

ANNUAL REPORT
(Covering the period June 10, 2005 – June 10, 2007)

**Programmatic Biological Opinion on the Land and Resource
Management Plans for the 11 National Forests in the USDA
Forest Service Southwestern Region**

Prepared by

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October, 2008

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Introduction

On April 8, 2004 the U. S. Forest Service Southwestern Region (FS) initiated Endangered Species Act (ESA) §7(a)(2) consultation with the USDOJ Fish and Wildlife Service (FWS) on the continued implementation of the 11 Land and Resource Management Plans (LRMPs) for the National Forests and National Grasslands in the Southwestern Region of the FS. The FWS issued a Biological/Conference Opinion (referred to as BO in this document) on June 10, 2005, which addressed adverse effects to 36 federal candidate, proposed, and listed species and seven designated or proposed critical habitats. The FWS also concurred with “not likely to adversely affect” determinations for an additional 15 candidate, proposed, and listed species.

The June 10, 2005 BO is considered a plan-level or programmatic consultation using a “tiered” approach. The tiered approach is a two-stage consultation process: the first stage was the June 10, 2005 BO, which evaluated the landscape-level effects of continued implementation of the 11 LRMPs. The second stage consists of the future consultations on site-specific projects which occur on each Forest under their specific LRMP. Thus, site specific projects within the Southwestern Region of the FS that may affect listed or proposed species or proposed or designated critical habitat on National Forest System (NFS) lands would need separate consultation.

During the development of the BO, it was determined by the FWS that the current status of four species (spikedace, Little Colorado spinedace, Chiricahua leopard frog, and the Sacramento prickly poppy) was of concern. In response to this concern, the FS and FWS cooperatively developed a set of Conservation Measures for each of the four species (Appendix A). The Conservation Measures were specifically designed to address issues related to the long-term conservation of these species on NFS lands in the Southwestern Region. These Conservation Measures were included in the final BA and therefore became part of the proposed action.

After the issuance of the FWS BO, an Interagency Agreement was developed and signed by both agencies in early January 2006. The purpose of this agreement was to facilitate the implementation of the Conservation Measures, Reasonable and Prudent Measures, and Terms and Conditions (T&Cs) of the BO. This cooperative effort was designed to ensure an integrated approach to conservation that would contribute to the recovery of all species addressed in the BO, but particularly those four species for which Conservation Measures were developed.

The Interagency Agreement established an Oversight Committee composed of both FS and FWS personnel. The Oversight Committee insures implementation and development of interagency coordination, evaluates protocols and procedures, oversees and sets the time frame for annual progress reports, and determines future courses of action. In June 2006, the Oversight Committee met to discuss a variety of issues, including the preparation of the first annual report as required in both the BO and Interagency Agreement. Regional office staffs from the FS and FWS met three times (November 2006, and twice in February 2007) to discuss various issues, including the progress of the annual report.

On March 16, 2007, the Oversight Committee met once again to discuss the Draft Annual Report and the LRMP BO. Several issues were discussed and it was decided that staff members from the FS and FWS would meet to resolve a number of issues. Staff members met in April, May and June, 2007. A third Oversight Committee meeting was held in June 21, 22, 2007 to discuss any remaining issues and set the date for the completion of this final report. During July and August, the FS Director of Wildlife, Fish, and Rare Plants met with the FWS Assistant Regional Director to discuss the LRMP BO. Furthermore staffs from both agencies met in July, August, and September, 2007 to discuss the LRMP BO and the annual report.

Since September 2007, the FS and FWS Regional office staff have continue to meet and work together to address and resolve the issues identified in this report, which covers the time period of June 10, 2005 through June 10, 2007.

Species Reports

Mammals

Lesser long-nosed bat

Arizona and New Mexico are at the extreme northern edge of the lesser long-nosed bat's range. Within NFS lands in the Southwestern Region, lesser long-nosed bats are known to roost and forage on the Coronado National Forest (NF), and foraging may occur on the Tonto and Apache-Sitgreaves, and Gila NFs. Currently the species does not breed on any NFs in the Southwestern Region, and only non-reproductive, post breeding roosts are known to occur on the Coronado NF.

Incidental Take Statement Evaluation

Within the June 10, 2005 BO, the FWS determined that incidental take, in the form of harm and harass, was reasonably certain to occur as the result of the continued implementation of the Coronado NF LRMP within the Engineering, Fire Management, Lands and Minerals, Rangeland Management, and Wildlife Programs. Take was not issued for the Tonto, Apache-Sitgreaves, or Gila NFs. For the Coronado NF, incidental take for the lesser long-nosed bat was issued and considered exceeded if the simultaneous roost census counts, conducted by the Arizona Game and Fish Department (AGFD), drop below 66,923 lesser long nosed bats for a period of two consecutive years as a result of the proposed action. Although we do not have the information for all surveyed sites on other state, federal or private lands, the results of the last two years of surveys conducted on the Coronado NF in 2005 and 2006 are displayed in Table 1 below. It should be noted that surveys for 2007 had not been conducted prior to the date of the information included in this report (i.e. June 10, 2005 – June 10, 2007), therefore the information below only includes the results of the surveys from 2005 and 2006.

Table 1 Results from the 2005 and 2006 AGFD simultaneous roost census counts for the lesser long-nosed bat for sites on the Coronado NF.

CORONADO NATIONAL FOREST	2005	2006
#Sites/Miles surveyed	4 sites	4 sites
# of Occupied Breeding Areas surveyed	0 (4 post breeding sites)	0 (4 post breeding sites)
# of Occupied Breeding Areas found	0 (4 post breeding sites)	0 (4 post breeding sites)
Number of Individuals	50 (Lone Star Mine); “not counted, but present” unnamed adit; 15,500 (Patagonia Bat Cave); 300 (Hilltop Mine)	450 (Lone Star Mine); 300 (Adit #4) both in Whetstones; “low number” Patagonia Bat Cave)

It should be noted that there are only four known sites that are on the Coronado NF that are generally monitored during the simultaneous roost surveys: Patagonia Bat Cave, Kasper Mine, Hilltop Mine, and Lone Star Mine, plus adits near Lone Star Mine. The remainder of the survey sites included in the AGFD simultaneous roost surveys is located on other land jurisdictions.

In addition to the information presented in the table above, 300+ adults were found in an abandoned mine adit (about 100 foot in length) in Brown Canyon (Huachuca Mountains) on September 9, 2006. Furthermore, Sierra Vista Ranger District personnel surveyed 26 sites in 2006, but only two were found to be roosting sites (Lone Star Mine and one other adit). It should also be noted that a University of Arizona researcher has shown the presence of this species in Stockton Pass, Pinalenos and the species was also detected during the Bat Conservation International training class in Portal, Chiricahua Mountains.

This report has highlighted a concern regarding the lesser long-nose bat incidental take statement issued in the BO. The incidental take statement includes individuals that occur on lands not under FS jurisdiction. Furthermore, it appears that the numbers of individuals counted in exit surveys at the locations included in the AGFD simultaneous roost surveys varies widely between sites and between years. This indicates that the re-initiation trigger used in the LRMP BO may not be truly determining when take as been exceeded as a result of FS actions. The FS is confident; however, that incidental take has not been exceeded during the reporting period of this report because no incidental take has been issued for the species for project level consultations.

Project Level Consultations

Since June 10, 2005, fifteen projects on the Coronado NF have received concurrence letters for “Not Likely to Adversely Affect” (NLAA) calls from the FWS, and six projects have required formal consultation. None of the six formal consultations have resulted in incidental take being issued for the lesser-long nosed bat.

Implementation of Terms and Conditions

Seven T&Cs were issued for the lesser long-nose bat in the LRMP BO. An evaluation of how each of these T&Cs has been implemented follows:

1.1 Design projects within the Engineering, Lands and Minerals, Rangeland Management, and Wildlife programs to minimize or eliminate adverse effects to the lesser long nosed bat.

There has been no incidental take issued for this species as a result of site specific projects since the LRMP BO was issued in 2005. Adverse effects have been minimized or eliminated during project implementation.

1.2 Develop specific management plans for known roosts that provide protection for the lesser long-nosed bat.

Coronado NF biologists have identified two sites to be addressed: one for possible closure order modification and one to evaluate for gate or fencing needs. This will be discussed with the FWS during the annual coordination meeting.

1.3 Any lesser long nose bat roosts (i.e., mines or caves) not already gated shall be gated by the FS unless it is determined that other measures are protective.

Gates have been installed where the need to protect the lesser long-nosed bat has been identified. One additional site was recently identified for evaluation.

1.4 Ensure that bats are protected from cyanide leaching ponds and other chemicals.

Cyanide leaching ponds have not been identified by Coronado NF biologists as a problem where the bats are currently found.

2.1 Identify areas with important, high density agave and other bat food plants. These areas shall be managed to maintain this habitat component for the lesser long-nosed bat.

High density agave areas are identified and addressed appropriately on a project by project basis.

2.2 Limit collection permits of agave cactus to areas outside known roosts of the lesser long-nosed bat where bats may be foraging.

Collection of agave plants in the area where bats could be foraging is not being permitted.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor lesser long-nosed bats on NFS lands. This can be accomplished by using AGFD's yearly simultaneous roost census.

The FS was responsible for organizing one of the first interagency exit counts and has participated yearly ever since. The Coronado is also involved in other monitoring for this species as well.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on lesser long-nosed bat to assess when the amount of take is being approached or exceeded.

Since the issuance of the FWS LRMP BO, there have been fifteen informal consultations, and six formal consultations completed on site specific projects implemented under the Coronado LRMP; however, no incidental take has been issued to date. Furthermore, the

result of the Coronado's monitoring efforts are reported annually to the Tucson FWS Field Office and are subject to review and discussion at the follow-up annual coordination meeting between the two agencies.

Recovery Actions Implemented

The Coronado NF biologists continue to assist the AGFD in surveying for this species on NFS lands. Furthermore, several caves and mine adits are gated with bat friendly gates. The Cave-of-the-Bells (which has been unoccupied for many years) is gated and access is regulated to keep spelunkers out during the roost occupancy period. In 2006, the Coronado acquired a Pettersson Bat Detector to help detect this species at project sites. One of the Coronado NF biologists received training (Bat Conservation International) in bat management and conservation in 2006, one in 2007, and the Forest has applied for a grant to obtain more equipment and funding for monitoring in 2007. University researchers working on AGFD grants have surveyed numerous sites on the Coronado to get locality and usage information that will help with management strategies. In 2007, the Coronado applied to have all of their biologists amended to do mist netting on the FWS permit, if they receive training from Bat Conservation International or with other bat researchers. Currently, however, only one of the biologists have the 100 hours experience required by FWS to be allowed to mist net for bats, but the Coronado is trying to negotiate this. During fire suppression activities and project development, high density agave stands are noted and effects from fire and suppression minimized, although fire does appear to stimulate the development of agave pups. This topic will be discussed with FWS during the annual coordination meeting.

Issues and Concerns

As a result of compiling this report, it has been discovered that the Incidental Take Statement within the LRMP BO, as written, will not adequately determine when the incidental take is exceeded on NFS lands as the result of the proposed action. The LRMP BO as currently written states that incidental take is exceeded if the AGFD simultaneous roosts counts drop below 66,923 for a period of two consecutive years as a result of the proposed action. However, the 66,923 figure includes 13 survey sites (LRMP BO Table 4, page 48), of which only four (Patagonia Bat Cave, Kasper Mine, Hilltop Mine, and Lone Star Mine) occur on the Coronado NF. Therefore, it is not reasonable to set triggers for exceeding incidental take that include occupied sites that do not occur on NFS lands. In order to separate cumulative effects from indirect effects associated with implementation of the proposed action, identification of effects associated the proposed action should take place and be logically and rationally connected with declines in the populations. Population declines on non-NFS lands alone cannot be used without a rational connection. For example, adverse effects to foraging habitat on NFS lands can be used to describe a possible cause and effect example of the proposed action affecting population numbers on non-NFS lands. Without any rational connection between the implementation of the proposed action and the population declines, one can conclude that changes in population status can be attributed to activities that occur on non-NFS lands. Furthermore, in examining the results displayed in Table 4, page 48 of the BO, it appears that the numbers of individuals at known sites varies tremendously between years. At this time the FS and FWS have agreed that, although none of the re-initiation triggers have been tripped for this species, consultation should

be re-initiated and information from the FWS recent 5 year review for the species should be used to reevaluate incidental take.

Mexican long-nosed bat

The Mexican long-nosed bat occurs from northern and central Mexico, southwestern Texas and southwestern New Mexico. No records of this species are known from Arizona. On the Coronado NF, this species is only known from two individuals taken in Guadalupe Canyon, Peloncillo Mountains, New Mexico many years ago. However, the species regularly occurs at roost sites in nearby mountains in New Mexico and Texas. It is speculated that the species forages on the Douglas Ranger District of the Coronado NF; however, there are currently no known roosts or breeding sites on the Coronado.

Incidental Take Statement Evaluation

Incidental take was not issued for the Mexican long-nosed bat in the LRMP BO because occupancy of the species on NFS lands in the Southwestern Region is not currently documented. The BO states: “However, if resident Mexican long nosed bats are found to occur on the Coronado NF in the future, the effects of the proposed action will be assessed in order to evaluate whether reinitiating of this consultation is needed”. To date, no information is available that would indicate that resident Mexican long-nosed bats occur on NFS lands (Coronado NF).

Project Level Consultations

There have been no project level consultations that have resulted in “Likely to Adversely Affect” (LAA) or “Not Likely to Adversely Affect” (NLAA) calls for the Mexican long-nosed bat since June 10, 2005.

Implementation of Terms and Conditions

No T&Cs were issued for the Mexican long nosed bat.

Recovery Actions Implemented

Because there are no known roosts on the Coronado NF, there have not been any recovery actions taken. Despite frequent monitoring efforts by Bat Conservation International in Cave Creek in the Chiricahua Mountains, no individuals have ever been recorded from mist netting or aural bat detection efforts.

Issues and Concerns

No issues or concerns have been raised regarding the Mexican long-nose bat.

Mount Graham red squirrel with Designated Critical Habitat

The Mount Graham red squirrel is endemic to the Safford Ranger District of the Coronado NF and found only on Mount Graham, Pinaleno Mountains, Arizona. Population estimates conducted annually by the AGFD indicate that the population declined from 1986 to 1990, increased from 1990 to 1999 and has been relatively stable since. Critical habitat was designated for the species on Mount Graham in 1990 and it is partially within the Mount Graham red squirrel refugium. Catastrophic wildfire is the major threat to the red squirrel and its critical habitat due to the species' relatively small, isolated, and restricted distribution in the Pinaleno Mountains.

Incidental Take Statement Evaluation

Within the June 2005 LRMP BO, incidental take was issued as a result of activities conducted under the Fire Management, Forestry and Forest Health, and Recreation Programs. Within the Incidental Take Statement, incidental take was defined in terms of midden occupancy. Specifically, the FWS determined that incidental take would be exceeded "...if more than 10 percent of middens located outside of the refugium during the life of this opinion are impacted as the result of the proposed action."

Results from the 2005 and 2006 surveys are displayed in Table 2 below. However, it should be noted that the information collected by the cooperating agencies does not seem particularly useful for reporting survey activities. The number of middens is not the information that AGFD typically reports to the FS. First, no transects are conducted. This subspecies is surveyed using hierarchical sub sampling of active, inactive, and uncertain middens in randomly selected blocks. Those middens that were categorized as "disappeared" were removed from the sample in the summer of 2006, when AGFD crews visited all know sites, so there is some discontinuity between 2005 and 2006 surveys, and the 2005 survey lacks the spring component. The relative unit of measure reported by AGFD to the FS is the number of individuals, with confidence intervals, estimated with an algorithm using active vs. other midden types, per vegetation type (mixed conifer, ecotone, and spruce-fir). Thus, it appears that the FS should probably be reporting the estimated population and confidence intervals, for both spring (which shows fall and winter survivorship) and fall (which shows reproductive success, before the influence of fall and winter mortalities, plus cone-caching success).

Table 2 Results from AGFD midden surveys in 2005, 2006 and 2007.

	2005	2006	2007
Number of Transects	N/A	N/A	N/A
Miles surveyed	N/A (estimate – 160 mi/yr.)	N/A (estimate – 160 mi/yr.)	N/A (estimate 160 mi/yr.)
# of Middens encountered	Active: 133 (fall survey only is post June 10, 2005)	Active: 138 (spring survey); 160 (fall survey)	Only spring survey conducted thus far in 2007; 108 active middens reported

Population estimates were also calculated from bi-annual surveys conducted by the AGFD in cooperation with the Coronado NF. The results of these surveys are as follows:

2005	Spring: 214 individuals	Fall: 276 individuals
2006	Spring: 199 individuals	Fall: 276 individuals
2007	Spring: 216 + or – 12	Fall: Not completed at the time of this report

Much of the habitat has been lost to catastrophic wildfire and insect outbreaks and the population has been low for several years. Data are not rigorous enough to determine trends and population viability analyses have been inconclusive and problematic.

Information from the AGFD surveys are not reported in the manner required in the LRMP BO Incidental Take Statement. It is recommended that the use of squirrel middens, as currently written into the Incidental Take Statement, be revised to the estimated number of individuals reported in the bi-annual surveys.

Project Level Consultations

There have been six project level consultations (NLAA) which have received concurrence from the FWS since June 10, 2005. There have been no formal consultations for site specific activities for the Mount Graham red squirrel or its critical habitat since the issuance of the LRMP BO.

Implementation of Terms and Conditions

Six T&Cs were issued in the LRMP BO for the Mount Graham red squirrel. Each of these has been implemented in the following manner:

- 1.1 Maintain adequate levels (i.e., as permitted to reduce the likelihood of catastrophic wildfire) of closed canopy, foliage volume, dead or downed wood around active, inactive, and apparently abandoned midden sites.

As projects are designed to reduce fuel load and the threat of catastrophic fire, and to restore forest health, special direction is included to provide for the habitat needs of the squirrel. For example, buffer areas are designated around squirrel middens as “no treatment” or “special treatment” zones.

- 1.2 Follow the FWS regional guidance criteria for pesticide use in areas occupied by the Mount Graham red squirrel.

Projects in Mount Graham red squirrel habitat are designed to minimize effects and the guidance criteria for pesticide use are followed.

- 1.3 Design projects within the Fire Management, Forestry and Forest Health, and Recreation Programs to minimize or eliminate adverse effects to the Mount Graham red squirrel.

Since 2005, no formal consultations (adverse effects) have occurred as a result of Coronado NF project activities. Six informal consultations have occurred for which concurrence

letters have been received from the FWS; therefore, projects have been designed to minimize adverse effects to the species.

2.1 Design projects in occupied red squirrel habitat to incorporate appropriate components of the Mount Graham red squirrel Recovery Plan with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the squirrel and its habitat.

Since June 10, 2005 only projects that have beneficial, insignificant, or discountable effects to the Mount Graham red squirrel have occurred. Furthermore, any project proposals in red squirrel habitat incorporate the appropriate components of the Recovery Plan.

3.1 In cooperation with state agencies, FWS, and on-going research efforts, monitor Mount Graham red squirrel middens on the Coronado NF.

The FS continues to work in cooperation with state conservation agencies, FS research stations, the FWS and others to conduct semi-annual surveys and conduct research. Monitoring is being conducted and reported annually to FWS Tucson Field Office and the results are subject to review and discussion at the annual coordination meeting between the two agencies.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Mount Graham red squirrels....

Since June 10, 2005 no incidental take has been issued for projects conducted by the Coronado NF.

Recovery Actions Implemented

The Pinaleño Ecosystem Management Demonstration Project and Pinaleño Ecosystem Restoration Project are large fuel reduction and restoration projects that are expected to be of benefit to this species. There has been a tremendous amount of effort put into the process of designing these projects, so that short-term effects are outweighed by long-term benefits, in conjunction with reducing fuel loads and beginning the process of forest restoration. The Coronado NF has members on the Recovery Plan implementation team and a liaison with the technical team. The Coronado NF has participated in habitat use development, and helped to draft a letter to the Director of FWS to begin determining the mechanisms needed for successful captive breeding and translocations. Because this subspecies is found in forested, terrestrial landscape, it is of high priority with the national and regional priority for fuel reduction and restoration projects. The Coronado is supporting research efforts by the University of Arizona to help determine the immediate effects of fuel reduction efforts on the occurrence and reproductive success of the taxon. On the downside, the effects of special uses (telescopes, recreation, and recreational housing) are minimized, rather than being conservation efforts. These economic and political values will likely make wildland fire use difficult to deploy (but the FS is constrained by the Arizona-Idaho Conservation Act). One encouraging side-note is that the Recovery Team is working on a letter to be sent to the AGFD Regional Supervisor to ask the Commission to take steps to remove or at least manage Abert's Squirrel. This is significant, as one of the greatest conservation concerns is that fuel reduction projects may favor Abert's squirrel (a non-native), which may compete with the native Mt. Graham red squirrel.

In 2007, the Coronado NF participated in the Recovery Team by having one employee on the Forest attend a habitat modeling workshop, along with AGFD and FWS employees also on the Recovery Team. To date modeling work has continued; however, results of this effort are not completed.

Issues and Concerns Identified

Concerns, regarding the Incidental Take Statement and the triggers set up for re-initiation in the LRMP BO, have been identified. The relative unit of measure reported by the AGFD to the FS is the number of individuals (not middens). Furthermore, these results are not reported based on being inside or outside of refugia. The FS and FWS have agreed to work together to amend the BO with a revised incidental take statement which addresses these concerns.

Birds

Bald Eagle

The bald eagle is found nesting on both coasts from Florida to Baja California, Mexico in the south, and from Labrador to the western Aleutian Islands, Alaska in the north. Currently, bald eagles are repopulating areas through much of the species' historic range that were unoccupied only a few years ago (FWS 1999) and populations have been increasing to the point that the species has been delisted by the FWS (FWS 2007). Within Arizona, bald eagles are found nesting within the Apache-Sitgreaves, Coconino, Prescott, and Tonto NFs. Birds can be found wintering on all Forests in Arizona and most of the Forests in New Mexico. Roosting is currently known to occur on the Coconino NF, and may also occur on other NFS land covered under this consultation as reported below. The Apache Sitgreaves also reports observed winter activities in the San Francisco and Blue River watersheds

The number of bald eagle breeding pairs in the Southwest Recovery Area has more than doubled in the last 15 years (FWS 1999). Currently (2007) in Arizona there are 53 breeding pairs, 48 of which were occupied in 2007. In 2007, 25 pairs successfully produced 38 fledglings and there were three new bald eagle territories or breeding areas discovered (AGFD 2007).

Incidental Take Statement Evaluation

In their 2005 BO, the FWS concluded that incidental take was reasonably certain to occur as a result of the continued implementation of the Apache-Sitgreaves, Coconino, and Prescott NF LRMPs. The FWS concluded that the incidental take of bald eagles will be considered to be exceeded if, for a period of two consecutive years, occupancy of bald eagle breeding areas (AGFD annual reports) on the Apache-Sitgreaves, Coconino, Prescott, and Tonto NFs falls below 21 breeding areas or the fledgling rate for those breeding areas drops below 11 as a result of the proposed action. The results of the last three years of AGFD surveys are displayed in Table 3 below.

Table 3 Bald eagle breeding areas on National Forest System lands in Arizona. Data from AGFD annual reports.

	Apache-Sitgreaves			Coconino			Prescott			Tonto			Total		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Total breeding areas	2	2	2	6	7*	7	6	6	5	21	22	22	35	37	36
Occupied breeding areas	2	2	2	5	5	6	6	6	5	18	19	20	31	32	33
Breeding attempts	2	2	2	5	5	5	6	6	5	16	17	19	29	30	31
Number of fledglings	3	2	3	3	8	9	7	9	7	21	16	15	34	35	34

**As of 2006, one is historic and hasn't been occupied since 1994 (Camp Verde) and one is a new BA, but is on private land at the junction of Beaver Creek and the Verde River (Beaver). Active BA's on the Coconino are: Coldwater, Ladders, Lower Lake Mary, Oak Creek, and Tower.*

Based on the information presented in Table 3 above, the number of breeding areas and the fledgling rate is well above the levels established in the BO; therefore, incidental take has not been exceeded for the bald eagle. It should be noted that a new nest site has been found which is located adjacent to the Rita Blanca National Grassland in Texas.

In addition to the known bald eagle breeding areas on NFS lands in Arizona, wintering bald eagles are known to occur on all NFs addressed in the June 10, 2005 BO. Wintering eagles and their occurrence on Southwestern Region NFs are discussed below by Forest:

Apache-Sitgreaves: Within the Clifton Ranger District, bald eagles are commonly found along Eagle Creek, the San Francisco and Blue Rivers during winter. The species is a common winter migrant to the Alpine Ranger District and may be observed from mid-October to mid-March in most any setting where carrion, waterfowl, or fish are located. Specific locations on the Alpine Ranger District include: East and West Forks of the Black River, Blue River, Campbell Blue Creek, San Francisco River, Luna Lake, Sierra Blanca Lake, Nelson Reservoir (also includes Springerville Ranger District), Tenney Pond, Terry Flat wetland, and Roger's Reservoir. On the Black Mesa Ranger District there are eight locations where wintering bald eagles are observed: Knoll Canyon Lake, Chevelon Canyon, Chevelon Canyon Lake, Bear Canyon Lake, Willow Springs Lake, Woods Canyon Lake, Black Canyon Lake, and Cottonwood Wash south of State Highway 260. Two roost sites are known on the Black Mesa District, State Highway 260 and Cottonwood Wash.

Carson: The Jicarilla Ranger District has known wintering sites (roosts sites appear to vary, but they are using the same general locations). Furthermore, the Questa Ranger District has wintering areas along the Rio Grande, but again not consistent roost sites. The total number of roosting sites on the Carson NF is currently unknown.

Cibola: There are known roost sites at Lake Marvin on the Black Kettle National Grassland in Texas and on the McClellan Creek National Grassland in Texas.

Coconino: Forest biologists have confirmed that there are 11-20 known bald eagle roosts on the Coconino NF. There are a number of other roosts that have general areas identified, but specific sites have not yet been confirmed. The Forest provides important wintering habitat for bald eagles. During the annual Bald Eagle Midwinter survey, approximately 15-20% of all eagles counted in Arizona were found within the Coconino NF.

Coronado: Bald eagles have been observed wintering on the Coronado NF, but no nest sites have been found.

Gila: Bald eagles are observed foraging or perching generally from November to March on the Gila NF at Snow Lake, Tularosa wetlands, San Francisco River, South Fork Negrito Creek, North Fork Negrito Creek, Negrito Creek, Quemado Lake, White Bluffs, Perry Lawson Canyon, Lake Roberts, Wall Lake, Gila River Bird Area and portions of Centerfire Creek, Trout Creek, San Francisco River, San Francisco River from Alma Bridge to Mule Creek, Romero Creek, Gila River, and Sacaton Creek.

Kaibab: One bald eagle winter activity site on the North Kaibab Ranger District was identified at the Big Springs administrative site. Common bald eagle activity sites known to occur on the remainder of the Kaibab include sites on the Williams Ranger District: Kaibab Lake, Catarac Lake, Dogtown Reservoir, Schulz Lake, Whitehorse Lake, and J.D. Dam; intermittent use has been recorded at Sunflower Flat, Coleman lake, Barney Flat, Steel Dam, and Johnson Canyon.

The Kaibab NF and the AGFD cooperate annually on a winter bald eagle bird count. That effort has been ongoing for several years through 2007. Reports of bald eagles remaining on the Kaibab after the spring migration include potential sightings at Whitehorse Lake and Dogtown Reservoir (about 8 miles apart). No additional sightings or information are available and follow-up efforts failed to detect any eagles.

Although the Kaibab does not have specific information on known bald eagle winter roost sites, they have entered into an administrative study with the FWS, Department of Defense, and Northern Arizona University to address this topic. A Northern Arizona University graduate student has completed field work to investigate bald eagle winter roost sites on both the Kaibab and Coconino NFs, based on satellite telemetry information collected by the AGFD Research Branch. The Kaibab NF was instrumental in bringing the parties together and assisted in establishing and defining the project. A thesis is expected by Summer, 2009.

