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In Reply Refer To:
AESO/SE
22410-05-F-0785

December 18, 2006

Memorandum

To: Field Manager, Hassayampa Field Office, Bureau of Land Management, Phoenix, Arizona

From: Field Supervisor

Subject: Biological Opinion on the Effects of the Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan on Federally-Listed Species

Thank you for your request for formal section 7 consultation on the Agua Fria National Monument (AFNM) and Bradshaw-Harquahala Resource Management Plan (RMP), pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (ESA). At issue are impacts associated with your management of the AFNM and Bradshaw-Harquahala RMP in Maricopa, Yavapai, La Paz, and Coconino counties, Arizona, on the federally-listed endangered Gila topminnow (*Poeciliopsis occidentalis occidentalis*), endangered desert pupfish (*Cyprinodon macularius*), and endangered Gila chub (*Gila intermedia*) and its critical habitat.

You have also requested concurrence from us that the proposed action may affect, but is not likely to adversely affect, the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), threatened bald eagle (*Haliaeetus leucocephalus*), threatened spikedace (*Meda fulgida*), and the candidate western yellow-billed cuckoo (*Coccyzus americanus*). We concur with these determinations in Appendix A at the end of this memorandum.

This biological opinion (BO) is based on information provided in the biological assessment (BA), the draft RMP and Environmental Impact Statement (RMP/EIS), telephone conversations, site investigations, meetings between the Bureau of Land Management (BLM) and us, and other sources of information. References cited in this BO are not a complete list of all available literature on the species of concern, associated actions, management and their effects, or on other subjects considered in this BO. A complete administrative record of this consultation is on file at our Phoenix office.

CONSULTATION HISTORY

- August 24, 2005. We received a copy of the draft biological assessment prepared for the RMP.
- December 23, 2005. We sent comments on the draft biological assessment to the Hassayampa Field Office (HFO).
- February 1, 2006. We received the final biological assessment prepared for the Bradshaw-Harquahala and Agua Fria National Monument RMPs.
- April 17, 2006. We received a memo from the Phoenix District, BLM, informing us that incidental take on Gila chub in Silver Creek had exceeded the amount provided in the May 20, 2004, Conference Opinion on the effects of the Existing Phoenix Resource Management Plan for the Agua Fria National Monument on the proposed endangered Gila chub (FWS file number 02-21-03-C-0409). Streambank alteration was measured and exceeded the thresholds provided in the conference opinion.
- August 4, 2006. We received a memo from the HFO requesting reinitiation of consultation on the Existing Phoenix Resource Management Plan (FWS file number 02-21-03-C-0409). Thus, the effects of grazing on Gila chub will be addressed in a separate consultation.
- November 2, 2006. Draft BO sent to the HFO.
- November 20, 2006. HFO sent us comments to the draft BO.

BIOLOGICAL OPINION

SCOPE OF THIS BIOLOGICAL OPINION

The RMP addresses the effects of the proposed action on listed species primarily at a broad, general, planning level. This consultation covers primarily broad land use plan-level and program-level actions; further consultation for these land use plan-level and program-level projects proposed in the RMP are not needed unless any of the four reinitiation criteria are triggered (50 CFR 402.16). However, some actions proposed in the RMP are a mix of land use plan-level, program-level, site-specific direction, and site-specific project actions. This consultation has not identified some site-specific projects. Detail about where or how they will be implemented will be identified later. As stated in the RMP, most site-specific projects implemented under the RMP will require separate section 7 analyses and consultation, as needed. The BLM will also be addressing other management actions in program, activity-level, and project-specific plans. These plans are subject to National Environmental Policy Act (NEPA) analysis and section 7 consultation, as necessary. The BLM will evaluate these management

actions to determine their impacts to the environment (i.e. NEPA analysis), including threatened and endangered species (i.e. section 7 consultation).

DESCRIPTION OF THE PROPOSED ACTION

The Bradshaw-Harquahala and AFNM RMP/EIS provides guidance to the Bureau of Land Management in its management of public land in Arizona within the Phoenix District. These documents not only provide adequate guidance for management actions but also assure that actions comply with the NEPA and the Federal Land Policy Management Act. The RMP/EIS was prepared under the authority of Sections 102 and 202 of the Federal Land Policy and Management Act and in conformance with the BLM planning regulations 43 CFR 1600. The RMP/EIS analyzes the impacts of implementing the BLM's proposed action and alternatives in conformance with the Council on Environmental Quality regulations for implementing NEPA (40 CFR 1500).

The proposed action consists of implementation of the preferred alternative described in the RMP/EIS). Once finalized, there will be two separate Resource Management Plans, one for the Agua Fria National Monument and another for the Bradshaw-Harquahala area.

The RMP/EIS includes land and resource allocations; management, implementation, and administrative actions and standard operating procedures and desired future condition objectives for many resources and management areas. The decisions are summarized below by resource category but can be found in their entirety in Chapter 2; Alternative E, the Preferred Alternative (section 2.6) and Management Common to All Action Alternatives (section 2.7) of the RMP/EIS.

1) Land Health Standards:

The proposed action establishes that the Arizona Land Health Standards apply to all resource programs. These standards apply to upland watershed function, riparian-wetland function and desired plant communities. The standards are as follows:

1. Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).
2. Riparian-wetland areas are in proper functioning condition.
3. Productive, diverse upland, and riparian-wetland plant communities of native species exist and are maintained.

2) Special Area Designations:

The proposed action provides management guidance for the existing Harquahala Mountain Summit Back Country Byway, which designates four Areas of Critical Environmental Concern (ACECs), and includes resource management objectives and guidance for these areas. The ACECs designated are Tule Creek ACEC (640 acres), Vulture Mountain ACEC (6,120 acres),

Harquahala Mountains ACEC (96,430 acres) and Black Butte ACEC (8,260 acres) for a total of 111,450 acres.

3) Wilderness Management:

The proposed action provides management guidance for the five existing wilderness areas (Hells Canyon, Hassayampa River Canyon, Harquahala Mountains, Bighorn Mountains, and Hummingbird Springs).

The proposed action nominates the Black Canyon Trail to the National Recreation Trail System.

4) Lands and Realty:

The proposed action designates Transportation and Utility Corridors, and defines how and when new corridors would be considered in response to public demand in the future. All state highways were designated as transportation corridors.

The proposed action provides management guidance for the existing communications sites at the White Tank Mountains, Lone Mountain, Burnt Mountain, Harquahala Peak, Valencia, and Black Canyon City (Bradshaw-Harquahala Planning Area).

The proposed action includes management guidance for land use authorizations including Recreation and Public Purpose Act leases, withdrawals, and classification changes (Bradshaw-Harquahala Planning Area).

In accordance with the AFNM Proclamation, no lands within the Monument will be disposed of or exchanged. No new transportation and utility corridors will be authorized in the AFNM.

5) Soil, Air, and Water Resources:

The proposed action provides management objectives and guidance for air quality, and water quality and quantity as it relates to biological communities and ecological function.

6) Biological Resources:

The proposed action identifies priority species and priority habitats for management. It designates three Wildlife Habitat Areas (WHA) totaling 179,640 acres. The WHAs are the Pronghorn Fawning Area (16,810 acres) and Pronghorn Movement Corridor (11,520 acres) on the Agua Fria National Monument and the Belmont/Bighorn Mountain WHA (140,310 acres) in the Bradshaw-Harquahala Planning Area.

The proposed action provides management objectives and guidance for upland and riparian habitat, invasive species, general wildlife management practices, priority habitat, and priority species including threatened, endangered and candidate species. The proposed action implements the BLM desert tortoise rangewide management policy.

The proposed action includes conservation actions and recovery actions for a number of listed species as well as all of the applicable terms and conditions from previous biological opinions.

Conservation Measures (CMs) proposed in the RMP for the AFNM and Bradshaw-Harquahala Planning Areas:

1) All species

- The BLM’s compliance with the ESA and NEPA will contribute to the conservation of the species.
- All proposed activity-level plans will be evaluated to prevent or mitigate any impacts that could degrade or destroy listed or proposed species and their designated or proposed critical habitat.
- The potentially adverse effects of the RMP will be tempered by legal guidelines that require the following: NEPA compliance and analysis, including threatened and endangered species evaluations, will be conducted for all future actions; compliance with the ESA; avoidance of jeopardy situations; and promotion of recovery of listed and proposed species.
- The direction in the “Arizona Standards for Rangeland Health and Guidelines for Grazing Administration” (effective August 21, 1995) will be incorporated in all plans affecting rangeland resources and grazing administration.

BLM proposes to implement the CMs originally issued from the Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (02-21-03-F-0210). Conservation Measures Riparian Area (RA)-1 through RA 14, Desert Pupfish (DP)-1 through DP-4, Gila topminnow (GT)-1 through GT-6, and Gila chub (GC) 1 through GC-3 will be implemented during fire- suppression operations and prescribed-burn operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. A complete list of these conservation measures is in Appendix B of this biological opinion. Necessary modifications of the CMs or impacts to federally protected species and habitat during fire-suppression operations will be documented by the Resource Advisor, and coordinated with the FWS.

2) Southwestern willow flycatcher (SWWF)

- The following conservation measures have been adopted from the Southwestern Willow Flycatcher Recovery Plan (FWS 2002):
 - Manage fire to maintain and enhance habitat quality and quantity.
 - Manage livestock grazing to restore desired processes and increase habitat quality and quantity.
 - Determine appropriate use areas for grazing.

- Fully implement section 7(a)(1) of the ESA.

3) Gila topminnow (GT) and Desert pupfish (DP)

The proposed action adopts the following measures from the Gila Topminnow Recovery Plan (1999) and Desert Pupfish Recovery Plan (1993).

GT Recovery Actions

Description of Recovery Action

- Monitor transplanted populations and habitat.
- Regulate land and water uses for the benefit of topminnow.
- Enhance and improve habitat for topminnow.
- Prevent invasion of non-native fish.
- Remove undesirable non-native fishes.
- Review all projects which might affect topminnow or habitat on public lands.
- Reintroduce topminnow into suitable sites within their historical range.
- Survey, evaluate, select reintroduction sites.
- Prepare reintroduction sites if necessary.
- Transplant topminnow.
- Manage the habitat of reintroduced populations.
- Study the relationship between topminnow populations and multiple use management, particularly livestock grazing.

DP Recovery Actions

Description of Recovery Action

- Re-establish desert pupfish populations.
- Monitor and maintain natural, re-established, and refugia populations.

