through the implementation of watershed improvement, such as partial fencing, erosion control activities, and other riparian and hydrologic improvements during the 50-year duration of the Agreement and associated section 10(a)(1)(A) enhancement of survival permit. The enhancement of survival permit shall cover ongoing land use activities, watershed improvement activities, and species related management and monitoring activities.

When signed, this Agreement will serve as the basis for the FWS to issue a permit under ESA section 10(a)(1)(A) for the take of covered, listed species associated with the potential future return of the Participants' enrolled lands to baseline conditions. The permit will authorize the Participants to take up to all individuals of the covered species, and their progeny, that are above the baseline condition for the enrolled lands. This includes any individuals of the covered species introduced to the enrolled lands or that have moved on those lands, as a result of the Party's voluntary conservation activities. The existing population of Yaqui chub on the Bar Boot Ranch is part of the baseline condition for this property, and at the end of the Agreement a viable population of Yaqui chub, as defined in section 4.0 of this Agreement, must be present. The Parties anticipate that the maximum level of take authorized under this Agreement and permit will never be realized. Permit issuance will not preclude the need for the Participants to abide by all other applicable Federal, State, and local laws and regulations that may apply.

2. DESCRIPTION OF ENROLLED PROPERTIES

The Bar Boot and the 99 Bar ranches are within the upper watershed of Leslie Creek, which is about 17 miles northeast of the City of Douglas, and about 15 miles east of McNeal, Arizona (see Figure 1). The Bar Boot and the 99 Bar Ranch control activities on the watershed between the LCNWR and the Coronado National Forest, which are the headwaters of Leslie Creek. The 99 Bar Ranch is an approximately 11,585-acre parcel, and is upstream and adjacent to the LCNWR. The 99 Bar Ranch is an active cattle production ranch and was granted a Conservation Easement in December 2001 for the purpose of providing critical watershed protection for Leslie Creek to maintain the integrity of aquatic habitat for endangered and threatened species, and desert riparian habitat for other wildlife species. The Bar Boot Ranch is also located upstream from the Leslie Canyon NWR and is in the process of acquiring a Conservation Easement for approximately 13,000-acres of protected land status. These conservation easements will protect the watershed from development of residential land uses. The Leslie Creek watershed contains ash, willow, and oak riparian communities, and a variety of upland Chihuahuan desert communities including grasslands and juniper/scrub shrublands. Currently, there are no federally listed species on either property.

Downstream protection of the species already existing on Leslie Canyon NWR is being obtained through the purchasing of conservation easements on the private lands in the covered area. This process has been completed for approximately 16,852 acres and an additional conservation easement of approximately 3,966 acres is in the process of being completed. The remaining acreage in the covered area is adjacent to ranch houses and will not be under a conservation easement, and a parcel of State Trust Land that is included in the Agreement. The Applicants hold the grazing leases for this State Trust Land Allotment and thus, may enroll this property to protect their interests on their allotments, per Federal Regulations on SHAs (69 CFR 24084). This however, does not allow re-establishment of covered species, any land treatments, or ranch infrastructure improvements on this allotment without the review, approval, and appropriate permits from the Arizona State Land Department. The inclusion of Arizona State Trust Land in the Agreement in no way changes the rights of the Arizona State Land Department or the purposes for which they manage State Trust Resources. It further gives no additional rights to the Federal Government to access or implement management activities on State Trust Lands, beyond those it is permitted through the Arizona State Land Department. The Arizona State Land Department may formalize its assurances under this Agreement by signing onto the Agreement as a Cooperating State Agency. However, this is not necessary for them to obtain Assurances under this Agreement (section 12, Neighboring Lands of this Agreement).

3. COVERED SPECIES

Threatened beautiful shiner (*Cyprinella formosa*)
Threatened Chiricahua leopard frog (*Rana chiricahuensis*)
Endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*)
Threatened Yaqui catfish (*Ictalurus pricei*)
Endangered Yaqui chub (*Gila purpurea*)
Endangered Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*)

Beautiful shiner are small cyprinids native to the Rio Yaqui basin, and are generally found in low densities (Hendrickson et al. 1980, Minckley 1973). The species was listed as Threatened, with critical habitat, on August 31, 1984, for population declines resulting from habitat destruction and modification and threats posed by introduced fish species (49 FR 34490). An additional possible threat is the occurrence of Asian tapeworm (*Bothriocephalus acheilognathus*) in the beautiful shiner, which, being a cyprinid, is a likely ultimate host for the invasive parasite. The life history and ecology of beautiful shiner are poorly known, but it is thought that the species is a mid-water column inhabitant that forages primarily on invertebrates (Maes 1995, TESS 2005). Nothing is known about the fire- or grazing-ecology of beautiful shiner.

Beautiful shiner occur in three ponds on San Bernardino NWR, and both populations are known to possess Asian tapeworm. A population of "Guzman" beautiful shiner exists at Dexter National Fish Hatchery (TESS 2005), but there are no additional populations known in the U.S., and the status in Mexico is unknown. While the area is within the historical range of beautiful shiner, there are no currently known populations in the area covered by this Agreement. Management actions related to the recovery of the species include the establishment of new shiner populations in existing wetlands, and the creation and maintenance of wetlands, including vegetation management.

Chiricahua leopard frogs are a medium-to-large ranid of the desert southwest, inhabiting a variety of wetland habitats from mid-elevation deserts to the higher Mogollon Rim. The species was listed as Threatened on June 14, 2002 (67 FR 40790), because of range-wide population declines resulting from wetland loss and alteration, invasive species competition and predation, and disease, specifically, chytridiomycosis (Daszak et al. 2003). The Chiricahua leopard frog is presently extirpated from more than 80 percent of its historical localities in southeastern and central Arizona and southwestern and west-central New Mexico, and is found now at about 90 wetland sites in the U.S. Chiricahua leopard frogs are carnivorous and appear to prefer deep-water habitats; reproduction is aquatic with long duration metamorphosis (up to a year). In the final rule listing the Chiricahua leopard frog as threatened, a section 4(d) rule was promulgated that exempted normal stocktank use and maintenance from the section 9 prohibitions against take (67 FR 40790). Chiricahua leopard frogs have been documented at Leslie Canyon NWR, San Bernardino NWR, and on private land east of San Bernardino NWR.

Chiricahua leopard frogs likely exist in the wild at 43 localities in their southern range in the U.S. (U.S. Fish and Wildlife Service files); included among those sites are Rosewood Tank on the Magoffin Ranch, and Leslie Canyon NWR. The species' status in Mexico is largely unknown. While the area is within the historical range of the Chiricahua leopard frog, there are no currently known populations in the area covered by this Agreement. Management actions related to the recovery of the species include the creation and restoration of wetlands, and the extirpation of invasive predatory species (e.g., American bullfrogs).

Huachuca water umbel is a short aquatic plant that inhabits mid-elevation cienegas of southeast Arizona and Sonora, Mexico (Warren et al. 1991). The species was listed as Endangered on January 6, 1997 (62 FR 665), and critical habitat was designated on July 12, 1999 (64 FR 37441), because of population declines resulting from habitat loss and degradation; groundwater depletion through pumping, diversions, and agricultural uses have reduced the areas available for

the wetland obligate to grow. In addition, excessive trampling by humans, livestock, and other animals presents a threat to extant populations (NatureServe 2005, Malcom and Radke 2008).