Lincoln: A bald eagle winter survey was conducted at Monument Canyon roost site in February 2006. No eagles were seen, although they have been observed in this area during previous surveys. Two to three bald eagles are also usually seen on Grindstone Lake in the winter months. The 2007 survey was not conducted due to a lack of time and budget.

Prescott: Currently two roosting sites are known on the Prescott.

Santa Fe: No information to report.

Tonto: No information to report.

Project Level Consultations

Apache-Sitgreaves: The Apache-Sitgreaves NF had 15 projects with NLAA determinations for bald eagles since June 10, 2005.

Cibola: The Forest had one NLAA for the McClellan Creek Hazard Tree Felling Project.

Coconino: There have been 11 projects which have received concurrence letters (NLAA) from the FWS since the issuance of the LRMP BO. One formal (LAA) consultation has been conducted during the reporting timeframe. Incidental take for two adults and their associated young due to harassment was issued.

Prescott: No consultations (NLAA or LAA) have been completed for projects on the Prescott NF during the reporting timeframe.

Tonto: There have been four projects which have received concurrence letters (NLAA) from the FWS since the issuance of the LRMP BO. No formal (LAA) consultations have been conducted during the reporting timeframe.

Implementation of Terms and Conditions

Seven T&Cs were issued for the bald eagle in the June 10, 2005 BO for the Apache-Sitgreaves, Coconino, Prescott, and Tonto NFs. No incidental take was issued for Forests where wintering bald eagles are known or suspected to occur.

1.1 Design projects within the Engineering, Forestry and Forest Health, Lands and Minerals, Rangeland Management and Recreation programs to minimize or eliminate adverse effects to the bald eagle.

All but one of the projects implemented since June 10, 2005 have avoided adverse effects. Conservation measures (typically seasonal restrictions) have been included in projects to minimize effects or eliminate measurable effects.

1.2 Where appropriate, continue the use of area closures in areas where bald eagles are known to nest. Implement nest closures where new bald eagle nests are found.

Bald eagle nest closures continue in areas where recreational pressure could disturb eagles. In 2007, the Springerville Ranger District implemented a new closure around the new nest at Crescent Lake, which is closer to the mail road, making it more vulnerable to disturbance. On the Coconino, it was determined that a closure was not needed around the new nest that successfully fledged young in 2006 because the two roads accessing the area have been closed and there is very little public use of the area.

1.3 Reduce open road densities to minimize disturbance from human use where bald eagles are known to be nesting.

On the Apache-Sitgreaves, reductions in open road densities to minimize disturbance from human use are implemented 300 feet around known nest sites where appropriate. On the Coconino, 1.5 miles of road accessing a nest site were closed. All Forests are beginning an

assessment of their entire motorized travel system as part of implementing the Travel Management Rule. Several Forests expect to reduce the number of miles of roads across their Forests by 2009.

2.1 Design projects in occupied bald eagle habitat to incorporate the appropriate components of the bald eagle Recovery Plan with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the eagle and its habitat.

Since June 2005, all but one project on NFS lands have had beneficial, insignificant or discountable effects to the bald eagle.

2.2 Manage lakes, wetlands, and riparian areas adjacent to and upstream of bald eagle breeding areas to eliminate direct effects and minimize indirect effects to the bald eagle.

The FS aims to manage areas adjacent to and upstream of bald eagle breeding areas to minimize or eliminate direct and indirect effects.

3.1 Continue to coordinate with AGFD Nest Watch Program to monitor bald eagle nest sites on NFS lands.

The FS continues to be involved in the AGFD Nest Watch Program both at the Regional and Forest levels. The closure area on the Crescent Lake BA (Apache-Sitgreaves NF) includes areas off-limits to boat traffic on a portion of the Lake.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on bald eagles....

This report fulfills this requirement.

Recovery Actions Implemented

Apache-Sitgreaves: The AZDGF in cooperation with the Alpine Ranger and Springerville Ranger Districts have implemented a monofilament fishing line recovery program at Luna Lake, Hulse Lake, Crescent Lake, Big Lake, and three lakes near Greer. Bald eagles are known to forage in these areas.

Cibola: The McClellan Creek National Grassland in Texas seasonally closes a portion of the area to limit disturbance to wintering bald eagles when eagles are present.

Coconino: The Coconino NF has coordinated and participated in the Bald Eagle midwinter surveys in 2005, 2006, and 2007.

Kaibab: Coordinated and participated in the Bald Eagle Midwinter Surveys in 2005, 2006 and 2007. The Forest has also recently entered into a study with Northern Arizona University to gather information on bald eagle wintering and roost sites.

Prescott: The Prescott NF coordinated and conducted Bald Eagle midwinter surveys in 2005, 2006, and 2007 using Forest personnel and volunteers. Additionally, livestock grazing was excluded by fencing 12 miles of the Verde River in 2005.

Tonto: Livestock exclusion on major river riparian areas has continued. Bald eagle exclosures have also continued in areas where recreational pressure could disturb eagles. Conservative use livestock grazing is being used within watersheds that contain bald eagle nests. The Tonto NF also continues to provide financial and staff support to the AGFD Nest Watch Program.

At the Regional level, the FS has recently (2007) signed a Memorandum of Understanding with the Arizona Game and Fish (and other federal agencies, tribes, etc.) to implement the Bald Eagle Conservation and Assessment in Arizona since the species has been delisted. The implementation of this document is intended to continue to provide management and recovery actions to maintain the species security. The FS also continues to participate in the Southwest Bald Eagle Management Committee led by the AGFD.

Issues and Concerns Identified

No issues or concerns regarding the bald eagle and the implementation of the LRMP BO have arisen.

Mexican spotted owl (MSO)

The historical and current range of the MSO includes the states of Utah, Colorado, Arizona, New Mexico, extreme west Texas and Mexico. The MSO Recovery Plan divides the range of the MSO into six Recovery Units (RUs): Southern Rocky Mountains-Colorado, Colorado Plateau, Southern Rocky Mountains-New Mexico, Upper Gila Mountains, Basin and Range West, and Basin and Range East. NFS lands within the Southwestern Region of the FS are within five of the six MSO RUs.

Incidental Take Statement Evaluation

In the June 10, 2005 BO, the FWS determined that incidental take was reasonably certain to occur on all 11 of the NFs in the FS Southwestern Region. Furthermore, the FWS determined that the anticipated level of take was most appropriately quantified in terms of number or percent of Protected Activity Centers (PACs) with disturbance and/or habitat alteration. Incidental take (harm and harass) was issued by Recovery Unit in the LRMP BO (see BO page 176; Table 53). In summary, the FWS determined that take was reasonably certain to occur within 5 percent of the total PACs (on NFS lands in the Southwestern Region) in the form of harm and 5 percent of the total number PACs in the form of harassment, for a total of 10 percent as a result of the proposed action over the next 10 years. In addition, incidental take of the PACs cannot exceed 75 percent of the decadal total in any one year.

Table 4 below shows the amount of incidental take issued in the BO by RU, as well as the amount of incidental take that has been issued under project level consultations since the LRMP BO was issued:

Table 4 Number of PACs and amount of incidental take issued by the FWS for projects on NFS lands since June 2005*.

Recovery Unit	National Forest	#PACS			Harm Incidental Take issued under project level consultations from June 10, 2005 to June 10, 2007	Harass Incidental Take issued under project level consultations from June 10, 2005 to June 10, 2007
		2005	2006	2007		
Colorado Plateau	Cibola	19	19	19	0	0
	Kaibab	0**	0**	0**	0	0
Southern Rocky Mountains – NM	Carson	2	2	2	0	0
	Santa Fe	47	47	47	0	0
Basin and Range West	Coronado	107	107	107	0	0
	Gila	0	0	0	0	0
	Prescott	0	0	0	0	0
	Tonto	31	31	31	0	0
Basin and Range East	Cibola	3	3	3	0	0
	Lincoln	139	145	145	1 PAC	0
Upper Gila Mountains	Apache-Sitgreaves	139	140	141	1 PAC	4 PACs
	Cibola	33	33	33	0	0
	Coconino	182	182	183	0	0
	Gila	258	258	258	1 PAC	0
	Kaibab	6	6	6	1 PAC***	1 PAC***
	Prescott	15	15	15	0	0
	Tonto	41	41	41	0	0
TOTAL		1022	1029	1031	4 PACS	5 PACs

* The numbers in this table do not include emergency suppression consultations.

** There are no resident Mexican spotted owls on the Kaibab Plateau (Colorado Plateau RU). Two formal consultations occurred since June 10, 2005; however, they are based on Critical Habitat determinations.

*** One pair of MSO for incidental take; however, it should be noted that the actions leading to take were fuels reduction work performed inside the PAC which followed Recovery Plan guidelines. Three years of surveys to protocol plus a previous 8 years of surveys consisting of 2-4 return visits per season and saturation calling (5 minutes of calling every 0.2 miles along rails within the PAC) have failed to detect a bird in or anywhere near this PAC; the last confirmed report of a MSO in the areas was from 1993-94. FWS records indicate that an owl was heard in the PAC near the ski area in 2005. Follow-up survey efforts to protocol failed to detect a response in that area.

Project Level Consultations

From June 10, 2005 to June 9, 2007, the FS received 13 BO's for project-level consultations involving the MSO.

Table 5 Consultations for MSO by forest with incidental take issued.

FOREST	NLAA	LAA	Incidental Take Issued
Apache-Sitgreaves	12	2	5 Pair
Carson	10	0	0
Cibola	2	0	0
Coconino	8	3	0
Coronado	13	0	0
Gila	47	1	1 pair and/or assoc. juveniles
Kaibab	7	4	1 pair*
Lincoln	4	1	1 pair
Prescott	0	0	0
Santa Fe	24	0	0
Tonto	5	2	0
TOTAL	132	13	7 pair (plus associated juveniles with 1 of these pair)

*Note that the pair of owls that FWS concluded were reasonably certain to be adversely affected does not currently exist nor has a pair ever been detected in or near this PAC. Owls were detected in the area in 1978, 1979, 1983, 1984, 1991, and 1993. The PAC was established in 1995. The rationale provided for incidental take was that the FWS was offering assistance to the FS by providing protection should the birds arrive one day in the future.

The majority (90%) of the project level consultations conducted under the LRMP Programmatic BO have minimized adverse effects and reached NLAA conclusions. Incidental take has been issued for seven PACs of Mexican spotted owls across the Region since June 10, 2005.

Implementation of Terms and Conditions

Within the LRMP BO the following four Terms and Conditions were issued:

1.1 Design projects within the Engineering, Forestry and Forest Health, Fire Management, Lands and Minerals, Rangeland Management, Watershed Management, and Recreation Programs to minimize or eliminate adverse effects to the Mexican spotted owl.

Of the 120 projects requiring consultation since the LRMP BO was issued, only 13 have received formal consultation (BO's), while 132 have minimized effects and received concurrence letters from the FWS.

2.1 Design projects within the Engineering, Forestry and Forest Health, Fire Management, Lands and Minerals, Rangeland Management, Watershed Management, and Recreation Programs to reduce negative effects (direct and indirect) with the goal of implementing projects that will have beneficial, insignificant, or discountable effects within occupied Mexican spotted owl habitat.

See 1.1 above.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and the Mexican spotted owl Recovery Team, and on-going research efforts, monitor Mexican spotted owl

PAC occupancy pursuant to the most recent version of an approved Recovery Plan. This monitoring scheme will assess changes in owl site occupancy rates so that management actions can be adjusted if changes in owl populations occur.

Accomplishments and results of monitoring are displayed in Table 6 & Table 7.

Table 6 Results from Mexican spotted owl monitoring conducted by the FS on NFS lands in New Mexico in 2005, 2006, and 2007

Forest	Year	Total # of PACs	Number of PACs Monitored	% Breeding Success	Number of Fledglings
Carson	2005	2	2	0	0
	2006	2	0	Unknown	Unknown
	2007	2	0	Unknown	Unknown
Cibola	2005	55	20	Unknown	2 Known
	2006	55	20	Unknown	0 Known
	2007	55	22	Unknown	Unknown
Gila	2005	258	83**	36% (30 nests occupied)	Unknown
	2006	258*	20	Unknown	Unknown
	2007	258	***	***	***
Lincoln	2005	139	87	42	36
	2006	145	76	11	8
	2007	145	****	****	****
Santa Fe	2005	47	15	Unknown	Unknown
	2006	47	15	Unknown	Unknown
	2007	47	10	Unknown	Unknown

* An area never surveyed prior to 2006 identified 4 roosting pairs, for which PACS will be established.

** 22 of the 83 territories are historical territories, of which 12 have not been occupied over the last six years of monitoring.

***2007 work is still in the process of being completed, data for this fiscal year will not be available until December 2007.

**** Monitoring reports for 2007 will not be completed until the Fall of 2007 for the Lincoln NF.

In 2005, 475 PACs occurred on New Mexico NFS lands, of which 207 (~43%) were monitored. In 2006, 476 PACs occurred on New Mexico NFS lands, of which 122 (~26%) were monitored. In 2007, 507 PACs occurred on New Mexico NFS lands; however, all the results of monitoring of these PACs were not available at the time of this writing.

Table 7 Results from Mexican spotted owl monitoring conducted by the FS on NFS lands in Arizona in 2005, 2006, and 2007.

Forest	Year	Total # of PACs	Number of PACs Monitored	% Breeding, Successfully Fledged	Number of Fledglings
Apache-Sitgreaves	2005	139	33	18%	7
	2006	140	30	6.5%	31
	2007	141	36	Unknown	Unknown
Coconino	2005	182	29	31%	16
	2006	182	30	17%	9
	2007	183	18	22%	6
Coronado	2005	107	31	32%	19
	2006	107	46	11%	8
	2007	107	36	8%	5
Kaibab	2005	6	3*	Unknown	Unknown
	2006	6	3**	Unknown	Unknown
	2007	6	6***	Unknown	Unknown
Prescott	2005	15	9	Unknown	Unknown
	2006	15	0	Unknown	Unknown
	2007	15	0	Unknown	Unknown
Tonto	2005	72	4	Unknown	0
	2006	72	12	Unknown	2
	2007	72	37	Unknown	Unknown

* Only commonly occupied PACs were monitored and only 1 PAC resulted in a MSO response.

** Only commonly occupied PACs were monitored and only 2 PACs resulted in a MSO response.

*** All Six PACs were monitored and 5 PACs were occupied.

In 2005, 521 PACs occurred on Arizona NFS lands, of which 109 (21%) were monitored. In 2006, 522 PACs occurred on Arizona NFS lands, of which 121 (23%) were monitored. In 2007, 524 PACs occurred on Arizona NFS lands, of which 133 (25%) were monitored.

It should be noted that PACs have been monitored for owl occupancy and not owl reproduction; therefore reproductive success is not accurately reflected in the numbers presented in the tables above. Furthermore, not all identified PACs have been monitored on NFS lands in the Southwestern Region due to lack of funding and personnel.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on the Mexican spotted owls, pursuant to 50 CFR 402.14(i)(3). In combination with T&C 3.1 above, this information will be used to assess when the amount and extent of take is being approached or exceeded....

This annual report fulfills this requirement.

Recovery Actions Implemented

Apache-Sitgreaves: Inventories for Mexican spotted owl are conducted two years prior to projects being implemented. New PACs are established when found. Prescribed burning is

being accomplished to reduce the risk of uncharacteristically large, high severity wildfires in restricted habitat and sometimes within protected habitat.

Carson: Nothing to report.

Cibola: Magdalena Ranger District conducted pre-treatment monitoring on the Ranch Supply prescribed burn according to project specific consultation. The project was designed to reduce fuels and abate fire risk within the Ranch Supply area, including an owl PAC. Inventories or monitoring activities are conducted two years prior to projects being implemented. New PACs are established when found.

Coconino: Pre-project inventories were completed and microhabitat monitoring occurred for several projects.

Coronado: The primary mechanism for species habitat recovery are from fuel reduction projects and fire management plans, including a programmatic wildland fire use amendment to the Coronado LRMP in 2005.

Gila: In 2005, 2006, and 2007 the Gila NF continued to manage natural fire ignitions, when appropriate, as wildland fire use fires with one of the objectives in Mexican spotted owl habitat being to minimize the potential for future high severity, landscape-level fires.

Kaibab: The annual monitoring effort now includes all PACs surveyed to protocol. The project that resulted in take was fuels reduction around the town of Williams. That work was initiated and continues to move forward. No treatments have been done within the PAC to date. Forest health in and around the PAC continues to decline with large areas of overstory mortality due to insects and disease..

Lincoln: Monitoring of Penasco continues, although there have been changes in this monitoring. The pre-commercial treatment has been started for the study and the commercial treatment has been laid out.

Prescott: Nothing to report.

Santa Fe: Nothing to report.

Tonto: Nothing to report.

Issues and Concerns Identified

Most Forests have indicated that personnel and funding levels are not adequate to meet the monitoring requirements set out in Term and Condition 3.1. In many cases, monitoring has either not been accomplished or it has come at the expense of habitat restoration or other management actions that could be accomplished to recover the species. In addition, the incidental take issued in the LRMP BO is difficult to understand at the Forest level. This is because incidental take was issued by recovery unit; however, the amount of take allotted to each

Forest is impossible to ascertain as the current BO is written. The FS would like to see take issued for the Mexican spotted owl, not only by Recovery Unit, but by NF as well. This will make it easier for the individual Forests to understand how much take they are allowed under the LRMP Programmatic BO and to determine if and when that incidental take is exceeded. Furthermore, several Forests think that the 10 percent limit on take should be eliminated to facilitate fuels reductions treatments, which have a long-term benefit to the species from reducing the risk of catastrophic wildfires. Placing limits on incidental take for fuels treatment or habitat restoration projects is only hurting the long term persistence of this species because, under current conditions, PACs or areas around PACs not treated have the potential to be become unsuitable for several decades if high severity fire burns through the PAC. In addition, the ceiling set for take should take into account whether the take was based on harm or harass. Take issued for harm or harassment, particularly “presumptive” take issued for birds that do not occur in the action area, such as has occurred on the Kaibab, should not count the same as take issued in instances of true harm or harassment in occupied PACs.

Another issue that has been identified when reviewing BOs issued since the June 10, 2005 LRMP BO is that it appears that the FWS is including fire suppression emergency consultations under the take assigned in the LRMP BO. Fire suppression activities were not included in the LRMP BO and take associated with these emergency actions should be deducted from the take allocated in the LRMP BO. It is suggested that the FS and FWS work together to address these issues. At this time the FS and FWS continue to work at the Regional office and field levels to resolve the issue identified. It is anticipated that changes will be made through amending the BO.

Southwestern willow flycatcher

The southwestern willow flycatcher (SWWF) is currently found nesting on four NFs in the Southwestern Region: Apache-Sitgreaves, Carson, Gila, and Tonto. Designated critical habitat occurs on the Apache-Sitgreaves, Carson, Coconino, Gila, Prescott, Santa Fe, and Tonto NFs.

Incidental Take Statement Evaluation

Within the 2005 LRMP BO, the FWS determined that incidental take was reasonably certain to occur on the Apache-Sitgreaves NF from the Lands and Minerals Program and the Wildlife Program; on the Carson NF from the Engineering Program; and the Gila NF and Tonto NFs from the Rangeland Management Program. Incidental take is difficult to quantify; therefore, the FWS concluded that: “incidental take of SWWF will be considered to be exceeded with the loss of one “site” on the Gila NF or the Tonto NF as the result of the proposed action, without a “site” being replaced. Table 8 below displays results from monitoring that has been conducted since 2005 for territories located on NFS lands in the Southwestern Region.

Table 8 Number of breeding territories an number of territories monitored on NFS lands in the Southwestern Region since June 10, 2005.

Forest	Year	Total Breeding territories	# of Territories Monitored
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Forest	Year	Total Breeding territories	# of Territories Monitored
Apache-Sitgreaves	2005	3	3
	2006	3	3
	2007	Unknown*	Unknown*
Carson	2005	1	1
	2006	1	1
	2007	2	2
Cibola	2005	0**	1
	2006	0**	1
	2007	0**	1
Gila	2005	4	4
	2006	6	6
	2007	***	***
Tonto	2005	Roosevelt: 153 Horseshoe: 23	110 18
	2006	Roosevelt: 153 Horseshoe: 18	110 18
	2007	*	*

* Unknown = no surveys conducted for the year or has not been reported yet.

**The Cibola monitors one territory to protocol on Bluewater Creek on the Mount Taylor Ranger District. This territory has been unoccupied since 1994. Another potential habitat area on Tajique Creek, Mountainair Ranger District is also surveyed to protocol each year, with no birds found so far.

***2007 work is still in the process of being completed, data for this fiscal year will not be available until December 2007.

According to the information provided above, the number of territories/sites has remained stable since the issuance of the LRMP BO. In addition to those territories above, on the Carson NF in 2006, a single adult was located on the Tres Piedras Ranger District at Stewart Meadows. Furthermore, in 2007, there was a first for the Gila NF. A total of four pairs and their associated nests were located on the Gila, one pair along Whitewater creek near the Glenwood Fish Hatchery site and three pairs along the San Francisco River at the Keller Canyon site in Catron County.

Project Level Consultations

Since June 10, 2005, the FS has received 11 concurrence letters (NLAA) from the FWS for the SWWF (Apache-Sitgreaves – 4; Carson – 0; Gila – 7 and Tonto – 0). The Apache-Sitgreaves conducted formal consultation with the FWS and a final BO for adverse effects to SWWF critical habitat was issued in early March, 2007.

Implementation of Terms and Conditions

Seven Terms and Conditions were issued by the FWS in their June 10, 2005 BO for the SWWF:

- 1.1 Manage riparian areas to eliminate direct effects and minimize indirect effects to the SWWF in order to maintain flycatcher populations on NFS lands overtime.

With the exception of portions of the Voigt allotment on the Apache-Sitgreaves NF, all occupied and suitable riparian habitat has been excluded from livestock grazing, to eliminate direct effects and minimize indirect effects. In the case of the Voigt allotment on the Apache-Sitgreaves NF, the pasture rotation was changed for the 2007 AOI to exclude livestock grazing in critical habitat. However, a few stray livestock were found in the pasture with critical habitat. The Forest has agreed to fence off all critical habitat on the allotment starting this fall with the best habitat first (which is not currently suitable). Overtime (within the next 2 years), all of the critical habitat in the Voigt allotment will be fenced off.

1.2 Design projects within the Engineering, Forestry and Forest Health, Lands and Minerals, Rangeland Management, and Wildlife Programs to minimize or eliminate adverse effects to the SWWF.

In 2005 and 2006 one formal consultation was completed for SWWF critical habitat on the Apache-Sitgreaves NF. In 2007, the AOI specified that no livestock grazing occur in critical habitat. Construction will begin in 2007 to fence off critical habitat, which is expected to be completed in 2008.

1.3 Follow FWS regional guidance criteria issued by the FWS for pesticide use in occupied SWWF habitat.

On the Apache-Sitgreaves, consultation has been completed on a Noxious Weed Plan following guidance criteria issued by the FWS for insecticide, herbicide, or pesticide use. The Gila and the Tonto have complied with this T&C as well.

2.1 Design projects within the Engineering, Forestry and Forest Health, Lands and Minerals, Rangeland Management, and Wildlife Programs to reduce negative effects (direct and indirect) with the goal of implementing projects that will have beneficial, insignificant, or discountable effects within occupied flycatcher habitat.

See 1.2 above.

2.2 Continue existing exclusions of livestock grazing in flycatcher habitat.

Livestock grazing exclusions continue in flycatcher habitat. The Apache-Sitgreaves excluded critical habitat from the pasture rotation in the Voight Allotment and will be constructing fences to exclude livestock grazing in critical habitat on the Voigt allotment over the next two years. This year, the best habitat (although not currently suitable) will be fenced, with the remaining finished in the next two years.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor SWWF sites and associated territories on NFS lands.

See Table 8 above. It should be noted; however, that the Tonto NF has indicated that monitoring effort will be reduced in 2007. In the past the Bureau of Reclamation has funded the monitoring which has cost in excess of \$700,000. Due to problems using a new hiring system, the ASNF was not able to monitor SWWF sites in 2007.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on SWWF....

No incidental take for the species has been issued since the June 10, 2005 BO.

Recovery Actions Implemented

Apache-Sitgreaves: Brown-headed cowbird trapping continues annually at known breeding sites in the Greer area and in the Alpine administrative use horse pasture. In addition, the willow area above Nelson Reservoir is inaccessible to all ungulates, as is the Alpine Horse Pasture. Furthermore, an elk enclosure is being constructed along one mile of critical habitat by the Forest on the East Fork of the Little Colorado river with Federal Highway Administration funds.

Carson: The Carson continues to improve the riparian condition at Stewart Meadows (one adult located here in 2006, see above) to improve the site as a future nesting site. The area is also excluded from livestock grazing.

Cibola: The Bluewater (existing SWWF territory) and Tajiue (potential SWWF habitat) riparian areas continue to be managed to eliminate direct effects and minimize indirect effects to the species in order to maintain flycatcher populations. Riparian enclosures are maintained to keep livestock out of the territories and discourage potential cowbird parasitism.

Coconino: The Forest has surveyed suitable and potential habitat in 2005, 2006, and 2007. One territorial, non-nesting male was detected at the Stagesop survey site in 2007.

Gila: GeoMarine, and other contractors have done surveys on the Gila (San Francisco, upper Gila River, Whitewater Creek) and in 2007 the initial data indicate that four additional pairs have been documented in the area (three on NFS lands, and one adjacent to the Forest).

Tonto: Nothing additional to report.

Issues and Concerns Identified

Beginning in 2007, Roosevelt Lake SWWF monitoring will be the sole responsibility of the FS, with no outside funding sources. In the past, BOR has funded the monitoring which has cost in excess of \$700,000. At current funding levels, the FS likely will not be able to continue to monitor this site at past levels. Therefore, it will be difficult to comply with Term and Condition 3.1 above in the future. Furthermore, the Incidental Take Statement assumes that monitoring will occur and be reported annually to determine if incidental take has been exceeded. Issuing take at the "site" level is problematic and often not related to activities implemented by the LRMP, but rather water levels and how that impacts existing habitat. At this time the two agencies have come to resolution on this issue and changes are anticipated through an amended BO.

One other issue has come to our attention for the SWWF. On page 193 of the LRMP BO, the FWS states that critical habitat has been proposed on the Cibola NF. Critical habitat has now been designated; however, it was **not** designated on the Cibola. The agencies have agreed that this will be corrected in an amended LRMP BO.

Amphibians and Reptiles

New Mexico Ridge-nosed Rattlesnake

The New Mexico ridge-nosed rattlesnake is found on NFS lands only on the Coronado NF within the Peloncillo Mountains of Arizona. This is one of only three populations of this species in the U.S. The other two populations are located in the Animas and Sierra San Luis Mountains. The Animas Mountains are privately owned, access to habitat areas is strictly controlled, and the population there is now protected from collection.

Incidental Take Statement Evaluation

The FWS has determined that the incidental take of the New Mexico ridge nosed rattlesnake will be difficult to detect for the following reasons: the subspecies has small body size and cryptic coloration ... and the ability to detect a dead or injured individual is difficult. Therefore, incidental take was quantified by the number of individuals taken or by using a habitat surrogate. The FWS anticipated the following incidental take for the species:

1. One New Mexico ridge-nosed rattlesnake will be killed or injured as a result of the proposed action; or
2. Up to 2 percent of delineated core habitat ranked as 3 or 4 (Holycross and Smith 2001), where the rattlesnakes are known to occur; or,
3. Up to 2 percent of delineated core habitats ranked as 3 or 4 (Holycross and Smith 2001), where the rattlesnake is reasonable certain to occur, will be affected as a result of the proposed action.

To date, there have been no effective methods developed for surveying the New Mexico ridge-nosed rattlesnake. Current methods take 30-50 person days to locate a single snake, so surveying and monitoring is not cost effective. No surveying or monitoring has been conducted since the June 10, 2005 BO; however, no projects have been implemented in occupied habitat either. Furthermore, the percentage of delineated core habitat ranked as 3 or 4 (Holycross and Smith 2001) where the rattlesnake is known to occur or where the species is reasonably certain to occur is not known.