The RMP also incorporates existing terms and conditions from previous biological opinions to be included as part of the proposed action:

A. Tule Creek Riparian Exclosure (FWS file number 2-21-91-F-060)

- The BLM will make all reasonable effort to minimize disturbance of and working within the stream channel and cienega of Tule Creek.
- The BLM (or appropriate designee) will regularly inspect and repair the exclosure fence.

B. Reintroduction of Gila topminnow and desert pupfish into three tributaries of the Agua Fria River (FWS file number 2-21-99-F-031):

- Notify the FWS prior to stocking the sites.

- Conduct prescribed burns such that no more than one-half of the watershed of each reintroduction site is burned in a two-year period (excluding buffers to the streams) and repeat treatment at greater than two-year intervals.
- At Silver Creek, monitor vegetation and streambanks of each site twice annually each year, during and following livestock seasonal use period, using accepted BLM methods. This is a modification from the original term and condition which required monitoring to be done once annually.
- Monitor DP and GT populations and appropriate aquatic habitat variables at least once each year. Use accepted protocols in cooperation with AGFD and FWS with respect to augmentation periods and extirpation evaluations.
- Monitor for fish kill immediately following the first runoff event after prescribed fires in the watershed.

C. Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (USFWS file number 02-21-03-F-0210)

I. Gila topminnow

The following reasonable and prudent measures and terms and conditions are necessary and appropriate to minimize take of GT:

1. Minimize the effects of harassment and mortality of GT.
 - A. BLM will coordinate all fire suppression actions in the watersheds for this species with FWS.
 - B. If incidental take of GT is likely to occur due to suppression actions, BLM will cooperate with us and other appropriate agencies to collect and salvage fish, if collection and salvage operations can be accomplished safely. Salvaged fish will be held at a facility approved by us until conditions at the site are once again suitable for the species. BLM will renovate/restore the population site(s) and aid in the re-entry of the species into the original site(s). If repatriation is not possible due to extreme effects at the site, BLM will coordinate with us to locate or restore a substitute site. Once conditions are suitable for the fish or a substitute site has been selected, the salvaged fish will be reintroduced. BLM will coordinate the salvage and release with us and AGFD.
2. Minimize the loss of GT habitat.
 - A. The BLM will monitor the effects of fire suppression actions on GT using protocols in Voeltz and Bettaso (2003) (i.e. ocular surveys, dip-netting, trapping, seining, electrofishing, etc., as applicable). Where fire suppression actions may have resulted in fish mortality, the BLM will investigate fire suppression related fish mortality and

determine if there have been measurable reductions in abundance from that determined by Voeltz and Bettaso (2003) or subsequent, annual AGFD status reviews. The BLM will monitor post-fire levels of sediment, debris, and fire-fighting chemicals at GT sites to ensure the habitat remains capable of supporting these fish. This monitoring will occur as soon as practicable after the fire and will be coordinated with FWS staff.

- B. BLM will send the results of this monitoring in a brief report to us by February of each year following monitoring efforts.

II. Desert pupfish

The following reasonable and prudent measures and terms and conditions are necessary and appropriate to minimize take of DP:

1. Minimize the effects of harassment and mortality of DP.
 - A. BLM will coordinate all fire suppression actions in the watersheds for this species with FWS.
 - B. If incidental take of desert pupfish is likely to occur due to suppression actions, BLM will cooperate with us and other appropriate agencies to collect and salvage fish, if collection and salvage operations can be accomplished safely. Salvaged fish will be held at a facility approved by us until conditions at the site are once again suitable for the species. BLM will renovate/restore the population site(s) and aid in the re-entry of the species into the original site(s). If repatriation is not possible due to extreme effects at the site, BLM will coordinate with us to locate or restore a substitute site. Once conditions are suitable for the fish or a substitute site has been selected, the salvaged fish will be reintroduced. BLM will coordinate the salvage and release with us and AGFD.
2. Minimize the loss of DP habitat.
 - A. The BLM will monitor the effects of fire suppression actions on DP using protocols in Voeltz and Bettaso (2003) (i.e. ocular surveys, dip-netting, trapping, seining, electrofishing, etc., as applicable). Where fire suppression actions may have resulted in fish mortality, the BLM will investigate fire suppression related fish mortality and determine if there have been measurable reductions in abundance from that determined by Voeltz and Bettaso (2003) or subsequent, annual AGFD status reviews. The BLM will monitor post-fire levels of sediment, debris, and fire-fighting chemicals at DP sites to ensure the habitat remains capable of supporting these fish. This monitoring will occur as soon as practicable after the fire and will be coordinated with FWS staff.
 - B. BLM will send the results of this monitoring in a brief report to us by February of each year following monitoring efforts.

III. Gila Chub (GC)

The following reasonable and prudent measures and terms and conditions are necessary and appropriate to minimize take of GC:

1. Minimize the effects of harassment and mortality of GC.

BLM will coordinate all fire suppression actions in the watersheds for this species with FWS. If incidental take of GC is likely to occur due to suppression actions, BLM will cooperate with us and other appropriate agencies to collect and salvage fish, if collection and salvage operations can be accomplished safely. Salvaged fish will be held at a facility approved by us until conditions at the site are once again suitable for the species. BLM will renovate/restore the population site(s) and aid in the re-entry of the species into the original site(s). If repatriation is not possible due to extreme effects at the site, BLM will coordinate with us to locate or restore a substitute site. Once conditions are suitable for the fish or a substitute site has been selected, the salvaged fish will be reintroduced. BLM will coordinate the salvage and release with us and AGFD.

2. Minimize the loss of GC habitat.

A. The BLM will monitor the effects of fire suppression actions on GC in areas affected by fire suppression actions. Monitoring will determine presence/absence and abundance (catch per unit effort or population estimates) of GC using accepted methods of fisheries sampling (e.g. hoop nets, electrofishing, seines). Where fire suppression actions may have resulted in fish mortality, the BLM will investigate fire suppression related fish mortality and determine if there have been measurable reductions in abundance from annual AGFD status reviews. The BLM will monitor post-fire levels of sediment, debris, and fire-fighting chemicals at GC sites to ensure the habitat remains capable of supporting these fish. This monitoring will occur as soon as practicable after the fire and will be coordinated with FWS staff.

B. During this monitoring, BLM will measure water quality at all sites surveyed for GC. Water quality data will include temperature, pH, dissolved oxygen, total dissolved solids, and turbidity.

7) Cultural Resources:

The proposed action designates eight Special Cultural Resource Management Areas (SCRMA) totaling 276,900 acres, and provides management objectives and guidance for these areas. The designated SCRMA on the Agua Fria NM are the High Use (1,570 acres), Moderate Use (8,750 acres) and Low Use (60,570 acres). The other five SCRMA are the Black Canyon (49,540 acres), Lake Pleasant/Agua Fria (27,240 acres), Wickenburg/Vulture (124,000 acres), Weaver/Octave (2,730 acres) and the Galena Gulch (2,500 acres) SMRA.

8) Recreational Resources:

The proposed action designates four Special Recreation Management Areas (SRMAs) totaling 384,510 acres and provides management objectives and guidance for these areas. These include the Black Canyon (68,730 acres), Castle Hot Springs (112,430 acres), Hassayampa (181,910 acres) and the Upper Agua Fria River Basin (21,440 acres) SMRAs. The proposed action also designates 11 Recreation Management Zones (RMZs) totaling 294,325 acres and provides management objectives and guidance as well as describing allowable uses and processes for reviewing discretionary activities in these areas. The Bradshaw-Harquahala planning area contains eight RMZs: the Table Mesa (11,050 acres), Hieroglyphic Mountains (16,510 acres), Sheep Mountain (4,270 acres), Stanton (6,050 acres), Wickenburg Community (72,040 acres), San Domingo Wash (16,040 acres), Vulture Mine (30,100 acres) and the Black Canyon Trails (11,535 acres) RMZs. The AFNM RMZs include the Front Country (12,440 acres), Back Country (57,200 acres), and Passage Zone (1,300 acres) RMZs.

9) Wilderness Characteristics:

The proposed action designates seven areas to be Managed for Wilderness Characteristics (MWCs) totaling 96,420 acres, including 23,200 acres on Perry Mesa in the AFNM. It also provides management objectives and guidance for these MWC areas.

10) Paleontological Resources:

The proposed action describes management objectives and provides guidance for management of paleontological resources if any are discovered within the planning area. These sites would be evaluated for sensitivity then classified and managed with land use allocations as described in the proposed action.

11) Visual Resources:

The proposed action designates Visual Resource Management (VRM) classifications for all of the public lands and provides management objectives and guidance for the classified lands. On the AFNM, 58,460 acres are designated as VRM class II and 12,440 acres as VRM class III. On the remaining lands, the 96,820 acres in five designated wilderness areas will continue to be managed as VRM class I, 416,510 acres are designated as VRM class II, 292,040 acres are designated as VRM class III, and 90,730 acres are designated as VRM class IV.

12) Rangeland Resources:

The proposed action permits the issuing of 104 livestock grazing authorizations, authorizes seasonal grazing only (November 1 – March 1 annually) in riparian areas on the AFNM, implements the Guidelines for Grazing Administration, and describes the process for grazing-permit renewal or modification. The proposed action also includes management guidance for range-improvement facilities.

13) Fire Management:

The proposed action allocates lands for fire use and non-use depending on vegetative community attributes and ecosystem function, establishes management objectives, and provides management guidance.

14) Transportation and Public Access:

The proposed action describes the allowable use of motorized vehicles on the public lands as restricted to designated routes only. On the AFNM, 101 miles of vehicle routes are designated as open and 70 miles of former vehicle routes are closed. Elsewhere, route designation will be completed within five years using a process that considers resource impacts, as well as public and administrative access needs and desires.

15) Mineral Resource Management:

The proposed action designates 171,940 acres as closed to locatable minerals, 171,680 acres as closed to mineral leasing, and 172,780 acres as closed to saleable minerals. Management guidance for lands reconveyed to the BLM is also provided.

16) Wild Burro Management:

The proposed action carries forward the previous designation of the Lake Pleasant Burro Herd Management Area (HMA) and continues to implement the Lake Pleasant Burro Herd Management Plan to manage the herd at the Appropriate Management Level (AML). It provides management guidance for achieving and maintaining the AML. Based on a manageability analysis, the Harquahala Herd Area would not be managed as a Herd Management Area and all of the burros therein would be removed.

A complete description of the proposed action includes guidance for all activities on the RMP, including other topics not discussed further in this biological opinion can be found in the RMP.