Very little has been published about the ecology of Huachuca water umbel. Flowering occurs throughout summer months, with tiny multi-flower umbels developing at a level lower than the leaves; the species also spreads by rhizomes (Warren et al. 1991, W. R. Radke Pers. Comm.). Lilaeopsis is a poor competitor, and relies on periodic flooding or other disturbance to reduce competition from other herbaceous-level vegetation.

Current research on San Bernardino and Leslie Canyon NWRs is focused on propagation methods, experimental evaluation of ecological attributes, and basic life history traits. Research scientists are currently examining the phylogenetic relationships of the genus.

Huachuca water umbel occurs in two locations on San Bernardino NWR, one site (12 separate patches) in Leslie Canyon NWR, and seven other known populations in southeast Arizona and northern Sonora (NatureServe 2005). While the area is within the historical range of the Huachuca water umbel, there are no currently known populations in the area covered by this Agreement. Management actions related to the recovery of the species include the propagation and establishment of the species at existing wetland areas, the maintenance of wetland levels, and the exclusion of humans and livestock that may excessively trample the species.

Yaqui catfish are medium-sized catfish native to the Rio Yaqui basin of Arizona and Mexico (Hendrickson et al. 1980, Minckley 1973), about which very little is known. The species was listed as Threatened with critical habitat on August 31, 1984, for population declines resulting from habitat destruction and modification, as well as threats posed by introduced, non-native channel (*I. punctatus*) and blue catfish (*I. furcatus*) (49 FR 34490). Yaqui catfish inhabit large ponds—and pools within large rivers—where they appear to be largely omnivorous benthic foragers (although feeding trials indicate that they will not readily consume bullfrog, *Rana catesbeiana*, tadpoles). Life history information is lacking for Yaqui catfish, but is thought to be similar to blue and channel catfish, species with which hybridization occurs. Fire and direct grazing effects are unknown for the Yaqui catfish.

Yaqui catfish occur in two ponds on or adjacent to San Bernardino NWR, and at least one population occurs on El Coronado Ranch. The species' status in Mexico is largely unknown, as no widespread surveys have been conducted since that of Hendrickson et al. (1980), but an apparently “healthy” population occurs in the Cajon Bonito, northern Sonora (Bill Radke, pers. comm.). While the area is within the historical range of the Yaqui catfish, there are no currently known populations within the area covered by this Agreement. Management actions related to the recovery of the species includes the creation and maintenance of large, deep wetlands.

Yaqui chub are small- to medium-sized fish native to the upper Rio Yaqui drainage of Sonora, Mexico and southeast Arizona (Hendrickson et al. 1980, Minckley 1973). The species was listed as Endangered, with critical habitat, on August 31, 1984, for population declines resulting from habitat destruction and modification (49 FR 34490). The second potential threat to Yaqui chub is the introduced—and invasive—Asian tapeworm (*Bothriocephalus acheilognathus*), an intestinal parasite (Granath and Esch 1983). Current research has shown the Asian tapeworm

impacts growth of Yaqui chub, but does not increase mortality. Asian tapeworm may have a larger impact on aquatic systems that have not previously been exposed to Asian tapeworm, therefore any introduced fish should be treated with Praziquantel to prevent spreading Asian tapeworm (Kline 2007). An additional complication to the tapeworm question focuses on the possibility that low genetic variability of the Yaqui chub may contribute to infestation susceptibility, or that certain populations possess a compromised Major Histocompatibility Complex that affects susceptibility (see, e.g., Hedrick et al. 2001). Yaqui chub tend to inhabit deep waters with steep banks or low-density cattails (*Typha dominigensis*), and forage primarily on aquatic micro- and macroinvertebrates. Little is known about the effects of grazing or fire on Yaqui chub; no specific studies have been conducted. Current populations have responded well to intensive population management, and have established large and viable populations in diverse habitats. Managed populations of this fish currently occur on San Bernardino NWR, Leslie Canyon NWR, and on the Coronado National Forest. It has additionally been protected on important private land at Slaughter Ranch, El Coronado Ranch, and on the Rancho San Bernardino in Mexico.

Yaqui chub occur in 14 ponds or springs on or adjacent to San Bernardino NWR, plus at Douglas High School, Leslie Canyon NWR, and El Coronado Ranch; all populations except for El Coronado are known to possess Asian tapeworm. The species' status in Mexico is largely unknown, but relatively secure populations occur on Rancho de San Bernardino. While the area is within the historical range of the Yaqui chub, there is only one known population within the area covered by this Agreement, see section 4 of this Agreement. Management actions related to the recovery of the species include the creation and maintenance of wetland habitats with deep waters and steep banks.

Yaqui topminnow are small live-bearing fish native to the Rio Yaqui basin of the United States and Mexico (Hendrickson et al. 1980, Minckley 1973). The species lives in shallow, warm water, and was formerly found throughout the Yaqui drainage; however, habitat modification and destruction in the United States resulted in their listing as Endangered without critical habitat on March 11, 1967 (32 FR 4001). A second threat to Yaqui topminnow is the introduced western mosquitofish (*Gambusia affinis*), which competes with, and preys on, Yaqui topminnow (Galat and Robertson 1992). Plant succession, especially the proliferation and spread of cattail, continues to take over wetlands upon which topminnow depend. Yaqui topminnow are prolific breeders, with females giving birth up to 20 young once every 20 days (USFWS 1995). The high fecundity of the species is vital to its survival, as new populations of arid-land aquatic species are often restricted to small founder populations (Fagan et al. 2002). Inbreeding depression has not been studied in Yaqui topminnow, but theory predicts that species maintained by multiple small founder populations have often already selected against the deleterious alleles that make inbreeding a persistent problem (Thornhill 1993). Yaqui topminnow consume a variety of food items, but are best known for their appetite for mosquito (Culicidae) larvae. The small fish significantly decrease mosquito larvae densities, an action that has positive effects for both human and ecosystem health (see, e.g., West Nile Virus, and in appropriate areas, malaria). Yaqui topminnow are also prey consumed by other native fish (e.g., Yaqui chub), other vertebrates, and some invertebrates (e.g., *Lethocerus*). Very little is known about the effects of livestock grazing or prescribed burning on poecilids in general, or on Yaqui topminnow specifically. Yaqui topminnow have been documented on the San Bernardino NWR, Leslie

Canyon NWR, on private property at Astin Draw, at Slaughter Ranch, and at Rancho San Bernardino.

Yaqui topminnow currently occur in the U.S. on or adjacent to San Bernardino NWR in 18 ponds, springs, or seeps, plus one pond at Douglas High School. The species' status in Mexico is unknown, but those populations that exist are likely threatened by introduced mosquitofish. Reestablishment efforts at Leslie Canyon NWR and El Coronado Ranch failed, presumably because of low water temperatures and shaded conditions. There are no known populations of Yaqui topminnow in the area covered by this Agreement. Management actions related to the recovery of the species include the provision of shallow, warm wetlands and the control of emergent vegetation.