Project Level Consultations

There have been no project level consultations addressing effects to the New Mexico ridge-nosed rattlesnake since the June 10, 2005 LRMP BO was issued.

Terms and Conditions

Four Terms and Conditions were identified in the LRMP BO:

1.1 Design projects within the Engineering (i.e. road management) and Forestry and Forest Health (i.e., use of chemicals) Programs to minimize or eliminate adverse effects to the New Mexico ridge-nosed rattlesnake.

Site-specific projects are being implemented in a manner compliant with this Term and Condition.

2.1 Design projects in occupied New Mexico ridge-nosed rattlesnake habitat to incorporate the appropriate components of the New Mexico Ridge-nosed rattlesnake Recovery Plan, with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the rattlesnake and its habitat.

Site-specific projects are being implemented in a manner compliant with this Term and Condition.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor New Mexico ridge-nosed rattlesnake habitat on the Coronado NF.

Budget limitations have precluded current monitoring efforts but the Forest is always looking for opportunities to cooperate with other entities.

3.3 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on New Mexico ridge-nosed rattlesnake....

Site-specific projects are being implemented in a manner compliant with this Term and Condition.

Recovery Actions Implemented

The Coronado NF Peloncillo Programmatic Fire Plan includes fuel treatments and wildland fire use, and is probably the Forests greatest tool to combat the biggest threat to this species – catastrophic wildfire. The Forest has been working cooperatively with researchers for many years to balance short-term affects and long-term benefits to the species. There have been prescribed burns in the Peloncillo Mountains in the past that have minimized the effects of burning to this rattlesnake.

Issues and Concerns Identified

The issue of conducting surveys and monitoring for this species is of concern. Due to the fact that it is extremely difficult to survey and find the species, as a result of its secretive behavior and cryptic coloration, the Forest is unable to expend the time and dollars that is required to conduct surveys on any regular basis. Therefore, the monitoring Term and Condition in the LRMP BO needs to be revisited. Furthermore, the Incidental Take Statement allows a 2 percent loss of delineated core habitat where the species is known to occur and where the species is reasonable certain to occur. The Coronado NF does not have information regarding how much habitat is delineated core habitat; however, once again, there have been no projects within habitat for the species which has resulted in adverse effects. The FS and FWS have reached agreement on Term and Condition 3.1 and have also agreed to work with the FWS species lead and others to revise the incidental take statement in an amended BO.

Sonora tiger salamander

Of the 40 ponds known currently to be occupied (within the last few years), 38 (95%) are located on the Coronado NF. Historically this species inhabited cienegas, springs and backwaters in the San Rafael Valley. Today manmade livestock tanks, ponds, and impounded cienegas provide the only remaining breeding habitat.

Incidental Take Statement Evaluation

In their June 10, 2005 BO, the FWS defined incidental take in terms of the condition and amount of Sonora tiger salamander habitat, and have used this surrogate measure to identify when take is exceeded. The FWS concluded that the incidental take of the Sonora tiger salamander would be considered exceeded if the number of occupied ponds on the Coronado NF falls below 38 for a period of two consecutive years as the result of the proposed action.

Below (Table 9) are the results of surveys conducted since the issuance of the June 10, 2005 LRMP BO:

Table 9 Results of surveys conducted for the Sonora tiger salamander on the Coronado NF.

	2005	2006	2007
Total # of occupied sites (ponds/tanks)	7 known	18 known	21 known
# of Ponds/Tanks surveyed	15	80	81

It should be noted, that because most surveys are done in winter and spring, the sample of sites for 2005 is underrepresented. Also, there are sampling issues that will not allow for reliable inter-year comparisons. For example, sites selected for sampling are subsets of those sites that have the potential to be occupied. Also, salamanders are mobile, and metamorphs can move between ponds during the right environmental conditions. This subspecies and introduced subspecies of tiger salamanders are difficult to differentiate phenotypically, and genetic testing is required to differentiate the two – plus, they hybridize, so the actual number of occupied sites of pure strains cannot be known without further work beyond the scope of the usual survey methods. This situation creates a dilemma when it comes to determining if incidental take, as it was issued in the LRMP BO, has been exceeded. It should be noted that in 2007, the Forest received survey information on this species from AGFD (and some FS survey information), but these reports do not distinguish between on and off Forest occurrences (as for previous years). The 2007 survey data includes results of January to March 2007 surveys from AGFD (positive in 15/56 sites), May surveys from AGFD (positive in 60/20 sites), and the cleanout of five stock tanks by Sierra Vista Ranger District biologist (positive in 0/5 sites).

According to the figures presented in the table above, it would appear that the Forest has exceeded the amount of incidental take issued; however, because of the issues identified above, and the fact that there have been no site-specific projects implemented by the Forest since the issuance of the LRMP BO that have resulted in incidental take to the species, we do not believe that incidental take has been exceeded as the result of the proposed action.

Project Level Consultations

There have been four formal consultations involving the Sonora tiger salamander since June 2005. None of these consultations have resulted in incidental take being issued for the species.

Implementation of Terms and Conditions

Within the June 10, 2005 BO, six Terms and Conditions were issued:

1.1 Design fire use, chemical use, range management, and recreational projects to minimize or eliminate adverse effects to the Sonora tiger salamander.

Projects have been designed to minimize adverse effects. Of the four BO's issued by the FWS for this species during the reporting period, none have resulted in the issuance of incidental take.

1.2 Implement educational programs for recreational users discouraging the use of non-native salamanders and fishes in Sonora tiger salamander sites.

The AGFD has designed a brochure for conservation of this species as well as a brochure that addresses the problems with introducing non-native plants and animals. The Forest will make this brochure available to the public.

2.1 Continue implementation of the "Stockpond Management and Maintenance Plan for the Sonora tiger salamander in the San Rafael Valley and Surrounding Areas" as developed in the FWS's December 19, 1997, subsequent BOs, and as portrayed in Attachment 2 of the Recovery Plan.

The stock pond management plans continues to be implemented as described in this Term and Condition.

2.2 Design projects in occupied Sonora tiger salamander habitat to incorporate the appropriate components of the Sonora tiger salamander Recovery Plan with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the salamander and its habitat.

Projects are being designed to incorporate recommendations found in the Recovery Plan. Projects are also being designed to minimize effects.

3.1 In cooperation with state conservation agencies, FS research stations, and ongoing research efforts, monitor populations of Sonora tiger salamanders on the Coronado NF.

Monitoring is being accomplished and the results are reported to the FWS Tucson Field Office for review and discussion during the Coronado NF/FWS annual coordination

meeting; however, as noted above the actual number of occupied sites of pure strains cannot be known without further work beyond the scope of the usual survey methods.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Sonora tiger salamander....

To date there have been no site-specific projects that have resulted in the issuance of incidental take. However, a partial reinitiation of the continuation of livestock grazing occurred in May 2006 on the HQ, Campini, and Blacktail grazing allotments. The Biological Opinion concluded that the effects and, therefore, the amount and extent of incidental take remained the same as that issued in the previous grazing opinion in 2002. In addition, this report satisfies this T&C.

Recovery Actions Implemented

In 2006, the Coronado NF worked cooperatively with FWS and AGFD to remove nonnative fish and amphibians from three stock tanks that currently support or had the potential to support the Sonora tiger salamander if the exotic species were effectively controlled. The control effort was moderately successful, with bullfrogs reoccupying the tanks. The Forest has been cooperatively planning to restore Scotia Canyon in order to re-introduce Chiricahua leopard frogs and Sonora tiger salamanders. In 2007, the Scotia Canyon restoration project was approved and implementation is expected to be completed by the end of fiscal year 07. However, salamanders cannot be reintroduced until bullfrogs are eradicated or maintained at an acceptable level. This will be the first attempt to reintroduce this taxon into a natural system.

Issues and Concerns Identified

As described above, there are concerns regarding the required monitoring for this species. There are sampling issues that will not allow for reliable inter-year comparisons and not all occupied sites are surveyed annually due to funding and time constraints. Furthermore, the actual number of occupied sites of pure strains cannot be known without further work beyond the scope of the usual survey methods, as this subspecies and introduced subspecies of tiger salamanders are difficult to differentiate phenotypically, requiring genetic testing to differentiate the two. This makes it difficult to determine if incidental take has been exceeded. After working with the FWS lead for this species, it has been determined that these issues are not significant to warrant change at this time. The two agencies will continue to work on these issues and make changes to the BO in the future.

Chiricahua leopard frog

The Chiricahua leopard frog is known to occur on the Apache-Sitgreaves, Coconino(although likely extirpated in 2007 due to drought), Coronado, Gila and Tonto NFs. There is an additional population site just outside the boundaries of the Cibola NF. The current status of this species is precarious. Populations have declined and continue to decline, primarily as a result of chytrid fungus, non-native species, and drought conditions that have occurred in the southwest over the last few years.

Incidental Take Statement Evaluation

The FWS concluded in their 2005 BO, that incidental take was reasonably certain to occur and concluded that incidental take of the species would be considered exceeded if, after a period of two consecutive years, there is a decrease in the total number of occupied population sites on NFS lands as a result of the proposed action. The baseline for this determination will be the 2004 survey season data which included 49 extant population sites. Results for 2004, 2005, and 2006 are displayed in Table 10 below:

Table 10 Extant populations of Chiricahua leopard frog on NFS lands in the Southwestern Region in 2004 - 2007.

FOREST	2004	2005	2006	2007
APACHE-SITGREAVES				
Alpine	2	2 ²	2 ²	2 ²
Black Mesa	0	0	0	0
Clifton	4 ¹	3	3	3
Lakeside	0	0	0	0
Springerville	0	0	0	0
COCONINO				
Mogollon rim	0	0	0	0
Mormon	0	0	0	0
Lk/Peaks	2	2	2	2 ³
Red Rock				
CORONADO*				
Douglas	1	2	2	4
Nogales	11	3	4	2
Safford	1	1	1	0
Santa Catalina (outside natural range)	N/A	N/A	N/A	N/A
Sierra Vista	9	0	0	0
GILA				
Black Range	2	Unknown	2	**
Glenwood Reserve	1 7 ⁴	Unknown Unknown	Unknown 4	
Quemado	2	2	2	
Wilderness	2	Unknown	2	
TONTO				
Cave Creek	0	0	0	0
Globe	0	0	0	0
Mesa	0	0	0	0
Payson	1	1	1	1 ⁵

FOREST	2004	2005	2006	2007
Pleasant Valley	4	4	6 (2 reintro's	5 ⁶
Tonto Basin	0	0	'06) 0	0

¹This figure, as presented in the BO may be in error, the Forest indicates there have been three existing sites not four.

²This is an educated guess on the Alpine for 2005 through 2007 as adequate surveys have not been conducted.

³Based on surveys conducted by FWS and AGFD so far in 2007, frogs have declined and may no longer exist at one or both of these sites (S. Hedwall, pers. comm. to C. Overby).

⁴This figure may be in error due to lack of sufficient data. The Forest indicates that the status of these populations were not accurately known, indicating that the actual baseline number in the BO may be in error.

⁵No frogs detected in 2007.

⁶One of the reintroductions in 2006 was successful; the other was not.

* In 2007, there were many surveys conducted, primarily by AGFD personnel. Below is an EMA-specific summary for surveys done between 10 June 2006 and 10 June 2007. **Santa Rita EMA:** Gardner Canyon, Sawmill Canyon, Tunnel Spring, Big Casa Blanca Canyon, and Cave Creek were surveyed informally, during surveys mostly targeting other species. No Chiricahua Leopard Frogs were found. Twelve localities were surveyed specifically for frogs on July 12-13, 2006. Chiricahua Leopard Frogs were found at one site—the only known locality. Note that these latter surveys were reported in the 2006 LRMP BO Annual Report, but the surveys were actually surveyed *after* the 10 June 2006 cutoff. **Galiuro EMA:** The last known locality in the Galiuros, Oak Creek (the northern one) was surveyed on March 29, April 13, 4/25, and 6/27. No Chiricahua Leopard Frogs were found, suggesting the population has crashed and the species may be extirpated in the Galiuros. However, a few frogs were recently found nearby on State land. They are expected to be salvaged for captive breeding with progeny likely to be used to restock sites in the Galiuro Mountains. An additional 7 localities were searched for frogs by AGFD and TNC on 25-27 June 2007 (hence, after the cutoff period for 2007, but this information is recorded here for the 2008 report). These sites were also surveyed as possible relocation sites, but no frogs were found; however, there does seem to be some good habitat. Lowland Leopard Frogs were found at a couple of the sites, but these may not have been on-Forest. **Tumacacori EMA:** Chiricahua Leopard Frogs were found at Summit Tank in the Pajarito Mountains in late February, and have been seen on several occasions. This is encouraging, as the species has not been documented there for at least two years. Nearby Peña Blanca Spring and the recently developed Rudy Ronquillo Pond at the springs have not had any leopard frog sightings for a couple of years, but we continue to monitor fairly frequently. We will likely reintroduce leopard frogs (either Chiricahua or Lowland) in 2008 or 2009 to the spring and pond site. The pond may not provide suitable habitat because it was recently colonized by bull frogs and its proximity to Peña Blanca Lake. However, the lake may be drained and dredged to remove contaminated sediments. This may provide an opportunity to eliminate bull frogs from Peña Blanca Lake. We have not received any reports from other sites, including the usually robust Sycamore Canyon site as of the time of this writing (7 August 2007). However, the FWS reports that the frogs are alive and well. On 24 May 2007 AGFD surveyed Alamo Canyon for possible fish introductions, and numerous lowland Leopard Frogs were seen and swabbed for chytrid fungus. **Chiricahua EMA:** There had been no reports of Chiricahua Leopard Frogs in the Chiricahuas (the type locality) since 2003, when there were 2 reports of frogs in Rucker Canyon. However, the Chiricahuas have not been well surveyed until 2007. AGFD surveyed 15 sites from 5-7 June 2007. Rucker Canyon was surveyed three times, including one night survey. No Chiricahua Leopard Frogs were found in the Chiricahuas, suggesting the species has been extirpated from its type locality. AGFD reported that most localities did not look like good frog habitat. **Dragoon EMA:** There were no reports of surveys between 10 June 2006 and 10 June 2007, but 18 July 2007 surveys yielded Chiricahua Leopard Frogs in Middlemarch Mine Shaft and Shaw Tank (reintroduction site). Frogs were placed in Halfmoon Tank in 2007, but the tank dried and the re-establishment failed. Eight additional sites were surveyed, but had no frogs. **Huachuca EMA:** This only refers to surveys done in the Canelo Hills, as the Huachuclas, proper (at least the east side) have frogs assignable to the Ramsey Canyon Leopard Frog taxon, as recognized by the FWS. These sites may be on or off-Forest, as the reports do not differentiate, but all sites are at least near the Forest boundary. Post Canyon, Welch Spring, and Freeman Spring were surveyed on 18 April 2007 for fishes (and cursorily for frogs). No frogs were reported. AGFD surveyed for fishes (and cursorily for frogs) in 10 April 2007. No frogs were seen.

**2007 work is still in the process of being completed, data for this fiscal year will not be available until December 2007.

For the Coronado, the information in the table above was put together by the Supervisor's Office, District Biologists, Mike Sredl from the AGFD (Recovery Team leader), and Jim Rorabaugh of FWS in Tucson. Due to insufficient funds and personnel, monitoring has not been conducted according to protocol on all possible sites on the Coronado. This is true for the other Forests as well. On the Coronado, monitoring has only been conducted where presence has been confirmed in the past.

Based on the information above, it would appear that take has been exceeded for the Chiricahua leopard frog. However, it is unclear that the loss of populations since 2005 is the result of FS actions for the following reasons:

1. The Incidental Take statement may not be adequately tied to the effects of the proposed action and may wrongly implicate the LRMPs as causing extirpation of populations;
2. It appears that there may be some errors in the baseline numbers used in the BO (Apache-Sitgreaves and Gila);
3. On the Coronado NF, a number of populations appear to be gone; however, there have been no site-specific projects that have resulted in incidental take for this species. This suggests that chytrid fungus, drought, and non-native species are likely responsible for the declines observed; and,
4. On the Gila, population numbers on the Reserve Ranger district have declined. In February 2007, the Gila NF notified the New Mexico FWS Ecological Services Field office that three of the occupied sites identified on the Negrito/Yeguas allotment were not occupied during 2006 surveys. The FWS immediately responded by informing the FS on February 8, 2006 that take had been exceeded. However, for the following reasons, the FS does not believe that there is sufficient information to assume that incidental take has been exceeded as the result of the proposed action:
 - a. FS biologists believe that these extirpations pre-dated both the Negrito/Yeguas BO and the LRMP BO. The baseline number of populations at the time of the issuance of the LRMP BO was assumed based on outdated surveys (i.e., did not include information from surveys in 2005);
 - b. Only one year of surveys since the issuance of the BO have been conducted on the allotment. The incidental take statement in the LRMP BO is based on two years of surveys (i.e., 2006 and 2007).
 - c. Metapopulation dynamics is not incorporated into the conclusion that incidental take has been exceeded. The populations that are believed to be extirpated occur in stock tanks. These types of aquatic environments are unstable and typically experience relatively frequent invasion, extirpation, and subsequent re-occupation from a nearby source population. This process of expansion and contraction of a series of interacting populations is termed a metapopulation in the Recovery Plan. The stock ponds which appear to have lost populations are part of a metapopulation that is connected to source populations in Negrito Creek, Tularosa River, and Deep Creek; and,
 - d. All of the Terms and Conditions for both BO's (Negrito/Yeguas and LRMP) have been fulfilled by the Gila NF. The District has fenced all reaches of Negrito

Creek with occupied habitat, and a portion of all occupied tanks. Actually, a greater portion of all occupied tanks were fenced than was recommended by the FWS in their Negrito/Yeguas BO.

Based on this information, it is suggested that the FS and FWS work cooperatively to address the issues outlined above.

Project Level Consultations

Project level consultations are listed in Table 11 below by Forest:

Table 11 Project-level consultations for the Chiricahua leopard frog since June 10, 2005.

FOREST	NLAA	LAA	Incidental Take Issued
Apache-Sitgreaves	11	1 another 1 pending	0
Coconino	1	0	0
Coronado	9	11	0
Gila	38	1	1 occupied site*
Tonto	8	2	0
TOTAL	67	15	1*

*Incidental take statement reads as follows: Incidental take will be considered exceeded if trampling results in the direct mortality or injury of more than 2 adult frogs, 2 juveniles, 5 tadpoles, or any egg masses, at any one location. Incidental take will be exceeded if more than one frog population is extirpated due to chytrid.

As indicated in the table above, although there have been 15 formal consultations since the issuance of the LRMP BO; however, incidental take has only been issued for one occupied site.

Implementation of Conservation Measures

As a result of the current status of this species, the FS and FWS jointly developed a set of Conservation Measures for the Chiricahua leopard frog which became part of the proposed action under consultation. The conservation measures have been implemented by National Forest (NF) as follows:

Conservation Measure #1: Design projects in occupied Chiricahua leopard frog habitat on NFS lands which address the appropriate components of the Chiricahua leopard frog recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to Chiricahua leopard frog.

Out of the 82 projects that have required consultation since 2005, 15 have resulted in adverse effects. Incidental take has been issued for only one of these 15 projects. One other project is awaiting a final BO in which additional take may be issued.

Of the 13 projects on the Apache-Sitgreaves NF since the issuance of the LRMP BO, 11 have minimized or eliminated effects. Two projects have been determined to likely result in adverse effects, 1 BO has been issued; however no incidental take was issued in the Opinion. The Forest

is awaiting a second BO from the FWS at this time. On the Coconino all projects involving the Chiricahua leopard frog have minimized or eliminated effects. There have been 20 projects on the Coronado NF that have required consultation for the species. Nine were NLAA, eleven were LAA; however, no take was issued in any of the BO's issued. All but one project on the Gila NF, have essentially eliminated adverse affects to the Chiricahua leopard frog, and all projects on the Tonto NF have minimized or eliminated adverse affects to the Chiricahua leopard frog. The one formal consultation on the Gila NF incorporated all recommendations by the FWS to minimize effects to the Chiricahua leopard frog. Additional measures were implemented by the Forest and the Permittee to minimize the potential effects as well.

The Clifton RD, ASNF, has not been able to meet Conservation Measure #1 for Chiricahua leopard frog on a grazing allotment due to a lack of surveys and an inability to exclude livestock grazing from all potentially suitable riparian areas on the interior of the allotment. This issue is likely to persist into fiscal year 2008. The District will likely not be able to survey all suitable habitats to protocol nor protect all interior suitable riparian habitat that livestock may access.

Conservation Measure #2: Over the next five years, cooperate with state game and fish agencies, other federal agencies, FS research stations, FWS, and others (universities, etc.) to access and prioritize habitat for potential Chiricahua leopard frog re-introduction. Cooperatively document the result in an annual report to FWS and to the extent feasible within the mission and capabilities of the FS, assist with any Chiricahua leopard frog re-introduction efforts.

Regional Office: The Threatened, Endangered, and Sensitive Species Program of the Southwestern Region (USDA FS) has taken the lead in organizing and hosting Chiricahua leopard frog conservation coordination meetings. The team of agency personnel and other interested parties established several workgroups to address various aspects of protecting populations, identifying information needs, information access, seeking funding and resources, establishing partnerships, and other tasks.

Apache-Sitgreaves: The Forest annually reports their survey findings to the FWS. The Black Mesa and Alpine Ranger Districts have coordinated with AGFD to identify potential habitat for re-introduction and have presented this information to the State and FWS at recent meetings.

Coconino: The Forest has worked with the FWS and the AGFD to identify and prioritize habitat (tanks) for reintroduction. The FWS removed frogs from Sycamore Basin tank for head starting purposes. A couple of small egg masses were produced in 2007 and a small population still is present at the Phoenix Zoo. The Forest provided a letter of support to AGFD dated April 9, 2007 for reestablishing and augmenting Chiricahua leopard frogs in the Buckskin Hills area.

Coronado: The Coronado assists AGFD in surveys and they conduct some of their own. AGFD has captured some frogs from the Santa Rita population for a captive breeding program at the Arizona Sonora Desert Museum. Additionally, in an effort to secure/re-establish Chiricahua leopard frogs in the Dragoon Mountains, in which eggs were taken and successfully produced young, frogs were then released into another location in the Dragoons.

Gila: The Gila NF has been an active participant in the Chiricahua leopard frog Multi-Agency Conservation Team that is being led by the FS Regional Office. The Forest also expects to be an active participant in any re-introductions recommended by this Team.

Tonto: In 2005, a re-introduction into Bottle Spring was accomplished. In 2006, several recovery projects were developed in coordination with the AGFD, FWS and the Phoenix Zoo. See the Recovery Actions Implemented section below for a full description of the work that has been accomplished on the Tonto NF.

Conservation Measure #3: Implement, as appropriate, the recommendations to minimize the effects of stock pond management and maintenance identified in the final recovery plan for the Chiricahua leopard frog.

On the Apache-Sitgreaves stock tanks cleared for maintenance are usually dry, have little or no cover, are surveyed with negative result (absence), and have increased amounts of sediment. They conduct one night-time or two day-time surveys which equal a complete survey. On the Coconino, various stock tanks have been treated to remove nonnative fish, several have been deepened, and several others have had treatments to reduce sedimentation. The remaining Forests with Chiricahua leopard frog habitat are also implementing these recommendations. See Recovery Actions Implemented section below for further details.

Conservation Measure #4: Continue to implement the standardized interagency monitoring protocol for Chiricahua leopard frogs.

Apache-Sitgreaves, Coconino, Coronado, Gila, and Tonto: All Forests are following the standardized interagency monitoring protocol for the species. The Coronado has reported that, due to inadequate funding, the formal monitoring protocol is not always followed, with shortened versions being substituted; however, a letter (July 2007) was sent by the Coronado to all Forest biologists, AGFD, NMDFG and the FWS requesting that all follow the formal monitoring protocol whenever possible so that when the Forest reports survey results they correspond to formal protocol surveys.

Conservation Measure #5: The long-term benefits directly attributable to wildland fire use for resource benefits, is the reduction of catastrophic fire. This is very significant in goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in GIS layers on each NF in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds. Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.

b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed: for example, spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, avoiding mechanical and chemical measures within the riparian corridor, etc. During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.

c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities/colleges, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

Apache-Sitgreaves: The Apache-Sitgreaves used prescribed burning to reduce catastrophic wildfires. Best Management Practices (BMPs) are implemented to minimize soil and ash movement. The Forest has followed subparts *a* and *b* above. The Forest has access to species distribution maps. Districts also apply mitigation measures for species protection during the development of fire use plans. Part *c* above, has not been completed by the Apache-Sitgreaves, but the Forest is currently having discussions with AGFD for contingency plans. On the Clifton Ranger District, an evacuation plan was set into place with coordination through Jim Rorabaugh, FWS and Mike Sredl, AGFD for the three known populations on the District.

Coconino: The GIS layer has not been completed; however, the locations of existing populations are known. Furthermore, there have been no Wildland Fire Use Fires in the areas of occupied or recently occupied habitat since June 2005.

Coronado: The Forest has worked with the FWS and come up with mutually acceptable conservation measures to be used during wildland fire use. The Forest meets annually with the FWS, the most recent being in March, 2007 to discuss this and other subjects. Financial concerns limit the Forests ability to be more pro-active in providing holding sites/captive rearing facilities for rescued populations at this time.

Gila: The Gila NF maintains current distribution GIS layers for all listed species on the Forest and this information is used to guide fire use mitigation to avoid or minimize the effect of these fires on listed species. In the spring of 2005, Fire use operational plans were developed on each District and these plans are reviewed and updated prior to each fire season. The Fire use operational plans are followed during every fire use event. A FS biologist, for the appropriate species, is consulted prior to determining how to manage all natural fire ignitions that are allowed to burn under a fire use scenario. Furthermore, the Gila is an active participant in the Chiricahua leopard frog Multi-Agency Conservation Team which has started to develop these contingency plans.

Tonto: The Tonto has GIS files identifying the occupied frog sites and are currently updating these to include the places where they introduced frogs. Furthermore, no wildland fire use fire was used in Chiricahua leopard frog habitat on the Tonto.

Implementation of Terms and Conditions

There were nine T&Cs issued for the Chiricahua leopard frog in the June 10, 2005 BO. The T&Cs and how they have been accomplished are listed below:

1.1. Where feasible, all equipment associated with authorized and permitted use will be properly sterilized between aquatic sites, by completely drying or treating with a 10% bleach or 1% Quat 128[®] solution, in order to reduce the spread of chytrids.

On the Apache-Sitgreaves all equipment associated with FS use is properly sterilized following the above guidelines. This T&C has also been added to all applicable term grazing permits on the Alpine Ranger District as well. On the Coconino, grazing has occurred on the Fossil Creek allotment; however, there have been no associated equipment use in areas occupied by the frog. This T&C is implemented on the Coronado and Tonto as well. The Gila NF has not authorized equipment use in or directly adjacent to occupied Chiricahua leopard frog sites that would have the potential to carry contaminated mud or water to the site

1.2 Develop contingency plans in cooperation with FWS, other federal and state agencies, and others to preserve, rescue, and secure populations in imminent threat of localized extirpation.

On the Clifton Ranger District of the Apache-Sitgreaves NF an evacuation plan was set into place with coordination through Jim Rorabaugh, FWS and Mike Sredl, AGFD, for the three known populations. The Forest still needs to develop plans for the other two occupied sites on the Forest. On the Coconino, a specific contingency plan has not been developed. In October 2005, four frogs were salvaged from the Sycamore Basin tank and taken to the Phoenix zoo by the FWS. The Coronado NF has contingency plans and works closely with the FWS regarding any rescue operations. The Gila NF is an active participant in the Chiricahua leopard frog Conservation Team, which has started to develop these contingency plans. On the Tonto NF several actions have taken place to preserve and secure frog populations (see the Recovery section below for a full discussion).

1.3 Cooperatively work to eliminate the presence of non-native aquatic species within occupied habitat of the Chiricahua leopard frog on NFS lands.

