

**United States Department of the Interior
U.S. Fish and Wildlife Service
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AESO/SE
02-21-05-F-0450
02-21-99-F-300RI
02-21-92-F-213RI

May 19, 2006

Gene Blankenbaker
Forest Supervisor
Tonto National Forest
2324 East McDowell Road
Phoenix, Arizona 85006

Dear Mr. Blankenbaker:

Thank you for your request for reinitiation of formal section 7 consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). At issue are impacts that may result to desert pupfish (*Cyprinodon macularius*) in Mud and Hidden Water springs, from the continued use of a 10-year term permit to graze livestock on the Sunflower Allotment. The Sunflower Allotment is located on the Mesa Ranger District, Tonto National Forest. Your request for consultation was dated April 7, 2005, and received by us on April 11, 2005. Additional clarification of your project was provided on May 25 and June 13, 2005. Your letter concluded that the reintroduction of desert pupfish into Mud and Hidden springs "may affect, but is not likely to adversely affect," Gila topminnow or desert pupfish. Stocking of desert pupfish into these two springs will be covered under Arizona Game and Fish Departments' (AGFD) 10(a) 1(A) permit. The biological evaluation prepared by the Mesa Ranger District and Tonto National Forest Supervisor Office requested that effects of implementing the current Sunflower Allotment management plan on desert pupfish be included in an amendment to the existing Biological Opinions (BO) (FWS file 02-21-92-F-213) for Mud Springs and (FWS file 02-21-99-F-300) for Hidden Water Springs. However, in order to amend the existing biological opinions that provide for incidental take of desert pupfish as a result of the continued use of the 10-year term grazing permit, we have re-initiated consultation on the two existing BOs (FWS file 02-21-92-F-213 and 02-21-99-F-300). We have prepared this new BO that provides the same applicable reasonable and prudent measures and terms and conditions that were provided in the previous BOs.

This reinitiation amends the proposed action by incorporating the desert pupfish stocking. The status of the species, environmental baseline, effects of the action, cumulative effects, and conclusions remain the same for Gila topminnow. Additional information regarding desert pupfish has been included in this re-initiation.

This BO is based upon information provided in your biological evaluation, various supporting documents, meetings, telephone conversations, electronic mail messages, and a July 18, 2005 field trip.

The Forest determined that the project would have no effect on the bald eagle. A determination of “no effect” to listed species or critical habitat does not require concurrence by the FWS and this species will not be addressed further in this consultation.

CONSULTATION HISTORY

- February 14, 1994 We issued a biological opinion management plan for the Dos S Unit of the Sunflower Allotment (02-21-92-F-213).
- October 2, 1996 We issued amendment to the biological opinion management plan for the Dos S Unit of the Sunflower Allotment (02-21-92-F-213). New actions included excluding the existing drinker and additional upland habitat from livestock access, and adding a new drinker system outside the south end of the enclosure.
- February 28, 2002 We issued a biological opinion for ongoing grazing management for 20 allotments on the Tonto National Forest, including the Sunflower Allotment (02-21-99-F-300).
- April 11, 2005 We received your initial request for re-initiation of consultation following AGFDs’ stocking of desert pupfish into Mud and Hidden Water Springs, and an amendment on the current biological opinions (file 02-21-92-F-213) for Mud Springs and (FWS file 02-21-99-F-300) for Hidden Water Springs.
- May 25, 2005 In a phone conversation, Bob Calamusso informs us that the Dos S unit of the Sunflower Allotment has no permittee and was permanently de-stocked. We request documentation of this allotment closure for our files.
- June 13, 2005 In a phone conversation, Bob Calamusso informs us that the allotment was not permanently de-stocked. It has not been grazed since 1997. All information has been received to initiate formal consultation.
- July 18, 2005 FWS and Tonto NF staff conducted a site visit to Mud Springs. Hidden Water Springs was not visited due to a wildfire in the area.
- August 11, 2005 We sent a draft of a new biological opinion (FWS file number 02-21-05-F-450) to the Tonto National Forest for review.
- November 16, 2005 Tonto NF sent a letter us accepting the draft biological opinion as the final biological opinion.
- April 2006 We were notified by the Tonto NF that the final biological opinion was not received.