Four of the six species (excluding Yaqui topminnow and beautiful shiner) are found on private lands in Southeastern Arizona. Some private lands hold an estimated 1/3 of a species' U.S. population (Yaqui catfish at El Coronado Ranch); private property populations constitute considerably smaller proportions of total known population for the other three species. While Federal land protection has proven vital since the listing of each of these species, the degree of protection offered to each of the three species by establishment on the private lands covered by this Agreement will greatly reduce the adverse effects of local extirpations on the recovery or possible extinction of these species by spreading populations over a larger area, and by increasing the number of populations of the species. Management actions necessary for population maintenance on the private lands would include the establishment of populations; habitat creation and/or maintenance; and monitoring.

As long as the Participants implements the agreed-upon voluntary conservation measures and maintains baseline responsibilities on the enrolled lands, the Participants may develop, farm, ranch, harvest timber, or make any other lawful use of the property even if such use results in the loss of species individuals or occupied habitat. Prior to conducting such an action the Participants must give the FWS a minimum 60-day advance notice and an opportunity to relocate the individuals in question, if the FWS so chooses.

4. BASELINE DETERMINATION

The proposed area covered by this Agreement and its associated 10(a)(1)(A) permit encompasses approximately 24,585 acres of the Leslie Creek drainage on the 99 Bar and BarBoot ranches in Cochise County, Arizona. The drainage is bounded on the east by the Chiricahua Mountains; on the west by the Swisshelm Mountains; the north edge of the drainage is an indistinct valley ridge, and the south edge is bounded by LCNWR. The valley bottom is dominated by rolling hills of desert grassland and the upper slopes of the drainage transition from piñon-juniper to oak-dominated woodlands.

Land ownership of the area covered by this Agreement is approximately 15% State land and about 85% privately held by 99 Bar and Bar Boot ranches; a small area (~1%) is federally owned (Bureau of Land Management). Federal land is not covered by this Agreement. Ranching activities occur on private land and through grazing leases on State or Federal land. All private land within the covered area, with the exception of small parcels around certain existing

buildings, are protected from future development by conservation easements held by the FWS. The covered area is delineated in Figure 1.

The 99 Bar Ranch and the Bar Boot Ranch contain very little perennial water and limited riparian hardwood vegetation. Based upon the combination of the limited amount of suitable habitat and surveys conducted by Leslie Canyon NWR personnel for the covered species, the baseline for Chiricahua leopard frog, Yaqui topminnow, Yaqui catfish, beautiful shiner, and Huachuca water umbel is set at zero (FWS files). The baseline condition for Yaqui chub on the 99 Bar Ranch is also zero, but based upon results of surveys conducted in 2007 and 2008 the baseline condition for Yaqui chub on the Bar Boot Ranch is set at one occupied site. In 2007 and 2008, Yaqui chub was discovered on the Bar Boot Ranch at the Chalk Tank Complex. In 2007, a viable population of Yaqui chub with multiple age classes was found in Lower Chalk Tank, but none were found in Upper Chalk Tank. In 2008, multiple age classes were found during monitoring in Upper Chalk Tank, but none were located in Lower Chalk Tank. Since Lower Chalk Tank is formed from the overflow and seepage from Upper Chalk Tank, these two tanks are considered to make up one population site. Enumeration of the population size is difficult for Yaqui chub and biologically irrelevant based upon the natural fluctuations that occur in Leslie Creek on the Leslie Canyon NWR. Population size on the LCNWR may vary from 10,000 to 200 individuals within the same year, and is related to the influences of environmental conditions on mortality and reproduction. Therefore, the baseline conditions will be defined as one perennial aquatic site occupied by a viable Yaqui chub population. Population viability will be determined by the presence of multiple size classes observed in the course of routine monitoring. The occupied site may be assigned to a livestock tank or pond that is equal to or larger in size than the Chalk Tank Complex and must be in a perennial aquatic site agreed upon at the end of the Agreement by the Permittee and FWS.

5. AGREEMENT AND PERMIT DURATION

The Agreement, including any commitments related to funding under FWS programs, will be in effect for a duration of 50 years following its approval and signing by the Parties. The associated section 10(a)(1)(A) enhancement of survival permit authorizing take of the species will have a term of 50 years from the effective date of the permit.

6. MANAGEMENT ACTIVITIES FOR COVERED SPECIES

The management activities that the Participants will undertake to accomplish the expected net conservation benefit for the covered species consists of watershed improvement activities that will protect and enhance native fish populations and other threatened, endangered, or candidate species that rely on aquatic and riparian resources. These watershed improvement activities will include restoration and maintenance of the native riparian vegetation to improve water storage and recharge, erosion control to reduce sedimentation and improve soil stability, and reapplication of fire in the upland vegetation communities through the development and implementation of a fire management plan to be developed for the watershed. The 99 Bar Ranch has a Memorandum of Understanding with the FWS and Malpai Borderlands Group to, in part, participate in fire management planning and grassland restoration. The 99 Bar Ranch also

received Partner's for Fish and Wildlife Project funding during 2002 and 2004 to conduct wetland restoration work. The Bar Boot Ranch has a draft Memorandum of Understanding with the FWS to participate in fire management activities and received a Cooperative Conservation initiative grant during 2003 to conduct wetland restoration activities.

Restoration and Maintenance of Riparian Vegetation:

Restoration and maintenance of riparian vegetation will be accomplished by the Participants implementing a series of enhancements to the watershed and riparian vegetation that includes erosion control projects, management of livestock tanks and ponds, control of invasive species, and upland land treatments.

Erosion Control: Direct erosion control activities, such as rock-and-wire gabion construction or construction of other erosion-control devices (e.g., simple rock dams, gradient-reduction methods, etc.), are important restoration actions for the maintenance of aquatic habitats that are important to all of the covered species. The Participants have already installed many erosion control devices in the watershed and future activities, including gabion development, shall be pursued when funding is available and permitting is accomplished.

Livestock Tanks/Ponds: In addition, livestock tanks and ponds (stock tanks) may also be used as rearing and refuge sites for the covered species. The joint use of these stock tanks and other ranch waters with livestock, and other normal ranching activities may result in four activities that could result in take of covered species: 1. Stock tank maintenance; 2. Livestock interactions; 3. Disease and invasive species introduction; and 4. Vegetation treatments. Each of these categories, and their associated minimization measures, are discussed in detail below.

Stock tank maintenance is a commonly employed practice that typically focuses on removing silt from tank bottoms on a 5 to 20-year cycle, usually with bulldozers or other heavy equipment when a tank is dry (Lehman 2004). In many cases, by the time a tank is ready for silt removal (i.e., dry), the covered fish species would likely have perished, and direct mortality from the heavy equipment will be unlikely, although effects to covered fish are possible. If Chiricahua leopard frogs and Huachuca water umbel are present at the site, they will likely survive if some soil moisture remains, but some mortality from the maintenance actions is possible. Therefore, when a stocktank is allowed to or deliberately dried to perform routine maintenance, the Participants will inform the FWS at least 30 days before the proposed action, and allow FWS personnel, or designee, access for the period of time required to salvage as many individuals of covered species as possible. When a tank dries naturally and a Participant chooses to perform maintenance, the Participant will inspect the tank for significant soil moisture, and if covered species are still present, the FWS will be informed no less than seven days in advance of maintenance so that an inspection can take place and any individuals of covered species can be salvaged.

