

regime, and habitat conditions are generally upward trending, with management by private and public land managers incorporating strategies that enhance the availability of permanent water and suitable habitat for Cow Head tui chub.

As discussed under Factor B, the Cow Head tui chub is not a commercial or recreational fish species and there are only a few documented scientific collections since 1939. Future collections for scientific purposes presumably would be limited, and overutilization is not likely to threaten the Cow Head tui chub with extinction in the foreseeable future.

As discussed under Factor C, no disease or predator currently threatens the Cow Head tui chub. Furthermore, the introduction and establishment of a disease or nonnative predator into the Cow Head Basin is not likely to occur and, in the unlikely event it were to occur, is not likely to threaten the Cow Head tui chub with extinction in the foreseeable future.

As discussed under Factor D, there are currently no recognized threats to the continued existence of the Cow Head tui chub identified under the other factors that require or would be ameliorated by further regulation. Further, the chub has persisted, with populations still occurring throughout its historic range, with the existing regulatory mechanisms. Therefore, we conclude that the possible inadequacy of existing regulatory mechanisms is not likely to threaten the Cow Head tui chub with extinction in the foreseeable future.

As discussed under Factor E, we have not identified additional factors that rise to a level likely to threaten the Cow Head tui chub with extinction throughout all or a significant portion of its range. Extreme natural drought has the potential to severely constrain the distribution of the Cow Head tui chub and its available habitat as it has in the past, and droughts are likely to occur periodically in the future. However, the Cow Head tui chub has demonstrated considerable resiliency in its ability to survive substantial regional droughts experienced over the last century, all under the current management regime. Permanent habitat provided by perennial spring-fed stream reaches in five subdrainages of the Cow Head Basin is likely to remain available in the foreseeable future. Therefore, natural drought and the additional factors discussed in Factor E are not likely to threaten the Cow Head tui chub with extinction in the foreseeable future.

Based on the lack of present or foreseeable threats to its continued

existence, we have determined that the Cow Head tui chub is not likely to become in danger of extinction in the foreseeable future throughout all or a significant portion of its range (section 3(6) of the Act) and, therefore, does not meet the Act's definition of threatened or endangered. Consequently, we withdraw our 1998 proposal to list the Cow Head tui chub as endangered (63 FR 15152, March 30, 1998).

We will continue to monitor the status of the species and to accept additional information and comments from all concerned governmental agencies, the scientific community, industry, or any other interested party concerning this finding. We will reconsider this determination in the event that new information indicates that such an action is appropriate.

#### References Cited

A complete list of all references cited is available at the Service's Klamath Falls Fish and Wildlife Office (see **ADDRESSES**).

#### Author

The primary authors of this notice are the staff of the Service's Klamath Falls Fish and Wildlife Office (see **ADDRESSES** above).

#### Authority

The authority of this action is section 4(b)(6)(B)(ii) of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 28, 2006.

**Marshall Jones,**

*Acting Director, U.S. Fish and Wildlife Service.*

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

#### Endangered and Threatened Wildlife and Plants; Revised 12-Month Finding for the Beaver Cave Beetle (*Pseudanophthalmus major*)

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of revised 12-month petition finding.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), announce our revised 12-month finding for a petition to list the Beaver Cave beetle (*Pseudanophthalmus major*) under the Endangered Species Act (Act) of 1973 (16 U.S.C. 1531 *et seq.*). After a review

of the best available scientific and commercial information, we conclude that this species is not likely to become an endangered or threatened species within the foreseeable future throughout all or a significant portion of its range. Therefore, we find that proposing a rule to list the species is not warranted, and we no longer consider it to be a candidate species for listing. However, the Service will continue to seek new information on the taxonomy, biology, and ecology of this species, as well as potential threats to its continued existence.

**DATES:** This finding was made on October 11, 2006. Although no further action will result from this finding, we request that you submit new information concerning the taxonomy, biology, ecology, and status of the Beaver Cave beetle, as well as potential threats to its continued existence, whenever such information becomes available.

**ADDRESSES:** The complete file for this finding is available for inspection, by appointment and during normal business hours, at the U.S. Fish and Wildlife Service, 3761 Georgetown Road, Frankfort, Kentucky 40601. Submit new information, materials, comments, or questions concerning this species to us at the same address.

**FOR FURTHER INFORMATION CONTACT:** Dr. Michael A. Floyd, Kentucky Ecological Services Field Office at the address listed above, by telephone at 502-695-0468, by facsimile at 502-695-1024, or by e-mail at [mike\\_floyd@fws.gov](mailto:mike_floyd@fws.gov).