The Apache-Sitgreaves NF has a Gila trout reintroduction project that is designed to remove non-native trout from Chitty Creek, and design features were included to re-survey for Chiricahua leopard frogs prior to treatment. Non-native fish are also removed in Apache trout recovery streams which may be beneficial for the frog as well. On the Coconino, in October 2005, tiger salamanders were removed from the Sycamore Basin tank in conjunction with the FWS. Additionally, nonnative fish were removed from several tanks currently not occupied by frogs. On the Coronado, non-native aquatic species elimination is being pursued with the help of partners. Elimination consists primarily of a bull frog eradication effort. The Gila is an active participant of the Chiricahua leopard frog Conservation Team which has started to discuss how to address this issue in New Mexico and Arizona. The Tonto NF is currently working on projects to be implemented in the future.

1.4 When designing fish habitat improvement projects, give consideration to Chiricahua leopard frogs in order to minimize conflicts with non-native aquatic predators.

For the Apache-Sitgreaves NF, see 1.3 above. On the Coconino and Tonto NFs no specific projects have been developed for fish improvement. On the Coronado, the Chiricahua leopard frog is considered when designing fish habitat improvement projects, as they are proposed, to minimize conflicts. A biological evaluation/assessment is completed for all fish habitat improvement projects on the Gila NF. This document considers the potential effects of the project to the Chiricahua leopard frog and requires the implementation of mitigation to minimize effect to this species.

1.5 Design projects within the Engineering, Forestry, and Forest Health, Fire Management, Rangeland Management, and Recreation Programs, as well as fire and chemical use, to minimize or eliminate adverse effects to the Chiricahua leopard frog.

On all Forests with Chiricahua leopard frog habitat, the FS has designed projects to minimize or eliminate adverse effects to the species. Since June 10, 2005, 82 projects have been consulted on involving the Chiricahua leopard frog. Of these 82 projects, only 15 have resulted in adverse effects; however incidental take has only been issued in one for one of these projects. Based on this information, the FS believes that this T&C has been accomplished.

1.6 Where feasible, and appropriate, implement any applicable project mitigation protocols outlined in the final Chiricahua leopard frog recovery plan.

Forests report that they are designing projects which incorporate design features taken from recommendations in the Draft (prior to May, 2007) and Final Recovery Plan, and other conservation measures proposed by the FWS for site specific projects.

2.1 Design projects within the Engineering, Forestry and Forest Health, Fire Management, Rangeland Management, and Recreation programs, as well as fire and chemical use to reduce negative effects (direct and indirect) with the goal of implementing projects that will have beneficial, insignificant, or discountable effects within occupied frog habitats.

See Conservation Measure #1 above.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor populations of Chiricahua leopard frogs on NFS lands.

Monitoring is occurring in cooperation with partners on all Forests with Chiricahua leopard frog habitat. Monitoring is not occurring for all “populations”, however.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on the Chiricahua leopard frog.

Since the issuance of the LRMP BO, one formal consultation has resulted in the issuance of take for the Chiricahua leopard frog. In that BO, which was for the Negrito/Yeguas grazing allotment on the Reserve Ranger District of the Gila NF, incidental take was issued. Stock tanks constructed on the allotment for the management of the allotment provide occupied Chiricahua leopard frog habitat. Additionally, several reaches of Negrito Creek within the boundary of this allotment provide occupied habitat as well. The District has fenced all reaches of Negrito Creek with occupied habitat, and a portion of all occupied tanks. A greater portion of all occupied tanks were fenced than was recommended by the FWS in their BO.

Recovery Actions Implemented

Several recovery actions have been implemented on NFS lands and are reported by Forest as follows:

Apache-Sitgreaves: Habitat has been identified in West Chevelon Canyon that may be suitable for Chiricahua leopard frog re-introduction. This information has been presented by the Forest to both the AGFD and FWS at recent meetings. The Clifton Ranger District has worked in conjunction with AGFD and FWS to collect genetic samples (digits and tail clips) from all populations for use in ongoing genetic studies. Additionally, Mike Sredl (AFGD) and Jim Rorabaugh (FWS) have attended a meeting with the Upper Eagle Creek Watershed Association (a permittee group) to discuss conservation opportunities for the species, including a statewide safe harbor agreement. The Alpine Ranger District has coordinated with AGFD on re-introductions of the species to Sierra Blanca Lake annually since 2004. Furthermore, in the long term, the Forest thinks that their Wildland Urban Interface (WUI) projects will be beneficial to potential and suitable Chiricahua leopard frog habitat with the reduction in fire hazard, resulting in decreased risk to the species from catastrophic fire effects.

Coconino: Emergency recovery actions as identified by the FWS in the “Chiricahua Leopard Frog Emergency Recovery Program: Phase I” dated April 14, 2006 have been completed and include: purchased sucker rod fencing (installation to occur in FY 08), installed 300 feet of erosion control filter socks to reduce sedimentation, repaired unstable slope at Walt’s tank, cleaned out sediment trap and sand bar at Sycamore Basin tank, removed juniper and scattered slash in a 300 acre area upslope of Sycamore Basin Tank in order to improve watershed condition and reduce sedimentation into the tank, and seeded around tanks to reduce sedimentation

Coronado: The Coronado assists AGFD in surveys and they conduct some of their own. AGFD has captured some frogs from the Santa Rita population for a captive breeding program at the Arizona Sonora Desert Museum. The Forest attempted to locate eggs to be head-started at the sole locality known in the Galiuro Mountains, but that population apparently crashed in 2006, as no individuals were seen after the spring surveys, despite numerous subsequent protocol surveys (beyond the minimum to declare “absence”). As mentioned above, frogs have been located nearby on State lands and may be used to restock sites in the Galiuro Mountains on the Coronado NF. Additionally, in an effort to secure/re-establish Chiricahua leopard frogs in the Dragoon Mountains (Cochise County, Arizona), three egg masses were collected in early May 2006 from the only known remaining leopard frog location. They were taken by AGFD to a State run hatchery facility for rearing. The eggs successfully produced young, which were then released into another location back in the Dragoon Mountains in the fall of 2006. In the summer of 2007, a pond was constructed at Pena Blanca Spring (Rudy Ronquillo Pond) in the Pajarito Mountains for the purpose of increasing use of the spring by many species of plants and animals, and specifically to provide breeding habitat for native ranid frogs. The Coronado NF actively participated in the recovery planning process and maintains a database of “likely extant (on the Coronado NF)” sites that is shared with other agencies and NGO’s.

Gila: The Gila NF has employed a seasonal crew for the last seven field seasons whose main responsibility has been to survey aquatic sites on the Forest for the Chiricahua leopard frog. In 2006, the Reserve Ranger District fenced out livestock from three occupied Chiricahua leopard frog streams (Negrito, South Fork Negrito, and North Fork Negrito), and four occupied stock tanks which were fenced to exclude livestock except at a single narrow water point at each tank.

Tonto: Several recovery actions for this species have occurred on the Tonto NF. In 2004 the Forest removed the sediment from the pool below the spring box at Bottle Springs (historical breeding site) and lined it with a pond liner. The center of the pond was deepened to a depth of about 2-3 feet. The liner was melded in to the existing shoreline. Once the liner was installed efforts to restore the habitat by placing some soil, rocks, and vegetation on top of the liner, as well as seeding the perimeter was accomplished. Efforts were also made to develop escape cover and undercut banks. Once completed, the pond was “fenced” to prevent elk from stepping on the liner and potentially puncturing it. An added benefit of the “fencing” is that it restricts access to the pond of large avian predators and may also discourage mammalian predators such as raccoons. All of this work was completed by late November of 2004. The two male frogs that were residents of the spring box had been salvaged by AGFD prior to beginning this project. In April of 2005, these frogs were released back into the new pond. At this time it was also decided to attempt to capture two adult females at Carroll Spring/Crouch Creek and translocate them to Bottle Spring. Unfortunately we were only successful in capturing one female at Carroll Spring. However, two egg masses were discovered at Carroll Spring and it was decided to take a portion of one of these and relocate it to Bottle Spring. Duke Klein of the Payson/Pleasant Valley Ranger District, monitored this re-introduction effort immediately after and then weekly after that. The day following the re-introduction effort, one of the egg masses had already dislodged and was on the bottom of the pool in approximately 1 foot of water. By 4/21 only 1 egg mass was still attached and 4/27 was the first record of tadpoles. In September a total of 69 tadpoles were counted.

In 2006, the following emergency recovery projects were developed in coordination with the AGFD, the Phoenix Zoo, and the FWS. These partners play critical roles in the survival and recovery of the species. The purpose of this project was to enhance habitats at existing occupied sites, enhance habitats at selected introduction sites, secure occupied sites, head-start reproduction, and finally augment existing or establish new populations.

Methods or Techniques Used: Several different techniques were utilized to improve and/or secure habitats for the Chiricahua leopard frog. Based on the FWS’s white paper the FS Regional Office earmarked an additional \$11,000 for emergency recovery actions in the Gentry Creek area. The emergency actions implemented are described below:

Sediment Removal- Because of sedimentation at one of the occupied sites, hand dredging was implemented to improve water depth in pools that had historically demonstrated reproduction. Prior to initiation of project the site was surveyed and all frogs encountered were captured and held in captivity during implementation of the project. To reduce impacts to the banks a system of ropes, pulleys and buckets (figure 1) were used to move sediment up to waiting personnel who then deposited it in an area where it would not re-enter the stream course during future rainstorms. The buckets were filled by hand using shovels (figure 2), taking care to save as much of the aquatic vegetation as possible. The project was completed in a day and the captured

frog was released back into the site. Placement of “erosion control filter socks” above these pools was also identified as an emergency measure by the FWS. Four 10’ x 12” excelsior sediment logs were purchased and placed above the wetted area (figure 3) to catch some of the sediment during run off events.

Breeding Pool Establishment – The 260 acre Pine Spring Wildlife Area was identified as a suitable site for establishment of a new population of leopard frogs. One of the concerns was adequacy of available pools during low flow years. As such, three sites were identified near the spring (figure 4) to develop pool habitat by placing log structures within the channel to create pools 12 to 18 inches deep. The structures were constructed of 3 logs, two in the bottom of the channel and one on top. The logs were obtained on site from the many drought/bug killed ponderosa pine in the area. Once cut they were transported to the actual construction site using an ATV and trailer, and then they were moved by hand to the point of placement (figure 5). Each log was keyed into the bank using hand tools and then anchored in place with cables and “duck bill” soil anchors (fig 6). The top log was attached using 4 pieces of ½’ rebar driven at an angle through the top log into each of the bottom logs. The top log was notched to provide a spillway, with rock being placed below the spillway to dissipate the force of the falling water (figure 7). Plant material was placed around the disturbed edges of each structure. Sediment cloth was added later to the two lower structures to improve the water holding capabilities.

Site Security: Two sites were fenced from livestock use. Both were existing wildlife areas. One was currently occupied and one had been identified as a potential release site for head-started leopard frogs. Both sites had existing fences but were in disrepair. Several days were spent removing fallen trees and felling dead trees that could eventually fall on the repaired fence. A “workday” was used at one site for fence repair with workers from AGFD and Pleasant Valley fire crews accomplishing the task.

Half of HY tank is to be fenced from livestock use. An elk fence (figure 10) was installed in the middle of the HY tank, so that if desired for future leopard frog management, all ungulate use on half of the tank could be eliminated. The tank at Pine Spring is within a fenced livestock enclosure, however the existing fence was in disrepair. Several days were spent at both sites removing fallen trees and felling dead trees that could eventually fall on the repaired fence. A “workday” was used for fence repair at Pine Spring, utilizing workers from AGFD, Phoenix Zoo and from across the Forest.

Head-starting/Release: Dave Daniels, AGFD Wildlife Manager collected 1 ½ egg masses from the area in April and transported them to a head-starting facility at the Phoenix Zoo (figure 8). Zoo personnel raised the eggs to late-stage tadpoles and young “froglets”. Three of the 4 currently occupied sites were augmented with tadpoles and “froglets” (figure 9) and new populations were established at two existing wildlife areas (figure 10 and 11). A total of 1,161 small frogs and tadpoles were released at 5 different sites. Three sites with existing populations were augmented with 40 “froglets” (figure 12) and 59 tadpoles. Two new sites were inoculated with 1,061 individuals. One site received 176 “froglets” and 486 tadpoles, while the other site received 50 “froglets” and 350 tadpoles.

Tank Renovation- Accumulated sediment was removed using heavy equipment from both tanks (figure 5). HY tank was deepened to a depth of approximately 10 feet (figure 6), and the spillway was repaired and armored with rock. The cost of tank renovation was provided by the Wildlife Conservation Council, Arizona Elk Society, and AGFD Heritage Funds. To alleviate sediment delivery to this tank, four 10' x 12" excelsior sediment logs were placed in one of the drainages to the tank.

A dirt tank located in the Pine Springs Wildlife Area was renovated by the Tonto NF C&M crew. This area was established in 1974, and a 1991 assessment of the area noted that the dam associated with this tank was eroded at that time. A dozer was used to repair the dam and remove accumulated sediment from the tank. An Eagle Scout project was used to apply "casing-seal" to the bottom of the tank, to improve its water retention capacity. Fifteen Boy Scouts were organized by an Eagle Scout candidate to hand spread "Casing-Seal" on the bottom of the tank (Figure 7), which was then worked into the bottom using hand rakes (figure 8) as well as an ATV with a disc (figure 9).

Issues and Concerns Identified

The Forests with Chiricahua leopard frog habitat have expressed concern regarding how a "population" was defined in the BO. At the level outlined in the BO, it is thought that the term "occupied sites" should be used. Furthermore, the "populations" are also designated with inconsistency. For example, discrete pools were considered populations on the Pleasant Valley Ranger District; however, an entire drainage was considered a population on the Payson Ranger District of the Tonto NF. Concern has also been expressed about the interpretation of T&C 3.2 related to the FS's ability to fund the monitoring that is suggested in this T&C.

Furthermore, discussions need to occur between FS and FWS regarding the loss of Chiricahua populations since 2005, and how that decline relates to the implementation of the proposed action for this consultation. Obviously several populations have been lost, particularly on the Coronado NF; however, it does not appear that these losses are the result of the implementation of the Coronado LRMP as there have been no consultations that have resulted in take for this species since June 10, 2005. Furthermore, the Coronado NF has implemented Recovery Actions for this species (see Recovery Actions section above). It is more likely that these populations have disappeared as a result of either one of three factors – drought, chytrid fungus, and/or non-native predators. Furthermore, there is an issue of exceeding take on the Gila NF. Currently there is disagreement that this loss is the result of the proposed action. The FS and FWS are currently working together to discuss and resolve these issues. At this time the FWS is preparing their 5 year review for this species. Once that information is available the agencies will reevaluate the need for changes to the LRMP BO for this species.

A concern for the Clifton Ranger District, Apache-Sitgreaves NF, is with fulfilling the conservation measures for the Chiricahua leopard frog. The majority of the District's potentially suitable habitat remains without surveys for presence. This will likely continue to be a concern into FY 2008.

Fish

Apache trout

The Apache trout occurs on three NFs within the Region: Apache-Sitgreaves, Coronado, and the Kaibab. The Gila NF also manages lands that are within the Action Area. The effects associated with implementation of the Forest Plans were assessed and determined likely to adversely affect populations on the Apache-Sitgreaves, Coronado, and Kaibab NFs. In the case of the Kaibab, the Forest Plan specifically discussed the value of this transplanted population and identified efforts that would improve the status of the Apache trout on the forest. The FWS determined that the statement “maintain not less than 90 percent of total linear streambank in stable condition” was likely to adversely affect the population, despite the stream occurring within designated wilderness and no riparian vegetation occurring there now or historically due to dry conditions. Implementation of the Gila Forest Plan may affect, but is not likely to adversely affect the Apache trout.

Incidental Take Statement Evaluation

The FWS concurred with the FS determination that adverse effects would occur to the Apache trout as a result of the implementation of the Apache-Sitgreaves, Coronado, and Kaibab NF LRMPs and that incidental take is reasonably certain to occur. The FWS has concluded that incidental take would be considered to be exceeded if, after a period of two consecutive years, there is a loss of any one population (recovery stream) on NFS lands as a result of the proposed action. Table 12 represents results from surveys that have been conducted since 2005 on the Apache-Sitgreaves, Coronado, and Kaibab NFs as well as ESA consultations for the species.

Table 12 Results from surveys and ESA consultations for Apache trout on NFS lands for 2005 and 2006.

	2005	2006	2007
Total Miles of Occupied Habitat	33 miles	37	41
Miles Surveyed	7 miles	7 miles	6
# of Reintroductions	1 (A-S)	1 (A-S)	2
Change in populations	0*	0*	0*
# NLAA Determinations	2	1	1
# LAA Determinations	0	0	0
Amount Incidental Take	None	None	None

* Additional unoccupied sites have been stocked. However, they will not be considered established populations until they become self-sustaining.

There have been no losses of pure populations (by recovery stream) since 2005 on NFS lands; however, the Forests report that altered habitat conditions likely are affecting all populations and especially some of the smaller recovery stream populations. However, the population in Home Creek is believed to be extirpated. The population in Stinky Creek was removed by chemical treatment due to the presence of brown trout. Stinky Creek was treated in June 2007 so it will be accounted for in the next reporting period.

Project Level Consultations

Four projects on the Apache-Sitgreaves took place with consultation on the effects to Apache trout. The Eager South Wildland-Urban Interface, the ATV Jamboree, and the Mexican Gray Wolf Release Sites projects resulted in a not likely to adversely affect determinations. No project consultations involved the Apache trout on the Coronado or Kaibab NFs.

Implementation of Terms and Conditions

In the June 10, 2005 LRMP BO, the FWS issued three Reasonable and Prudent Measures with six implementing Terms and Conditions. The following documents compliance with the non-discretionary Terms and Conditions:

1.1 Manage riparian areas adjacent to and upstream of Apache trout populations for conditions to eliminate direct affects and minimize indirect effects to Apache trout and its habitat.
No changes in management actions occurred during this time period for any of the Forests involved. Projects are being designed to minimize effects to the species.

1.2 Design projects within the Engineering, Forestry and Forest Health, Rangeland Management, Watershed Management, and Wildlife Programs to minimize or eliminate adverse effects to the Apache trout.

All projects have been designed to minimize or eliminate adverse effects to the Apache trout.

1.3 Cooperate with state conservation agencies to eliminate the introduction and presence of non-native fish species within Apache trout habitat.

The Apache-Sitgreaves NF has coordinated with the AGFD on the chemical treatment of several streams to remove non-native fish species. The Coronado NF is cooperating with other agencies to avoid non-native species introductions in the areas where this species is found. The stream reach where the Apache trout were introduced on the Kaibab NF goes subsurface with a few miles of stream flow, depending on snow pack, making this isolated water safe from effects from other fish species.

2.1 Design projects in occupied Apache trout habitat to incorporate appropriate components of the Apache Trout Recovery Plan with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the Apache trout and its habitat.

All projects since 2005 have resulted in insignificant or discountable effects to the species.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Apache trout populations on NFS lands.

On the Apache-Sitgreaves no cooperative actions occurred within this time period regarding this species. Five miles of surveys were completed by the Forest however. The AGFD conducted surveys in occupied habitat on the Kaibab NF. The population has been affected by drought and other factors, but has not been affected by the implementation of projects under the Kaibab NF LRMP.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Apache trout, pursuant to 50 CFR 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Accomplished through this report.

Recovery Actions

The following recovery actions have been taken for this species on NFS lands.

Stream renovations:

Upper East Fork LCR (2005, 2006)
Hayground Creek (2005)
West Fork LCR (2006)

Migration Barrier Construction:

Upper & Lower East Fork LCR barriers (2005)
Upper & Lower West Fork LCR barriers (2005)
Upper South Fork LCR barrier (2005)
Hayground Creek barrier reconstruction (2005)
Conklin Creek (2006 and 2007)

Issues and Concerns

The FS has not, and will likely not in the future, monitor all populations of Apache trout on NFS lands annually. The FS and FWS are working together to resolve this issue. On the Coronado NF, the FWS has indicated concern about the population's genetic make-up (cross breeding with non-native trout) and the fact that it was introduced into an area where it was not historically known to occur. Fish biologists have suggested eliminating the Apache trout from Mt. Graham and replacing it with Gila trout. We recommend that the Recovery Teams and the other agencies work to resolve this issue.

Chihuahua chub

The Chihuahua chub occurs only on or near the Gila NF within the Mimbres River watershed. Populations occur primarily on lands managed by The Nature Conservancy, NMDGF, and private lands. Chihuahua chub have been stocked in Mcknight Creek which lies within the boundary of the Gila NF. However, habitat for the species is very limited. The population is believed to be absent on NFS lands at this time or so low that it is likely not a viable population.

Incidental Take Statement Evaluation

The FWS determined that incidental take was reasonably certain to occur as a result of the implementation of the Gila NF LRMP. The FWS concluded that incidental take would be

considered to be exceeded if one self-sustaining population is no longer maintained on the Gila NF as a result of the proposed action.

Table 13 Results of surveys and ESA consultation for Chihuahua chub on NFS lands.

	2005	2006	2007
# self-sustaining pops. on NFS lands	0*	0*	0**
Miles Surveyed	0 miles	0 miles	.75
# of Reintroductions	0	0	0
Change in populations	0	0	**
# NLAA Determinations	0	1	0
# LAA Determinations	0	0	0
Amount Incidental Take	None	None	None

* The population on the Gila NF within McKnight Creek is presumed to be absent at this time due the lack of suitable habitat for the species. The absence of the species within the Forest boundaries, however, is not due to implementation of the proposed action

** On 18 April 2007 the Gila NF in cooperation with NMDGF surveyed McKnight Creek to determine if Chihuahua Chub were present. The survey indicated that Chihuahua chub are no longer present in McKnight Creek. No losses in the population can be attributed to the implementation of the LRMP.

Project Level Consultations

One project underwent consultation to determine potential effects to the Chihuahua chub. A determination of not likely to adversely affect was concluded for the Mimbres, Powderhorn, Sapillo Range Allotment, and the FWS concurred with this determination. Effects to the Chihuahua chub were eliminated by excluding the pasture comprised of riparian zones along the Mimbres River and excluding the entire upper watershed of McKnight Creek.

Implementation of Terms and Conditions

The FWS issued three Reasonable and Prudent Measures with seven implementing Terms and Conditions. The following documents the Gila NF's implementation of the T&Cs:

1.1 Manage riparian areas adjacent to and upstream of Chihuahua chub populations for conditions to eliminate direct effects and minimize indirect effects to Chihuahua chub and its habitat. **Riparian areas along McKnight Creek, where Chihuahua chub were introduced in the past, are excluded from livestock grazing. The majority of riparian habitat upstream of the site where Chihuahua chub were introduced is located within designated wilderness, therefore management actions are very limited and don't frequently occur.**

1.2 Design projects within the Fire Management, Rangeland Management, Recreation, and Wildlife programs to minimize or eliminate adverse effects to the Chihuahua chub. **NEPA is being completed on the Sheppard grazing allotment in 2007. Informal consultation with the FWS has been initiated by the Wilderness Ranger District. No fire management,**

Recreation, or wildlife projects were implemented that would adversely affect the Chihuahua chub.

1.3 Continue efforts among the FS, FWS, and the NMDGF to augment and maintain the chub population.

The Chihuahua chub recovery team has not formally met for several years. In the past several years, recovery efforts have focused on supplementing and monitoring the chub populations that are located on NMDGF and The Nature Conservancy properties. Habitat suitability surveys on Gallinas Creek are planned for fall 2007.

1.4 Develop a fire contingency plan in cooperation with FWS that includes pre-planning efforts to prevent adversely impacting the McKnight Creek population and downstream populations. **This has not been accomplished to date. There is currently not a population on NFS lands. The fish that were stocked in McKnight Creek originated from a captive population maintained at Dexter National Fish Hatchery & Technology Center.**

2.1 Design projects in occupied Chihuahua chub habitat to incorporate appropriate components of the Chihuahua Chub Recovery Plan with the goal of implementing projects that will have beneficial, insignificant, or discountable effects to the chub and its habitat.

Effects to Chihuahua chub are analyzed during project design within the McKnight drainage with the goal of not adversely affecting the species. Currently there are no projects within the watershed on FS lands that will adversely affect the species.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Chihuahua chub populations on the Gila NF. **Efforts to monitor the McKnight creek fisheries during the field season of 2006 were not successful due to fire danger early in the season and high stream flows during the remainder of the field season. The Forest pointed out several times during the development of these terms and conditions that a viable population of Chihuahua chub did not exist on the Forest. The latest surveys completed by the Recovery Team (2001) indicated that very few (3) of the stocked chubs survived and reproduction had not occurred. There have been no stockings of chub on the Forest subsequent to the 2001 findings. Monitoring of McKnight Creek was completed during April 2007. No Chihuahua chub were detected.**

3.3 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Chihuahua chub, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

No impacts to the species as a result of the proposed action have taken place within the reporting period.

Recovery Actions

The Forest cooperated with the NMDGF and The Nature Conservancy (TNC) to conduct Chihuahua chub population monitoring on lands owned by the Department and TNC. The Forest

has in the past, evaluated the potential for establishing Chihuahua chubs in other locations such as East Canyon and the Mimbres River. East Canyon habitat is very limited and completely dries during drought periods. The Mimbres River has minimal deep pool habitat and is currently occupied by brown and rainbow trout. There is a short reach of the Mimbres River that was determined to be potentially capable of supporting chub.

Issues and Concerns

The Forest has not yet developed a fire contingency plan to address actions to protect the Chihuahua chub in the Mcknight Creek drainage. Furthermore, the Forest expressed concerns with the FWS during the development of the BO that the population of chub in Mcknight Creek was not likely viable and could possibly be absent because of an absence of habitat suitable to sustain the population over the long-term. Using the presence of a population in Mcknight Creek, perhaps, is likely not a satisfactory measure for assessing incidental take associated with implementation of the Gila NF LRMP. Note, the species no longer occurs on the Forest. The two agencies are working together with the FWS species lead to address this issue.

Desert Pupfish

Historically, the desert pupfish lived throughout the lower Gila river basin and the San Pedro, Santa Cruz, Salt, and lower Colorado rivers in Arizona. In the past, an effort to translocate populations to several locations on NFS lands failed due to a myriad of reasons unrelated to land management. However, in 2007, biologists from the AGFD and the Tonto NF again transplanted the pupfish from a pond at the Boyce Thompson Arboretum near Superior to the Mud Spring area on the Forest. The species was reintroduced on June 12, 2007.

Incidental Take Statement Evaluation

The incidental take statement in the June 10, 2005 LRMP BO states: “If the desert pupfish occurred on NFS lands, adverse effects would be expected as a result of the continued implementation of the Coronado, Prescott, and Tonto NF LRMPs. On the Coronado, adverse effects may result from implementation of the Forestry and Forest Health, Rangeland Management, and Watershed Management Programs. On the Prescott NF, adverse effects may result from the implementation of the Rangeland Management and Wildlife Programs. On the Tonto NF, adverse effects may result from the implementation of the Forestry and Forest Health, Rangeland Management, and Recreation programs.

Although potential adverse effects to the desert pupfish have been identified for the programs described above, no pupfish currently occur on the Prescott NF. Therefore, no incidental take of desert pupfish is anticipated. However, if desert pupfish are reintroduced to the Prescott NF in the future, effects of the proposed action will be assessed in order to evaluate whether reinitiation of this consultation is necessary.”

At this time the species does occur on the Tonto NF as the result of reintroductions in June of 2007. The FS will be reinitiating consultation on this species.

Gila chub

The Gila chub occurs on six NFs within the Region: Apache-Sitgreaves, Coconino, Coronado, Gila, Prescott and the Tonto. The effects associated with implementation of the Forest Plans were assessed and determined likely to adversely affect populations on all six NFs with Gila chub occurrence.

Incidental Take Statement Evaluation

The FWS determined that incidental take was reasonably certain to occur as a result of the implementation of the Apache-Sitgreaves, Coconino, Coronado, Gila, Prescott, and Tonto NF LRMPs. The FWS concluded that incidental take would be considered to be exceeded if currently occupied pool habitat is diminished at either the reach scale (i.e., number of pools reduced) or the scale of an individual pool (i.e., quality of pools degraded) on NF System lands as a result of the proposed action.