Emergency maintenance may be necessary when natural events, such as floods, threaten a stock tank. For the purposes of this Agreement, the Participants shall have the sole right to determine that an emergency maintenance action is needed. In such cases, the notification requirements detailed in the above paragraph shall be waived, provided that the Participant informs the FWS

within 72 hours of the end of the emergency event. However, the Participants are encouraged to notify the FWS prior to any action, but it is not required and FWS may not delay any emergency actions.

Livestock use of stocktanks and other water covered by this Agreement is a common condition, and most interactions should have minimal impact on the covered species. The primary possible negative interaction is trampling. Leopard frogs, especially their egg masses, and water umbel are both subject to direct impacts of trampling (67 FR 40790, Malcom and Radke 2008). The Participants should strive to minimize any negative impacts resulting from normal livestock operations through partial fencing, stocking rates, and/or timing of occupied stocktanks and other waters as funding and alternative waters are available.

Invasive Species: Invasive species, including diseases that compromise native species, are a distinct threat to the covered species (USFWS 1995, 67 FR 40790). Asian tapeworm and chytridiomycosis are invasive diseases that currently threaten native species (Yaqui chub and beautiful shiner, and Chiricahua leopard frogs, respectively). Species such as bullfrogs, crayfish, mosquitofish, sunfish, and non-native catfish species present predation, competition, and hybridization threats to the covered species, and may carry disease, as well. Introduction of these species, and other invasive species not listed above, may not be intentional by the Participants, but inadvertent introduction may occur during typical ranching operations. The following measures shall be included to minimize the probability that introductions will occur.

To minimize the threats posed by introduced diseases and species, the Participants will enact the following provisions:

a. The Participants will not knowingly engage in the release of non-native fish, amphibian, or invertebrate species within the covered area; nor shall they allow other people or groups to conduct such releases. Any questions as to the native status of a species should be sent by the Participants to the FWS 30 days before any action is taken; the native status determination of the FWS will be binding.

b. The Participants agree to notify the FWS of any observations of suspected introduced species, as well as any die-offs of covered species in the case of introduced diseases.

c. The Participants agree to allow temporary access by the FWS, or their designees, to execute measures aimed at controlling or eliminating non-native species and diseases, with 14-day advanced notice. Such control or eradication measures may be requested by any party to the Agreement.

d. All vehicles and tools will be properly cleaned and/or dried before moving to new locations to minimize the potential to spread amphibian diseases. Any refilling of livestock tanks will be preferentially from ground water sources and not from other livestock tanks. Fire suppression activities will likewise avoid using other surface waters in suppression efforts or in refilling waters post-fire.

Land Treatments: Fire, herbicide application, and mechanical removal are all common vegetation control methods employed in normal ranching operations. Each of the methods can be useful for long-term habitat maintenance, but each presents a short-term threat to populations of covered species. Large and uncontrolled fires can trigger a variety of ecosystem changes, including the creation of heavy ash loads that increase water temperatures and lower dissolved oxygen concentrations, impacting covered fish species (Rieman and Clayton 1997, Dunham et al. in press); many herbicides are under-tested before being marketed, and recent research has shown that a common agent, such as Roundup, can cause mortality and morbidity among frogs (Hayes et al. 2002, Relyea 2005); and mechanical vegetation removal, if done without care, can increase silt loads in runoff and deposition in stock tanks (Edeso et al. 1999, Willcox et al. 2003).

To minimize the effects of these vegetation treatments, the Parties will:

a. Employ low-intensity prescribed fire that minimizes the threat of uncontrolled high-intensity wildland fires within the covered area. In cases of wildfires, plans shall include low-intensity back-burning around occupied sites, when possible. The FWS will provide logistical support for fire applications, if requested by a Participant. Incorporate guidance for fire management provided in the Chiricahua leopard frog Recovery Plan (U.S. Fish and Wildlife Service 2007) into all prescribed fire plans and fire management decisions.

b. Use synthetic herbicides only when other vegetation management methods are too costly or less effective. All synthetic herbicide will be applied by a certified applicator and will be used consistent to the approved labeling. In addition, Participants will contact LCNWR staff to ensure that use of synthetic herbicide in areas that may impact covered species will use all appropriate protection measures in White (2004), or newer revisions.

c. Perform mechanical vegetation control while minimizing soil disturbance by employing a 50m buffer around drainages above occupied sites and around occupied sites; and if necessary, employ erosion control techniques (e.g., straw bales) in drainages downstream of the mechanical action.

While the primary goal of this Agreement is to expand the range of the covered species, in return for regulatory assurances, additional cost-effective measures aimed at enhancing conservation should be pursued whenever possible, contingent on funding. Many enhancement options are available, and some possibilities are described below. The FWS will help pursue funding avenues for such measures. Other measures, not included here or elsewhere in this Agreement, shall be subject to review and approval by the Parties prior to any action being taken.

a. Fencing off a portion of appropriate sites will provide protection from trampling to covered species and allow better habitat to develop. Partial fencing will create a refuge within a site, while leaving the majority of a site available to livestock use. Fencing should be employed in sites where Huachuca water umbel is not protected from trampling by natural barriers.

b. Double tank systems, where one tank serves as a sediment trap and the other serves as the primary water reservoir, should be constructed when funding allows. Such a tank design reduces

the frequency of tank maintenance (i.e., sediment removal) and reduces incursions into the occupied aquatic sites.

c. Creation of additional small refuges, such as steel or concrete tanks, at sites will allow the site itself to be maintained while providing alternate habitat for covered species. The small refuge can be fenced off to provide additional vegetation for covered species, while the main site can remain unfenced.

d. Incorporate guidance for livestock tank management provided in the Chiricahua leopard frog Recovery Plan (U.S. Fish and Wildlife Service 2007) into maintenance, water hauling, and improvement decisions.

e. Pipelines can be used to connect primary sites or smaller refuges to a permanent water source.

e. Maintaining or improving existing habitat conditions at primary or secondary sites should be pursued whenever opportunities and funding allow. Maintenance can include emergent vegetation control, maintaining water volume, or maintenance of livestock exclusion barriers. Improvements can include establishing emergent vegetation where none exists, increasing the volume of an aquatic site, or erecting livestock exclusion devices, where appropriate.