#### SUPPLEMENTARY INFORMATION:

#### Background

The Act provides two mechanisms for considering species for listing. One method allows the Secretary, on his own initiative, to identify species for listing under the standards of section 4(a)(1). We implement this through an assessment process to identify species that are candidates for listing, which means we have on file sufficient information on biological vulnerability and threats to support a proposal to list the species as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. Using this process, we identified the Beaver Cave beetle as a candidate for listing in 2001 and included it in the Candidate Notice of Review (CNOR) published in the **Federal Register** on October 30, 2001 (66 FR 54808). In subsequent CNORs that we published on June 13, 2002 (67 FR 40657), May 4, 2004 (69 FR 24875), and May 11, 2005 (70 FR 24870), we continued to recognize this

species as a candidate for listing based on updated assessments of its status. We also published a CNOR on September 12, 2006 (71 FR 53755), which maintained the species as a candidate for listing because we had not yet finalized this, our most current review of the species.

A second mechanism that the Act provides for considering species for listing is for the public to petition us to add a species to the Federal Lists of Threatened or Endangered Species (Lists) found at 50 CFR 17.11 (animals) and § 17.12 (plants). Under section 4(b)(3)(A), when we receive such a petition, we must determine within 90 days, to the extent practicable, whether the petition presents substantial scientific or commercial information that listing may be warranted (a "90-day finding"). If we make a positive 90-day finding, we must promptly commence a status review of the species and under section 4(b)(3)(B), we must make and publish one of three possible findings within 12 months of receipt of such a petition (a "12-month finding"):

1. The petitioned action is not warranted;
2. The petitioned action is warranted (in which case we are to promptly publish a proposed regulation to implement the petitioned action); or
3. The petitioned action is warranted but (a) the immediate proposal of a regulation and final promulgation of a regulation implementing the petitioned action is precluded by pending proposals, and (b) expeditious progress is being made to add qualified species to the Lists (i.e., a "warranted but precluded" 12-month petition finding). Our standard for making a species a candidate through our own initiative is identical to the standard for making a "warranted but precluded" 12-month petition finding.

On May 11, 2004, the Service received a petition from the Center for Biological Diversity to list 225 species we previously had identified as candidates for listing, including the Beaver Cave beetle. Pursuant to requirements in section 4(b)(3)(B) of the Act, the CNOR and Notice of Findings on Resubmitted Petitions published by the Service on May 11, 2005 (70 FR 24870) included a finding that the immediate issuance of a proposed listing rule and the timely promulgation of a final rule for each of these petitioned species, including the Beaver Cave beetle, was warranted but precluded by higher priority listing actions, and that expeditious progress was being made to add qualified species to the Lists.

Section 4(b)(3)(C)(i) of the Act directs that when we make a "warranted but

precluded" finding on a petition, we are to treat the petition as being one that is resubmitted annually on the date of the finding; thus the Act requires us to reassess the petitioned actions and to publish a finding on the resubmitted petition on an annual basis. We included a "warranted but precluded" finding on the resubmitted petition on the Beaver Cave beetle in the CNOR and Notice of Findings on Resubmitted Petitions published in the **Federal Register** on September 12, 2006 (71 FR 53755). The resubmitted petition finding was based on an assessment of the Beaver Cave beetle that covered information available as of October 2005. Although we typically make the annual finding for petitioned candidate species through the CNOR, we are not required to wait a full year to reassess the status of such species and may publish a revised petition finding separately from the CNOR. That is what we are doing in this situation.

As a result of new information regarding conservation efforts for the Beaver Cave beetle, we have completed a reassessment of its status (FWS 2006a). The updated assessment document is available from our Kentucky Ecological Services Field Office (see **ADDRESSES**, above). This resubmitted 12-month finding evaluates new information, as described in the species assessment and related documents referenced in it, and re-evaluates previously-acquired information.

### Species Information

The Beaver Cave beetle (*Pseudanophthalmus major*) was described by Krekeler (1973) from 3 specimens collected from Beaver Cave, Harrison County, Kentucky by T.C. Barr and J.R. Holsinger in 1966. Cave beetles in the genus *Pseudanophthalmus* are small, eyeless, reddish-brown insects that belong to the predatory ground beetle family Carabidae. Like most other insects, they have six legs and a body that consists of a head, thorax, and abdomen. Body length is generally from 3.0 to 8.0 millimeters (mm) (0.12 to 0.32 inches), depending upon the species. Maximum body length for the Beaver Cave beetle is 8 mm. According to Barr (1996), the genus *Pseudanophthalmus* is represented by approximately 255 species. The different species within the genus are differentiated by differences in the shape and size of the various body parts, especially the shape of the male appendages used during reproduction. Most members of the genus are cave dependent (troglobites) and are not found outside the cave environment. All are predatory and feed

upon small cave invertebrates such as spiders, mites, millipedes, and diplurans, while the larger *Pseudanophthalmus* species also feed on cave cricket eggs (Barr 1996). Members of this genus vary in rarity from fairly common, widespread species that are found in many caves to species that are extremely rare and restricted to only one cave, such as the Beaver Cave beetle.