BIOLOGICAL OPINION

Description of the Proposed Action

The Forest proposes to continue management of Mud and Hidden Water springs according to the current livestock management plans prepared for the Dos S and Cottonwood units of the Sunflower grazing allotment. In a separate action, the AGFD, in coordination with the FWS, propose to stock desert pupfish at Mud and Hidden Water springs, both occupied Gila topminnow sites. The Forest requests that effects to desert pupfish be included in an amendment to the existing Biological Opinion (FWS file number 2-21-92-F-213) for Mud Springs and the existing BO (FWS file number 2-21-99-F-300) for Hidden Water Springs. These biological opinions provided terms and condition to reduce incidental take of Gila topminnow from livestock management activities.

The action area for this consultation is Mud and Hidden Water springs and their respective watersheds. The Sunflower Allotment is divided into four units, two which the Dos S and Cottonwood are addressed in this biological opinion. The Dos S Unit (Mud Springs) is 80,000 acres in size. It has been managed with six pastures under a rest rotation (Table 17, page 176 in Biological Opinion FWS file number 02-21-99-F-300). The Cottonwood Unit (Hidden Water Springs) is 45,000 acres in size. The entire allotment has not been grazed since 1997 (B. Calamusso, Tonto NF, pers. comm. July 18, 2005).

STATUS OF THE SPECIES

Desert pupfish

Desert pupfish were listed as endangered, with critical habitat, on April 30, 1986 (USFWS 1986). Critical habitat was designated at Quitobaquito Spring in southwest Arizona. There is no critical habitat within the action area. The desert pupfish 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 impoundment and diversion, water pollution, channelization and habitat modification. Life history information can be found in the desert pupfish recovery plan (Marsh and Sada 1993).

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.

Mud Springs (T. 5 N., R. 8 E. sec 26) is located on the Dos S unit of the Sunflower Allotment. The Mud Springs complex consists of a concrete trough and four constructed ponds. These ponds and trough are excluded from livestock grazing by interior and exterior fencing. The watershed above the complex is small, consisting of a low hillside; vegetated by foothill paloverde, saguaro cactus and low understory shrubs. The ponds and trough are vegetated with cattail, bulrush and desert saltgrass.

Hidden Water Spring (T. 3 N., R. 9 E., sec 21) is located in Cane Springs Canyon within the Four Peaks Wilderness. It is within the Cottonwood Unit of the Sunflower Allotment. Unlike Mud Springs it is located in a larger watershed, 6,000 acres with very steep canyon topography. Hidden Springs was fenced from livestock in 1999 (FWS file number 02-21-99-F-300), but portions of the enclosure may be in need of repair (J. Voeltz, AGFD pers. comm. August 9, 2005).

A. Status of the species within the action area

Desert Pupfish Currently there are no desert pupfish located at either spring. Ten desert pupfish were stocked in Hidden Spring in 1976 but did not persist likely due to the small number of translocated fish. Tonto National Forest, USFWS, and AGFD propose to introduce 100 to 500 desert pupfish into Hidden Water Springs and all four ponds at Mud Springs. The source desert pupfish population is the Boyce Thompson Arboretum, Superior, Arizona. AGFD will transport fish to the site in tanks and follow existing protocols for acclimation and transfer of desert pupfish into the spring pond. Translocation of desert pupfish from a source population to Mud and Hidden Water springs will be covered by Arizona Game and Fish 10(a)(1)(A) recovery permits and is not considered part of the proposed action under consultation. AGFD and Tonto NF will coordinate the translocation with the FWS Arizona Ecological Services Office (AESO).

B. Factors affecting species' environment within the action area

Gila topminnow are currently found at both springs. Actions within the project area that affect the springs are limited to livestock grazing and recreation. Livestock grazing has been ongoing in the action area for years, although not at the spring sites. Utilization levels have showed a dramatic decrease since this allotment was subject to improved management under a rest-rotation schedule that produced more balanced utilization and more forage production. Reduced livestock numbers are also a factor. In the early 1970s and again in the early 1980s, utilization levels were high over much of the allotment, particularly near permanent waters. Since the implementation of improved management, however, utilization levels had dropped. This allotment has not been grazed since 1997.

Due to their small size, it is anticipated that the four ponds located at Mud Springs will require continued maintenance to prevent emergent vegetation from completely overtaking the open water habitat. Mud Springs was cleared of vegetation and enlarged using a small backhoe in 2003. Prior to the action, Gila topminnow were salvaged and stored on site. There is no doubt that the loss of fish and habitat disturbance occurred during this maintenance. Pond maintenance involves dredging to remove silt, building up the berm with gravel and soil, and piping to create an off-site drinker with a safety valve to prevent accidental draining of the pond. During these activities, some individuals were likely injured or killed by trampling, being accidentally

dropped, or by handling stress. The salvage and holding activities are State actions and this take is anticipated under AGFD's existing 10(a)(1)(A) permit and will be reported by AGFD in their annual reports. Road and fence maintenance has not affected the Gila topminnow population or the overall health of the springs.