Re-establishment of Covered Species:

Re-establishment of covered species within livestock tanks and ponds will also be pursued. This Agreement is used to establish the baseline for all species covered under this Agreement. This baseline is determined based on the lack of perennial water and no history of occupancy. All reestablishment of covered species will be accomplished in coordination with Arizona Game and Fish Department and with appropriate permitting. To this end, Chiricahua leopard frog population sites may be reestablished under this Agreement or under the AGFD State-wide Chiricahua Leopard Frog SHA (CLFSHA) (AGFD & USFWS 2006). Yaqui Topminnow may be re-established within the covered area under the Safe Harbor Agreement for Topminnow and Pupfish in Arizona (TPSHA) (AGFD 2007). This will be done by accepting the conservation measures of those Agreements and signing Certificates of Inclusion with AGFD, but primary implementation and reporting will be handled by the LCNWR staff, in coordination with AGFD. Re-establishment of all other Yaqui fish covered by this Agreement would be under this Agreement, in coordination with AGFD, and all appropriate State permits will need to be acquired. Huachuca water umbel may be re-established in appropriate habitats in the covered area under this Agreement and will be coordinated with the AESO lead biologist for this species.

Adaptive Management:

Because of the amount and type of appropriate habitat for the covered species that will be created some adaptive management will be needed to determine the appropriate mix of species is at each aquatic site. This is particularly important for the Yaqui fish and Chiricahua leopard frog. Adaptive management is the framework in which conservation actions are employed, monitored, and treated as experiments to refine how resources are managed (Walters 1986). Because our state of knowledge regarding the covered species—from their basic life history and ecology to

their genetic structure—is insufficient, adaptive management is a useful framework to both enhance species conservation as well as to learn. In some primary habitats, the Parties may establish an aquatic species community composed of certain species, while in another they may establish a different assemblage; evaluating the community outcome provides information as to what management techniques will work, and which will fail. An exact cause may not be known for the outcomes, but the on-the-ground information will be important in determining which species to manage at which sites and in what combinations. Therefore, it is not anticipated that all species will be successful at all re-establishment sites.

The adaptive management framework is important for integrating new information as it becomes available. For example, before the 1980s very few land managers practiced active wetland management, but research indicated that varying water levels permit a variety of organisms to co-exist without significant negative impacts to those species for which wetlands were traditionally managed. Adaptive management was applied to wetlands in many areas, and more information was learned while, at the same time, many species benefited. With relation to this Agreement, researchers may find a possible treatment for chytridiomycosis in the laboratory; this treatment, and variations or alternatives, can be applied to Chiricahua leopard frog populations within the covered area. Subsequent biological monitoring, as required by this Agreement, will provide information useful to assess the treatment's efficacy.

Because of the benefits offered by adaptive management, its framework shall be incorporated into this Agreement. Two types of adaptive management findings may affect this Agreement: those findings that require a structural change to the Agreement; and those that require minor changes to management techniques. Structural changes may be triggered by new information that is foundational to the concepts underlying this Agreement, such as information indicating that gene flow between populations within the covered area is not sufficient to prevent inbreeding depression.

An example of minor management changes that would not require changes to this Agreement would be a finding that specific covered species cannot co-exist under certain conditions (requiring that certain community assemblages not be established). The FWS and Parties will work collaboratively to address minor management changes.

Nothing in this Agreement prevents the Participants from implementing management activities not described in the Agreement, as long as such actions maintain the original baseline conditions and do not affect the beneficial actions set forth in the Agreement. The Participants will notify the FWS 60 days in advance of any activities likely to result in the loss of species individuals or occupied habitat. The notification will allow the FWS an opportunity to capture and relocate the affected individuals, thereby minimizing the impact of the authorized take. The Participants will try to avoid undertaking any disruptive actions during the breeding season of the covered species that could negatively impact reproductive activities, to minimize the impact of authorized take. If such actions can not be avoided, Parties shall include FWS in the planning of these activities to determine if additional minimization measure may be implemented to reduce impacts on reproduction.

Emergency situations such as natural disasters (e.g., hurricanes, excessive rainfall, extreme drought, insect infestations, or epidemic disease) may require initiation of certain management actions such as salvaging individuals with less than 60 days prior notification. The Participants will notify the FWS within 10 days of discovering such a situation, and will make reasonable accommodations to the FWS for survey and/or relocation of species individuals prior to the action. The Parties acknowledge that survey and translocation may be precluded by certain urgent situations.

This Agreement will grant to the FWS, after reasonable prior notice, the right to enter the Participants' properties for the purpose of ascertaining compliance with the Agreement and for monitoring, surveying, sampling, marking, and in certain circumstances relocating species, as well as other measures that may be necessary. In addition, the Participants will complete and submit an annual report of activities related to species' management to the FWS, and other reports as required by the Agreement.

7. NET CONSERVATION BENEFIT

The private property within the covered area has already been or is in the process of having conservation easements placed over the developable lands and is thus protected from residential subdivisions. This will eliminate future downstream impacts of residential development on Leslie Canyon NWR and the species it was created to recover. This Agreement, through re-establishment of the Covered Species on non-Federal lands and providing regulatory assurances so permittees may undertake watershed improvement activities that are expected to improve the watershed above Leslie Canyon NWR, is expected to result in following net conservation benefits to the covered species:

- Increased numbers of populations and size of populations of Chiricahua leopard frogs, Yaqui topminnow, Yaqui chub, Yaqui catfish, beautiful shiner, and Huachuca water-umbel, both locally and in the general area.

- Elimination of the need to use mosquito fish (*Gambusia* spp.) for mosquito control in all ranch waters and allow for greater control of non-native predators and competitors that threaten the covered species in the watershed.

- Insurance against the loss of the covered species in the general area because of the extirpation of localized populations.

- An increased connectivity of populations in the general area.

- Restoration of the water table, allowing for more stable discharge rates in Leslie Canyon NWR.

- Increased overall quality and quantity of water, by lessening the potential for erosive scouring of wetlands during extreme floods.

- Increased overall volume of perennial wetland habitats for the covered species downstream from the ranches on the LCNWR.

- Improved watershed stability and hydrologic function by implementing prescribed burns to improve grass and herbaceous plant cover.

The FWS has determined that the Parties' conservation measures, as described in this Agreement, are reasonably expected to provide a net conservation benefit to all the covered species as described above. All of the species' listing rules cite the destruction and degradation of wetland habitats, and the conservation measures above will reduce and reverse the negative trend of wetlands in the area.

Given the probable species' response time to the planned conservation measures, the FWS estimates it may take at least five years of implementing the Agreement to fully reach a net conservation benefit for the species' habitat, although some level of benefits will likely occur within a shorter time period. If these species are translocated or disperse onto the covered properties, the net conservation benefits for these species would be realized upon reestablishment of self-sustaining populations within the covered area. The 50-year duration of this Agreement is considered sufficient to establish populations of the covered species and fully reap the benefits of additional conservations measures aimed at the long-term protection of the watershed on the enrolled property.

Implementation of this Agreement is expected to result in protection, reestablishment, and expansion of the covered species beyond the baseline condition within the lands enrolled under the Agreement. The 50-year permit would also minimize the impact of any take of any individuals above the baseline condition. The permit and Agreement may be extended beyond the specified terms through amendment, upon agreement of the Parties.