PROJECT AREA DESCRIPTION

The action area, located in central Arizona, includes approximately 976,000 acres of BLM-administered lands in Maricopa, Yavapai, La Paz and Coconino counties (Map 1). The action area also includes portions of the Prescott National Forest, State, county, and private lands. The BLM-administered lands have been divided by geographic area into seven management units (MU). One of these management units is the AFNM, consisting of approximately 71,000 acres of public land. The other six management units, located within the Bradshaw-Harquahala Planning Area, are the Black Canyon MU, Castle Hot Springs MU, Hassayampa MU, Harquahala MU, Harcuvar MU, and Upper Agua Fria River Basin MU. Management of the resources within these management units is addressed by planning area, and includes management decisions that are common to all planning areas. Scattered parcels of BLM-administered land, primarily 3,000 acres in Coconino County, outside the seven management units are still within the action and are subject to management decisions common to all areas.

The RMP addresses management impacts on all BLM-administered lands in all seven management units and the scattered parcels. The activities and management of the AFNM will be separated from the other six management units and scattered parcels and constitute a separate resource management plan.

The action area includes a diversity of terrain, vegetation, and habitat types. The elevation varies from over 6,000 feet on some of the scattered parcels in Coconino County to approximately 1,000 feet near Interstate 10 along the southern part of the planning area. Vegetative communities vary by elevation, soil type, and precipitation. Sonoran Desertscrub is dominant in the southwestern portion of the planning area; semi-desert grassland, interior chaparral and some pinyon-juniper woodlands are more common in the northern part of the planning area. The action areas contain approximately 140 linear miles of riparian corridors on BLM-administered lands.

STATUS OF THE SPECIES

The purpose of this section is to briefly summarize the best available information regarding the current rangewide status of each species analyzed in this document. Additional information regarding each species is contained in the administrative record for this consultation and other sources of information available to us in our files for each species. Please see our website for additional information on each species (<http://www.fws.gov/southwest/es/arizona/>).

Gila topminnow (GT)

The GT was listed as endangered, without critical habitat, in 1967 (USFWS 1967). The reasons for decline of this fish include past dewatering of springs and marshlands, impoundments, channelization, diversion, regulation of flow, land management practices that promote erosion and arroyo formation, and the introduction of predacious and competing non-native fishes (Minckley 1985, Minckley and Deacon 1991, Miller 1961). The original Recovery Plan was approved in 1984 (USFWS 1984) with delisting criteria. This Plan did not adequately address criteria for replicating natural populations. A revised recovery plan was drafted in 1994, but was never finalized (Voeltz and Bettaso 2003). However, managers are using the replication criteria for natural populations from the draft revised recovery plan in managing GT populations (Voeltz and Bettaso 2003).

Rangewide Population Status

In the U.S. the GT has a historical range that includes the Gila River and tributaries from New Mexico to the Colorado River. Currently, there are 14 remaining natural GT sites (Weedman 1998) in Arizona. Twenty-three sites on BLM land in Arizona have been stocked with GT (Voeltz and Bettaso 2003), including the Tule Creek population (Castle Hot Springs MU), which has remained stable. Cooperative efforts by the BLM, AGFD, and the FWS to reintroduce topminnow into suitable habitat sites are ongoing.

Life-history information can be found in the 1984 Recovery Plan (USFWS 1984), the draft revised GT Recovery Plan (Weedman 1998), and references cited in the plans and in this biological opinion.

Desert pupfish (DP)

DP were listed as endangered with critical habitat in 1986 (USFWS 1986). Critical habitat was only designated at Quitobaquito Spring in southwestern Arizona. There is no critical habitat within the action area. The DP Recovery Plan was finalized in 1993 (Marsh and Sada 1993). Primary threats to the species include competition and predation from introduced non-indigenous fish species, water use, water pollution, channelization, and habitat modification. Additional life-history information can be found in the desert pupfish Recovery Plan (Marsh and Sada 1993).

Rangewide Population Status

The historical distribution of DP included the Gila River basin, lower Colorado River, Rio Sonoyta basin, Salton Sink basin, and Laguna Salada basin (Minckley 1973, Marsh and Sada 1993). Historical collection localities occurred in Mexico in Baja California and Sonora and in the United States in California and Arizona. Populations and distribution probably expanded and contracted historically as regional and local climatic conditions varied.

Thirteen natural populations persist; nine of these are in Mexico. Approximately 20 transplanted populations exist in the wild (Marsh and Sada 1993), though this number fluctuates widely due to climatic variation and the establishment (and failure) of refugia populations. Many natural and transplanted populations are imperiled by one or more threats. Threats to the species include loss and degradation of habitat through groundwater pumping or diversion, contamination of agricultural return flows, predation and competition from nonnative fish species, populations of questionable genetic purity, restricted range, small populations, and environmental contaminants (Weedman et al. 1996).

Life-history information can be found in the 1993 recovery plan (Marsh and Sada 1993) and references cited therein, and in this biological opinion.

Gila chub (GC) and its Critical Habitat

The GC was listed as endangered with critical habitat on November 2, 2005 (FWS 2005). Historically, GC have been recorded from rivers, streams, and spring-fed tributaries throughout the Gila River basin in southwestern New Mexico, central and southeastern Arizona, and northern Sonora, Mexico (Miller and Lowe 1967, Rinne and Minckley 1970, Minckley 1973, Rinne 1976, DeMarais 1986, Weedman et al. 1996). Today the GC is restricted to small, isolated populations scattered throughout its historical range.

Critical habitat for GC includes approximately 163 miles of stream reaches in Arizona and New Mexico (FWS 2005). The seven primary constituent elements are summarized here: 1) perennial pools, eddies, and higher velocity areas in headwaters, springs, and cienegas of smaller

tributaries; 2) suitable water quality for spawning, including temperatures ranging from 68 to 79.7°F; 3) suitable water quality, including low levels of contaminants and sedimentation, for all other aspects of GC life history; 4) adequate food base; 5) sufficient cover for sheltering; 6) a low enough level of nonnative species such that GC are able to survive and reproduce; and 7) streams that maintain a natural flow pattern sufficient to support GC (FWS 2005).

Rangewide Population Status

GC currently occur in Turkey Creek in New Mexico; in Indian, Larry, Little Sycamore, Red Tank Draw, Silver, Spring, Sycamore, Cienega, Dix, Eagle, and Bonita and Walker creeks and Lousy Canyon, Sabino Canyon, Sheehy Spring, Redfield and Bass canyons, Babocomari River, and the San Carlos and Blue rivers in Arizona. GC also may still occur in Cienega los Fresnos and Cienega la Cienegita, Mexico (Weedman et al. 1996), although recent surveys did not detect the species.

Of all the known extant GC populations, most are small; about two thirds are considered stable but threatened, and a third are unstable and threatened (Weedman et al. 1996, FWS 2005). Reestablishment of GC has been attempted in five Arizona sites; three are believed to be extant, Romero Canyon in southern Arizona, and Lousy Canyon and Larry Creek within the AFNM.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Past consultations in the action area

Formal and informal section 7 consultations with the BLM or in which BLM was a cooperating agency that have the action area in this BO are listed at the end of this document in Table 1. In general, these projects have resulted in adverse effects to listed species but have not resulted in jeopardy or adverse modification of critical habitat. Other actions such as reintroduction projects have contributed to recovery.

On February 21, 1991, we issued a biological opinion (FWS file number 2-21-91-F-060) on the Tule Creek Riparian Exclosure which addressed the adverse effects of exclosure construction and maintenance on GT in Tule Creek. Effects to the GT were likely to occur through vehicles crossing Tule Creek during construction. The FWS concluded that the proposed action would not jeopardize the continued existence of the GT. Take was anticipated as a result of the proposed action in the form of direct loss of GT and temporary habitat loss. The level of take would be exceeded if more than ten dead or injured GT were observed. In order to minimize take, the following reasonable and prudent measures were issued:

- Conduct all proposed actions in a manner which will minimize direct GT mortalities.
- Maintain complete and accurate records of actions which may result in the take of GT and their habitat.

September 3, 1991, we issued a biological opinion (FWS file number 2-21-91-F-469) on the Tule Creek Riparian Exclosure Pipeline which addressed the adverse effects of constructing a pipeline and livestock drinking trough outside of the livestock exclosure. Effects to the GT were likely to occur through vehicles crossing Tule Creek during construction, temporary sediment increases in GT habitat, ground disturbance, and petroleum product spillage. The FWS concluded that the proposed action would not jeopardize the continued existence of the GT. Take was anticipated as a result of the proposed action in the form of direct loss of GT and temporary habitat loss. The pipeline is no longer functioning; it was destroyed by heavy flooding in 1993. The livestock troughs are no longer connected to Tule Creek (T. Hughes, BLM, pers. comm. April 3, 2006).

On November 28, 1998, we issued a biological opinion (FWS file number 2-21-99-F-031) on the reintroduction of GT and DP into Three Tributaries of the Agua Fria River which addressed the adverse effects of the transplant and continued ongoing management in the action area. Effects to the GT and DP were likely to occur from the reintroduction process and ongoing land-management activities such as livestock grazing, vehicle crossings in Silver Creek, and prescribed grassland fires. The FWS concluded that the proposed action would not jeopardize the continued existence of the GT or DP. Take was anticipated as a result of the proposed action in the form of direct loss of GT and DP during the reintroduction actions and indirect harm, harassment, or mortality from the ongoing management actions.

In order to minimize take, the following reasonable and prudent measures were issued:

- Conduct ongoing actions in a manner which reduces disturbance or disturbance to habitat or individuals or death to individuals.
- Provide a means to determine the level of incidental take that actually results from the project.

On September 3, 2004, we issued a biological opinion (FWS file number 02-21-03-F-0210) for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. That opinion addressed the effects of the BLM's fire suppression and fire and fuels management treatments on 31 listed species and designated critical habitat for nine species. The level of take is defined by BLM's proposed prescribed fire rotation in the watersheds of GT-, DP- and /or GC-occupied sites: up to one-half of the watershed for each site may be burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments will occur at greater than two-year intervals with no more than the total of approximately 5,000 acres of prescribed fire near fish habitat. We did not anticipate that wildland fire use or mechanical or chemical treatments could result in incidental take because these actions are not planned in any watershed containing these three species. In order to minimize take, reasonable

and prudent measures and terms and conditions were issued and are currently being implemented, and have been included as conservation measures for this BO.

On May 9, 2006, we issued a biological opinion (FWS file number 22410-2006-F-0006) for the proposed reintroduction of DP into Tule Creek and GT and DP into Buckhorn Spring (Castle Hot Springs MU). The FWS concluded that the proposed action would not jeopardize the continued existence of the GT or DP. Take was anticipated only as a result of floods carrying the fish downstream of the exclosures into ephemeral reaches of the drainages and dying when the water evaporated. No reasonable and prudent measures were issued.