Results of any surveys conducted since 2005 are displayed in the table below. It should be noted that no surveys were conducted for this species on the Apache-Sitgreaves and Coconino NFs.

Table 14 Results of surveys for Gila chub and pool habitat on NFS lands for 2005 and 2006.

	2005	2006	2007
Total Miles of Occupied Habitat	21.75 miles	17.75 miles*	17.75
Miles Surveyed	5 miles	1 mile	5 miles
# of Reintroductions	3 (Coronado)	0	0
Pool Habitat Diminished	0	0	0

*
ed habitat declined because of catastrophic wildfire, but was not the result of the implementation of the proposed action.

Pool habitat (occupied as of 2005) has not diminished at either the reach scale or the scale of an individual pool on NF land as a result of the implementation of the LRMP.

Project Level Consultations

There have been five project level consultations for this species since June 10, 2005. These projects were the Chitty Creek Restoration Project, Pigeon Ecosystems Restoration and Wildland Fire Use Plan, the Wolf Release Sites Project on the Apache-Sitgreaves NF, and one project on the Coronado NF which have resulted in the issuance of a concurrence letters from the FWS. Four formal consultations have occurred during the reporting timeframe on the Coronado NF.

Implementation of Terms and Conditions

The FWS issued three Reasonable and Prudent Measures with six implementing Terms and Conditions. The following documents the implementation of the T&Cs:

1.1 Manage riparian areas adjacent to and upstream of Gila chub populations for conditions to eliminate direct effects and minimize indirect effects to Gila chub and its habitat.

Apache-Sitgreaves: No changes in management actions occurred during this time period.

Coconino: No specific projects were completed, but this is ongoing management.

Coronado: Riparian areas are being managed and projects are being designed to minimize adverse effects to this species.

Gila: Occupied habitat on the Gila NF is within designated wilderness. Occupied habitat is not within a grazing allotment. Riparian areas on the Forest are managed to be properly functioning. The Gila NF has not implemented any projects within or adjacent to Gila chub habitat.

Prescott: Riparian exclosures at Middle Water Spring and Upper Water Spring, Indian Creek, were monitored and maintained to exclude livestock grazing from occupied habitat.

Tonto: The stream corridor is fenced on Silver Creek. No other habitat enhancement activities have been conducted. No degradation of habitat has occurred.

1.2 Design projects within the Engineering, Fire Management, Forestry and Forest Health, Lands and Minerals, Rangeland Management, Recreation, Watershed Management, and Wildlife programs to minimize or eliminate adverse effects to the Gila chub.

Apache-Sitgreaves: For the Chitty Creek Restoration and Pigeon Restoration Projects, buffers and timing of burns were designed so that no visually measurable ash or sediment could be found within the drainages or down stream of the project area.

Coconino: No projects that have undergone NEPA have occurred with Gila chub habitat.

Coronado: This T&C is being considered and implemented for all projects.

Gila: management actions that could affect the Gila chub are limited due to occupied habitat being within designated wilderness. No projects have been planned within or adjacent to occupied and critical habitat that would adversely affect the Gila chub. Efforts to manage wildfires in or within close proximity of Gila chub streams are undertaken on a fire by fire basis and appropriate suppression actions are taken.

Prescott: In 2006, population and habitat assessment was completed for the Indian Creek population, and in unoccupied critical habitat in Sycamore and Little Sycamore Creeks for the DRT Livestock Grazing CE.

Tonto: No degradation of habitat has occurred.

1.3 Cooperate with state conservation agencies to eliminate the introduction and the continued presence of non-native species within Gila chub habitat.

The Gila NF is currently working cooperatively with NMDGF and USFWS-NMFRO on several non-native fish management projects. Removal of non-natives from occupied Gila chub habitat has been discussed as a future action. On the Prescott non-native fish and

crayfish removal was completed on one mile of stream on Sycamore Creek in unoccupied critical habitat. No actions have been taken on the remainder of the Forests. On the Coronado NF, Gila chub are being monitored in cooperation with AGFD where projects have been implemented in the past to eliminate non-natives, and may be continued into the future.

2.1 Design projects in occupied Gila chub habitat to incorporate important characteristics of pool habitats with the goal of implementing projects that will have beneficial, insignificant, or discountable effects to the chub and its habitat. Projects within watersheds occupied by Gila chub have been designed to have beneficial, insignificant, or discountable effects to the habitat of the Gila chub.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Gila chub and Gila chub pool habitat on NFS lands.

Monitoring of Gila chub habitat on the Gila NF is planned for fall 2007 in cooperation with the NMGFD. On the Prescott monitoring was completed in all occupied habitat for the Sycamore Creek, Little Sycamore Creek, and Indian Creek populations on the Forest in 2005. In 2006, monitoring was completed for the Indian Creek population, and in unoccupied critical habitat in Sycamore and Little Sycamore Creeks for livestock grazing project analysis. On the Tonto, monitoring efforts are being developed and will occur in 2007. On the Coronado NF monitoring is being conducted and results are reported annually to the FWS for review and discussion during the annual coordination meeting.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Gila chub, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

This annual report fulfills this requirement.

Recovery Actions

The Gila NF provided funding to Dr. Thomas E Dowling, Arizona State University, to initiate genetic work on the phylogenetically unresolved complex of chubs in the Gila River. In cooperation with the NMDGF, the Gila NF has submitted funding proposals, if obtained, will be utilized to survey and evaluate additional streams for possible Gila chub repatriation. On the Tonto and Prescott NFs, salvage and repatriation was accomplished following the Cave Creek Complex Fire. Before the Aspen Fire (2003), the Coronado NF assisted AGFD in renovation efforts to remove non-native fish from Sabino and Romero Canyons, while salvaging Gila chub for subsequent re-stocking. These efforts were successful. During the Aspen Fire, Gila chub were again salvaged and held for captive propagation, which was again successful, and the species was reintroduced into Sabino in 2005. It was also likely present historically in Bear and Romero Canyons, so they were also introduced into those canyons. Periodic attempts to re-inoculate these systems have met with varying success, but the canyons have undergone dynamic

changes that scoured out and silted in many pools. On private land adjoining Coronado NF lands, the Forest helped to reintroduce Gila chubs in the Canelo Hills.

Issues and Concerns

Site occupancy is the focus of surveys on the forests. Habitat quantity and quality are not monitored regularly or to a specific and consistent protocol to determine if pools have been affected. Therefore, determining if take has been exceeded is problematic. The FS will work with the FWS species lead to determine if amendment to the BO is necessary for this species.

Gila topminnow

Historically, the Gila topminnow occupied larger streams and rivers including the Gila, Salt, Santa Cruz, San Pedro, San Carlos, and their respective tributaries. The Gila topminnow was once the most common fish in the Gila River Basin but is presently restricted to about 14 populations in separated, isolated locations (Minckley 1973). Three of these support Gila topminnow at disjunct locations: Sonoita Creek, Santa Cruz River, and Cienega Creek. Only 12 of these natural topminnow populations are considered extant (Weedman and Young 1997).

Additional efforts have identified suitable habitat for stocking Gila topminnow on NFS lands. These sites are located on the Coronado, Prescott, and Tonto NFs. Therefore, analysis during the consultation process included predicted effects of implementing the forest plans to populations stocked in the future and within the life of the consultation. The FS determined that adverse effects could result from activities associated with the Engineering, Lands and Minerals, and Recreation Programs.

Incidental Take Statement Evaluation

The FWS concurred with the FS determination and concluded that incidental take was reasonably certain to occur as a result of the implementation of the Coronado, Prescott, and Tonto NF LRMPs. The FWS concluded that incidental take would be considered to be exceeded if, after a period of two consecutive years, there is a loss of any currently extant population of Gila topminnow on NFS lands as a result of the proposed action. The results of the surveys from 2005, 2006, and 2007 are presented in Table 15 below.

Table 15 Results of any surveys conducted for the species since 2005.

	2005	2006	2007
Total Miles of Occupied Habitat	9 acres, 6 miles	9 acres, 5 miles	9 acres, 5 miles
Miles Surveyed	5 acres, 1 mile	7 acres, 3 miles	7 acres, 7 miles
# of Reintroductions	0	1	1

Based on the survey information presented in Table 15 above, estimated occupied habitat has remained relatively stable over the past two years. All populations that existed on June 10, 2005 on NFS lands are believed to be extant today. In addition, two reintroductions have taken place on the Tonto NF.

A total of six sites currently (2007 surveys) have extant populations of Gila topminnow on the Tonto NF:

- Dutchman Grave Spring
- Walnut Spring
- Mud Spring
- Hidden Water Spring
- Unnamed Drainage 68B
- Lime Creek

Approximately one mile of habitat in Sycamore Creek was occupied by Gila topminnow in 2005. Pool habitat was diminished by drought and non-native invasive species, especially mosquito fish. However, the absence of a topminnow population or the diminished pool habitat on the Coronado NF is not due to the implementation of the LRMP.

Sites previously occupied by Gila topminnow on the Prescott NF succumbed to the effects of drought prior to June 10, 2005. The sites have not been restocked with Gila topminnow.

Project Level Consultations

The Coronado NF had two projects with ESA consultation. One project resulted in a NLAA determination with concurrence, and a second resulted in a LAA determination.

The Prescott NF had no consultations (NLAA or LAA) for projects during the reporting timeframe.

The Tonto NF had one project which received a concurrence letter (NLAA) from the FWS since the issuance of the LRMP BO. No formal consultations have been conducted during the reporting timeframe.

Implementation of Terms and Conditions

Three Reasonable and Prudent Measures (RPMs) were issued for the Gila topminnow in the June 10, 2005 LRMP BO. Six Terms and Conditions were described to implement the RPMs. The RPMs apply to the Coronado, Prescott, and Tonto NFs. However, only the Coronado and Tonto NFs consulted on projects to determine effects to the Gila topminnow.

- 1.1 Manage riparian areas adjacent to and upstream of Gila topminnow populations for conditions to eliminate direct effects and minimize indirect effects to Gila topminnow and its habitat.

The Tonto NF constructed riparian fencing on Campaign Creek to protect riparian areas from ungulate grazing. The Coronado NF is managing riparian areas and designing projects to minimize adverse effects to the Gila topminnow.

1.2 Design projects within the Forestry and Forest Health (i.e., pest management), Rangeland Management, Watershed Management, and Wildlife programs to minimize or eliminate adverse effects to the Gila topminnow.

All projects on the Tonto and Coronado NF have been designed to minimize or eliminate adverse effects to the Gila topminnow.

1.3 Cooperate with state conservation agencies to eliminate the introduction and presence of non-native fish species within Gila topminnow habitat.

The Coronado NF is working with partners to eliminate non-native species, but success is limited. The Prescott and the Tonto NFs did not report any opportunity to implement this T&C.

2.1 Design projects in occupied Gila topminnow habitat to incorporate appropriate components of the Gila Topminnow Recovery Plan with the goal of implementing projects that have beneficial, insignificant, or discountable effects to the Gila topminnow and its habitat.

Proposed projects in occupied habitat consider the fish's habitat needs. However, the systems are very dynamic and FS efforts make little difference in the face of catastrophic fire and flooding events being experienced on the Forests.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Gila topminnow populations on NFS lands.

The Forests have cooperated with other agencies to monitor Gila topminnow populations of NFS lands.

3.4 In order to monitor the impacts of incidental take, the FS shall track and report the effects of proposed action on Gila topminnow, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Accomplished through this report.

Recovery Actions

The Coronado NF is developing a project in cooperation with other agencies to build a barrier and pursue stream renovation for the topminnow, which should be implemented beginning in 2007. A report on the success of this effort is anticipated to be part of the next Annual Report

The Prescott NF had no additional recovery actions to report.

The Tonto NF reintroduced Gila topminnow into Dutchman Grave Spring in 2005 after ash flow from the 2004 willow fire eliminated the species from the site. Walnut Spring was dredged in 2005 in an effort to avoid freezing and overheating of water in topminnow habitat. Cottonwood Artesian was deepened in 2006 to provide conditions necessary for restocking Gila topminnow in 2007.

Issues and Concerns

No issues or concerns were reported for this species

Gila trout

The Gila trout is native to the Gila River basin and historically occupied the upper Gila River in New Mexico and parts of the San Francisco River System in New Mexico and Arizona. A native trout identified as Gila trout occupied waters in the Verde and Agua Fria systems in Arizona. The Arizona populations were believed to be extirpated around the turn of the 20th Century (U.S. Fish & Wildlife Service 1993). The New Mexico populations were reduced to about five relict populations.

The Gila trout now occurs on the Gila NF in New Mexico and the Apache-Sitgreaves NFs in Arizona. Gila trout were stocked within Dude Creek on the Tonto NF in the late 1990s, but the reintroduction is believed to have failed. Recent surveys of Tonto Creek have not yielded any Gila trout.

Streams for Gila trout recovery have been identified on the Apache-Sitgreaves, Coconino, Coronado, and Gila NFs. Therefore, the analysis in the BA and BO incorporated all occupied as well as identified recovery streams.

Incidental Take Statement Evaluation

In the June 10, 2005 LRMP BO, the FWS concluded that incidental take was reasonably certain to occur as a result of the continued implementation of the Apache-Sitgreaves, Coconino, Coronado, Gila, and Tonto NF LRMPs. However, incidental take on the Coconino and Coronado NFs is contingent upon the stocking of Gila trout in identified recovery streams on those Forests; therefore, no incidental take was issued. As of January 2007, this has not occurred and there are not current plans to do so.

For the purposes of the LRMP BO, FWS defines incidental take in terms of the number of extant populations. The extant populations on June 10, 2007 included Main Diamond Creek, South Diamond Creek, Black Canyon, McKnight Creek, Spruce Creek, Big Dry Creek, Whiskey Creek, Upper White Creek, Mogollon Creek, and Lower Little Creek on the Gila NF; Dude Creek on the Tonto NF (this creek was errantly assigned to the Coconino NF); and Raspberry Creek on the Apache-Sitgreaves NFs. The FWS concludes that Incidental take of Gila trout will be considered to be exceeded if, after a period of two consecutive years, there is a loss of any currently extant population of Gila trout on NFS lands as a result of the implementation of the LRMPs. Table 16 presents the results and estimates of occupied habitat for the Gila trout submitted by the Forests.

Reintroduction of Gila trout to Dude Creek on the Tonto NF is believed to have failed and is likely due to the lack of suitable habitat for Gila trout. The failed reintroduction of Gila trout to Dude Creek is not believed to be the result of the continued implementation of the Tonto NF LRMP. The USDA FS believes that a viable population did not exist in Dude Creek upon the

issuance of the LRMP BO on June 10, 2005. Therefore, Dude Creek should not have been included as an extant population with regards to assessing incidental take.

Table 16 Results and estimates of occupied habitat for Gila trout on NFS lands, reintroductions, and quantification of lost populations.

	Apache-Sitgreaves			Gila			Tonto			Total		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Occupied Habitat (Miles)	Unk	Unk	Unk	65*	66*	66	0	0	0	65*	66*	66*
Miles surveyed	4.9	0	0	0	0.25	12	0	3	3	4.9	3.25	15
# Reintro.	0	0	0	0	1	**	0	0	0	0	1*	0
Lost Pops.	0	0	0	0	0	**	0	0	0	0	0	0

* Occupied habitat is estimated based on previous years surveys and the assumption that the populations are still present and unaffected by the LRMPs because of the lack of projects implemented under the LRMPs.

**Surveys for Gila Trout are conducted by the Recovery Team and associated members from NMDGF, USFWS-NMFRO, and Gila NF. Survey and monitoring data is maintained and stored by NMDGF Conservation Services Division. Results of monitoring efforts can be obtained by contacting Dr. D.L. Propst, NMDGF Conservation Services Division. During 2007 population monitoring has been completed on Main Diamond Creek, S. Diamond Creek, Black Canyon, McKnight Creek, and Little Creek. The Gila will receive a copy of this data around Dec. and can provide this information in next years report.

Based on the information presented, the FS that incidental take for the Gila trout has not been exceeded. The number of viable populations extant upon the issuance of the LRMP BO still exists on NFS lands.

Project Level Consultations

The Apache-Sitgreaves NF has had three informal consultations for Gila trout: Chitty Creek Restoration, Gila Trout Conservation Project, and Wolf Release Sites Projects. Therefore, no project –level take has been issued.

The Gila NF has had four informal consultations and zero formal consultations involving Gila trout. No incidental take was issued for the Gila trout on the Gila NF.

Implementation of the Terms and Conditions

Three Reasonable and Prudent Measures with six implementing Terms & Conditions were issued for Gila trout in the June 10, 2005 LRMP BO. The T&Cs consist of the following.

1.1 Manage riparian areas adjacent to and upstream of Gila trout populations for conditions to eliminate direct effects and minimize indirect effects to Gila trout and its habitat.

The Apache-Sitgreaves NF indicates that no changes in management actions has occurred during the reporting timeframe.

The Gila NF reports that all occupied Gila trout habitat is within designated wilderness where management actions are limited. All occupied habitat, including riparian areas adjacent to and upstream of, is excluded from livestock grazing. Efforts to manage wildfires in or within close proximity of Gila trout streams are undertaken on addressed on a fire by fire basis and appropriate suppression actions are taken. The goal of the Gila NF is to manage riparian areas to be properly functioning systems.

Implementation of this T&C has been accomplished.

1.2 Design projects within the Engineering, Forestry and Forest Health (i.e. pest management), Rangeland Management, Watershed Management, and Wildlife programs to minimize or eliminate adverse effects to the Gila trout.

Apache-Sitgreaves NF: on the Chitty Creek Restoration Project, buffers and timing of burns were designed so that no visually measurable ash or sediment could be found within the drainages or downstream of the project area. The objective was to protect future Gila trout habitat (recovery stream).

Gila NF: During 2007 NEPA analysis was initiated on the Rain Creek/74 Mountain grazing allotment. The Forest submitted a BA to the FWS and is awaiting concurrence on a NLAA determination for the species.

1.3 Cooperate with state conservation agencies to eliminate the introduction and current presence of non-native fish species within Gila trout habitat.

Apache-Sitgreaves: No cooperative actions occurred within the reporting period for this species.

Gila NF: The Forest continues to cooperate with partners to eliminate non-native fish in streams suitable for Gila trout repatriation. Current efforts include renovation of approximately 21 miles of the upper West Fork Gila River and associated tributaries. Additional streams on the Gila NF have been identified for renovation and efforts will be undertaken as time and funding become available.

2.1 Design projects in occupied Gila trout habitat to incorporate appropriate components of the Gila Trout Recovery Plan with the goal of implementing projects with beneficial, insignificant, or discountable effects to the Gila trout and its habitat.

Apache-Sitgreaves: on the Chitty Creek Restoration Project, buffers and timing of burns were designed so that no visually measurable ash or sediment could be found within the drainages or downstream of the project area. The objective was to protect future Gila trout habitat (recovery stream).

Gila NF: No projects have been planned or designed within or adjacent to occupied habitat that would adversely affect the Gila trout. Efforts to manage wildfires in or within

close proximity of Gila trout streams are undertaken on a fire by fire basis and appropriate actions are taken.

3.1 In cooperation with other state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Gila trout populations on NFS lands.

Apache-Sitgreaves: No cooperative actions occurred within the reporting time period regarding this species.

Gila NF: The Gila NF continues to work cooperatively with the Gila trout recovery team to monitor Gila trout populations as the team determines is necessary.

3.2 In order to monitor the impacts of incidental take, the FS will track and report the effects of the proposed action on Gila trout, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the subspecies.

Accomplished with this report.

Recovery Actions

Apache-Sitgreaves NF: About 4.9 miles of habitat and fish surveys were conducted on Chitty Creek in preparation for reintroduction of this species. However, the stocking of fish will likely not take place for several years due to channel altering flows that occurred after a fire.

Gila NF: During June 2006, the FS, NM Department of Game & Fish (NMDGF), and FWS personnel translocated 37 Whiskey Creek lineage Gila trout from Whiskey Creek to Langstroth Creek. The Gila NF, in cooperation with NMDGF and FWS, completed 2 piscicide treatments on the Upper West Fork Renovation Project during 2006. During 2006, the Gila NF cooperated with partners to supplement existing populations by stocking Gila trout in Little Creek and Black Canyon.

During 2007 FS, NMDGF, and FWS completed one piscicide treatment on the Upper West Fork Renovation Project. Several Gila trout streams will be stocked in the fall of 2007, including Black Canyon and Mogollon creek and fish will be transplanted from Whiskey creek to Langstroth creek. Gila trout will be retrieved from South Diamond and taken to Mora National Fish Hatchery to supplement the brood stock located there.

Issues and Concerns

Viable populations did not exist in Dude Creek on the Tonto NF when the LRMP BO was issued; therefore, it should not have been included as an extant population with regards to assessing incidental take. The FS and FWS have agreed that Dude Creek should not have been included and this change will be made in an amendment to the BO.

Little Colorado River Spinedace

The Little Colorado River spinedace is found in north-flowing streams of the Little Colorado River Basin. However, populations are generally small and the true population size for any occupied stream is unknown due to the yearly fluctuations and difficulty in locating fish. Occupied habitat currently exists on the Apache-Sitgreaves and Coconino NFs.

Incidental Take Statement Evaluation

In their 2005 LRMP BO, the FWS concluded that incidental take was reasonably certain to occur as a result of the implementation of the Apache-Sitgreaves and Coconino NFs LRMPs. The incidental take is expected to occur from the Engineering, Forestry and Forest Health, and Wildlife Programs on the Apache-Sitgreaves NF; and from the Engineering, Fire Management, Forestry and Forest Health, Lands and Minerals, and Wildlife Programs on the Coconino NF. The FWS believes that incidental take in the form of harm and harass to individuals will be difficult to detect. Therefore, the FWS concludes that incidental take for Little Colorado spinedace will be considered to be exceeded if there is a loss of one population in the current number of spinedace populations on NFS lands as a result of the proposed action. The FWS did not specify what populations were extant at the time of the issuance of the BO. The FWS has indicated that the FS should utilize the populations reported in the Biological Assessment. The results of the last two years of information for the spinedace on NFS lands are presented in Table 17.

Table 17 Information regarding the Little Colorado spinedace on NFS lands.

	Apache-Sitgreaves			Coconino			Total		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Occupied Habitat (miles)	7	7	7	4	4	4	11	11	11
Number of Populations	2*	2*	2*	4	4	4	6	6	6
Habitat Surveyed (stream miles)	2	2	3	0	0	0	2	2	3?
# of Reintroductions	0	0	0	2	0	1	2	0	1

* Populations include the Nutrioso and Rudd Creek Population and a population in Dines Tank (Leonard Canyon)

Rudd Creek and Nutrioso Creek on the Apache-Sitgreaves NF contain a population of Little Colorado Spinedace (Note: The AGFD and Apache-Sitgreaves NF cooperated on reintroduction of this species into West Chevelon Canyon in late June 2007)

On the Coconino NF, the entirety of the East Clear Creek watershed is considered occupied spinedace habitat for the purposes of management (East Clear Creek Watershed Strategy 1999). Currently only found in

- West Leonard
- Yeager Canyon – supplementally stocked by AZGFD
- Dines Tank (Leonard Canyon)

- Dane Canyon – supplementally stocked by AGFD
- Bear Canyon – supplementally stocked by AGFD
- East Clear Creek – only 1 fish found in 2005

The Forest did not complete any surveys in 2005, 2006, or 2007. AGFD has been supplementally stocking spinedace in the East Clear Creek Watershed.

Based on the information presented above, it is assumed that the number of populations has not changed on NFS lands. Therefore, incidental take has not been exceeded (or cannot be determined).

Project Level Consultations

The Apache-Sitgreaves had three NLAA determinations for spinedace: one was done under the Counterpart Regulations and no concurrence was requested from FWS, and two went through informal consultation with FWS.

The Forest did have three formal consultations for spinedace. They include the Nutrioso WUI, Carlisle Range Allotments Complex, Eagar South WUI. The Forest has been issued BOs for the three projects.

Incidental take issued since the June 10, 2005 LRMP BO includes the following for Eagar South WUI and Nutrioso WUI BOs:

Incidental take is described in terms of habitat conditions, using surrogate measures to identify when take has been exceeded. Take will be exceeded if any of the following conditions occur:

- a. There are declines in stream functioning conditions within the Nutrioso Creek watershed as measured by Proper Functioning Condition (PFC) surveys, which are attributable to the proposed action.
- b. The anticipated effects to Little Colorado spinedace are greater than those disclosed in the project Biological Assessment and Evaluation (BAE) as anticipated from planned implementation of BMPs or the effectiveness of the implemented BMPs.
- c. There is a decline in Little Colorado spinedace constituent elements due to the proposed action. GAWS survey data will be used as baseline data for the constituent element measures. Future surveys will be accomplished by Region 3 Stream Inventory Protocol.

One formal consultation on the Coconino has occurred during the reporting period. The project is the East Clear Creek Watershed Health project. Incidental take was not issued by the FWS for the project.

Implementation of the Conservation Measures

The FS agreed to implement the following conservation measures for the Little Colorado River spinedace:

Conservation Measure #1: Design projects in occupied Little Colorado spinedace habitat on NFS lands which address the appropriate components of the Little Colorado spinedace recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to Little Colorado spinedace.

Apache-Sitgreaves NF: The Forest attempts to design projects to minimize or eliminate negative effects to Little Colorado River spinedace habitat. The proposed action for the Carlisle Range Allotment Complex included actions that reduced downstream effects for Little Colorado spinedace in Silver Creek, but not to a level that would reduce the effects to the point in which they are insignificant, discountable, or beneficial. The Eager South WUI and the Nutrioso WUI projects did not meet the intent of this conservation measure although mitigations were developed in cooperation with FWS to lessen the impact to spinedace. The effects determinations were likely to adversely affect the spinedace.

Coconino NF: All projects that undergo NEPA are designed taking into account listed species and their habitat. Where possible, design features are included to limit the impacts. Mitigation measures are also included where needed.

Conservation Measure #2: Over the next two years, the FS, in Cooperation with other state agencies and federal agencies, universities, FS research facilities, and FWS will assess and prioritize stream and river habitat segments on NFS lands for potential Little Colorado spinedace reintroduction. Cooperatively document the results in an annual report to FWS.

Apache-Sitgreaves NF: Plans are in place to reintroduce Little Colorado spinedace to West Chevelon creek, and the reintroduction was accomplished in late July 23, 2007. This is in coordination with the AGFD and the FWS. The Little Colorado Spinedace Recovery Team has identified Alder Canyon and Willow Canyon as other potential reintroduction sites for Little Colorado spinedace. AGFD and FS would like to begin the NEPA process for reintroductions into Willow Canyon.

Coconino NF: The Forest worked with FWS and AGFD and others to prioritize recovery actions for spinedace and included priorities for supplemental stocking within the watershed, and implementation of the strategy is ongoing. This is documented in the *East Clear Creek Watershed Recovery Strategy for the Little Colorado Spinedace and Other Riparian Species (1999)*.

Conservation Measure #3: To the extent feasible within the mission and capabilities of the FS assist the FWS, and AGFD with any Little Colorado spinedace reintroduction efforts.

Apache-Sitgreaves NF: Personnel from the Apache-Sitgreaves NF, Black Mesa Ranger District, completed ESA section 7 consultation with the FWS in 2004 to reintroduce spinedace to West Chevelon Creek. The Forest and the AGFD implemented the reintroduction in late July 23, 2007. They are also working with AZGFD personnel to

evaluate Little Colorado spinedace habitat in Willow Creek and initiate reintroduction actions in the Willow Creek watershed.

***Coconino NF:* Knowledge of AGFD and FWS supplemental stockings; but not actively involved with recent stockings.**

Conservation Measure #4: With state agencies and other researchers (i.e. academic and FS), who are currently monitoring Little Colorado spinedace populations, participate in the development of a consistent monitoring methodology for spinedace, their associated habitat, and co-occurring aquatic species. Cooperatively document the results in an annual report to the FWS.