The net conservation benefit is reasonably expected to be attained by implementation of the conservation measures, including the reestablishment of covered species on the enrolled properties. The first signs of a net conservation benefit will be observed within the first several years of implementation of this Agreement, when populations of the covered species are established. The full conservation benefit is reasonably expected to occur within five years, as populations become self-sustainable and other conservation measures (e.g., erosion control and prescribed burns) are enacted.

The Participants agree to voluntarily manage the enrolled lands to produce a cumulative net conservation benefit to the covered species, by implementing conservation measures to increase species populations and/or enhance/restore/maintain suitable habitat. The net conservation benefit will be sufficient to contribute, directly or indirectly, to recovery of the covered species, after taking into account the length of the Agreement and any off-setting adverse effects of authorized take. Although the Agreement may not permanently conserve or recover species populations or their habitats, it provides for important short-, mid-, or long-term benefits to the species, including but not limited to: maintenance/restoration/enhancement of habitat; maintenance/increase of population numbers or distributions; increase in habitat connectivity;

reduction of habitat fragmentation; insurance against catastrophic events; establishment of buffers for other protected areas; and creation of areas for testing and implementing new conservation strategies.

The Parties anticipate this Agreement will result in an increased number and/or distribution of the covered species, and/or an increase in the total area of occupied suitable habitat, within the enrolled lands. Without this cooperative government/private effort, these lands would not otherwise be utilized by the species in the foreseeable future. The Agreement will also provide an example of a mutually beneficial relationship between government agencies and private landowners to benefit endangered and threatened species, and evidence that such species can coexist with current land-use practices. Therefore, the cumulative impact of this Agreement and the activities it covers, which are facilitated by the authorized take, is reasonably expected to provide a net conservation benefit to the species.

8. MONITORING AND REPORTING

The annual report will be based upon the results of compliance and biological monitoring, along with information on individual projects implemented during the calendar year covered by the report.

Compliance Monitoring:

The Participants will be responsible for annual monitoring and reporting related to implementation of the Agreement and fulfillment of its provisions, including verification of baseline maintenance, implementation of agreed-upon conservation measures, and take authorized by the permit. The Agreement will grant the FWS, with reasonable prior notice to the Participants, the right to enter the enrolled lands to ascertain compliance with the Agreement.

The Participants will provide information on the previous calendar years activities to FWS (LC/SBNWR) by December 31st. The combined annual reports will be due September 1st of each year and copies will be made available to all Parties.

The first annual report will include a detailed description of the existing habitat conditions within the enrolled lands, an estimate of the population size or occupied habitat acreage for each covered species, a description of each covered species' distribution and productivity on the enrolled lands, and any conservation measures implemented during the first year.

Biological Monitoring ensures the biological success of the species covered by this Agreement and that a net conservation benefit occurs. This monitoring encompasses four distinct areas: habitat quality and quantity, population status, genetic diversity, and disease and invasive species status. The primary responsibility for biological monitoring rests with the FWS or appropriate proxies (e.g., State agencies, academia), and the Participants will grant access for this monitoring, provided that a minimum of 30 days notice is given by the FWS, and appropriate coordination is provided. The temporal frame of monitoring each aspect is described below.

a. Habitat quality will be monitored to ensure that habitat conditions are suitable for the covered species. Parameters to be measured include, but are not limited to, amount of emergent vegetation, amount of marginal vegetation, water quality (pH, standard conductivity, dissolved oxygen, and turbidity), and water depth. Habitat quantity will be estimated in terms of volume (acre-feet, cubic feet, or cubic meters, as required) for primary sites, and in terms of area (acres, square feet, or square meters) for secondary sites. Habitat monitoring will be conducted at maximum once per year, and at minimum, once every two years.

b. Population status of each covered species will be estimated according to the following measures: the population of small fish species will be described in terms of percent habitat occupied; Yaqui catfish populations will be estimated by mark-recapture methods; Huachuca water umbel patches will be described in terms of area covered (e.g., m^2); and Chiricahua leopard frog populations will be described in terms of presence-absence, and in case of presence, through double-observer population estimates. Population status monitoring will be conducted at maximum once per year, and at minimum, once every two years.

c. Genetic diversity of the covered species will be monitored at a maximum once every five years and at a minimum once every ten years. Tissue samples will be collected from the covered species and stored in either 95% ethanol, or as directed by appropriate information. Microsatellite variation, or a similar and appropriate technique as innovation allows, will be used to assess genetic diversity.

d. Disease and invasive species status will be assessed during population status monitoring. All fish captured during population monitoring will be identified to species; at least one person conducting the monitoring needs to be able to separate mosquitofish from Yaqui topminnow. A minimum of ten Yaqui chub will be checked, using Praziquantel, to determine the presence or absence of Asian tapeworm (Kline 2007); this portion of disease monitoring will be conducted at a maximum once every two years, and at a minimum, once every three years. At least one person conducting the monitoring will be certified to conduct surveys according to the protocol set forth by the Chiricahua leopard frog Recovery Plan, and must be able to identify external characteristics of chytridiomycosis; if chytrid is suspected, then appropriate samples will be collected for further analysis. The disease and invasive species monitoring will be conducted a maximum of once per year, and a minimum of once every two years, except as noted for tapeworm monitoring.

Annual reports summarizing the events of the year as pertains to this Agreement, including the results of monitoring efforts, if applicable, will be submitted to the Arizona Ecological Services Office and the FWS Southwest Region Office (Albuquerque) by September 1st of each year. An exception will occur if this Agreement has been in effect for less than six months, in which case, no report need be submitted. Submission of the report will be the responsibility of the FWS, who will work in conjunction with the Participants to provide necessary information.

The reports will contain the following information:

- a description of watershed integrity actions taken;
- the cumulative number of populations of each covered species within the covered area;

- a description of population re-establishment actions taken for covered species;
- a description of minimization measures taken;
- a description of conservation enhancement actions taken;
- a summary table of habitat conditions as determined by monitoring, or, if no monitoring is completed, then a general description of conditions within the covered area;
- a summary table of population status of each covered species as determined by monitoring, or, if no monitoring is completed, then a general description of casual observations;
- summary information of genetic diversity status of covered species, if such monitoring occurred;
- a summary of any diseases or invasive species detected during monitoring, or, if no monitoring occurred, then a description of any anecdotal information; and
- any other relevant information regarding this Agreement or the covered species or area.

Hydrological and Biological Monitoring

The FWS developed hydrological studies to determine the status of the Leslie Creek Watershed and the connection of the creek to the aquifer upstream. Biological monitoring activities will be coordinated and conducted by agency personnel acting in the normal course of official duties (to the extent budgets and staff time permit) and also through the Agreement's funding mechanisms.

The hydrological studies conducted by the FWS and any biological monitoring activities conducted by the Parties will be reported to the FWS annually by December 31.

9. FUNDING

All Parties agree to explore possibilities for securing funding to restore wetland habitat on the 99 Bar Ranch and Bar Boot Ranch within the Leslie Creek Watershed. Watershed improvement activities have been ongoing on these properties with the assistance of the NRCS, FWS – through Refuges and Partners in Wildlife, and personal finances. The Austin's have a proven track record of successfully implementing such projects on their El Coronado Ranch under an existing habitat conservation plan and associated incidental take permit (USFWS 1988).