A. STATUS OF THE SPECIES WITHIN THE ACTION AREA

Gila topminnow

GT is currently known to occur at four locations in the RMP/EIS areas (Map 2). The GT transplant history for the action area can be found in Voeltz and Bettaso (2003). The Tule Creek population was originally stocked in 1968 and supplementally stocked in 1981 following floods in 1978. This population underwent a significant population decrease following floods during January 1993. The population has recovered to the point where GT are common in permanent water throughout the area. A concrete barrier was constructed by the Bureau of Reclamation (BOR) in Tule Creek near Lake Pleasant to prevent non-native fish from traveling upstream to GT habitat in Tule Creek.

GT were reintroduced into AD Wash in 1992. This site is on lands administered by the Arizona State Land Department within the Castle Hot Springs MU. The transplant site is in a narrow canyon below a large earthen tank on private land upstream. GT are still present at this site.

Lousy Canyon was stocked with GT in 2000 (FWS file number 2-21-99-F-031). Currently, this species is present in suitable habitat throughout the canyon.

A tributary of Larry Canyon (T. 9 N., R. 3 E., sec 9) was stocked with 500-600 GT in October 2005 (FWS file number 2-21-99-F-031). AGFD monitored this site in December 2005 and found GT common throughout the system (J. Voeltz, AGFD, pers. comm. March 14, 2006).

Cooperative efforts by the BLM, AGFD, and the FWS to reintroduce GT into suitable habitat sites are ongoing. The BLM proposes to reintroduce GT into Silver Creek (T. 10 N., R. 3 E. sec 11) (FWS file number 2-21-99-F-031). Efforts are currently underway to transplant GT into Buckhorn Spring in the Castle Hot Springs MU (FWS file number 22410-2006-F-0006).

Desert Pupfish

DP currently occur at one location within the action area, Lousy Canyon (T. 9 N., R. 3 E., sec 5) on the AFNM (Map 2). This population was introduced in 2001. Monitoring conducted in 2002 indicated the population persists (Voeltz and Bettaso 2003). This population was supplemented by the BLM, AGFD, and FWS on March 31, 2006. The BLM, AGFD, and FWS reintroduced DP into an unnamed tributary to Larry Creek (T. 9 N., R. 3 E., sec 9) on March 31, 2006. The

BLM proposed to eventually stock DP into Silver Creek (T. 10 N., R. 3 E. sec 11) (FWS file number 2-21-99-F-031).

DP were introduced by the AGFD into AD Wash on State lands in 1992. DP have not been collected since July of 1993, despite annual sampling efforts (Voeltz and Bettaso 2003). In 1983, fifteen DP were stocked in Garfias Wash, west of Lake Pleasant. They have not been collected at that site since they were stocked. Both AD Wash and Garfias Wash are considered failed transplants.

Cooperative efforts by the BLM, AGFD, and the FWS to reintroduce DP into suitable habitat sites are ongoing. The 1988 Phoenix RMP/EIS states that all potential habitats in the Lake Pleasant and Black Canyon Resource Conservation Areas could be stocked with DP if site-specific NEPA evaluations conclude that the sites are suitable.

Gila chub and its Critical Habitat

Four GC populations occur in the action area, all of which occur, at least in part, on the Agua Fria National Monument (Map 2). There are currently no proposals to establish GC populations elsewhere in the planning area. There are four critical habitat areas designated for GC on the AFNM; Indian, Larry, Silver creeks, and Lousy Canyon (USFWS 2005).

The Silver Creek population was considered stable but vulnerable in 1996. The occupied habitat extends from approximately one mile above the boundary with the Tonto National Forest downstream to approximately five miles below the Forest boundary. The lower half of the occupied habitat in Silver Creek dried up during 2002-2004. GC were abundant in all of the larger pools and recruitment was evident in the upper 1.5 mile of the creek during the spring of 2005. The habitat for this population is in a grazing allotment that had been placed under a management plan that will ensure the constituent elements are protected.

There are two roads crossing Silver Creek on BLM-administered land: the upper crossing is inside the critical habitat area where the primitive road bed crosses the creek on a willow bedrock shelf, and the lower crossing is where the Bloody Basin Road crosses approximately 0.25 mile above the confluence with the Agua Fria River. The upper crossing is usually dry during base flow and the lower crossing is dry except during spring runoff and following storm events. The BLM-administered portion of the habitat for this population was included in the AFNM in 2000. Since GC were salvaged from Silver Creek in June 2005 in response to the Cave Creek Complex Fire and were returned in August 2005 after surveys indicated that Gila chub were still common in the stream.

Cattle grazing in winter 2005 and spring 2006 led to overuse in Silver Creek in the Boone Pasture of the Horseshoe Allotment. Streambank alteration was documented at 47% on December 14, 2005. The permittee was unable to move livestock because of on-going calving. Streambank alteration was measured again on April 4, 2006 and documented at 62%, again exceeding the allowable use of 25 percent as defined in the conference opinion addressing Gila chub on the AFNM (FWS file number 02-21-03-C-0409). The exceedence during the authorized

livestock season of use was likely a result of the lack of upland waters due to the ongoing drought (April 13, 2006 letter from the Phoenix District BLM to AESO).

The FWS and the BLM met on July 31, 2006 to discuss the incidental take exceedence. Since incidental take was exceeded, the conference opinion could not be converted to a biological opinion (50 CFR 402.10). The BLM requested reinitiation of formal consultation to address the effects of future livestock management on GC on the AFNM on August 4, 2006. The effects of cattle grazing on Gila chub will thus be evaluated in a separate biological opinion (FWS file number 02-21-03-F-0409RI).

The Lousy Canyon and Larry Creek Tributary GC were monitored in April 2005 and appeared to be healthy and stable with all size classes represented. These populations are located in steep canyons and are virtually unaffected by any land uses or human activities.

The Indian Creek GC population was considered unstable and vulnerable in 1996. At that time, the population was known only from a few small pools on BLM-administered lands approximately 1 mile downstream of the National Forest boundary. During the summer of 2002, Indian Creek was dry for approximately 1.5 miles above Red Rock Gulch. During the summer of 2003, the entire critical habitat stream segment along Indian Creek in the AFNM was dry. The GC population in Indian Creek on the AFNM is apparently present during years of average or above average precipitation but is subject to local extirpation during prolonged drought. The current status of GC in Indian Creek is unknown. This area will likely become re-colonized by GC from upstream on the Forest Service lands if that segment of the population survives the current drought. GC from Indian Creek were salvaged in July 2005 in response to the Cave Creek Complex Fire. Despite much of the watershed burning, GC persisted in Indian Creek on FS lands after the fire. The salvaged fish were returned to Indian Creek in November 2005.

B. FACTORS AFFECTING SPECIES' ENVIRONMENT WITHIN THE ACTION AREA

Activities within the action area that may adversely affect listed species and critical habitat include livestock grazing, and wild burro and mining management. Two or more of these species co-exist at numerous sites or will in the future as a result of the proposed action. Factors affecting GC and its critical habitat, GT and DP and the effects analysis are similar and therefore are combined into one section in this biological opinion to avoid redundancy.

Livestock Grazing

Livestock do not currently affect DP, GT, or GC at Lousy Canyon or the Larry Creek tributary because access is prevented due to the steep and rugged terrain in these canyons. The effects of livestock grazing on the watersheds are reduced by the relatively small watershed sizes and low gradient which limit erosive runoff (livestock grazing occurs primarily on the mesa tops, and Larry and Lousy canyon watersheds are approximately 7 and 12 mi² in size respectively). Runoff effects are also dissipated by the dense vegetation in the canyon sides. Upland and streamside vegetation tends to slow runoff and filter and trap sediments before they enter the streams.

Livestock grazing on the Lousy Canyon/Larry Canyon Tributary watersheds precipitates the need to have livestock watering facilities and access roads to maintain them. The location of these facilities within the watershed do not contribute significantly to erosion, silt runoff, or accelerated runoff due to the flat terrain and small watersheds above each site. The decisions to monitor water quality and adaptively manage the area coupled with the desired future conditions will facilitate timely responsive management should deleterious affects from management actions become evident.

Wild Burro Management

Wild burros are not authorized within the AFNM. If wild burros are documented on the Monument they would be removed as authorized by BLM policy regarding wild burros outside of the HMA.

The Lake Pleasant HMA includes those portions of the Castle Hot Springs MU that contain GT and proposed DP reintroduction Tule Creek. Wild burro management within the Lake Pleasant HMA is in accordance with provisions of the Lake Pleasant Herd Management Plan and at the Appropriate Management Level (AML) set in that plan. Wild burros are removed from the Lake Pleasant HMA when the population exceeds the AML or if they are determined to be nuisance animals as defined by the Wild Horse and Burro Act of 1972.

Aerial surveys for the Lake Pleasant Burro HMA were last conducted in 1999. Two hundred and five burros were estimated to occur here. Despite the wild burro presence, the GT has persisted at Tule Creek since 1968. The BLM does not specifically monitor burro use of vegetation within the enclosure; however, the site is inspected once or twice annually (FWS file number 22410-2006-F-0006). Evidence of burro use has been observed in Tule Creek; burro sign is seen in the in the enclosure but riparian vegetation use is unnoticeable and immeasurable (T. Hughes, BLM, pers. comm., November 7, 2006).

Minerals Management

Mineral management does not affect GC, GT, and DP in the AFNM. Three active placer mining-claims, on BLM-administered land, are located on Buckhorn Creek approximately one mile below the enclosure fence. There are no chemicals used in this mining operation. The existing road in Buckhorn Creek and Buckhorn Springs' presence in a side canyon of Buckhorn Creek has prevented upstream erosional events from affecting the spring (L. Young and T. Hughes, BLM, pers. comm. October 27, 2005).

There is currently no mining activity in Tule Creek.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that

are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Implementation of the RMP may result in both negative and positive effects to species and their habitat, including any designated critical habitat in the action area. These effects are addressed by Issue and Management Concern below.

Other activities described in the Proposed Action (special area designations, wilderness management, lands and realty, soil, water and air resources, biological resources, cultural resources, wilderness characteristics, paleontological resources, visual resources, and transportation and public access) do not affect any federally-listed species in the action area. These activities will not be discussed further in this BO.