***Apache-Sitgreaves NF:* A Forest fish biologist attends most Little Colorado Spinedace Recovery Team meetings and will participate with the FWS, state agencies, and other researchers in the development of a consistent monitoring methodology for spinedace if requested. All monitoring results would be documented in an annual report to the FWS.**

Monitoring methodology for the species has been discussed with District participation as part of recovery efforts during Recovery Team deliberations. The most effective monitoring methodology for the species is still undetermined although based upon 2006 surveys conducted in Nutrioso and Rudd Creeks by AGFD and discussions with the FWS, it was suggested that seining may be more effective at detecting the species presence than electrofishing.

Conservation Measure #5: The long-term benefits directly attributable to wildland fire use for resource benefits, is the reduction of catastrophic fire. This is very significant to long-term land management goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in GIS layers on each NF in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds.

Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.

***Apache-Sitgreaves NF:* The Forest has created GIS layers (geodatabases) for listed species on the Forest. The Forest prescribes burns to reduce catastrophic wildfires. Retention of buffer vegetation will maintain current habitat conditions, but may not help to improve riparian vegetation in drainages, streams, and rivers.**

***Coconino NF:* A draft contingency plan for the species has been developed by the Little Colorado Spinedace Recovery Team. Spinedace critical habitat is in GIS, but the layer is**

not complete for occupied or recently occupied habitat. There have been no Wildland Fire Use Fires in the areas of occupied or recently occupied habitat.

b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed. For example, concerns could include spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, avoiding mechanical and chemical measures within the riparian corridor, etc.

During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.

***Apache-Sitgreaves NF:* A fisheries biologist is assigned to fire management activities. Additionally, BMPs along with Recommended Mitigation Measures will be implemented to minimize soil and ash movement.**

***Coconino NF:* There have been no Wildland Fire Use Fires in the areas of occupied or recently occupied habitat.**

c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

***Apache-Sitgreaves NF:* The Districts have been provided species distribution maps completed at the Forest-level. The Districts apply mitigation measures for species protection during the development of fire use plans. A contingency plan for the species is in draft form and was developed by the Little Colorado Spinedace Recovery Team with Forest participation.**

***Coconino NF:* Contingency plan has not been developed and GIS layer is not complete. However, there have been no Wildland Fire Use Fires in the areas of occupied or recently occupied habitat.**

Implementation of Terms & Conditions

1.1 Manage riparian areas adjacent to and upstream of spinedace populations for potential natural vegetation conditions to eliminate direct effects and minimize indirect effects to spinedace. **Riparian areas adjacent to an upstream of potential spinedace habitat on the Apache-Sitgreaves NFs are managed to maintain natural aquatic vegetation condition to eliminate direct effects and minimize indirect effects to spinedace. Efforts were made to reduce potential impacts associated with WUI treatments in the Eager South and Nutrioso WUI Projects. However, the Forest was not able to reduce the impacts to discountable and insignificant.**

A BA submitted to the FWS in November 2006 resulted in a LAA determination for the indirect effects to spinedace occupying Silver Creek (Apache-Sitgreaves NFs) downstream of the allotment. This was due primarily to continued year-long grazing in degraded soil, range, and watershed conditions, non-functioning PFC analysis in most drainages, cumulative effects, and the residual effects of past inappropriate livestock grazing. Accomplishing this T&C requires support for minimizing effects to spinedace. The elimination of adverse effects has not occurred for this particular project within Silver Creek watershed.

For the Coconino, although the East Clear Creek Watershed Health project is expected to have short term adverse effects, the project is designed to improve spinedace habitat and contribute to recovery of the species in the watershed over the long term.

1.2 Design projects within the Engineering, Fire Management, Forestry and Forest Health, Lands and Minerals, Rangeland Management, and Wildlife programs to minimize or eliminate adverse effects to the Little Colorado River spinedace.

The Nutrioso WUI Project on the Apache-Sitgreaves NF was designed to spread impacts over time and provided 300 foot buffers to minimize the impacts from the project to the species. These WUI projects, and a range project were not able to minimize adverse effects to the level that would be insignificant and discountable.

Projects on the Black Mesa Ranger District (Apache-Sitgreaves NF) are designed to minimize or eliminate adverse effects to Little Colorado River spinedace habitat within the following program areas: Recreation, Wildlife, Fire, Range, Engineering, Timber, Silviculture, Archaeology, and GIS. Projects on the Black Mesa Ranger District for 2005 and 2006 have not resulted in adverse effects to Little Colorado spinedace.

1.3 Cooperatively work to eliminate the presence of non-native aquatics within occupied habitat of the spinedace on FS System lands and when designing fish habitat improvement projects, give consideration to native fish species.

When projects are designed for fish habitat improvements, consideration is given to native fish species in order to minimize conflicts with non-native aquatic predators.

2.1 Design projects within the Engineering, Forestry and Forest Health, Lands and Minerals, Rangeland Management, and Wildlife programs to reduce negative effects (direct and indirect) with the goal of implementing projects that have beneficial, insignificant, or discountable effects within occupied spinedace habitat.

Apache-Sitgreaves NF: Projects in the above program areas are designed with the goal of implementing projects that will have beneficial, insignificant, or discountable effects within potential Little Colorado River spinedace habitat on the Black Mesa Ranger District. The District has not had a likely to adversely affect determination within the reporting timeframe.

Due to the urgency of the Nutrioso and Eager South WUI projects and the baseline condition of the occupied reaches, the FS could not minimize the impacts from the project to insignificant or discountable.

On the Coconino NF, although the East Clear Creek Watershed Health project is expected to have short term adverse effects, the project is designed to improve spinedace habitat and contribute to recovery of the species in the watershed over the long term. Furthermore, on the Coconino, a draft BA was completed for the ongoing operation and maintenance of the Blue Ridge Reservoir (C.C. Cragin) project, however, an MOU is being developed with the FS and the Bureau of Reclamation (BOR) that, among other things, designates the BOR as the lead for ESA compliance.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Little Colorado River spinedace populations on NFS lands.

The Apache-Sitgreaves NF cooperates with AGFD and FWS to help monitor Little Colorado River spinedace populations on NFS lands.

3.2 In order to monitor the impacts of incidental take, the FS will track and report the effects of the proposed action on Little Colorado River spinedace, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the subspecies.

The Apache-Sitgreaves NF relies on efforts by AGFD and FWS to monitor Little Colorado River spinedace to monitor the impacts of incidental take.

The LRMP BO annual report accomplishes this T&C.

Recovery Actions

There are plans in place to re-introduce Little Colorado spinedace to West Chevelon Creek, which were implemented in late July 23, 2007. The Little Colorado Spinedace Recovery Team has identified Alder Canyon and Willow Creek as other potential reintroduction sites for Little Colorado spinedace.

In the long term, the WUI projects will be beneficial to Little Colorado spinedace habitat in the Nutrioso Creek watershed with the reduction in fire hazard, resulting in decreased risk to the species from catastrophic fire effects in the watershed.

Issues and Concerns

No issues and concerns regarding the Little Colorado spinedace and the implementation of the LRMP BO have arisen. However, it is very difficult to minimize impacts to the level of insignificant and discountable for WUI projects on the Apache-Sitgreaves NF. Pending further discussion with FWS species leads the FS will utilize the number of populations reported in the Biological Assessment to determine if incidental take has been exceeded.

Loach minnow

The loach minnow is endemic to the Gila River basin of Arizona and New Mexico, and Sonora, Mexico. Its historic range included the basins of the Verde, Salt, San Pedro, San Francisco, and Gila rivers (Minckley 1973, Sublette *et al.* 1990). The species is believed to be extirpated from Mexico. During the last century, both the distribution and abundance of the loach minnow have been greatly reduced throughout its range (Propst *et al.* 1988). Extant populations are geographically isolated and inhabit the upstream reaches of their historic range.

Historically in Arizona, the loach minnow occupied up to 2,250 stream km (1,400 mi), but it is now found in less than 225 km (140 mi) (Propst *et al.* 1988). The loach minnow is generally rare to uncommon where it is found in the following areas: Aravaipa Creek (Pinal and Graham counties); limited reaches of the White River (Gila County) and the North and East forks of the White River (Navajo County); Three Forks area of the Black River; throughout the Blue River; Campbell Blue Creek; sporadic in Eagle Creek; and in the San Francisco River between Clifton and the New Mexico border (Greenlee County) (Marsh *et al.* 1990; Velasco 1994; Bagley *et al.* 1995, 1996).

In New Mexico, the loach minnow historically occupied about 330 stream km (205 mi); now it is found in about 258 stream km (160 mi). The loach minnow has become very rare in substantial portions of this remaining range. The species is extant in the upper Gila River, including the East, Middle, and West forks, the San Francisco and Tularosa rivers, and Dry Blue Creek. Recent biochemical work on this species indicates that there are substantial differences in genetic composition between the remnant loach minnow populations that occupy isolated fragments of the Gila River basin (Tibbets 1992).

The loach minnow occurs in waters within the Apache-Sitgreaves and Gila NF boundaries. Although the fish is not found on the Coronado NF, it is located downstream in Aravaipa Creek, so projects that occur in the upper watershed of Aravaipa Creek, on Forest land, are evaluated for downstream effects.

Incidental Take Statement Evaluation

In the June 10, 2005 LRMP BO, the FWS concluded that incidental take was reasonably certain to occur as a result of the continued implementation of the Apache-Sitgreaves and Gila NF LRMPs. The FWS concluded that the incidental take of loach minnow will be exceeded if, after a period of two consecutive years, there is a loss in the current number of loach minnow sites on NFS lands as a result of the proposed action, without being offset by newly established sites.

Surveys and monitoring were conducted by Gila NF and in cooperation with NMDGF and Rock Mountain Research Station. Annual monitoring of warm water fishes at eight permanent sites in the Gila and San Francisco River drainages was accomplished in cooperation with NMDGF. The Gila NF contracted with D. Miller of Western New Mexico University to monitor six sites within the Gila River Bird Area. John Rinne, Rocky Mountain Research Station, conducted monitoring at numerous sites on the Gila River. The Gila NF accomplished monitoring for loach minnow on Dry Blue Creek (Table 18). Results for the eight permanent sites can be obtained from the NMDGF

Table 18 Dry Blue Monitoring Results for Loach Minnow

Year	# of individuals	Effort (seconds)	CPUE (fish/min)
2000	8	986	0.49
2004	22	1882	0.70
2006	37	2426	0.92
2007	*	*	*

* Surveys and monitoring were conducted by Gila NF and in cooperation with NMDGF and Rocky Mtn. Research station. Annual monitoring of warm water fishes at 8 permanent sites in the Gila and San Francisco River drainages was accomplished during October 2006 in cooperation with NMDGF. The Gila NF funded D. Miller of Western NM University to monitor six sites within the Gila River Bird Area. John Rinne, Rocky Mtn. Research Station, conducted monitoring at numerous sites on the Gila River. Complete results of monitoring are not available currently. Results for the 8 permanent sites can be obtained from Dr. D.L. Propst, NMDGF. Annual monitoring on the Dry Blue will occur during October 2007

Table 19 2006 Loach Minnow Monitoring – Gila River (Rinne and Miller, Unpublished Data).

Site Name	# of individuals		
	2005	2006	2007
Bird Area 1	354	71	*
Bird Area 2	140	125	*
Bird Area 3	674	229	*
Bird Area 4	468	105	*
Bird Area 5	117	108	*
Bird Area 6	4	10	*
Lower Bird Area	192	114	*
W. Fork Gila @ Little Creek	0	2	*

* Monitoring data for 2007 is not available at this time, reports are provided to the Forest in the fall of 2007.

Based on the information presented in Table 18 and Table 19, the number of loach minnow populations on the Gila NF has remained the same since June 10, 2005. The Apache Sitgreaves has occupied habitat for loach minnow, but the amount is unknown. Surveys have not been conducted in presumed occupied habitat. It is unknown if any losses of populations have occurred on the Apache-Sitgreaves NF since June 10, 2005.

Project Level Consultations

The Apache-Sitgreaves had six informal consultations that involved loach minnow. They include the Chitty Creek Restoration Project, the Pigeon Restoration Project, the Blue School Education Land Grant, the Wolf Release Sites, and two consultations on the annual ATV Jamboree. The Forest conducted one formal consultation involving adverse effects to the loach

minnow for the Nutrioso WUI Project. No incidental take has been issued for loach minnow for this project.

The Gila NF had 25 informal consultations that involved the loach minnow. The Gila NF also had 32 informal consultations that involved loach minnow critical habitat. There were no formal consultations for loach minnow on the Gila NF during the reporting period. As such, no incidental take was issued for the species since June 10, 2005

Implementation of Terms and Conditions

The June 10, 2005 LRMP BO included three Reasonable and Prudent Measures with six implementing Terms & Conditions. The Terms & Conditions follow with a description of implementation at the project level during LRMP implementation.

1.1 Manage riparian areas adjacent to and upstream of loach minnow populations for conditions to eliminate direct effects and minimize indirect effects to loach minnow and its habitat.

On the Apache-Sitgreaves, efforts were made to minimize effects, however, potential impacts of WUI projects are difficult to eliminate. The Pigeon Restoration project was designed to eliminate fire intensity and severity within sensitive areas and provided 300 ft. buffers to minimize the impacts from the project to the species.

Approximately 95% of loach minnow habitat on the Gila NF is excluded from livestock grazing. Riparian management on the Gila NF emphasizes properly functioning systems.

1.2 Design projects within the Engineering, Forestry and Forest Health (i.e., pest management), Rangeland Management, and Watershed Management programs to minimize or eliminate adverse effects to the loach minnow.

The Apache-Sitgreaves designs WUI projects to reduce fire severity within sensitive areas and provides buffers to minimize the impacts to the species from projects. However, it is almost impossible to reduce potential impacts of WUI projects to eliminate adverse effects. Nonetheless, the Pigeon and Chitty Creek Restoration projects were able to incorporate measures to eliminate adverse effects.

No projects have been planned or designed within or adjacent to occupied habitat that would adversely affect the loach minnow on the Gila NF. Efforts to manage wildfires adjacent to occupied streams are undertaken on a fire by fire basis and appropriate suppression actions are taken.

1.3 Cooperate with state conservation agencies to eliminate the introduction and continued presence of non-native species within loach minnow habitat.

No cooperative actions on the Apache-Sitgreaves NF have occurred within the reporting period regarding loach minnow.

The Gila NF is currently working cooperatively with NMDGF and FWS-NM Fisheries Resources Office on several non-native fish management projects. During 2006, the three agencies began implementation of The Forks Non-native Removal Project. The project is a

four-year project that includes the mechanical removal of non-natives in the area of East, Middle, and West Forks Gila River. The NMDGF continues to stock rainbow trout in loach minnow habitat at several sites along the Gila River forks.

2.1 Design projects in occupied loach minnow habitat to incorporate appropriate components of the Loach Minnow Recovery Plan with the goal of implementing projects that will have beneficial, insignificant, or discountable effects to the loach minnow and its habitat.

Projects on the Apache-Sitgreaves NF were designed to minimize effects to the loach minnow through riparian buffers and reducing fire severity in riparian areas. However, we were unable to reduce impacts to insignificant and discountable levels on the Nutrioso WUI projects.

During 2006, all new or proposed projects on the Gila NF and within or adjacent to loach minnow habitat were analyzed to determine project effects to aquatic resources. No new or proposed project has been determined to adversely affect the loach minnow.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor loach minnow sites on NFS lands.

The Apache-Sitgreaves NFs has not cooperatively monitored loach minnow sites on the forest.

The Gila NF has cooperated and contracted with several entities to monitor all populations of loach minnow on the Gila NF.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on loach minnow, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Compliance with this T&C is the resulting annual report.

Recovery Actions

Apache-Sitgreaves: No recovery actions occurred within the reporting period.

Gila: During June 2007 the Gila NF, in cooperation with NMDGF, AGFD, and FWS Phoenix ES Office collected loach minnow from the Gila River for captive breeding at the Bubbling Springs Hatchery in Arizona.

Coconino: No recovery actions occurred with the reporting period. However, it is hoped that reintroduction of this species will occur in Fossil Creek by the end of 2008 (Tonto and Coconino NFs).

Issues and Concerns

Neither Forest reported any issues or concerns regarding implementing the RPMs or the implementing T&Cs associated with the June 10, 2005 LRMP BO; however, funding and personnel are not available to do adequate surveys and monitoring on all Forests with loach minnow.

The Apache-Sitgreaves NFs has not been able to do adequate surveys and monitoring of loach minnow populations. It is very difficult to reduce impacts from WUI projects to insignificant or discountable.

Critical habitat for the loach minnow was designated in 2007, therefore the FS will be re-initiating consultation on critical habitat for this species.

Sonora chub

The distribution of Sonora chub appears little changed from its historic range although few collections are available. In the United States, it has remained locally abundant in Sycamore Creek (Minckley and Deacon 1968, Minckley 1973, Minckley 1985), where it occurs in an 8.4 km reach from about 0.1 km below Yanks Spring, downstream to about 1.0 km above the international border (AGFD unpub. data). Flow within that reach is intermittent except during the rainy season; surface discharge from Sycamore Creek usually sinks into the streambed before reaching Mexico (Hendrickson and Juarez-Romero 1990). Other records of occurrence within the Sycamore drainage include Yanks Spring, Penasco Canyon, Atascosa Canyon, and an unnamed tributary to Sycamore Creek (Bell 1984). Yanks Spring has been impounded in a concrete tank for more than half a century (Miller 1949), and contains a population that was introduced from the adjacent creek (Minckley and Brooks 1985). Depending on seasonal flows, it is also found in nearby California Gulch. The Sonora chub only occurs on the Coronado NF.

Incidental Take Statement Evaluation

The June 10, 2005 LRMP BO concluded that incidental take is reasonably certain to occur as a result of the continued implementation of the Coronado LRMP. The FWS has concluded that incidental take of Sonora chub will be considered to be exceeded if currently occupied pool or spring habitats are measurably reduced or diminished as a result of the implementation of the Coronado NF LRMP.

The Coronado NF contains six miles of habitat occupied by Sonora chub. It should be noted that there is a safety concern associated with surveying for this species. The canyons where it occurs (Sycamore and California Gulch/Warsaw Canyon) are known routes for drug traffickers and undeclared aliens, so the survey information only includes going to a major pool in the upper end to assess the population. At the time of this report, no surveys had been conducted in 2007; however, surveys were conducted in 2005 and 2006. It was determined that no pool or spring habitat was measurably reduced or diminished during the reporting period. These drainages are also negatively impacted by the presence of non-natives, although the species persists in good numbers in Sycamore Canyon, despite the presence of a large population of bullfrogs.

Project Level Consultations

The Coronado NF did not implement any projects within drainages occupied by Sonora chub that would require ESA Section 7 consultation. Therefore, no informal or formal consultations took place during the reporting period.

Implementation of Terms and Conditions

The FWS issued three Reasonable and Prudent Measures along with six implementing Terms & Conditions.

1.1 Manage riparian areas adjacent to and upstream of Sonora chub populations for conditions to eliminate direct effects and minimize indirect effects to Sonora chub and its habitat.

Riparian areas on the Coronado NF are being managed and projects are being designed to minimize adverse effects to the Sonora chub.

1.2 Design projects within the Engineering, Forestry and Forest Health, Lands and Minerals, Rangeland Management, Watershed Management, and Recreation programs to minimize or eliminate adverse effects to the Sonora chub.

Riparian areas on the Coronado NF are being managed and projects are being designed to minimize adverse effects to the Sonora chub.

1.3 Cooperate with AGFD to eliminate the introduction and presence of non-native fish and frog species within Sonora chub habitat.

The University of Arizona and other agencies and NGOs have been attempting to eliminate non-native species, but success is limited.

2.1 Design projects in occupied Sonora chub habitat to incorporate important characteristics of pool habitats with the goal of implementing projects that will have beneficial, insignificant, or discountable effects to the Sonora chub and its habitat

a. Pools shall be retained in their current frequency or increased in incidence in each occupied reach, even if only a single pool is occupied by Sonora chub.

b. The physical characteristics of the pools in each reach shall be retained or improved. Important characteristics include, but are not limited to: length, width, depth, residual depth, bank shape, bed material, instream cover type, presence of submergent or emergent vegetation, and absence of non-native fish or amphibians.

Proposed projects in occupied habitat consider the fish's habitat needs.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Sonora chub and Sonora chub pool habitat on the Coronado NF.

Monitoring is being done and results are reported annually to FWS and subject to review and discussion in the annual coordination meeting.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on Sonora chub, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Monitoring is being done and results are reported annually to FWS and subject to review and discussion in the annual coordination meeting. Additionally, this annual report satisfies this T&C.

Recovery Actions

This watershed system seems pretty stable. Fuel loads upslope do not appear excessive, and Sycamore Canyon Stream and its tributaries seem to handle flood events well. Nearby California Gulch is more prone to drought, as it has far less surface water. Both systems have problems with non-native species. Bullfrogs have become extremely abundant in Sycamore Canyon (but the chub persists), and bullfrogs and warm water game fishes are found in California Gulch. The University of Arizona and AGFD have been conducting bullfrog eradication in Sycamore Canyon. Because this canyon straddles the Mexican border, there are concerns that borderland security issues may inhibit surveys and conservation efforts.

Issues and Concerns

No issues or concerns reported by the Coronado NF.

Spikedace

Spikedace historically occurred throughout the mid-elevations of the Gila River drainage, but is currently known only from the middle Gila and upper Gila rivers, and Aravaipa and Eagle creeks (Barber and Minckley 1966, Minckley 1973, Anderson 1978, Marsh et al. 1990, Sublette et al. 1990, Jakle 1992, Knowles 1994, Rinne 1999). The species also occurs in the upper Verde River, but appears to be declining in numbers. It has not been documented in the Verde River since 1999 despite annual surveys, and additional survey work is needed to determine its current status. Habitat destruction along with competition and predation from introduced non-native species are the primary causes of the species decline (Miller 1961, Williams et al. 1985, Douglas et al. 1994). The status of spikedace is declining rangewide. Within occupied areas, it is presently common only in Aravaipa Creek (13 miles) in Arizona and within the Gila Bird Area (7 miles) portion of the Gila River in New Mexico (U.S. Fish and Wildlife Service 2000). In addition, spikedace occur in low numbers above the Gila Forks Area in New Mexico and sporadically in the Verde River and Eagle Creek in Arizona.

Spikedace are currently found on the Gila NF. They may still be present on the Apache-Sitgreaves, Coconino, and Prescott NFs, but if so, persist at very low numbers.

Incidental Take Statement Evaluation

In the June 10, 2005 LRMP BO, the FWS concluded that incidental take was reasonably certain to occur as a result of the continued implementation of the Apache-Sitgreaves, Coconino, Coronado, Gila, Kaibab, Prescott, and Tonto NFs. The FWS concluded that incidental take of spikedace will be considered to be exceeded if the number of fish collected in the bird area of the Gila NF drops below 500 individuals or if less than two of the three sites in the Forks area of the Gila River are occupied.

Given the limited amount of information, the FWS could not conclude that incidental take of spikedace is reasonably certain to occur within Arizona during the lifetime of the consultation. The headwaters that occur on the Kaibab NF are not connected by any stream flow and the Forest boundary is miles from the Verde River, buffered by the slopes of the Mogollon Rim. The geography makes downstream effects from any management activity highly unlikely.

Table 20 Number of individual spikedace collected at the Bird Area of the Gila River and at sites on the three forks of the Gila River.

Site Name	# of individuals		
	2005	2006	2007
Gila Bird Area (Miller data only)	1075	1283	*
East Fork Gila (all data)	0	0	*
Middle Fork Gila (all data)	0	0	*
West Fork Gila (all data)	7	32	*

*Surveys and monitoring were conducted by Gila NF and in cooperation with NMDGF and Rocky Mtn. Research station. Annual monitoring of warm water fishes at 8 permanent sites in the Gila and San Francisco River drainages was accomplished in cooperation with NMDGF. The Gila NF and NMDGF also initiated surveys during 2005 to describe the distribution and status of fishes in the three forks of the Gila River. During 2007 surveys were completed on the East Fork and West Fork Gila River. No spikedace were captured during survey efforts on the E. Fork. Propst has not collected spikedace at his E. Fork or Middle Fork sites since 1995 and 2000 respectively. The USFWS NMFRO collected approximately 100 spikedace, during late July, in the W. Fork Gila River approximately .75 miles upstream of the Gila-Cliff Dwellings National Monument.

The Gila NF funded D. Miller of Western NM University to monitor six sites within the Gila River Bird Area. John Rinne, Rocky Mtn. Research Station, conducted monitoring at numerous sites on the Gila River. Complete results of monitoring are not available currently. Results for the 8 permanent sites can be obtained from Dr. D.L. Propst, NMDGF. Monitoring reports for the Gila River Bird Area are not available at this time; the Forest receives this data in the Fall of each year and will provide it in next years report.

Surveys conducted by Dennis Miller in the Gila Bird Area of the Gila River during the reporting period indicate the population has remained above the threshold for incidental take of 500 individuals per year collected (Table 20). However, the occupancy of two of the three sites at the East, Middle, and West Fork sites of the Gila River cannot be supported by the information collected by multiple surveyors. It appears as though only the population in the West Fork of the Gila has been detected during the reporting period. Therefore, occupancy at two of the three sites cannot be determined.

Project Level Consultations

Apache-Sitgreaves NFs: Four informal consultations occurred on the Forest during the reporting period: Chitty Creek Restoration, Nutrioso WUI, Blue School Education Land Grant, and the

Pigeon Restoration Projects. No formal consultations took place for the spikedeace on the Apache-Sitgreaves, and, therefore, no incidental take was issued for the reporting period.

Coronado NF: Consultation involving spikedeace did not occur on the Coronado NF during the reporting period. Therefore, no incidental take for projects has been issued.

Coconino: Consultation involving the spikedeace did not occur on the Coconino NF during the reporting period. Therefore, no incidental take for projects has been issued.

Gila NF: The effects of three projects were consulted upon informally on the Gila NF during the reporting period. The Gila also had eight informal consultations that involved spikedeace critical habitat. However, no formal consultations took place. No incidental take was issued for projects on the Gila NF since June 10, 2005.

Kaibab NF: No ESA section 7-related activities occurred on the Kaibab NF related to spikedeace during the reporting period.

Prescott NF: Consultation involving spikedeace did not occur on the Prescott NF during the reporting period.

Tonto NF: Consultation involving spikedeace did not occur on the Tonto NF during the reporting period.

Formal consultation did not occur for the species on any of the Forests. Therefore, no incidental take was issued for projects implemented using the Apache-Sitgreaves, Coconino, Coronado, Gila, Kaibab, Prescott, or Tonto NF LRMPs.

Implementation of Conservation Measures

As a result of the current status of this species, the FS and FWS jointly developed a set of Conservation Measures for the spikedeace which became part of the proposed action under consultation. The conservation measures have been implemented as follows:

Conservation Measure #1: Designing projects in occupied spikedeace habitat on NFS lands that address the appropriate components of the spikedeace recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to spikedeace.

Apache-Sitgreaves NF: Buffers and timing of burns on the Chitty Creek Restoration were designed so that no visually measurable ash or sediment could be found within the drainages or down stream of the project area. The Chitty Creek Restoration project boundaries occur in the Eagle Creek drainage that is believed to be currently occupied by spikedeace. Similar measures were used in the Pigeon Restoration Project.

Coconino NF: Nothing to report. No projects or consultations during the reporting period.

Coronado NF: Spikedace currently does not occur within the boundaries of the Coronado NF. During consultation, the LRMP was analyzed for potential downstream effects to the population of spikedace in Aravaipa Creek. Projects have not been implemented during the reporting period in drainages that may affect spikedace downstream. Therefore, the Forest believes the Conservation Measures are not applicable at this time.

Gila NF: During 2006 and 2007, all new or proposed projects within or adjacent to spikedace habitat were analyzed to determine project affects to aquatic resources. No new or proposed projects have been determined to adversely affect the spikedace. Efforts to manage wildfires adjacent to occupied streams are undertaken on a fire by fire basis and appropriate actions are taken.