10. RESPONSIBILITIES OF THE PARTIES

In addition to the following stipulations, the Parties will work cooperatively on other issues as necessary to further the purposes of the Agreement. Moreover, nothing in this Agreement shall limit the ability of Federal and State conservation authorities to perform their lawful duties and conduct investigations as authorized by statute and by court guidance and direction.

Participants:

1. Agree to carry out watershed improvement actions as funding becomes available and as agreed in annual discussion with FWS.

2. Provide reports to the FWS on species mortalities, injuries, or diseases observed on the enrolled lands.

3. Notify the FWS 60 days in advance of any planned land management activity (such as controlled burn, fencing, construction, tilling, hay operation, etc.) that the Participants reasonably anticipate will result in the take of the species on the enrolled lands; and provide the FWS the opportunity to capture and/or relocate any potentially affected species.

4. Notify the FWS of any change to the enrolled propertys' management, including prior notification for returning the enrolled property to baseline conditions; and identify the actions that would result in changed management or return to baseline.

5. Agree to annual monitoring and reporting on compliance with this Agreement.

6. Allow access by the FWS, or other agreed-upon party, to the enrolled lands for purposes of carrying out monitoring and management activities. In the event of an emergency, the FWS may enter the premises to care for and protect species at any time.

FWS:

1. Provides technical assistance, to the maximum extent practicable, when requested; and provides information on Federal funding programs.

2. Upon execution of the Agreement and satisfaction of all other applicable legal requirements, the FWS will consider issuance of a permit to the Participants in accordance with ESA section 10(a)(1)(A), authorizing take of the covered species as a result of lawful activities within the enrolled property. The term of the permit will be 50 years.

3. Ensures Participants are implementing the terms of the Agreement if/when it is permitted.

4. Performs biological monitoring, unless conducted by Participants.

5. Will provide the Participants with a minimum of 14 days notice prior to entering the enrolled properties to conduct monitoring.

6. Will coordinate all re-establishment activities with AGFD, including acquiring all necessary permits.

11. INCIDENTAL TAKE

The activities that occur under this Agreement and those ongoing on these properties may impact populations of the covered species that naturally disperse, are reestablished under this Agreement, and the existing population of Yaqui chub.

The covered properties in this Agreement are active ranches. The owners' activities include the management of livestock, maintenance of ranch infrastructure required to manage livestock, including the maintenance of tanks, roads, and fences. The FWS holds conservation easements over both properties, and no further development will occur. Any take resulting from normal ranching activities will tend to be minimal; stock tank maintenance is typically a brief process, and only major overhauls may result in the complete loss of a population at a particular aquatic site. Minimization measures, as described in Section 6 above, will reduce the likelihood of this occurring. If the Participants propose to undertake any actions that fall outside the scope of habitat enhancement or its normal ranching operations, and they may reasonably expect incidental taking of any covered species, including any activities that will return the property to baseline conditions, they will give the FWS at least 60 days advance notice and provide an opportunity to relocate affected individuals. The Parties will work together to minimize negative impacts to covered species from such actions.

Under this Agreement, the Participants are authorized to make use of the enrolled property in any manner that does not result in reducing the population and/or occupied habitat of the covered species below the original baseline conditions. The permit, if granted, will authorize take of covered species that is above the baseline condition of the property, or alteration of occupied habitat, resulting from lawful activities within the enrolled lands, from the time this Agreement is signed until permit expiration. The Participants may continue current land-use practices, undertake new ones, or make any other lawful use of the property, even if such use results in the loss of species individuals or their habitat covered under this Agreement.

Among the activities the Participants plan to continue, which in no way shall be considered a limitation on any other activity the Participants desire to engage in, are the following activities that may result in an unintentional take of the species: cattle tank repairs, road maintenance, and establishment of erosion control devices (e.g., gabions).

Occupied habitat that is part of the enrolled properties baseline condition may not be adversely altered, unless agreed to by FWS pursuant to section 13 under reassignment of baseline. The maximum number of individuals or occupied habitat that can be taken pursuant to this Agreement will be no more than the number of additional individuals or acres of occupied habitat above the baseline created through this Agreement. Thus, the net impact of the take authorized under this program is, at the very least, a return to the status quo, and therefore would not negatively impact the species. To return the enrolled property to baseline conditions, the Participants must demonstrate that the agreed-upon baseline conditions were maintained and the activities identified in the Agreement as necessary to achieve a net conservation benefit were carried out for the duration of the Agreement. No habitat will be impacted until the Participants have given the FWS a 60-day prior notice to relocate any remaining species individuals from the area to be impacted.

Other ongoing uses in the covered area, such as recreation, home repair, maintenance, and improvement not otherwise mentioned above may also result in a small amount of incidental take. If the incidental take associated with these activities can be anticipated, the Participants should provide FWS at least 60 days advance notice and provide an opportunity to relocate affected individuals. The Parties will work together to minimize negative impacts to covered

species from such actions. If the incidental take can not be anticipated and is associated with an otherwise legal activity, incidental take from these activities could occur up to the number of individuals, population sites, or acres of habitat above the baseline condition.

Impact of Incidental Take:

The source of the covered species to be re-established onto the covered properties under this Agreement will be either from Leslie Canyon NWR, San Bernardino NWR, or captive refugia populations where the populations are large enough to remain viable after the removal of some individuals. Due to the reproductive potential of these species, it is unlikely that removal of individuals from existing populations will have a long-term negative impact on the species. Removal of fish from wild populations will be done under a separate research and recovery section 10(a)(1)(A) permit held by USFWS, AGFD or another designated entity. The impact of such removals will be evaluated under the issuance of that permit.

The proposed reestablishment of covered species in this Agreement would increase the number of population sites occupied within the range of these species and would be consistent with the recovery plans for these species. The potential impact of incidental take within these new populations and the baseline population of Yaqui chub in Chalk Tank Complex would be consistent with the normal fluctuations of natural populations. This could range from a few individuals to potentially all individuals within a reestablishment site. Natural populations were subject to local extirpation and periodic recolonization as part of normal metapopulation dynamics (Fagan et al. 2003, Stockwell and Leberg 2002). While unlikely, if an entire population at a site is lost through incidental take, the cause of the take will be identified, minimization measures will be evaluated, and if appropriate the site will be reestablished with translocated individuals from another site managed under this agreement or another source consistent with criteria for the initial translocations. If this occurs in Chalk Tank Complex, the baseline population of Yaqui chub must be reestablished or reassigned to a more persistent occupied site, with agreement in writing between the owner of the Bar Boot Ranch and FWS. Therefore, the level of anticipated take will not exceed the baseline for the covered lands in this Agreement and not appreciably reduce the anticipated net conservation benefit of this Agreement and its associated section 10(a)(1)(A) permit.

12. AGREEMENT & PERMIT ADMINISTRATION

After approval of the Safe Harbor Agreement, the FWS may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a landowner or successor in interest to the landowner, to mitigate or compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the Agreement except as stipulated in 50 CFR 17.22(c)(5) and 17.32(c)(5).