All of the proposed actions would occur on BLM-administered lands within the action area. The effects described as a result of these proposed actions could also occur on adjacent State, Forest Service, and private lands in action area. Although there are listed fish populations on State land (AD Wash), almost all GT, DP, and GC in the action area are located on BLM-administered lands. The direct effects to individuals would only result if the species occurs in the portion of the action area in which a proposed action is occurring. Indirect effects of the different proposed and ongoing actions will continue to be minimized by the remote locations of listed fish populations, proposed new recreation regulations, mineral entry withdrawal on the AFNM, and existing wild burro management plans. Specific project proposals developed under the RMP will evaluate the likelihood of species presence and possible effects to determine the need for future consultation.

Livestock Grazing

The proposed Silver Creek release site (GT and DP) is accessible to livestock, but livestock will only be present in the Boone pasture of the Horseshoe Allotment for 6 to 10 weeks during the fall-winter period (November 1 to March 1). Livestock are not expected to congregate in these riparian areas at this time of year. Measurable livestock grazing impacts to the future GT and DP populations are therefore not anticipated. If Silver Creek was to be adversely affected, as detected through monitoring, corrective actions would be taken as defined in the earlier consultation on the introduction of these species into Silver Creek (FWS file number 02-21-99-F-031). The effects of cattle grazing on GC are evaluated in a separate biological opinion (FWS file number 02-21-03-F-0409R1).

The Castle Hot Springs MU proposed release sites, Tule Creek (DP) and Buckhorn Spring (GT and DP), will remain excluded from livestock grazing and no indirect effects are expected to occur. The current perennial-water portions of these sites are protected by an enclosure fence. Fish can be washed downstream of the enclosure sites as a result of large flood flows. It is anticipated that these fish would experience 100% mortality due to the ephemeral nature of these downstream reaches. Livestock effects to the proposed DP and GT transplants into these sites are addressed in a separate biological opinion (FWS file number 22410-2006-F-0006). The

proposed conservation measures listed earlier in this BO to conserve and protect these two species are part of the RMPs proposed action and are expected to reduce adverse impacts to DP and GT at the two stocking locations.

Livestock grazing on the Lousy Canyon/Larry Canyon Tributary watersheds will continue the need to have livestock watering facilities and access roads to maintain them but these facilities are not expected to affect listed fish species. The location of these facilities within the watershed will not contribute significantly to erosion, silt runoff, or accelerated runoff due to the flat terrain and small watersheds above each site. Livestock grazing will continue primarily on the mesa tops, not the canyons in which the fish populations are located. Water quality monitoring and adaptive management will facilitate timely responsive management should deleterious effects from management actions become evident.

Wild Burro Management

Wild burros will continue to be unauthorized within the AFNM. If wild burros are documented on the AFNM, they would be removed as authorized by BLM policy regarding wild burros outside of HMA.

The Lake Pleasant HMA includes those portions of the Castle Hot Springs MU that contain GT habitat and proposed DP habitat in Tule Creek. Wild burro management within the Lake Pleasant HMA will continue in accordance to the provisions of the Lake Pleasant Herd Management Plan and at the AML set in that plan. Wild burros have been and will continue to be removed from the Lake Pleasant HMA when the population exceeds the AML or if they are determined to be nuisance animals as defined by the Wild Horse and Burro Act of 1972.

The Tule Creek release site will continue to be excluded from livestock grazing by an enclosure fence (FWS file number 2-21-91-F-060). The BLM will not specifically monitor burro use of vegetation within the enclosure; however, the site will continue to be inspected once or twice annually (FWS file number 22410-2006-F-0006).

Buckhorn Creek, a proposed GT and DP reintroduction site (FWS file number 22410-2006-F-0006), is outside the Lake Pleasant Burro HMA. However, burros are found throughout the area and may continue to use Buckhorn Creek for water or forage. Burro use in this area is very light (T. Hughes, BLM, pers. comm. November 7, 2006).

Minerals Management

Mineral material disposal (sale of sand and gravel) and placer mining in washes may adversely affect GT and DP in the Castle Hot Springs MU if done within close proximity of any of the proposed release sites. The placer mining effects taking place downstream from Buckhorn Spring on proposed GT and DP transplants were formally consulted on in a separate BO, (FWS file number 22410-2006-F-0006). Three active placer mining claims, on BLM-administered land, are located on Buckhorn Creek approximately one mile below the enclosure fence. There are no chemicals used in this mining operation. The existing road in Buckhorn Creek and Buckhorn Springs' presence in a side canyon of Buckhorn Creek will prevent upstream erosional

events from the placer mines from affecting the spring (L. Young and T. Hughes, BLM, pers. comm. October 27, 2005).

There is currently no mining activity occurring in Tule Creek. Tule Creek would not be affected by future mine claims as a result of ACEC designation which would remove this area from mineral entry.

Recreation Management

AFNM Planning Area

The emphasis of recreation management on the Monument would be guided under provisions presented for a Special Recreation Management Area containing three RMZs. The RMZ allocations are: Front Country, Back Country, and Passage. These RMZs are not designated in the non-Monument lands in the planning area.

Front Country RMZ (12,440 acres) No portion of Front Country drains into occupied or potential GC, DP, or GT habitats, therefore the proposed management actions would not have any effect on listed fishes.

Passage RMZ (1,300 acres) Secondary roads are located within the watersheds which drain into GT, DP, and GC habitats. The effects of these existing roads on listed fish were addressed in an earlier biological opinion (FWS file number 02-21-99-F-031). The upper road crossing on Silver Creek is lightly traveled and is over a very willow riffle where GC are unlikely to occur. Most of the crossing is bedrock-controlled so the road crossing is not anticipated to cause adverse up or downstream effects to GC or its critical habitat. The other roads are located on mesa tops and are lightly traveled. The heavy vegetation on the canyon sides and bottoms are sufficient to filter any excessive sediment from storm runoff on these roads. We determine that there will be no measurable effects on these three species.

Back Country Zone RMZ (57,200 acres) This zone will provide an undeveloped, primitive, and self-directed visitor experience and landscape setting without provisions for motorized or mechanical access. The management emphasis will be to preserve natural, undeveloped landscapes. All lands within the Monument that are not in the Front Country or Passage RMZ are considered Back Country RMZ. Recreational use, primarily hiking and hunting, in Lousy Canyon and Larry Creek is very infrequent due to the rugged terrain. There is no off-highway vehicle access into these sites. Dispersed recreation; horseback riding, hunting, and hiking, may occur in Silver Creek, but as in the above case, is more likely to occur in the upland areas. We determine that there would be no measurable effects to these three fish species.

Manage for Wilderness Characteristics Areas Perry Mesa will be designated as a Manage for Wilderness Characteristics Area (MWCA) (23,200 acres) as part of the AFNM RMP. The use of the area will generally be through non-motorized and non-mechanical means. Motorized use that does not degrade resources or conflict with the desired future conditions described in the RMP may be allowed on designated routes. The watersheds for Lousy Canyon and Larry Creek are located within this area and are recognized as an important component of the naturalness and will be actively managed. Proposed restrictions will limit recreational use and visitation at these

sensitive sites to the low level that is currently experienced. These management actions will benefit GT and DP in Lousy Canyon and Larry Creek through restoration and protection of watersheds and aquatic habitats. These species will also benefit from no new rights-of-way (ROW) authorizations within the above mentioned watersheds.

Bradshaw-Harquahala Planning Area

Recreational use in the Tule Creek and Buckhorn Spring in the Castle Hot Spring MU is expected to remain light and dispersed. GT and DP habitats will be protected from recreational impacts, primarily off-highway vehicle use, by the pipe-rail enclosure fence that was built in 1991 (FWS file number 2-21-91-F-060).

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

GT, DP, and GC habitat and their watersheds in the AFNM are located on BLM-administered lands. Private lands are located along the Agua Fria River downstream of these habitats. None of these native fish species are expected to survive if they reach the Agua Fria River due to predation by non-native fish. No actions that could affect these species are expected to occur that would be without a Federal nexus.

The very poor road conditions in Tule Creek limit access to the GT and DP site from downstream State and private lands. Lake Pleasant management may also preclude residential development in the area. Buckhorn Canyon, downstream of Buckhorn Spring, consists of a dry wash that crosses State and private land to Lake Pleasant. Buckhorn Spring's location in a side canyon within a remote area reduces any cumulative effects that may arise from these other land ownerships. Residential development, although expected to continue increasing where permitted within the action area, may be limited in the proximity of Tule Creek and Buckhorn Spring. State and private lands within the vicinity of these two sites are very remote and consist of rugged terrain; future development may not be possible in these areas.

Failure of the Tule Creek enclosure fence resulting from vandalism may allow unauthorized off-highway vehicle use in the enclosure area. This may adversely affect both fish species if vehicle use destroys habitat and decreases water quality from excessive sedimentation and erosion from collapsed banks. The Boulder Creek allotment is expected to be re-stocked with livestock in the future; livestock may access the enclosure area when the enclosure is damaged by floods or vandalism. If this occurs, particularly in the spring-summer, concentrated livestock may adversely affect topminnow and pupfish or their habitat, decrease water quality, or decrease surface water volume from livestock consumption. The HFO inspects both enclosure fences two times a year.

CONCLUSION

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

After reviewing the current status of these three fish species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the action, as proposed, is neither likely to jeopardize the continued existence of the three listed species, nor likely to adversely modify or destroy Gila chub critical habitat. Note: This biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to designated and proposed critical habitat. We base our conclusion on the following:

1. The proposed action provides guidance to the HFO with a commitment to avoid jeopardy and adverse modification of critical habitat to all species. Additional conservation measures and incorporation of terms and conditions contribute to the conservation and minimization of adverse effect of listed species. Examples of existing site-specific projects that may adversely affect these three fish species have already been formally consulted upon in earlier biological opinions. Each of these biological opinions determined that the actions would not jeopardize the continued existence of these species.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Three previous biological opinions analyzed the effects of component parts of the RMP, including the Tule Creek enclosure fence BO, the Tule Creek pipeline BO, and the reintroduction of GT and DP into three tributaries of the Agua Fria River BO. Also the Phoenix RMP portion of the AFNM was addressed in a Conference Opinion. This document is being reinitiated for a new BO. The BLM has committed to implementing those reasonable and prudent measures and terms and conditions as described in the RMP proposed action. As program or project-level plans are

developed and the BLM comes to us for consultation on those plans, and as surveys are conducted in areas that are not documented as occupied by listed species, we will likely have better information at that time to predict effects to listed species from future actions. Based on those plans, our analysis in consultation, and new documented locations of listed species, reinitiation of this consultation (which could be addressed through those program or project-level consultations) may be necessary to adjust anticipated take herein (50 CFR 402.16a).