Kaibab NF: No ESA consultation assessing downstream effects to spikedace have occurred on the Kaibab NF. Therefore, the Forest believes that the Conservation Measures are not applicable at this time.

Prescott NF: The Prescott NF is in the early planning stages (pre-NEPA) of developing a Native Fish Restoration Plan. Completion of this stage is due in FY2007 with NEPA analysis to begin as well.

Tonto NF: The Tonto NF continues to exclude livestock from the Verde River riparian area.

The implementation of CM #1 has been accomplished. In addition, no formal consultations have resulted during LRMP implementation on any of the Forests with occupied spikedace habitat.

Conservation Measure #2: Cooperating with state conservation agencies, other federal agencies, FS research stations, FWS, and others (universities) to assess and prioritize habitat of stream and river segments for potential spikedace reintroduction. In addition, determine necessary habitat and watershed improvements in occupied watersheds and watersheds identified as high priority reintroduction sites and implement projects needed to contribute to recovery.

a. Determine necessary habitat and watershed improvements in occupied watersheds and watersheds identified as high priority reintroduction sites and implement projects needed to contribute to recovery.

Apache-Sitgreaves NF: During the first Spikedace Conservation Coordination Meeting hosted by the Southwestern Region of the FS, the Blue River was identified as a priority site for reintroducing spikedace. The second annual meeting occurred on January 30, 2007. During this meeting, personnel from the AGFD indicated that it has begun the internal process of approving this stocking. The AGFD will coordinate with the Apache-Sitgreaves to accomplish this effort. Also, the Apache-Sitgreaves participates on the Spikedace Conservation Coordination team.

Coconino NF: Fossil Creek has been the focus of a substantial cooperating effort to establish a native aquatic community. Fossil Creek was identified as a priority for re-establishing a population of spikedace. The Coconino is cooperating with the AGFD, Tonto

NF, FWS, BOR, and various other organizations and interested parties to fully accomplish this goal. Recently, the Coconino NF has participated on the Spikedace Conservation Coordination team.

Coronado NF: Spikedace currently does not occur within the boundaries of the Coronado NF. During consultation, the LRMP was analyzed for potential downstream effects to the population of spikedace in Aravaipa Creek. Projects have not been implemented during the reporting period in drainages that may affect spikedace downstream. Therefore, the Forest believes the Conservation Measures are not applicable at this time.

Gila NF: In cooperation with the NMDGF, FWS, and others, the Gila NF has identified the San Francisco as a high priority for reintroduction of spikedace. The project is in progress with stocking expected to occur when fish become available from propagation efforts. The Gila NF participates on the Spikedace Conservation Coordination team.

Kaibab NF: No opportunities exist for spikedace reintroductions on the Kaibab NF. Therefore, the FS believes that this Conservation Measures is not applicable at this time and likely will not be in the future due to an absence of historical suitable habitat for spikedace within the boundaries of the Kaibab NF.

Prescott NF: The Prescott NF has been involved in the efforts of the Spikedace Conservation Coordination Team in planning for possible projects for spikedace on the Forest. Primary coordination efforts for the Prescott to date have involved surveys for spikedace in the Verde River.

Tonto NF: The Tonto NF has been involved in the efforts of the Spikedace Conservation Coordination Team. The Forest is currently cooperating with the AGFD, BOR, and FWS to assess the feasibility of reintroducing spikedace to Spring Creek in the Tonto River basin.

This Conservation Measure has been implemented with efforts that will likely result in substantial expansion into the historic range of the species.

Conservation Measure #3: Participate in ongoing efforts initiated in 2003 involving state agencies, other federal agencies, universities/colleges, FS research facilities, and FWS to document the current state of knowledge regarding the spikedace. Further, develop a conservation assessment and strategy for the spikedace with a target completion of this effort within 1.5 years.

The Southwestern RO, Apache-Sitgreaves, Coconino, Gila, Prescott, and Tonto NFs have been involved in efforts to protect and recover with participation in the Spikedace Conservation Coordination Team.

- a. Identify existing populations in imminent need of protection and develop and implement, to the extent possible by the FS, a strategy for protecting the population and reducing threats to the population.

The Southwestern RO, Apache-Sitgreaves, Coconino, Gila, Prescott, and Tonto NFs are involved in efforts to protect and identify actions necessary to reduce threats to existing populations of spikedace.

Existing populations were identified and discussed at the spikedace conservation meetings in December, 2005 and February, 2007. No site specific strategy has been developed to date. Efforts to reduce threats to the Gila River Bird Area population include exclusion of livestock, implementation of Off Road Vehicle (OHV) closure, and annual monitoring. The present population in the West Fork Gila River is located within designated wilderness that is not within a grazing allotment.

Conservation Measure #4: With state conservation agencies and other researchers (i.e., academia and FS), who are currently monitoring spikedace populations, participating in the development of a consistent monitoring methodology for spikedace, their associated habitat, and co-occurring aquatic species. The FS will cooperatively document the results in an annual report to the FWS.

This issue has been addressed in the discussions of the Spikedace Conservation Coordination Team. A consistent monitoring protocol is being developed for New Mexico. However, ongoing monitoring projects target different aspects of species biology and may not lend well to incorporating a standardized protocol.

The Prescott NF in cooperation with the Rocky Mountain Research Station Flagstaff is sharing monitoring methodologies being conducted in the upper Verde River with stakeholders.

Conservation Measure #5: The FS will assist the FWS, AGFD, and the NMDGF with any spikedace reintroduction effort to the extent feasible within the mission and capabilities. **The Gila NF is currently working cooperatively with the NMDGF to reintroduce spikedace to the San Francisco River in New Mexico. Two reintroduction sites have been identified and discussed with the responsible FS line officer. The NMDGF is currently working with FWS to complete Section 7 consultation. The Conservation Services Division of NMDGF, Gila NF, and FWS-New Mexico Fisheries Resource Office have submitted funding requests to the BOR in an effort to acquire CAP funding to conduct monitoring on reintroduced populations.**

The Apache-Sitgreaves is working cooperatively with the AGFD to reintroduce spikedace to the Blue River. In addition, the Coconino and Tonto NFs are cooperating with the AGFD, FWS, BOR and others to reintroduce spikedace to Fossil Creek.

The Tonto NF is cooperating with the AGFD, FWS, and others in early planning to determine the feasibility of stocking spikedace in Spring Creek in the Tonto River basin.

There have been no reintroduction efforts to date on the Prescott NF. All efforts have been discussions for detection, protection, and possible recovery actions in the upper Verde River.

Conservation Measure #6: The FS will, within the mission and capabilities, assist the FWS, other federal agencies, state agencies, universities/colleges, and others in the development of a captive spikedace propagation program designed to augment wild populations.

The FS has been involved with others in discussions on the development of a captive spikedace propagation program designed to augment wild populations. The BOR is funding the establishment of a captive facility for spikedace and loach minnow at the Bubbling Springs Hatchery operated by the AGFD. Applicable Forests will cooperate with others to provide access to wild populations to serve as sources for the captive stock.

During June 2007, the Gila NF, in cooperation with NMDGF, AGFD, and FWS Phoenix ES Office captured 600+ spikedace at the Gila River Bird Area to begin the captive breeding program at Bubbling Springs Hatchery in Arizona.

The FS has also agreed to implement the following conservation measures with regards to wildland fire use:

Conservation Measure #7: The long-term benefits directly attributable to wildland fire use for resource benefits are the reduction of catastrophic fire. This is very significant to long-term land management goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in Geographical Information System (GIS) layers on each NF in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds.

Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.

Apache-Sitgreaves NF: a map identifying watersheds that are particularly susceptible to ash flow and sediment has not been developed at this time. A map of sensitive resource areas (occupied and critical habitat) has been made available to the District Fire Management Officer and the Line Officer for both districts with occupied habitat and designated critical habitat.

Coconino NF: Spikedace critical habitat is in the GIS, but needs to be updated to reflect the recent re-designation. There is no longer any critical habitat on the Coconino NF. There have been no wildland fire use fires in the area of occupied or recently occupied habitat.

Coronado NF: Spikedace currently does not occur within the boundaries of the Coronado NF. During consultation, the LRMP was analyzed for potential downstream effects to the

population of spokedace in Aravaipa Creek. Wildland fire use for resource benefits did not occur in drainages that may affect spokedace downstream. Therefore, the Forest has not implemented this Conservation Measures at this time.

***Gila NF:* The Gila NF completes pre-ignition planning yearly prior to the beginning of fire season. The Forest has developed and provides districts with GIS layers of current distribution of federal status species including critical habitat. The yearly planning is utilized to assist line officers during the decision making process related to appropriate suppression actions during fire season.**

***Kaibab NF:* Spikedace or designated critical habitat does not occur on the Kaibab NF. Therefore, this Conservation Measure is not applicable.**

***Prescott NF:* GIS layers for species and critical habitat occurrence are available**

***Tonto NF:* Spikedace or designated critical habitat does not occur on the Forest at this time. Therefore, this Conservation Measure is not applicable at this time.**

b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed. For example, concerns may include spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, and avoiding mechanical and chemical measures within the riparian corridor, etc.

During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.

***Apache-Sitgreaves NF:* The Forest believes it has limited occupied habitat and a fisheries biologist is assigned to fire management activities. Additionally, BMPs along with mitigation measures will be implemented to minimize soil and ash movement.**

***Coconino NF:* Nothing to report.**

***Coronado NF:* Spikedace currently does not occur within the boundaries of the Coronado NF. Wildland fire use for resource benefits did not occur in drainages that may affect spokedace downstream. Therefore, this Conservation Measures is not applicable at this time.**

***Gila NF:* The Gila NF has been successful in providing specialist input and coordination during fire events. District Biologists are expected to consult with the Forest Fisheries Biologist, via phone or email, on actions that are required for events that are lower in priority.**

***Kaibab NF:* Spikedace do not occur on the Kaibab NF. Therefore, the Forest has not implemented this Conservation Measure at this time.**

***Prescott NF:* A fisheries biologist is assigned for consultation on projects.**

***Tonto NF:* Spikedace do not occur on the Forest at this time. Therefore, this Conservation Measure is not applicable.**

- c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities/colleges, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

***Apache-Sitgreaves NF:* A contingency plan specific to the Forest has not been developed.**

***Coconino NF:* Nothing to report.**

***Coronado NF:* Spikedace currently does not occur within the boundaries of the Coronado NF. Wildland fire use for resource benefits did not occur in drainages that may affect spikedace downstream. Therefore, this Conservation Measures is not applicable at this time.**

***Gila NF:* The Gila NF, through annual pre-ignition planning and appropriate suppression response discussions, addresses the potential effects to TEP species and if potential effects can not be mitigated the Line Officer is responsible for determining the appropriate suppression response.**

***Kaibab NF:* Spikedace do not occur on the Kaibab NF. Therefore, the Forest has not implemented this Conservation Measure at this time.**

***Prescott NF:* No actions were completed during reporting timeframe.0**

***Tonto NF:* Spikedace do not occur on the Forest at this time. Therefore, this Conservation Measure has not been implemented at this time.**

Implementation of Terms and Conditions

The FWS issued three Reasonable and Prudent Measures along with six implementing Terms & Conditions. Forests with projects involving ESA consultation and implemented using the LRMP responded to the question of compliance with the non-discretionary Terms & Conditions. This includes only the Apache-Sitgreaves and Gila NFs. The Prescott NF also submitted responses based on compliance with the Terms & Conditions although consultations were absent during the reporting period.

1.1 Manage riparian areas adjacent to and upstream of spikedace populations for conditions to eliminate direct effects and minimize indirect effects to spikedace.

Apache-Sitgreaves NF: Buffers and timing of burns on the Chitty Creek and Pigeon Restoration Projects were designed so that no visually apparent ash or sediment could be detected within the drainages or downstream of the project area.

Approximately 95% of spikedace habitat on the Gila NF is excluded from livestock grazing. Riparian management on the Gila NF emphasizes properly functioning systems.

Livestock grazing allotments on the Prescott NF continue to restrict livestock grazing use along the upper Verde River. The Prescott NF continues to have road closures in place for the upper Verde River and is currently coordinating with the AGFD to prevent illegal vehicle access to the upper Verde River through the use of barriers.

1.2 Design projects within the Engineering, Fire Management, Forestry and Forest Health, Lands and Minerals, Rangeland Management, Watershed Management, and Wildlife programs to minimize or eliminate adverse effects to the spikedace.

The Apache-Sitgreaves had no adverse determinations for this species.

Gila NF: The Gila NF reports no projects planned or designed within or adjacent to occupied habitat that would adversely affect the spikedace. Efforts to manage wildfires adjacent to occupied streams are undertaken on a fire by fire basis and appropriate suppression actions are taken.

Prescott NF: in 2005, population and habitat assessments were completed for the Horseshoe Livestock Grazing Project EA for areas along the upper Verde River.

1.3 Cooperatively work to eliminate the presence of non-native aquatics within occupied habitat of the spikedace on NFS lands. Give consideration to native fish species when designing fish habitat improvement projects.

No fish projects have occurred on the Apache-Sitgreaves or Coconino within spikedace habitat.

Gila NF: The Gila NF is currently working cooperatively with NMDGF and FWS-New Mexico Fisheries Resource Office on several non-native fish management projects. During 2006, the three agencies began implementation of The Forks Non-native Removal Project. The project is a four-year project that includes the mechanical removal of non-natives in the area of East, Middle, and West Forks of the Gila River. The NMDGF continues to stock rainbow trout in spikedace habitat at several sites along the Gila River Forks.

Prescott NF: Non-native fish removal was conducted on three miles of stream along the upper Verde River in 2006 in cooperation with the Rocky Mountain Research Station, Flagstaff.

2.1 Design projects within the Engineering, Fire Management, Forestry and Forest Health, Lands and Minerals, Rangeland Management, Watershed Management, and Wildlife programs to reduce negative effects (direct and indirect) with the goal of implementing projects that will have beneficial, insignificant, or discountable effects within occupied spikedace habitat.

For the Chitty Creek Restoration Project on the Apache-Sitgreaves NF, buffers, fire severity within the riparian areas, and timing of burns were designed so that no visually

measurable ash or sediment could be detected within the drainage or down stream of the project area.

During 2006 and 2007, all new or proposed projects within or adjacent to spikedace habitat were analyzed to determine project effects to aquatic resources. No new or proposed projects have been determined to adversely affect the spikedace.

Tamarisk control was completed along 1.5 miles of the upper Verde River on the Prescott NF in 2006 to improve streambank and riparian conditions.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor spikedace populations on NFS lands.

No cooperative actions occurred on the Apache-Sitgreaves or the Coconino NFs within the reporting period regarding the spikedace. However, Arizona State University personnel conduct surveys in the Eagle Creek drainage annually.

Surveys and monitoring were conducted by Gila NF and in cooperation with NMDGF and Rocky Mountain Research Station. Annual monitoring of warm water fishes at eight permanent sites in the Gila and San Francisco River drainages was accomplished in cooperation with NMDGF. The Gila NF and NMDGF also initiated surveys during 2005 to describe the distribution and status of fishes in the three forks of the Gila River. During 2005, surveys were completed on the East Fork and during 2006 surveys were initiated on the West Fork. Approximately 100 spikedace were captured in the West Fork during these efforts. No spikedace were captured during survey efforts on the East Fork. Spikedace have not been collected by the NMDGF at the East and Middle Forks sites since 1995 and 2000, respectively. The Gila NF and the NMDGF collected approximately 100 spikedace in the West Fork Gila River approximately 0.75 miles upstream of the Gila Cliff Dwellings National Monument.

The Gila NF funded Dennis Miller, Western New Mexico University, to monitor six sites within the Gila River Bird Area. John Rinne, Rocky Mountain Research Station, conducted monitoring at numerous sites on the Gila River. Complete results are not available currently (2007 results needed).

Coordinated spikedace surveys were completed along 26 miles of the upper Verde River in 2005. No spikedace were found. In cooperation with the Rocky Mountain Research Station-Flagstaff, the Prescott NF continued monitoring native fish populations and habitat conditions at seven permanent sites along the upper Verde River.

3.2 In order to monitor the impacts of incidental take, the FS shall track and report the effects of the proposed action on spikedace, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Implementation of this Term & Conditions is accomplished through the reporting process contained within this annual report.

Recovery Actions

Excluding surveys and minimization measures, no completed recovery actions were reported for the Apache-Sitgreaves, Coconino, Coronado, Gila, Prescott, or Tonto NFs. However, planning has begun for reintroduction of spinedace to Fossil Creek on the Coconino and Tonto NFS, the Blue River on the Apache-Sitgreaves NFs, the San Francisco River on the Gila NF, and potentially Spring Creek on the Tonto NF. Also, ongoing efforts to reduce nonnative species in sections of the Verde River and Gila River continue. The Prescott NF, along with AGFD and the BOR, completed site feasibility visits in 2006 along the upper Verde River for potential fish barrier locations. A final report is in progress.

Issues and Concerns

Incidental take is not adequately tied to the implementation of the LRMPs. Occupancy of sites on the Forks of the Gila River likely should not have been used to determine level or extent of take. Monitoring within Gila Bird area is a concern to the well-being of the population. Also, funding and personnel are not available to do adequate surveys and monitoring in all cases. The FS and FWS have agreed to modify the incidental take statement. Furthermore, the FS will re-initiate consultation for critical habitat which was designated for this species in March 2007.

Yaqui chub

The Yaqui chub was once found throughout the Rio Yaqui Drainage which drains western Sonora and portions of eastern Chihuahua in Mexico, and the San Bernardino Valley in the extreme southeastern corner of Arizona (DeMarais and Minckley 1993). This included San Bernardino Creek in Mexico and Arizona (Black Draw and Astin Spring) and the Morse Canyon portion of the Willcox Playa in Turkey Creek. It is believed that the Yaqui chub occurred historically in the West Turkey Creek drainage (U.S. Fish and Wildlife Service 1994) in the Chiricahua Mountains (Rutter 1896) on the Coronado NF. Turkey Creek has been the focus of efforts to reintroduce the fish to the Coronado NF.

Incidental Take Statement Evaluation

In the June 10, 2005 LRMP BO, the FWS concluded that incidental take of Yaqui chub is reasonably certain to occur as a result of the implementation of the Coronado NF LRMP. The FWS defines incidental take in terms of habitat characteristics, and is using this surrogate measure to identify when take has been considered to be exceeded. The FWS concludes that incidental take of Yaqui chub has been exceeded if currently occupied pool habitat is diminished at either the reach scale (i.e., number of pools reduced) or the scale of an individual pool (i.e., quality of pools degraded) on the Coronado NF as a result of the proposed action.

Surveys on the Coronado NF were conducted in conjunction with a translocation effort, as part of an on-going project to re-introduce a population of Yaqui chub (and associated fish species) into West Turkey Creek on the Douglas Ranger District. With the assistance of the native fisheries specialist of the AGFD, four Yaqui chub (and 80 long fin dace) were collected via

electroshocking from an adjacent private land site and immediately transported up canyon for release into perennial pools on the Forest. Yaqui chub from previous introductions were not observed. Follow-up surveys and translocations efforts are planned for 2007. The translocation effort did occur in 2007.

Pool habitats within the Coronado NF have likely diminished in quantity and quality due to drought and sediment flows following wildfires. This has not been documented using a standardized methodology for assessing habitat. Nonetheless, the Forest suspects it has occurred but does not believe it is the result of project actions implemented using the Coronado NF LRMP.

Project Level Consultations

There have been no recent consultations for this species and no incidental take has been issued.

Implementation of Terms and Conditions

Three Reasonable and Prudent Measures with six implementing Terms & Conditions were issued in the June 10, 2005 LRMP BO.

1.1 Manage riparian areas adjacent to and upstream of Yaqui chub populations for conditions to eliminate direct affects and minimize indirect effects to Yaqui chub and its habitat.

This T&C is being accomplished as projects are designed and riparian areas managed to minimize adverse effects to Yaqui chub populations.

1.2 Design fire use, chemical use, range management, and recreational projects to minimize or eliminate adverse effects to the Yaqui chub.

This T&C is being accomplished as projects are designed and riparian areas managed to minimize adverse effects to Yaqui chub populations.

1.3 Cooperate with state conservation agencies to eliminate the introduction and continued presence of non-native fish species within Yaqui chub habitat.

This T&C is also being met by the Forest as they cooperate with others to eliminate non-native fish species all across the Forest (no specific actions taken in Yaqui chub habitat).

2.1 Design projects in occupied Yaqui chub habitat to incorporate important characteristics of pool habitats with the goal of implementing projects that will have beneficial, insignificant, or discountable effects to the Yaqui chub and its habitat.

a. Pools shall be retained in their current frequency or increased in incidence in each occupied reach, even if only a single pool is occupied by Yaqui chub.

b. The physical characteristics of the pools in each reach shall be retained.

Important characteristics include, but are not limited to: length, width, depth, residual depth, bank shape, bed material, instream cover type, presence of submergent or emergent vegetation, and absence of non-native fish or amphibians.

There have been no current projects being pursued but this T&C will be implemented as projects are developed.

3.1 In cooperation with state conservation agencies, FS research stations, FWS, and ongoing research efforts, monitor Yaqui chub and Yaqui chub pool habitat on the Coronado NF.

Monitoring is being conducted each year in conjunction with re-introduction efforts, and an annual report is submitted to Tucson FWS for review and discussion at the annual coordination meeting between the Coronado NF and FWS.

3.2 In order to monitor the impacts of incidental take, the Coronado NF shall track and report the effects of the proposed action on Yaqui chub, pursuant to 50 CRF 402.14(i)(3). In combination with 3.1, this information will be used to assess when the amount or extent of take is being approached or exceeded. In addition, this information shall be used to make adaptive management changes for reducing adverse effects to the species.

Recovery Actions

Surveys on the Coronado NF were conducted in conjunction with a translocation effort, as part of an on-going project to re-introduce a population of Yaqui chub (and associated fish species) into West Turkey Creek on the Douglas Ranger District. With the assistance of the native fisheries specialist of the AGFD, four Yaqui chub (and 80 long fin dace) were collected via electroshocking from an adjacent private land site and immediately transported up canyon for release into perennial pools on the Forest. Yaqui chub from previous introductions were not observed. Follow-up surveys and translocations efforts are planned for 2007. Translocation did occur in 2007.

Issues and Concerns

No issues or concerns were presented by the Forest. However, a standardized approach to inventory and describe the quality of pool habitat has not occurred. Thereby, the amount or extent of incidental take will remain subjective without a baseline account to assess effects or changes to Yaqui chub pool habitat.

Plants

Arizona agave

The majority of Arizona agave clusters occur on the Tonto NF in three limited areas. Present FS regulations prohibit removing, destroying, or damaging any plant that is classified as threatened, endangered, rare or unique species (36 CFR 261.9). Although the species was addressed in the LRMP BO, no take was issued. Furthermore, this species has been delisted since the issuance of the BO, therefore, no further information is provided.

Arizona cliff rose

There are two populations of this species which occur on NFS lands in the Southwestern Region – the Cottonwood population on the Coconino NF and the Horseshoe Lake population which occurs on the Tonto NF.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

Project Level Consultations

Coconino: No project level consultations have occurred during the reporting period.

Tonto: There have been no site specific projects which have required consultation (NLAA or LAA) since June 10, 2005 for this species.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

Coconino: None reported.

Tonto: None reported.

Issues and Concerns Identified

No issues or concerns regarding this species have arisen.

Arizona hedgehog cactus

This plant is only found on the Tonto NF in Arizona.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

The Tonto NF has surveyed for the species, results are displayed in Table 21 below:

Table 21 Results from surveys conducted for the Arizona hedgehog cactus on the Tonto NF in Arizona.

	2005	2006	2007
Total Miles of or #	5	5	No information

of transects surveyed			
Number of plants observed	40	40	No information

Project Level Consultations

There have been no site specific projects that have required consultation (NLAA or LAA) for this species on the Tonto NF.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

The only ongoing efforts, in addition to those identified in the FS April 2004 Biological Assessment, are those that are outlined in the Carlota Mine mitigation.

Issues and Concerns Identified

There are no issues or concerns regarding this species.

Holy Ghost Ipomopsis

Holy Ghost ipomopsis is found in a single population within Holy Ghost Canyon on the Santa Fe NF in New Mexico. Approximately 80 percent of the plants grow on the cut slopes of Forest Road 122.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

The Santa Fe NF has surveyed for the species and the results are displayed in Table 22 below:

Table 22 Survey results for the Holy Ghost Ipomopsis on the Santa Fe NF in New Mexico.

	2005	2006	2007
Total miles surveyed	14 mi.	22 mi.	Unknown
Number of Plants observed	450	1,450	Unknown

Project Level Consultations

There have been no site specific projects that have required consultation on this species.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

In 2005, plants were re-introduced at two sites. This included approximately 200 plants at Winsor and 200 plants at Panchuela. In 2006, re-introduction occurred at three sites: 330 plants at Winsor, 330 plants at Panchuela and 330 plants at Indian Creek. In 2007, the Holy Ghost canyon population was supplemented with 150 plants.

Issues and Concerns Identified

There are no issues or concerns related to the Holy Ghost Ipomopsis.

Huachuca water umbel

The Huachuca water umbel has been documented from 27 sites in Santa Cruz, Cochise, and Pima counties, Arizona, and in adjacent Sonora, Mexico. Twenty one extant sites occur in four major watersheds – San Pedro River, Santa Cruz River, Rio Yaqui, and Rio Sonora. Of these 21 sites, 4 sites are under management of the FS, Coronado NF.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

Survey results for the species on the Coronado NF are found in Table 23 below.

Table 23 Survey results for the Huachuca water umbel on the Coronado NFs in 2005 and 2006.

	2005	2006	2007
Total Miles or Number of Transects Surveyed	3	3	No surveys yet
Number of Plants Observed	Numerous*	Numerous*	No surveys yet

* It should be noted that it is difficult to estimate the number of plants for this species, as the species forms interlocking mats. Numerous = present in large numbers for the size of the area searched, or commonly encountered in good habitat.

The population currently appears to be stable according to the Coronado NF biologist.

Project Level Consultations

Since 2005, there has been one informal and two formal consultations involving the Huachuca water umbel. No take was issued, as take is not issued for plant species.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

No specific recovery actions have been taken for this species since the issuance of the LRMP BO as the population seems to be stable.

Issues and Concerns Identified

There are no issues and concerns have been identified.

Pima pineapple cactus

The Pima pineapple cactus is found in Pima and Santa Cruz counties, Arizona, and northern Sonora, Mexico. Within the Coronado NF specifically, the species is located on the Nogales and Sierra Vista Ranger Districts. These populations lie within the southern end of the species' range, disjunct from the main distribution to the north, and represent only a minor part of the species' distribution and abundance.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

Surveys for the species have been conducted since June 10, 2005. There are two exclosures on the Coronado NF that are surveyed, and adjoining areas may also be surveyed. Surveys are not annual. In 2005, 25 plants were observed on the Sierra Vista Ranger District and 3 plants were found on the Nogales Ranger District. No surveys were conducted in 2006, and surveys were not scheduled to take place 2007 until after the timeframe of this report.

Project Level Consultations

Since 2005, there has been one formal consultation involving the Pima pineapple cactus since June 10, 2005. No take was issued, as take is not issued for plant species.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

No specific recovery actions have been taken for this species since the issuance of the June 10, 2005 LRMP BO.

Issues and Concerns Identified

There are no issues or concerns related to this species.

Sacramento Mountains thistle

This species occurs primarily on the Lincoln NF in south-central New Mexico. Presently, the thistle occurs in small dense populations at 86 sites on the Lincoln NF.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO. Some of the occurrences are small and sparse, particularly at drying sites, others are relatively large (in numbers) and dense on well watered travertine springs.

Surveys for new populations have been conducted on the Lincoln NF, prior to new projects in 2005 and 2006. Surveys have been conducted through contracts for the Rio Penasco and 16 Springs Wildland Urban Interface Projects. Two previously unrecorded occurrences near the mouth of Water Canyon were documented in 2006. The results of extensive monitoring, last done in 2005 under an agreement with Dr. Patricia Barlow-Irick, and of surveys done in 2006 are displayed below in Table 24.