Recreation impacts are increasing on the District and on the allotment, especially in meadow and riparian areas. Mud Spring occurs along Forest Route 393, a 4-wheel drive road, and is a relatively short distance from the Bee Line Highway (0.25 mile). The spring itself is subject to little, if any, recreational use. Hunting, off-highway vehicle use, camping, hiking, and sightseeing occur in the area. Access to Hidden Water Spring is somewhat limited by rugged terrain and its location within a designated wilderness. With increasing recreation, Hidden Spring and its associated pond may see some increase in recreational use, although given its remote location and its small size; these effects will likely be insignificant.

Monitoring of the fish species will be conducted by AGFD under the Department's 10(a)(1)(A) permit. Translocation of pupfish from a source population to Mud and Hidden Water springs will also be conducted by AGFD under the department's 10(a)(1)(A) permit.

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.

The main impacts from cattle are the grazing of plants and trampling of vegetation and soil (Marlow and Pogacnik 1985). These impacts can affect both riparian zones and uplands. In addition, cattle can affect water quality (Armour et al. 1991). To date, livestock have not been on the Sunflower Allotment since 1997. If the Sunflower Allotment is re-stocked in the future the following effects will likely occur.

Due to the small drainage area above Mud Springs' ponds, grazing outside the exterior fence will have little impact on the pond. Due to the ponds' close proximity to Forest Road 11 and the Beeline Highway, exclosure fence inspections would be convenient. The larger Cane Springs Canyon watershed above Hidden Water Spring may make this site more susceptible to livestock grazing impacts in the future. Water quality concerns and the potentially detrimental effect of livestock waste on fish (Cross 1971, Taylor et al. 1991) are not expected to present a serious threat; this is also lessened by the fact that wetlands are noted for their ability to remove pollutants (Johnston et al. 1990). This is also supported by the fact that the Gila topminnow population has flourished at Hidden Water Spring in the presence of cattle grazing for 30 years. Livestock grazing likely has effects to individual desert pupfish, and it affects the viability of desert pupfish populations through siltation and possible failure of the berm that impounds the spring.

However, as previously mentioned, the Gila topminnow population has thrived in the presence of livestock at this site for 22 years. With proposed maintenance of the pond, any desert pupfish population established should continue to persist into the foreseeable future in the presence of future livestock grazing management.

CUMULATIVE EFFECTS

Cumulative effects include those 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 are subject to the consultation requirements established under section 7, and therefore are not considered cumulative in the proposed action. Because the action areas are entirely within Forest Service lands, any future actions should be subject to Section 7 consultation.

CONCLUSION

After reviewing the status of the desert pupfish, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action, is not likely to jeopardize the continued existence of this species and ultimately; the project should benefit the desert pupfish. 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.

INCIDENTAL TAKE STATEMENT

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

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

We believe that the biological conclusions remain the same as the original two biological opinions (FWS file numbers 02-21-92-F-213 and 02-21-99-F-300) for the modified proposed action. The description of the proposed action remains the same except for the proposed desert pupfish stocking into Mud and Hidden Water springs. The original opinion addressed the impacts of continued livestock grazing on the Sunflower Allotment on the existing Gila topminnow populations at these springs. The incidental take statement for Gila topminnow remains the same. Similar reasonable and prudent measures and terms and conditions for desert pupfish have been added. The following is an updated incidental take statement for the proposed project.

We anticipate that any take of desert pupfish would be difficult to detect and quantify because they have a small body size and they are highly fecund; thus, rapid reproduction of the species may mask any population decline resulting from the take. Therefore, it is not possible to provide precise numbers of desert pupfish that could be harmed, injured, or killed from the proposed action. In such instances where take is otherwise difficult to detect and/or quantify, we may quantify take in terms of some aspect of the species' habitat that may be diminished or removed by the action. Therefore we will consider authorized take to have been exceeded if any of the following conditions occurs:

- a) As a result of enclosure failure livestock grazing occurs at Mud Springs resulting in more than five percent use of any woody riparian species (measured as percentage of apical meristems grazed within six feet of the ground) and trampling, chiseling, or other physical impact by livestock on more than 10 percent of the alterable streambanks by length;
- b) if the Forest's riparian utilization limits of less than 10 percent impact to alterable banks, less than 30 percent use of plant biomass, and less than 40 percent use of leaders on woody plants less than 6 feet tall, are exceeded by more than 10 percent at any one time within the watershed of Cane Springs Canyon (Hidden Water Spring).