AMOUNT OR EXTENT OF TAKE

Our effects analyses of ongoing program implementation found that any incidental take of GT or DP from livestock grazing management on the AFNM and Castle Hot Springs MU is unlikely. The proposed action has incorporated enclosure inspections at Tule Creek and Buckhorn Spring that originated as terms and conditions from previous formal consultations (FWS file numbers 2-21-91-F-060 and 22410-2006-F-0006). The GT and DP habitats, Larry and Lousy canyons, on the AFMN are located in areas inaccessible to livestock grazing. Indirect effects from the upland watershed are minimal due to the small watershed size and dense canyon vegetation. Livestock grazing effects to GC and its critical habitat in the action area will be addressed in a separate biological opinion (FWS file number 02-21-03-F-0409RI).

The FWS completed a BO on September 3, 2004 (FWS file number 02-21-03-F-0210) for the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. That BO addressed the effects of the BLM's fire suppression and fire and fuels management treatments on DP, GT, and GC. The proposed action implementing wildfire and prescribed fire management will incorporate the terms and conditions and conservation measures for GT, DP, and GC, described in the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (FWS file number 2-21-03-F-210). We anticipate that previous BOs covered any incidental take that may occur as a result of this program guidance. Please refer to these BOs for more detailed information.

The FWS completed a BO on May 9, 2006 (FWS file number 22410-2006-F-0006) for the proposed reintroduction of DP into Tule Creek and GT and DP into Buckhorn Spring (Castle Hot Springs MU). No incidental take was issued for this activity that would occur from actions under BLM management control.

No additional incidental take is anticipated as a result of implementing the proposed action.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the BLM must comply with the terms and conditions of the following reasonable and prudent measures, and report implementation of these terms and conditions to us. These terms and conditions are non-discretionary. The reasonable and prudent measures, with the implementing terms and conditions are designed to minimize or avoid the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided.

There are no reasonable and prudent measures and terms and conditions required under this consultation.

Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202, telephone: 480/967-7900) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification will be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here do not necessarily represent complete fulfillment of the BLM's section 2(c) or 7(a)(1) responsibility for these species. In furtherance of the purposes of the ESA, we recommend implementing these discretionary actions.

We recommend that you:

1. Coordinate with the FWS in development and implementation of a recovery plan for the GC.
2. Coordinate with the AGFD and FWS to translocate GC into suitable habitat in the Castle Hot Springs MU.
3. Conduct, fund, or otherwise support comprehensive surveys for the GC in all potential or suitable habitats on BLM lands.
4. Coordinate with the AGFD and us to begin a program to control non-native aquatic species on BLM lands.

REINITIATION NOTICE

This concludes formal consultation on the action of the FRMP as described in the requests. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals

effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. As discussed in the incidental take statement, specific project plans or programmatic plans developed under the FRMP may provide new information indicating the amount or extent of incidental take anticipated may be different than indicated herein. Reinitiation of consultation would be required in that scenario (50 CFR 402.16a). We suggest that reinitiation of this plan-level consultation could be batched with the consultation document(s) for these project or program-level consultations.

We appreciate your efforts to identify and minimize effects to listed species from this project. For further information please contact David Smith (928) 226-0614 (x109) or Debra Bills (602) 242-0210 (x239). Please refer to consultation number 02-21-05-F-0785 in future correspondence concerning this project.

/s/ Steven L. Spangle

cc: Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ (Attn: D.Smith)

Habitat Branch Chief, Bob Broscheid, Arizona Game and Fish Department, Phoenix, AZ

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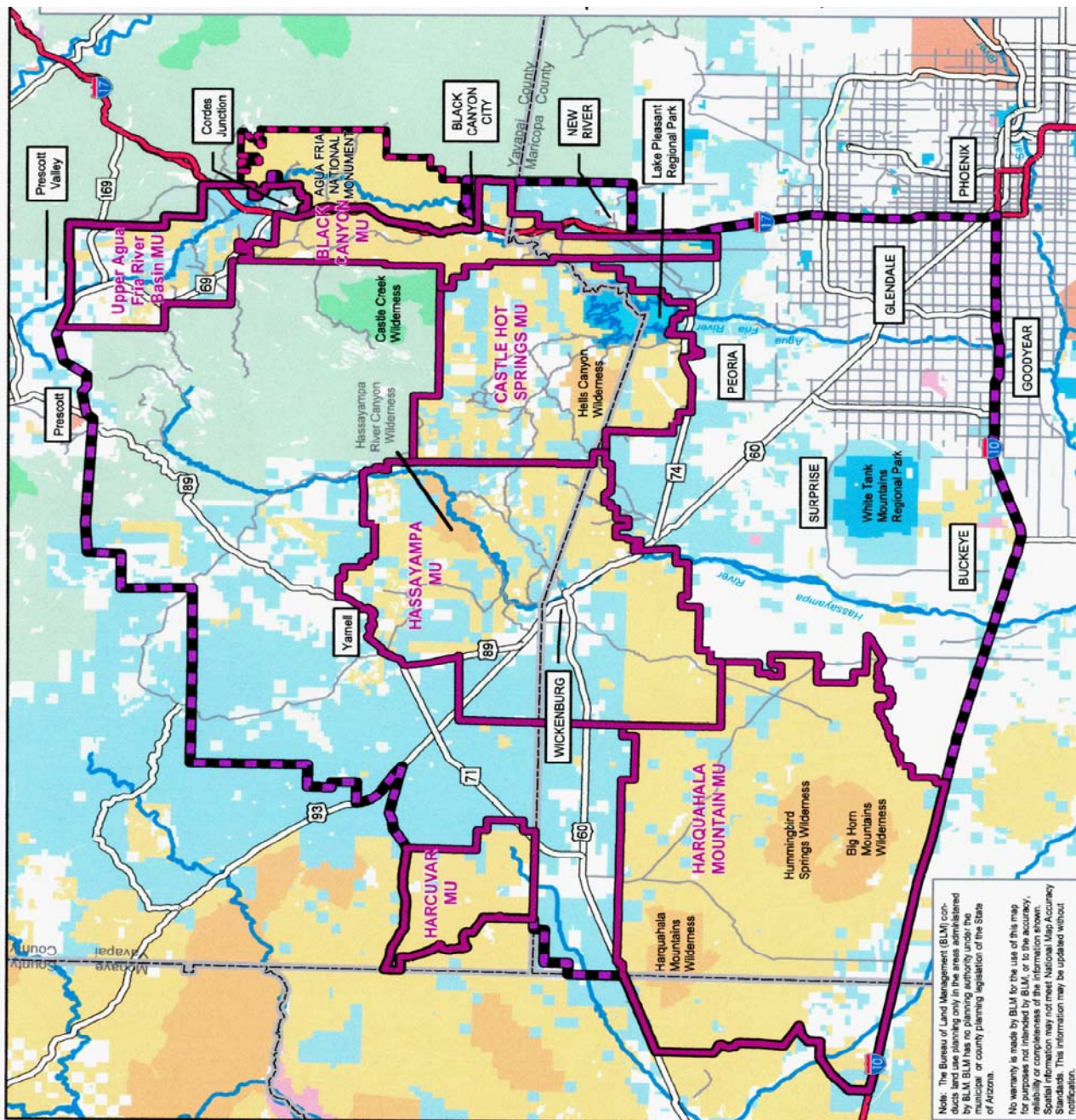
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TABLES AND FIGURES

Table 1. Past consultations within the AFNM and Bradshaw-Harquahala planning area.

File Number	Title
2-21-88-F-167	The Phoenix Resource Management Plan and Environmental Impact Statement (EIS). Addressed the effects of implementing the proposed action on federally-listed species in the plan's action area.
2-21-91-F-060	Tule Creek Riparian Exclosure. Addressed the effects of a livestock exclosure to protect Gila topminnow in a perennial reach of Tule Creek.
2-21-91-F-469	Tule Creek Riparian Exclosure Pipeline. Addressed the effects of pipeline installation to pipe water from Tule Creek exclosure to a livestock trough on Gila topminnow.
2-21-93-F-263	Revised Black Canyon Habitat Management Plan. Addressed the effects of plan implementation on Gila topminnow, desert pupfish and spikedace.
2-21-96-F-422	Eastern Arizona Grazing EIS, Phoenix District portion. Addressed permitting and operation of grazing allotments in the Phoenix Field Office's jurisdictions.
2-21-97-I-399	Lake Pleasant Burro Herd Management Plan. Addressed the effects of this plan on Gila topminnow, bald eagle, peregrine falcon, and cactus ferruginous pygmy owl.
2-21-99-F-031	Reintroduction of Gila Topminnow and Desert Pupfish into Three Tributaries of the Agua Fria River. Addressed the effects of reintroducing these two fish species into suitable habitat in the Agua Fria River tributaries.
2-21-03-F-210	BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. Addressed fuel treatments, prescribed fires, wildland fire use, and wildfire suppression throughout Arizona on BLM lands.
2-21-03-C-409	Existing Phoenix Resource Management Plan for the Agua Fria National Monument. Addressed the effects of management actions of the Phoenix RMP carried out in the Agua Fria National Monument on the proposed Gila chub and its proposed critical habitat.

Figure 1. Agua Fria National Monument and Bradshaw-Harquahala Planning Areas; including Management Units (MU).



Appendix A. Concurrences with Not Likely to adversely Affect determinations

This appendix contains our concurrences with your determinations that the proposed action may affect, but is not likely to adversely affect certain listed species; these concurrences are based on the full implementation of the proposed action as described in the Description of the Proposed Action section of the Biological Opinion, including the conservation measures proposed by the BLM.

Southwestern willow flycatcher

We concur with the finding of “may affect, not likely to adversely affect” for the SWWF. The RMP proposes numerous conservation measures based upon Recovery Actions from the Southwestern willow flycatcher recovery plan (USFWS 2002). All of the riparian habitats along all of the streams in the planning area have been evaluated to determine habitat potential for SWWF. The criteria used to evaluate these areas are the presence of surface water during the nesting season, frequency of scouring floods, and the potential to develop suitable-sized habitat patches. There is currently no potential for suitable breeding habitat to develop in the action area. No critical habitat exists in the action area.

SWWF territories have been documented in two locations, on lands not administered by the BLM, within the Bradshaw-Harquahala planning area. One territory was located near the confluence of Morgan City Wash and the Agua Fria River, downstream of the dam at Lake Pleasant in 2004. This site is located on lands administered by the Bureau of Reclamation. The other territory site is at Palm Lake on the Hassayampa River Preserve owned by the Nature Conservancy (TNC). To date no nests have been found in either BLM planning area.