Table 24 Results of monitoring and surveys for Sacramento Mountain thistle in 2005 and 2006.

	2005	2006	2007
Total Number of Occurrences Monitored	83	0*	No info. submitted by Lincoln
Number of Plants	280,630	600-800 plants	No info

Observed		recorded at two newly documented sites	submitted by Lincoln
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*The Lincoln NF follows protocol for extensive monitoring developed to meet Recovery Plan specified action, as approved by the FWS, on an every other year schedule (funding allows).

Monitoring in 2005 documented some 280,630 plants. Evidence of herbivory, by species, the number and species of noxious weeds, and the extent of surface water is also recorded. Some occurrences have increased in number of plants, others have decreased. Reasons for fluctuations are not well understood, though decrease in spring/water flows and the extent of herbivory are all factors known to affect plants in several ways. No direct relationship that applies to all cases has been found. Comparative numbers of plants found at 83 sites, in addition to 2005, are as follows:

- 2003 – 304,500 plants
- 2000 – 347,100 plants
- 1998 – 398,490 plants
- 1995 – 342,280 plants

In summary, except between 1995 and 1998, the number of plants has declined over every monitoring period. However, there is indication that number of plants has increased since 2006, likely as a result of increased precipitation. At this time no new survey information is available for the timeframe of this report.

Project Level Consultations

No consultations (formal or informal) have occurred since the issuance of the June 10, 2005 LRMP BO involving this species.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

Protective measures continue to be implemented for occurrences during implementation of the Rio Penasco Wildland Urban Interface treatments. Contracted surveys are carried out for occurrences during planning and/or prior to implementation of new projects. Monitoring of populations continues as described above. Dr. Barlow-Irick sampled for the exotic *Rhinocyllus* weevil during her monitoring in August of 2005; however, no weevils were found. The Sacramento Mountains thistle is not exposed to livestock grazing at approximately 40 occurrences because of enclosure fences or inaccessibility to livestock.

Issues and Concerns Identified

No issues or concerns were identified for this species.

Sacramento prickly poppy

The Sacramento prickly poppy occurs along the western face of the Sacramento Mountains between LaLuz Creek and Escondido Canyon in Otero County, New Mexico and may occur under lands managed by the FS, Bureau of Land Management, the State of New Mexico, the City of Alamogordo, and private citizens.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

Surveys were conducted in 2005 in April, May, August, and December for adults and seedlings in Alamo and Caballero canyons on the Lincoln NF. In 2006, surveys were conducted in Dry, Dog, Alamo, and Caballero canyons under a grant to T&E Inc., and New Mexico Natural Heritage Program at the University of New Mexico. The summary of these results is presented in Table 25 below:

Table 25 Summary of survey results for Sacramento prickly poppy on the Lincoln NF for 2005 and 2006.

	2005 (Alamo & Caballero Canyons)	2006 (Alamo & Caballero Canyons)	2006 Dry Canyon	2006 Dog Canyon	2007 Dog Canyon	2007 Fresnal Road
Number of Plants Observed	April and May: Seedlings: 816 Adults: 330 August: Plants: 819	July – Oct: Seedlings: 221 Adults: 488 December: Seedlings: 235 Adults: 488		July: Seedlings: 0 Adults: 3 Oct: Seedlings: 97 Adults: 10 Dec: Seedlings: 150 Adults: 14	June: Plants documented below mouth of canyon, off NFS lands. On/adjacent to Oliver Lee SP and BLM lands.	10 Plants plus 1 outside project area

Project Level Consultations

One formal consultation has been issued by the FWS since June 10, 2005, which involved the Sacramento prickly poppy. This consultation involved the South La Luz Allotment. The Sacramento Allotment re-initiation, which is currently in progress, will also involve adverse effects to the prickly poppy; however, that consultation has not been completed at this time.

Implementation of Conservation Measures

As a result of the current status of this species, the FS and FWS jointly developed a set of Conservation Measures for the Sacramento prickly poppy which became part of the proposed action under consultation. The conservation measures have been implemented as follows:

Conservation Measure #1: Annually protect newly emerging seedlings from trampling on NFS lands.

It is difficult to protect all newly emerging seedlings from trampling and the Lincoln NF is finding this Conservation Measure difficult to fully implement. See full discussion regarding this matter in the Issues and Concerns section below.

Conservation Measure #2: Within the mission and capability of the FS, participate with state and federal agencies, FS research and others (i.e., universities, etc.) to identify genetic factors essential to future reintroduction efforts and improve our collective understanding of the poppy's ecology in relation to habitat improvement and species recovery.

Ongoing – see discussion under Recovery Actions Implemented below.

Conservation Measure #3: On NFS lands limit Off-Highway Vehicle use to established routes.

OHVs are limited to established routes on the Lincoln NF. Access and Travel Management are undergoing analysis, per national policy at this time.

Conservation Measure #4: To the extent feasible within the mission and capabilities of the FS, assist in the propagation and reintroduction of Sacramento prickly poppy.

Ongoing – see discussion under Recovery Actions Implemented below

Recovery Actions Implemented

Recovery efforts have included the following since June 10, 2005:

2005: Seeds were successfully germinated at the University of New Mexico greenhouse by the New Mexico Natural Heritage botanist. Young plants from the University were successfully transplanted and established at the Rio Grande Botanical Garden in the spring and summer of 2005. Controlled pollination of plants at the Rio Grande Botanical Garden was successful with seed production.

From March to August of 2005, watering of two seedling plots was carried out by Otero Chapter of the New Mexico Native Plant Society volunteers. The watered plots had 9% survival of seedlings, control plots had 11% survival. Note, that the un-watered control plots had higher survival (11%) than the watered plots (9%).

2006: Monitoring of plant numbers and population age structure was accomplished in Alamo, Caballero, Dry and Dog canyons under a grant to T&E, Inc., with Phil Tonne, University of New Mexico, New Mexico Natural Heritage Program botanist as the principle investigator. General

information on the condition of plants, reproductive status, associated species, and extent of fungal infestation were documented in 2006. Associated species information was also documented in 2006. A tentative identification of fungus was made in July of 2005 at the University of New Mexico as a species of *Alternaria*. Natural Heritage New Mexico and the FWS are monitoring seedling presence and survival in Alamo and Dog Canyons in the fall and winter of 2006 and 2007.

Other ongoing activities include: GPS locations for plants in Alamo, Caballero and Dog Canyon were gathered by the Natural Heritage New Mexico botanist. It had been proposed that livestock be held out of Alamo canyon pasture in the fall until plants went dormant; however, this did not occur. It should be noted that seedlings do not go “dormant” over the winter in the sense that above ground tissues die back to the root stalk. Seedlings have meager photosynthetic tissue, sometimes only cotyledons at the onset of winter freezes, and immature root systems. If leaf tissue is lost or damaged over the winter, it is very unlikely that the seedling can survive.

Issues and Concerns Identified

The Lincoln NF is finding it impractical to implement Conservation Measure #1. The poppy establishes new plants in a manner that makes it virtually impossible to protect all seedlings. Seeds disperse by several means, including floodwaters, hence seedlings may emerge in any part of the habitat, not just around known plants. Secondly, the fact that they germinate in fall, winter, and spring, causes difficulty in terms of the effort required to locate seedlings throughout a 7 mile long rocky canyon. Furthermore, the logistics of getting protective fencing material in and out of occupied habitat creates an extreme logistical challenge. The FS and FWS have been working together to revise this conservation measure and are also working cooperatively to implement recovery and conservation actions for this species.

Zuni fleabane

This species is known from three locations in the Zuni Mountains, McKinley County, New Mexico; 28 locations in the Sawtooth and northwestern Datil mountains, Catron County, New Mexico, and one location on the Navajo Indian Reservation, Apache County, Arizona. Most of the known Zuni fleabane sites occur on the Cibola NF, within Management Areas 13, 14, and 16, as described in the Cibola NF LRMP.

Incidental Take Statement Evaluation

Under section 7(a)(2) of the ESA, take is not issued for plant species. Therefore, no incidental take statement was included in the June 10, 2005 LRMP BO.

Project Level Consultations

Since 2005, there have been no formal consultations involving this species. The Cibola NF had one informal consultation which resulted in a concurrence letter.

Terms and Conditions

Because no incidental take is issued for plants under section 7(a)(2) of the ESA, there are also no Terms and Conditions issued.

Recovery Actions Implemented

The Cibola NF, has prohibited off road vehicle travel for fuel wood cutting within the northern portion of the Datil Mountains on the Magdalena Ranger District.

Issues and Concerns Identified

There are no issues and concerns regarding this species.

Summary and Discussion

This report fulfills the requirements set out in the June 10, 2005, LRMP BO and the Interagency Agreement to Implement the BO to prepare an annual report for the FWS. The purpose of this annual report is to evaluate the need for re-initiation of consultation, and address any issues or concerns that have arisen in the implementation of the BO over the last two years.

Re-initiation Triggers

To determine if re-initiation of consultation is needed at this time, the FS has evaluated each of the following re-initiation factors:

1. The amount or extent of incidental take is exceeded.

Based on the information presented in the sections above, it is clear that the amount or extent of incidental take has not been exceeded for many of the species; however, for several other species it is difficult to determine if incidental take has been exceeded as the result of the proposed action due to a variety of factors. The FS and FWS have discussed this issue on a species by species basis and have determined that take has not been exceeded at this time. The agencies have also developed new incidental take statement language for the majority of species where this is an issue and these changes are anticipated to be addressed in an amendment to the BO.

2. New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.

At least two issues have arisen regarding this re-initiation factor. First, in the June 10, 2005 LRMP BO concurrence was received for the Kuenzler's hedgehog cactus; however, since the issuance of the BO the Lincoln NF has determined that allotment grazing in un-surveyed suitable

habitat would result in an adverse effect to the species. This determination was not consistent with that made in the LRMP BA or BO, but was consistent with the March 2005 Framework for Streamlining Informal Consultation for Livestock Grazing Activities document agreed to by both the FS and FWS. Secondly, the Rangeland Management Program on the Apache-Sitgreaves NF was determined not likely to have adverse effects to listed, proposed, or candidate species based on the Standards and Guidelines analyzed in both the BA and BO. However, adverse effects may be occurring as a result of the Rangeland Management Program on the Apache-Sitgreaves. At this time the agencies have mutually agreed that not all situations/site specific projects were anticipated in the LRMP BO and therefore there may be situations where this will occur. If this becomes a recurrent issue the agencies will reevaluate their positions at that time.

3. The action has been modified in a manner causing effects to listed species or critical habitat not previously considered.

No Forest Plan Amendments have occurred that have resulted in the action being modified. However, in the future there are at least three amendments (Apache-Sitgreaves Stewardship Amendment, Lincoln NF Perk/Grindstone and Fire Use Fire amendment) that could have significance to the June 10, 2005 LRMP BO to the point of re-initiation. Discussions between the FWS and FS should occur to resolve these potential future issues.

4. A new species is listed or critical habitat is designated that may be affected by the action. Loach minnow and spikedace critical habitat has been designated since the June 10, 2005 LRMP BO. Re-initiation of consultation will occur to address this new designation.

General or Recurring Issues and Concerns

Several issues and concerns have been identified during the implementation of the LRMP BO. These concerns are discussed below:

1. Since June 10, 2005, formal consultation has resulted in an adverse affect call for the Kuenzler's hedgehog cactus, which is contrary to the "not likely to adversely affect" call that was concurred upon by the FWS in the June 10, 2005 LRMO BO. This situation involved a grazing allotment, and the adverse call was made based on the possibility of trampling of cactus plants in unsurveyed habitat and the sideboards set up for effect calls in the Framework for Streamlining Informal Consultation for Livestock Grazing Activities. This situation has also occurred on the Apache-Sitgreaves NF as well, although in this case the BO concurred with a NLAA call for the Rangeland Management Program when adverse effects may be in fact occurring. The two agencies have worked together and determined that this situation should not result in re-initiation of the June 10, 2005 LRMP BO at this time.
2. For several species, incidental take statements could to be adjusted or modified for a number of reasons. Because of this, it has been difficult to determine if incidental take has been exceeded as the result of the proposed action. The FS and FWS have discussed these incidental take statements and will be addressing changes in an amendment to the BO.

3. Several Forests have indicated their inability to comply with the monitoring required in T&C 3.1 in the BO for many species. The BO places emphasis on monitoring each species at a level in which the FS does not have funding to carry out. It could also be argued that the level of funding outlined in T&C 3.1 is beyond the scope of what is required under §7(a)(2) consultation. It should be noted, that in many cases, monitoring has come at the expense of habitat restoration or other management actions that could be done to recover the species. Most, if not all, Forests in the Region are faced with personnel and funding levels that are not adequate to accomplish the monitoring outlined in T&C 3.1 at this time. The two agencies have agreed to revise the current monitoring T&C 3.1 in an amended BO.
4. The Lincoln NF is finding it impractical to fully implement Conservation Measure #1 for the Sacramento Mountain prickly poppy. The poppy establishes new plants in a manner that makes it virtually impossible to protect all seedlings. The two agencies are working together to revise Conservation Measure #1 and to implement recovery actions for the species.
5. In November, 2006 a letter from the FWS Regional Office to the FS Regional Office suggested that the FS immediately re-initiate consultation on the LRMP BO because an adverse call had been made on the Kuenzler's hedgehog cactus, which is inconsistent with the FWS concurrence with a "not likely to adversely affect" call in the LRMP BO. The FS and FWS have discussed this issue and have agreed that they will work together and through the LRMP BO Oversight Committee to develop a course of action to resolve issues.
6. The incidental take statement for the MSO poses several issues:
 - a. Take was issued by Recovery Unit; however, it is difficult for Forests within Recovery Units to know how much take they are allowed for their particular Forest. Take should be broken down by Recovery Unit, and by the Forests within the Recovery Unit.
 - b. The Incidental Take Statement for the MSO makes it difficult to conduct fuels treatment projects designed to reduce the risk of catastrophic fire and restore ecosystems to their natural range of variability. The 10% limits should be adjusted to facilitate treatment of PACs to reduce fire risk.
 - c. Take is being issued in project level consultations when the species is not reasonably certain to occur. For example, for the City Project and the Twin Prescribed Burn Projects on the Kaibab NF, take was issued "...for harm due to the reduction and loss of MSO nesting and roosting habitat...". This PAC has been surveyed every year since 1991, and MSO have not been detected since 1993, but the BO made the statement that the species was reasonably certain to occur in the PAC and take was issued. The FS would like to come to some resolution with the FWS regarding take being issued for the species in PACs that have been surveyed to protocol and the species has not been found. Issuing take when it is not likely to occur is contributing to an environmental baseline for this species that is in error.

- d. For fuels reduction projects, at least in Arizona, the FS is being asked to conduct micro habitat monitoring. On the Pinaladrea project for example, the cost of this sampling could range from \$50,000 to \$100,000.

The FS and FWS are working together with Regional and field office staff to resolve these issues and address them in an amended BO.

7. The Gila NF expressed concerns with the FWS during the development of the BO that the population of Chihauhua chub in Mcknight Creek was not likely viable and could possibly be absent because of an absence of habitat suitable to sustain the population over the long-term. Using the presence of a population in Mcknight Creek, perhaps, is likely not a satisfactory measure for assessing incidental take associated with implementation of the Gila NF LRMP. The FS is working with the FWS species lead to resolve this issue.
8. Incidental take for the spikedace is not adequately tied to the implementation of the LRMPS. Occupancy of sites on the Forks of the Gila River likely should not have been used to determine level or extent of take. Monitoring for the spikedace within the Gila Bird area is a concern to the well-being of the population and fluctuations can not be adequately tied to implementation of the proposed action. The two agencies continue to discuss these issues and will address any needed changes in an amendment to the BO. The FS will re-initiate consultation for spikedace critical habitat.
9. No issues or concerns were presented by the Forests regarding the Yaqui and Gila chubs. However, a standardized approach to inventory and description of the quality of pool habitat has not occurred. Thereby, the amount or extent of incidental take will remain subjective without a baseline account to assess effects or changes to Yaqui chub and Gila chub pool habitat. Both agencies are aware of this issue and will continue to work with the species experts.
10. The Cibola NF has requested that they be removed from the Conference Opinion for the yellow-billed cuckoo in the LRMP BO document. According to 15 years of breeding bird survey data, this species (western U.S. distinct population segment) has never been found on the Cibola NF. The FWS has agreed to remove the Cibola from the Conference Opinion for the yellow-billed cuckoo in an amended BO.
11. Future Forest Plan Amendments for Restoration projects on NFS lands is a concern. It is likely that these projects could result in re-initiation of the LRMP BO, most particularly for the Mexican spotted owl. The FS will keep the FWS informed if this issued develops into more of a concern as time goes on.
12. In February the FS received a white paper from the New Mexico Ecological Services Field office regarding the Chiricahua leopard frog and exceeding take on the Negrito/Yeguas allotment on the Gila NF (see discussion under Chiricahua leopard frog above). FS and FWS have agreed that the LRMP BO Oversight Committee should be made aware of issues such as this, have the opportunity to discuss the issues, and be allowed to develop a course of action prior to emails and white papers being sent to FS or FWS leadership.

13. There is still indication that some FS line officers and biologists are not aware of the conservation measures and terms and conditions outlined in the BO. The FS will continue to inform and educate their employees regarding the mandatory requirements of the LRMP BO.
14. There were no populations identified on the Globe Ranger District of the Tonto NF for the Chiricahua leopard frog. Hence, there was no consideration for the protection and maintenance of existing populations in the Chrysotile Allotment on the Tonto NF. The specific population listed in the LRMP BO places emphasis on identified populations while potentially de-emphasizing the importance of other populations unknown at the time of the BO issuance.

Although a number of issues and concerns have been identified through the development of this annual report, a number of positive outcomes have been identified as well. For example, on the Tonto NF, the LRMP BO has been a positive driving force behind much of the consultation and recovery actions that were initiated in 2006 for the Red Lake Allotment. Several habitat improvement projects, including fence building and repairs, and egg mass collection, captive rearing and release of metamorphs are just some of the recovery activities conducted on this allotment in 2006. As part of this, frogs were reintroduced at two historic localities. Furthermore, in the BA for the Carlisle Allotment on the Lakeside Ranger District on the Apache-Sitgreaves, there was a complete discussion of the LRMP compliance for the Chiricahua leopard frog. This resulted in FWS concurrence for a NLAA finding. The LRMP BO has also resulted in the FS seeking Natural Resource Conservation Service EQUIP or other funds to restructure pastures to avoid critical habitat for the southwestern willow flycatcher.

Recommendations for Change

1. Incidental Take Statements for the following species should be considered for revision. These changes will be addressed in an amendment to the BO.
2. Monitoring Term and Condition (3.1) needs to be revisited for all species for which it was issued. The FS and FWS have mutually agreed on changes to Term and Condition 3.1 which will be addressed in an amendment to the BO.

Define a mutually agreed upon understanding of how the Programmatic LRMP and site specific projects are linked. The FS and FWS have worked together and determined that not all site specific projects could be anticipated in the BO, therefore it is acknowledged that there will be times when this document and site specific documents will not be in concert.

4. Changes are needed for Conservation Measure #1 for the Sacramento prickly poppy. The two agencies are currently engaged in developing a mutually agreed upon revision to this conservation measure.
5. An issue resolution process should be developed so that in the future, any issues or disagreements between the agencies can be resolved quickly at the appropriate level. The

agencies have mutually decided that the Oversight Committee will function as the initial issue/dispute resolution team.

6. A streamlined method for re-initiation should be developed and approved by the OSC which includes a long term landscape perspective, particularly for wide ranging species such as the Mexican spotted owl. This issue will be addressed when full re-initiation of consultation is required.

7. Several issues involving the Chiricahua leopard frog are in need of discussion and resolution. These issues will continue to be discussed and resolved once the FWS completes their 5 year review of this species.

8. Issues involving several of the fish species (as identified in the Summary and Discussion section above) need to be discussed and resolved. Many of these issues have been resolved and will be addressed in an amended BO.

9. The two agencies need to cooperatively evaluate the re-initiation factors and determine both if consultation is necessary, and if so, how best to approach the task. This has been done and it has been determined that none of the re-initiation factors have been tripped at this time. Re-initiation will occur; however, for designated critical habitat for the spikedace/loach minnow and for the desert pupfish which now occurs on the Tonto NF.

10. FS needs to make Forests, including line officers and biologists, more aware of the LRMP BO, its associated Conservation Measures, and Terms and Conditions and the ramifications for non-compliance. The FS will make a renewed effort to inform and educate field employees on the mandatory components of the LRMP BO.

11. The MSO micro habitat monitoring on fuels reduction projects needs to be discussed as the FS thinks these requests are cost prohibitive. The two agencies are currently in discussion regarding this issue and it is expected that it will be addressed when the FWS finalizes the revised Recovery Plan for the species.

Appendices

Appendix A

The Following is an excerpt from the Programmatic Biological and Conference Opinion – The Continued Implementation of the Land and Resource Management Plans for the Eleven National Forests and National Grasslands of the Southwestern Region, Consultation #2-22-03-F-366, June 10, 2005, pp. 29-33:

Conservation Measures

In response to concerns regarding the current status of four species, and after thorough review of their environment baseline, the FS and FWS cooperatively developed a set of conservation measures for each of these species. These conservation measures were provided to the FWS on February 2, 2005, in the form of a supplement to the April 8, 2004, biological assessment. The four species included in the supplement are the spikedace, Little Colorado spinedace, Chiricahua leopard frog, and Sacramento prickly poppy. The conservation measures specifically address issues related to the long-term conservation of the species on NFS lands in the Southwestern Region. These conservation measures were included to become part of the proposed action and were analyzed as part of the proposed action by the FWS.

Spikedace

The FS has agreed to implement the following conservation measures for the spikedace:

Conservation Measure #1: Design projects in occupied spikedace habitat on NFS lands which address the appropriate components of the spikedace recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to spikedace.

Conservation Measure #2: Cooperate with state game and fish agencies, other federal agencies, FS research stations, FWS, and others (universities, etc.) to assess and prioritize habitat of stream and river segments for potential spikedace reintroduction. Cooperatively document the results in an annual report to the FWS.

- a. Determine necessary habitat and watershed improvements in occupied watersheds and watersheds identified as high priority reintroduction sites and implement projects needed to contribute to recovery.

Conservation Measure #3: Participate in ongoing efforts initiated in 2003 involving state agencies, other federal agencies, universities, FS research facilities, and FWS to document the current state of knowledge regarding the spikedace. Cooperatively develop a conservation assessment and strategy for the spikedace. Target the completion of this effort within 1.5 years.

- a. Identify existing populations in imminent need of protection and develop and implement, to the extent possible by the FS, a strategy for protecting the population and reducing threats to the population.

Conservation Measure #4: With state agencies and other researchers (i.e. academic and FS), who are currently monitoring spikedace populations, participate in the development of a consistent monitoring methodology for spikedace, their associated habitat, and co-occurring aquatic species. Cooperatively document the results in an annual report to the FWS.

Conservation Measure #5: To the extent feasible within the mission and capabilities of the FS, assist the FWS, AGFD, and the NMDGF with any spikedace reintroduction effort.

Conservation Measure #6: Within the mission and capabilities of the FS, assist the FWS, other federal agencies, state agencies, universities, and others in the development of a captive spikedace propagation program designed to augment wild populations.

Conservation Measure #7: The long-term benefits directly attributable to wildland fire use for resource benefits is the reduction of catastrophic fire. This is very significant to long-term land management goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in Geographical Information System (GIS) layers on each National Forest in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds. Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.
- b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed. For example, spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, avoiding mechanical and chemical measures within the riparian corridor, etc. During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.
- c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

Little Colorado River Spinedace

The FS has agreed to implement the following conservation measures for the Little Colorado River spinedace:

Conservation Measure #1: Design projects in occupied Little Colorado spinedace habitat on NFS lands which address the appropriate components of the Little Colorado spinedace recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to Little Colorado spinedace.

Conservation Measure #2: Over the next two years, the FS, in Cooperation with other state agencies and federal agencies, universities, FS research facilities, and FWS will assess and prioritize habitat stream and river segments on NFS lands for potential Little Colorado spinedace reintroduction. Cooperatively document the results in an annual report to FWS.

Conservation Measure #3: To the extent feasible within the mission and capabilities of the FS assist the FWS, and AGFD with any Little Colorado spinedace reintroduction efforts.

Conservation Measure #4: With state agencies and other researchers (i.e. academic and FS), who are currently monitoring Little Colorado spinedace populations, participate in the development of a consistent monitoring methodology for spinedace, their associated habitat, and co-occurring aquatic species. Cooperatively document the results in an annual report to the FWS.

Conservation Measure #5: The long-term benefits directly attributable to wildland fire use for resource benefits, is the reduction of catastrophic fire. This is very significant to long-term land management goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in GIS layers on each National Forest in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds. Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.
- b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed. For example, spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, avoiding mechanical and chemical measures within the riparian corridor, etc. During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.

- c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

Chiricahua Leopard Frog

The FS has agreed to implement the following conservation measures for the Chiricahua leopard frog:

Conservation Measure #1: Design projects in occupied Chiricahua leopard frog habitat on NFS lands which address the appropriate components of the Chiricahua leopard frog recovery plan, with the goal of implementing projects with beneficial, insignificant, or discountable effects to Chiricahua leopard frog.

Conservation Measure #2: Over the next five years, cooperate with state game and fish agencies, other federal agencies, FS research stations, FWS, and others (universities etc.) to assess and prioritize habitat for potential Chiricahua leopard frog reintroduction. Cooperatively document the result in an annual report to the FWS and to the extent feasible within the mission and capabilities of the FS assist the with any Chiricahua leopard frog reintroduction efforts.

Conservation Measure #3: Implement, as appropriate, recommendations to minimize the effects of stock pond management and maintenance identified in the final recovery plan for the Chiricahua leopard frog.

Conservation Measure #4: Continue to implement the standardized interagency monitoring protocol for Chiricahua leopard frogs.

Conservation Measure #5: The long-term benefits directly attributable to wildland fire use for resource benefits, is the reduction of catastrophic fire. This is very significant in goals and objectives vital to restoring fire-adapted systems. Their absence predisposes ecosystems to the undesirable effects associated with catastrophic fires, potentially at levels of severity and intensity outside historic ranges of variability which are highly detrimental to aquatic systems. That said, the FS agrees to the following:

- a. Pre-ignition Planning: Maintain current distributions of threatened, endangered, proposed, and candidate species in GIS layers on each National Forest in the Southwestern Region and these GIS layers will be provided to the Line Officer, Fire Management staff and/or incident commander for each species occurring in the watershed of the ignition as well as surrounding watersheds. Identify watersheds that are particularly susceptible to ash flow and sediment following high intensity fires. Use this information to guide fire use mitigation measures such as; delay, direct check and/or suppress.

b. A FS biologist for the appropriate species will be assigned and consulted during fire management activities to ensure that concerns for threatened and endangered species are addressed. For example, spawning season restrictions to protect breeding activities, appropriate buffers to filter ash and sediment, avoiding mechanical and chemical measures within the riparian corridor, etc. During development and implementation of operational management plans, identify potential threats to listed species and designated critical habitat and develop mitigation actions to eliminate threats.

c. Develop contingency plans in cooperation with FWS, other federal agencies, state agencies, universities/colleges, and others to preserve, rescue and secure a population in imminent danger of localized extirpation due to fire use for resource benefits.

Sacramento Prickly Poppy

The FS has agreed to implement the following conservation measures on the Lincoln NF for the Sacramento prickly poppy:

Conservation Measure #1: Annually protect newly emerging seedlings from trampling on NFS lands.

Conservation Measure #2: Within the mission and capability of the FS, participate with state and federal agencies, FS research and others (i.e., universities, etc.) to identify genetic factors essential to future reintroduction efforts and improve our collective understanding of the poppy's ecology in relation to habitat improvement and species recovery.

Conservation Measure #3: On NFS lands limit Off-Highway Vehicle use to established routes.

Conservation Measure #4: To the extent feasible within the mission and capabilities of the FS, assist in the propagation and reintroduction of Sacramento prickly poppy.