EFFECT OF THE TAKE

In this biological opinion, we determined that this level of anticipated take is not likely to result in jeopardy to the desert pupfish. This is due primarily to the fact that the project's main purposes are to improve habitat for native fish and establish a new population of desert pupfish. Adverse effects will be short-lived.

REASONABLE AND PRUDENT MEASURES WITH TERMS AND CONDITIONS

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

The following reasonable and prudent measures and terms and conditions, as described under the existing biological opinion (file number 02-21-99-F-300) are necessary and appropriate to minimize the effects of take of desert pupfish.

1. Conduct all proposed actions in a manner that will minimize take of desert pupfish. The following term and condition will implement reasonable and prudent measure 1.

Inspect and maintain all desert pupfish site exclosures a minimum of three times a year. One of the inspections must be within one month of livestock being placed in a pasture next to the exclosure. Inspection reports from the permittees may be used to accomplish this term and condition. The permittees will report their inspection and maintenance work to the District annually. Livestock will be removed from any exclosure immediately upon learning that have intruded into the exclosure. Notification will be provided to the AESO of any exclosure fence damage and any livestock intrusion into the exclosures in an annual report required by this biological opinion (Recovery Plan Task 1.4, Weedman 1998).
2. Monitor the fish community and habitat to document levels of incidental take. The following terms and conditions will implement reasonable and prudent measure 2.
 - a. The Tonto NF shall coordinate with AGFD to insure that Mud and Hidden Water springs and ponds are monitored annually.
 - b. Tonto NF will coordinate with AGFD to provide an annual report that will include presence/absence of topminnow and pupfish, a visual estimate of fish numbers, a description of berm condition, measurements of pond water depth and surface area, and a quantitative estimate of pond volume. These data will also be collected before and just after maintenance to determine the baseline condition for comparison in subsequent surveys.
3. Maintain a complete and accurate record of actions which may result in the take of desert pupfish. The following term and condition will implement reasonable and prudent measure 3.

- a. Records of enclosure and gap fence monitoring and maintenance shall be maintained. Exclosure maintenance, repair, livestock intrusion, and other relevant information will be furnished to the AESO as part of the annual report for this Biological Opinion (Recovery Plan Task 1.4, Weedman 1998).
- b. In the annual report described in the general terms and conditions in this biological opinion amendment, the Forest Service shall briefly summarize for the previous calendar year; 1) implementation and effectiveness of the terms and conditions, 2) documentation of take, if any, and 3) actual livestock use (head, animal months, dates of pasture use, utilization measurements, etc) with a description of any variations from the proposed action (for the Sunflower Allotment). If other monitoring or research is completed concerning Gila topminnow, desert pupfish, or conditions of rangeland, riparian areas, or soil, a copy of the relevant reports shall be included (Recovery Plan Tasks 1.4, 1.5, 2.4, and 3, Weedman 1998).
- c. Ensure that the AESO is sent all copies of all NEPA documents and section 7 reports completed for projects on the Sunflower Allotment (Recovery Plan Tasks 1.4, 1.5, 2.4, and 3, Weedman 1998).

CONSERVATION RECOMMENDATIONS

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

We recommend the following:

1. Continue to re-establish Gila topminnow and desert pupfish into suitable habitat on the Forest. Identify suitable and potential Gila topminnow and desert pupfish habitat. One action plan covering all known suitable and potential sites and all Forest actions affecting them should be done. Augmentation stocking and management of existing sites should be included (Recovery Plan tasks 1.4, 1.7, 2.1, 2.2, 2.3, 2.6).
2. Cooperate with Federal, State, and local partners to construct a barrier on Lime Creek to prevent the upstream movement of non-native fish. Control non-native fish in the watershed as needed (Recovery Plan Task 1.4).
3. Develop and improve the spring located near the conjunction of the Beeline Highway and Forest Road 11 to support a future Gila topminnow and/or desert pupfish translocation.

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

Disposition of Dead or Injured Listed Species

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

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your request. 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.

The FWS appreciates the Forest Service's efforts to identify and minimize effects to listed species from this project. For further information please contact David Smith at (928) 226-0614 x 109 or Debra Bills (602) 242-0524 x239. Please refer to the consultation number, 02-21-05-F-0450 in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc:

District Ranger, Mesa Ranger District, Tonto National Forest, Phoenix, AZ
Assistant Field Supervisor, Tucson, AZ (Attn: Doug Duncan)
Nongame Branch, Arizona Game and Fish Department, Phoenix, AZ

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