The Palm Lake territory on the TNC preserve along the Hassayampa River near Wickenburg may be affected by cowbird parasitism if a nest is present and parasitism occurs. The BLM administers six livestock grazing allotments within a five-mile radius of this territory. However, a large portion of the town of Wickenburg also lies within this radius. There are also numerous irrigated pastures and corrals along the Hassayampa River within this area. All of these activities are documented as cowbird attractants. The water sources on BLM allotments are located in desert areas away from the riparian zone along the river. The effects of these BLM waters in attracting cowbirds to the TNC preserve are likely overshadowed by those cowbirds attracted to the other activities on private lands in the vicinity.

The Waddell Dam territory is located downstream of the Waddell Dam on the Agua Fria River. This riparian vegetation is watered by releases and subsurface leakage from Lake Pleasant. These flows are managed by the Bureau of Reclamation office in Phoenix, Arizona. No natural establishment or maintenance of riparian vegetation occurs as a result of seasonal flooding. Upland watershed condition effects, whether from livestock grazing, recreation, etc. to this territory are nullified by river regulation by the dam. Suitable attributes of SWWF breeding habitat that are currently present are not regenerated naturally and are not expected to support SWWF. When the riparian vegetation matures and its dense understory vegetation disappears it will eventually lose its suitability as SWWF habitat.

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Bald Eagle

We concur with the finding of “may affect, not likely to adversely affect” for the bald eagle. The grazing allotment around Lake Pleasant, which includes the bald eagle breeding area, was closed to livestock grazing in 1995. Therefore the only adverse effects to bald eagles from decisions made in these plans are associated with the continued presence of burros in the nest area and management of the Lake Pleasant Burro Herd Management Area. Potential adverse effects of this decision are tempered by implementation decisions in the Herd Management Plan that direct burro removal where needed to protect resources. The BLM will remove burros from areas where habitat degradation occurs in accordance with the 1999 Lake Pleasant Burro Herd Management Plan (FWS file number 2-21-97-I-399).

Other effects to bald eagles in the action area may occur from actions on Lake Pleasant, such as management of the dam, reservoir-related recreation, and development, that are not under the jurisdictional management of the BLM.

Spikedace and Proposed Critical Habitat

We concur with the finding of “may affect, not likely to adversely affect” for the spikedace because, although within its historical range, the species is currently believed to be extirpated from the system. Recent fish surveys in the Agua Fria River have not resulted in any recent occurrence records.

APPENDIX B. CONSERVATION MEASURES ADOPTED IN THE ARIZONA STATEWIDE LAND USE PLAN AMENDMENT FOR FIRE, FUELS AND AIR QUALITY MANAGEMENT APPLICABLE TO THE PLANNING AREAS

CONSERVATION MEASURES FOR FIRE MANAGEMENT ACTIVITIES

Wildland Fire Suppression (FS)

The following Conservation Measures will be implemented during fire suppression operations, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Each Conservation Measure has been given an alphanumeric designation for organizational purposes (*e.g.*, FS-1). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

- FS-1** Protect known locations of habitat occupied by Federally listed species. Minimum Impact Suppression Tactics (M.I.S.T.) will be followed in all areas with known Federally protected species or habitat [Appendix U, *Interagency Standards for Fire and Aviation Operations 2003*, or updates].
- FS-2** Resource Advisors will be designated to coordinate natural resource concerns, including Federally protected species. They will also serve as a field contact representative (FCR) responsible for coordination with the USFWS. Duties will include identifying protective measures endorsed by the Field Office Manager, and delivering these measures to the Incident Commander; surveying prospective campsites, aircraft landing and fueling sites; and performing other duties necessary to ensure adverse effects to Federally protected species and their habitats are minimized. On-the-ground monitors will be designated and used when fire suppression activities occur within identified occupied or suitable habitat for Federally protected species.
- FS-3** All personnel on the fire (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present. This information is best identified in the incident objectives.
- FS-4** Permanent road construction will not be permitted during fire suppression activities in habitat occupied by Federally protected species. Construction of temporary roads is approved only if necessary for safety or the protection of property or resources, including Federally protected species habitat. Temporary road construction should be coordinated with the USFWS, through the Resource Advisor.
- FS-5** Crew camps, equipment staging areas, and aircraft landing and fueling areas should be located outside of listed species habitats, and preferably in locations that are disturbed. If camps must be located in listed species habitat, the Resource Advisor will be consulted to

ensure habitat damage and other effects to listed species are minimized and documented. The Resource Advisor should also consider the potential for indirect effects to listed species or their habitat from the sighting of camps and staging areas (*e.g.*, if an area is within the water flow pattern, there may be indirect effects to aquatic habitat or species located off-site).

- FS-6** All fire management protocols to protect Federally protected species will be coordinated with local fire suppression agencies that conduct fire suppression on BLM-administered lands to ensure that the agency knows how to minimize impacts to Federally protected species in the area.
- FS-7** The effectiveness of fire suppression activities and Conservation Measures for Federally protected species should be evaluated after a fire, when practical, and the results shared with the USFWS and AGFD. Revise future fire suppression plans and tactical applications as needed and as practical.

Fuels Treatments (prescribed burning and other fuels management) (FT)

The following Conservation Measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological):

- FT-1** Biologists will be involved in the development of prescribed burn plans and vegetation treatment plans to minimize effects to Federally protected species and their habitats within, adjacent to, and downstream from proposed project sites. Biologists will consider the protection of seasonal and spatial needs of Federally protected species (*e.g.*, avoiding or protecting important use areas or structures and maintaining adequate patches of key habitat components) during project planning and implementation.
- FT-2** M.I.S.T. will be followed in all areas with known Federally protected species or habitats.
- FT-3** Pre-project surveys and clearances (biological evaluations/assessments) for Federally protected species will be required for each project site before implementation. All applicable Conservation Measures will be applied to areas with unsurveyed suitable habitat for Federally protected species, until a survey has been conducted by qualified personnel to clear the area for the treatment activity.
- FT-4** Use of motorized vehicles during prescribed burns or other fuels treatment activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, washes, and temporary fuel breaks or site-access routes. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after the prescribed burn or fuels treatment project is completed.
- FT-5** As part of the mandatory fire briefing held prior to prescribed burning, all personnel (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to

individuals and their habitats. All personnel will be informed of the Conservation Measures designed to minimize or eliminate take of the species present.

Rehabilitation and Restoration (RR)

- RR-1** When rehabilitating important areas for Federally listed species that have been damaged by fire or other fuels treatments, the biologist will give careful consideration to minimizing short-term and long-term impacts. Someone who is familiar with fire impacts and the needs of the affected species will contribute to rehabilitation plan development. Appropriate timing of rehabilitation and spatial needs of Federally listed species will be addressed in rehabilitation plans.
- RR-2** Seed from regionally native or sterile alien (non-native) species of grasses and herbaceous vegetation will be used in areas where reseeding is necessary following ground disturbance to stabilize soils and prevent erosion by both wind and water.
- RR-3** Sediment traps or other erosion control methods will be used to reduce or eliminate influx of ash and sediment into aquatic systems.
- RR-4** Use of motorized vehicles during rehabilitation or restoration activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, or washes, and to temporary access roads or fuel breaks created to enable the fire suppression, prescribed burn, or fuels treatment activities to occur. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after rehabilitation or restoration activities are completed.
- RR-5** All temporary roads, vehicle tracks, skid trails, and off-road vehicle (ORV) trails resulting from fire suppression and the proposed fire management activities will be rehabilitated (water bars, etc.), and will be closed or made impassible for future use.
- RR-6** Burned area emergency rehabilitation (BAER) activities and long-term restoration activities should be monitored, and the results provided to the USFWS and AGFD. Section 7 consultation for BAER activities will be conducted independently, if necessary.
- RR-7 (Recommended)** Develop public education plans that discourage or restrict fires and fire-prone recreation uses during high fire-risk periods. Develop brochures, signs, and other interpretive materials to educate recreationists about the ecological role of fires, and the potential dangers of accidental fires.

CONSERVATION MEASURES FOR FIRE MANAGEMENT ACTIVITIES IN RIPARIAN AND AQUATIC HABITATS (RA)

Wildland Fire Suppression and Rehabilitation

The following Conservation Measures will be implemented during fire suppression operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS. The BLM's 1987 policy statement on riparian area management defines a riparian area as "an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil."

- RA-1** During wildfire suppression, apply M.I.S.T. within riparian areas. Fire suppression actions in riparian areas should be prioritized to minimize damage to stands of native vegetation from wildfire or suppression operations. To the extent possible, retain large, downed woody materials and snags that are not a hazard to firefighters.
- RA-2** Fire suppression and rehabilitation in riparian corridors will be coordinated with the Resource Advisor or qualified biologist approved by BLM.
- RA-3** Site-specific implementation plans that include project areas with Federally protected aquatic or riparian-obligate species will specify fire management objectives and wildland fire suppression guidance, taking into account the special concerns related to these species.
- RA-4** In riparian areas, use natural barriers or openings in riparian vegetation where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, use wet firebreaks in sandy overflow channels rather than constructing firelines by hand or with heavy equipment.
- RA-5** Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists or where dry, intermittent sections occur.
- RA-6** Avoid the use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats, particularly sites occupied by Federally protected species. Apply operational guidelines as stated in the *Interagency Standards for Fire and Fire Aviation Operations 2003 (or updates)*, "Environmental Guidelines for Delivery of Retardant or Foam Near Waterways," Chapter 8 (pp. 8-13 through 8-15).
- RA-8** When using water from sources supporting Federally protected species, care must be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by Federally protected aquatic species to avoid introducing non-native species, diseases, or parasites.

RA-9 If water is drafted from a stock tank or other body of water for fire suppression, it will not be refilled with water from another tank, lakes, or other water sources that may support non-native fishes, bullfrogs, crayfish, or salamanders.

RA-10 Use of containment systems for portable pumps to avoid fuel spills in riparian or aquatic systems will be required.

Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

The following Conservation Measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological) within riparian, wetland, or aquatic habitats.

RA-12 All Conservation Measures for wildland fire suppression (**RA-1 to RA-11, Section 2.1**) also apply to fuels treatment activities (prescribed fire; mechanical, chemical, and biological treatments) in riparian, wetland, and aquatic habitats.

RA-13 Fire management treatments within or adjacent to riparian and aquatic habitats will be designed to provide long-term benefits to aquatic and riparian resources by reducing threats associated with dewatering and surface disturbance, or by improving the condition of the watershed and enhancing watershed function.