Modification of the Agreement. Any party may propose modifications or amendments to this Agreement, as provided in 50 CFR 13.23, by providing written notice to, and obtaining the written concurrence of, the other Parties. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The Parties will use their best efforts to

respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other Parties' written concurrence.

Amendment of the Permit. The permit may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the FWS's permit regulations at 50 CFR 13 and 50 CFR 17. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons for it.

Termination of the Agreement. As provided for in Part 12 of the FWS's Safe Harbor Policy (FR 64:32717), the Participant(s) may terminate implementation of the Agreement's voluntary management actions prior to the Agreement's expiration date, for circumstances beyond the Participant's control. In such circumstances, the Participant may return the enrolled lands to baseline conditions even if the expected net conservation benefits have not been realized. If the Participant is unable to continue implementation of the plans and stipulations of the Agreement, whether due to catastrophic destruction of the species population numbers or habitat or due to unforeseen hardship, the Participant would relinquish the permit to the FWS. Species management on the Participant's lands would return to its status prior to the signing of the Safe Harbor Agreement (i.e., original baseline). Such termination will not affect the Participant's authorization under the permit to take any individual species or occupied habitat that is not part of the Participant's baseline at the time of termination. The Participant may terminate this Agreement due to uncontrollable circumstances upon 60 days prior written notice to the other Parties, provided that the baseline conditions have been maintained and the FWS is provided an opportunity to relocate affected species within 60 days of that notice. The Parties may terminate the Agreement at any time and for any reason, but early termination of enrollment will extinguish the Participant's assurances to return the property to baseline condition and associated take authorization at the time of termination. Therefore, a return to baseline condition must occur prior to the termination date and a time table should be negotiated with FWS.

Permit Suspension or Revocation. The FWS may suspend or revoke the permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. The FWS also, as a last resort, may revoke the permit if continuation of permitted activities would likely result in jeopardy to covered species (50 CFR 13.28(a)). Prior to revocation, the FWS would exercise all possible measures to remedy the situation.

Permit Severability. Each Permittee will be independently severable with respect to the Agreement's section 10(a)(1)(A) permit. Thus, failure on the part of one landowner may result in revocation of that landowner property from coverage under the permit, but shall not affect the rights and obligations of the other landowner under the permit. Likewise, the early termination of one landowner shall not affect the coverage of the other landowner under the permit.

Baseline Adjustment. Unforeseen circumstances could involve habitat impacts resulting from catastrophic events such as hurricanes, rainstorms, severe drought, lethal forest fires, or insect/disease epidemics. Such events are beyond the reasonable control of, and did not occur through, the fault or negligence of the Participants, including but not limited to "acts of Nature" or sudden actions of the elements such as those described above. Such catastrophes could either

locally destroy the species' population or render the habitat unsuitable, thereby reducing population numbers or occupied acreage below the original baseline conditions. For such circumstances beyond the control of the Participants, the Parties may agree to revise the Agreement's baseline conditions to reflect the new circumstances, rather than terminate the Agreement.

Remedies. Each party shall have all remedies otherwise available to enforce the terms of the Agreement and the permit, except that no party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

Dispute Resolution. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

Neighboring Lands. This Agreement covers all the non-Federal lands within the watershed between the Coronado National Forest and the LCNWR. LCNWR is downstream from all aquatic habitats that would be created through this Agreement and no perennial waters exist in Leslie Canyon watershed below LCNWR. Therefore, no Neighboring landowners are anticipated to be affected by this Agreement's conservation activities. However, if the Participants choose to enroll their state trust lands grazing leases, the Agreement's assurances run with that property and the Arizona State Land Department would be treated as a neighboring landowner covered under the Agreement. The Arizona State Land Department may request to formalize these assurances by signing onto this Agreement as an additional Participant.

Succession and Transfer. This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees, in accordance with applicable regulations (50 CFR 13.24 and 13.25). The rights and obligations under this Agreement shall run with the enrolled property and are transferable to subsequent non-Federal property owners pursuant to 50 CFR 13.25. The enhancement of survival permit issued to the Participants also will be extended to the new owner(s). As a party to the original agreement and permit, the new owner(s) will have the same rights, including the original baseline, and obligations with respect to the enrolled property as the original owner. The new owner(s) also will have the option of receiving Safe Harbor assurances by signing a new Agreement and receiving a new permit. The Participants shall notify the FWS of any transfer of ownership, so that the FWS can attempt to contact the new owner, explain the baseline responsibilities applicable to the property, and seek to interest the new owner in signing the existing Agreement or a new one to benefit listed species on the property. Assignment or transfer of the permit shall be governed by FWS regulations in force at the time.

Availability of Funds. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the FWS will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

Relationship to Other Agreements. A conservation easement was purchased and recorded on 11,585 acres of the 99 Bar Ranch, and a conservation easement is being assessed and being purchased for 13,000 acres on the Bar Boot Ranch. These easements restrict future urban development on these properties and therefore, they will remain as open space and wildlife habitat. The conservation easements are held by FWS.

No Third-Party Beneficiaries. This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law.

Other Listed Species, Candidate Species, and Species-of Concern. Other listed, proposed, or candidate species, or species of concern may occur in the future on lands enrolled in the Agreement as a direct result of the Participants' voluntary conservation actions. If biological surveys determine this Agreement will provide a net conservation benefit to any such species or their potential habitat, the Parties may agree to amend the Agreement and permit to cover additional species, at the Participants' request.

If federally designated candidate species should occur on the property, the FWS will recommend measures for including them in a joint Safe Harbor Agreement/Candidate Conservation Agreement with Assurances to contribute toward the conservation of those species. If appropriate measures are included in such an agreement, the FWS, consistent with its "No Surprises" policy, will not impose additional requirements on the Participants as a result of any such species later being listed as threatened or endangered.

Notices and Reports. Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

Alysa Bennett:
Alysa F. Bennett,
99 Bar Ranch Limited Liability Limited Partnership
McNeal, AZ 85617

Mr. and Mrs. Austin:
Mr. Josiah and Mrs. Valer Austin
Pearce, Arizona 85625

FWS:

Refuge Manager
Leslie Canyon National Wildlife Refuge
U.S. Fish and Wildlife Service
P.O. Box 3509
Douglas, AZ 85608
(520) 364-2104

Field Supervisor
Arizona Ecological Services Office
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, #103
Phoenix, Arizona 85021
(602) 242-0210

13. SIGNATURES

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that the FWS issues the permit.

Alysa Bennett, 99 BAR RANCH LLP — 9/16/08

Alysa F. Bennett, 99 Bar Ranch Limited Liability Limited Partnership Participant — Date

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that the FWS issues the permit.

9-24-08

Date

9-24-08

Josiah and Valer Austin, Bar Boot Ranch Participant

Date

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that the FWS issues the permit.

Actin Deputy Regional Director
U.S. Fish and Wildlife Service

29 Sept. 2008
Date

14. LITERATURE CITED

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Figure 1. Map of the upper Leslie Canyon Watershed and Area to be enrolled.