RA-14 For priority fire/fuels management areas (*e.g.*, WUIs) with Federally protected species or designated critical habitat downstream, BLM biologists and other resource specialists, as appropriate, in coordination with USFWS and AGFD, will determine:

- A) The number of acres and the number of projects or phases of projects to occur within one watershed per year.
- B) An appropriately-sized buffer adjacent to perennial streams in order to minimize soil and ash from entering the stream.
- C) Where livestock grazing occurs in areas that have been burned, specialists will determine when grazing can be resumed. Such deferments from grazing will only occur when necessary to protect streams from increased ash or sediment flow into streams ¹.

¹ The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Exhibit 4-2, BLM supplemental guidance, page 5 of 9 (<http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm>) establishes the following policy for livestock exclusion following burns:

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedlings and use of these areas should not be permitted until the vegetation recovers or is established. Both re-vegetated and, burned but not re-vegetated areas, will be closed to livestock grazing for at least two growing seasons following the season in which the wildfire occurred to promote recovery of burned perennial plants and/or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures will be made a condition or term on the grazing license

If agreement cannot be reached or treatment will not meet fuel reduction objectives, BLM will re-initiate consultation. Our authority to make these types of changes is in the regulations at 43 CFR 4110.3-3(b).

Species Specific Conservation Measures

In addition to the general Conservation Measures listed in **Sections 1.0** and **2.0**, the following species-specific Conservation Measures will be applied during wildfire suppression to the extent possible, and will be required during fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

Fish

The following Conservation Measure will be implemented for all Federally protected fish species that may be affected by the Proposed Action during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

FI-1 BLM will cooperate with other agencies to develop emergency protocols to decrease the impacts of fire suppression and fuels treatment activities on Federally listed fish species. Emergency protocols will include appropriate agency contacts, a list of facilities that can hold fish, sources of equipment needed (e.g., sampling gear, trucks) and how to address human health and safety issues.

In addition to implementing **FI-1**, the following species-specific Conservation Measures will also apply:

Desert pupfish (FE, CH)

DP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and critical habitat.

DP-2 Conduct prescribed burns such that no more than one-half of the watershed of each desert pupfish site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

DP-3 Monitor, where practical, for fish kill immediately following the first runoff event after prescribed fires in watersheds containing desert pupfish.

or permit through the issuance of grazing decision (see 43 CFR 4160). Livestock closures for less than two growing seasons may be justified on a case-by-case basis based on sound resource data and experience. Livestock management following seedling establishment and/ or burned area recovery should maintain both non-native and/or native species to meet land use (including Standards for Rangeland Health and Guidelines for Grazing Management) or activity plan objectives.

DP-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by desert pupfish.

Gila topminnow (FE)

GT-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

GT-2 Conduct prescribed burns such that no more than one-half of the watershed of each Gila topminnow natural or reintroduction site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

GT-3 Monitor for fish kill, where practical, immediately following the first runoff event after prescribed fires in the watersheds containing Gila topminnows.

GT-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila topminnow, when possible.

GT-5 Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire vegetation treatments) that may adversely affect the Gila topminnow. Mitigation plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

GT-6 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of Gila topminnow from other resource program impacts.

Gila chub (PE, Proposed CH)

GC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and proposed critical habitat.

GC-2 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila chub, when possible.

GC-3 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of Gila chub from other resource program impacts.

APPENDIX C. RECOMMENDATIONS FOR CANDIDATE SPECIES

Western Yellow-billed Cuckoo

Status of the Species

The western continental United States distinct population segment of the yellow-billed cuckoo (western yellow-billed cuckoo) is a candidate species under the ESA (USFWS 2005). In response to a petition to list the species submitted in February 1998, on July 25, 2001, the FWS issued a 12-month “warranted but precluded” finding (meaning that listing of the species is warranted but precluded by higher priority listing actions (USFWS 2001). Historically, the western yellow-billed cuckoo occupied and bred in riparian zones from western Washington (possibly southwestern British Columbia) to northern Mexico, including Oregon, Washington, southwestern Idaho, California, Nevada, Utah, western Colorado, Arizona, New Mexico, and western Texas. Today, the species is absent from Washington, Oregon, and most of California, is likely extirpated in Nevada, is rare in Idaho and Colorado, and occurs in the balance of its range in riparian habitats that are much reduced from their previous extent and are heavily affected by human use (USFWS 2001).

The western yellow-billed cuckoo is associated primarily with cottonwood-willow dominated riparian habitats (Gaines 1974, Gaines and Laymon 1984). Cottonwood-willow is the predominant and preferred habitat, but very tall screwbean-honey mesquite stands are also used. In addition, yellow-billed cuckoos have been found to use a mixture of saltcedar and cottonwood/willow (Corman and Wise-Gervais 2005). Gaines (1974) found that vegetation density, distance to water, and the length and width of the habitat area were important characteristics when surveying for cuckoos.

Principal causes of riparian habitat losses are conversion to agricultural and other uses, dams and river flow management, stream channelization and stabilization, and livestock grazing. Available breeding habitats for yellow-billed cuckoos have also been substantially reduced in area and quality by groundwater pumping and the replacement of native riparian habitats by invasive non-native plants (particularly saltcedar) (Rosenberg et al. 1991). Currently in Arizona, cuckoos occur in a scattered fashion throughout the central, east-central, west central, and southeastern parts of the State, with the majority of known populations occurring along the San Pedro, Verde, and Agua Fria rivers and Cienega Creek in Pima, Pinal, Cochise, and Yavapai counties, and Sonoita Creek in Santa Cruz County (Corman and Magill 2000).

Status of the Species in the Action Area

On the Agua Fria National Monument, approximately 20 cuckoos were found in 2003 along portions of Sycamore Creek, Indian Creek, Ash Creek, Little Ash Creek, Dry Creek, and the Agua Fria River (Wise-Gervais and Magill 2003).

Cuckoos have also been documented at the confluence of Humbug and Cow Creeks in the Castle Hot Springs MU, Box Canyon on the Hassayampa River in the Hassayampa MU, and they likely

occur elsewhere along riparian areas with suitable habitat. Comprehensive surveys for this species have not been conducted statewide since 1999 (Corman and Magill 2000), or within the action area since 2003 (Wise-Gervais and Magill 2003).

Conservation Recommendations for Yellow-billed cuckoo

We recommend that the BLM:

1. Apply the conservation measures for southwestern willow flycatcher (conservation measures WF-1 to WF-7 as defined in the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management) for occupied and/or suitable yellow-billed cuckoo habitat.
2. Map and survey potential, suitable, and occupied yellow-billed cuckoo habitat to determine where management actions should occur.

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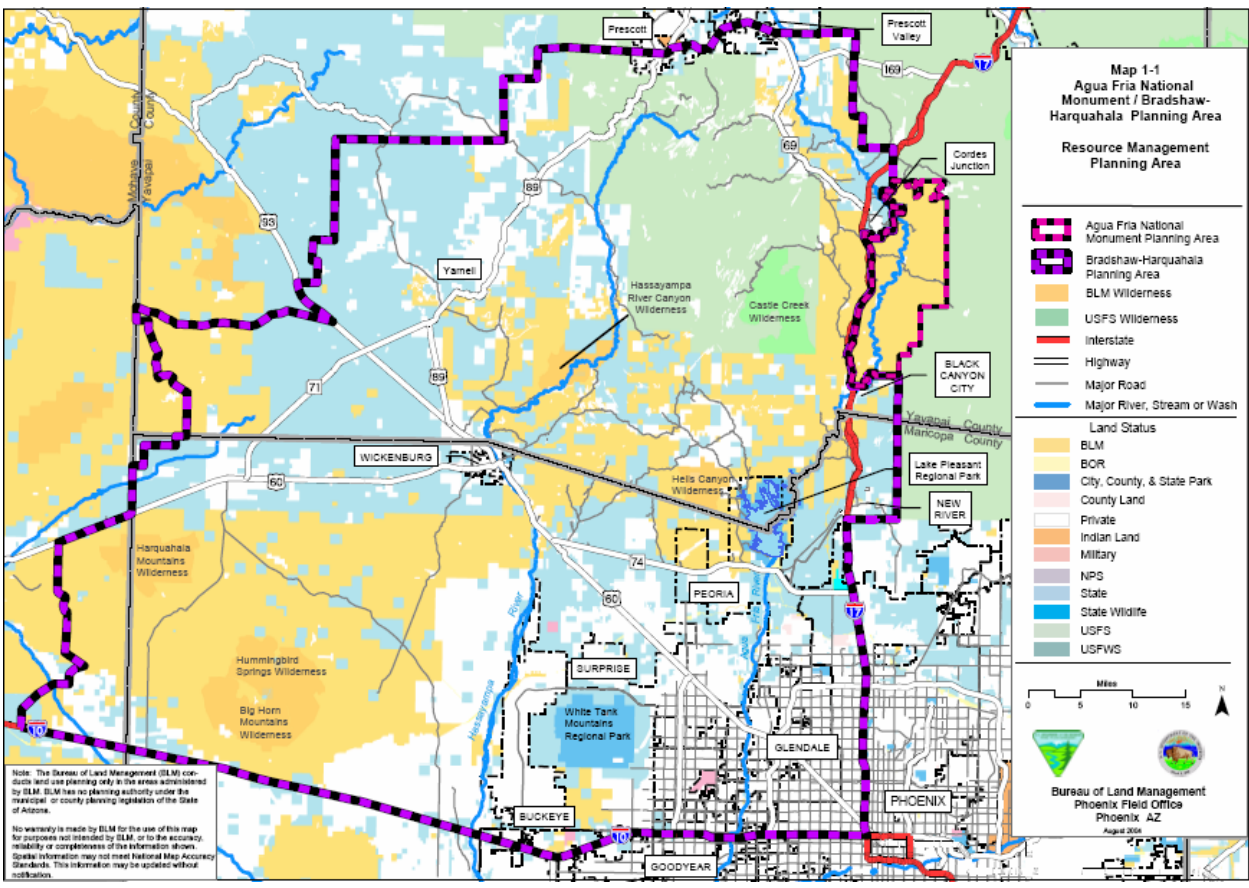
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APPENDIX C. MAP 1. Harquahala-Bradshaw and Agua Fria Planning Areas, Hassayampa Field Office, Bureau of Land Management, Arizona.



MAP 2. Threatened and Endangered Species Locations within the Bradshaw-Harquahala and Agua Fria National Monument Planning Areas, Hassayampa Field Office, Bureau of Land Management