Little detailed life history information is available for the rarest of the cave beetles, including the Beaver Cave beetle. However, the generalized summary that follows is accurate for the more common and more easily studied species and is believed to also apply to the rarer species (Barr 1998). Cave beetles copulate in the fall, and the eggs are deposited in the cave soil during late fall. The eggs hatch and larvae appear in late fall through early winter. Pupation occurs in late winter to early summer with the adult beetles emerging in early summer (Barr 1996).

The limestone caves in which these cave beetles are found provide a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. No photosynthesis takes place within the dark zone of a cave. Therefore, all organisms that are adapted to life within a cave are dependent upon energy from the surface. This energy can be in the form of leaf litter, woody debris or small bits of organic matter that is washed or falls into the cave, or guano deposited by cave-dependent bats that feed on the surface and return to the cave to roost (Barr 1996).

The Beaver Cave beetle is restricted to Beaver Cave, a limestone cave located in the Bluegrass Region of central Kentucky. There are no other caves in the vicinity of Beaver Cave, and the Beaver cave beetle has not been found at any other locations. The only known entrance to Beaver Cave is located in an open pasture and hillside of a dairy farm in eastern Harrison County. The cave generally trends northeastward from its entrance for approximately 350 meters before terminating in a breakdown (i.e., a portion of the cave where the ceiling has collapsed) (Laudermilk 2006). Most of Beaver Cave is comprised of a simple, narrow passage approximately 1 meter wide and 2.5 meters high. However, there are several larger rooms present, and there are multiple levels in a few places (Laudermilk 2006). A more extensive description of the cave can be found in Barr (1996).

## Conservation Efforts

The Service's Partners for Fish and Wildlife (Partners) Program (Kentucky Ecological Services Field Office) began working with the owner of the Beaver Cave property in 2002, and other partners (Kentucky Department of Fish and Wildlife Resources (KDFWR), Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), Kentucky State Nature Preserves Commission, and Kentucky Division of Forestry) soon thereafter, to implement projects that would conserve Beaver Cave and the species that occupy it and in order to eliminate the threats to the Beaver Cave beetle and its habitat or reduce them to the point that listing was no longer warranted. The Partners Program coordinated several conservation efforts that were planned and implemented through five inter-related agreements/contracts between the landowner and the agencies listed above: (a) A Partners Program 15-year Wildlife Habitat Enhancement Agreement; (b) a Continuous Conservation Reserve Program (CCRP) 15-year contract through FSA; (c) a Wildlife Habitat Incentives Program (WHIP) 15-year contract through NRCS; and (d) two Landowner Incentive Program (LIP) 10-year agreements through KDFWR. These projects were initiated in the summer of 2003 and fully implemented by fall of 2005. Collectively, these agreements and contracts encompassed three general conservation efforts: (1) Maintain Beaver Cave and the landowner's surrounding property in a manner that (a) reduces or eliminates sediment and animal waste within the cave's watershed by excluding cattle from the cave entrance with fencing, developing and implementing a rotational grazing program, and installing hardened stream crossings and heavy use areas, and (b) establishes and maintains a forested buffer around the entrance to Beaver Cave; (2) construct and maintain the metal gate at the entrance to Beaver Cave; and (3) control and limit access to Beaver Cave and the landowner's surrounding property.

Many aspects of the conservation efforts identified in the five inter-related agreements are on-going, such as maintenance of the gate and control of access into the cave, and others have already been implemented (e.g., exclusion of cattle, construction of the cave gate, tree plantings, hardened stream crossings). Based on our evaluation of each of the three conservation efforts using the criteria provided in the Policy for Evaluation of Conservation Efforts When Making

Listing Decisions (PECE) (68 FR 15100), we have determined that each of the three efforts is sufficiently certain to be implemented and effective so as to have contributed to the elimination or reduction of threats to the species (FWS 2006b). Therefore, the Service can consider these conservation efforts in making a determination as to whether the Beaver Cave beetle meets the Service's definition of a threatened or endangered species.

## Discussion of Listing Factors

Section 4 of the Act and implementing regulations at 50 CFR part 424 set forth procedures for adding species to the Lists. A species may be determined to be an endangered or threatened species based on the applicability of one or more of the five factors described in section 4(a)(1). These factors and their application to the Beaver Cave beetle are summarized below.

### *A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

In our initial assessment of the Beaver Cave beetle in 2001, we identified this species as a candidate for listing due to the present and threatened destruction and modification of its habitat (66 FR 54800). The activities contributing to this threat factor have now been addressed, as summarized below.

In our initial 2001 assessment and subsequent CNORs and petition findings, we identified and recognized a potential risk of destruction or modification of the cave environment (the species' habitat) which could occur as a result of (1) polluted runoff from the farm operation, specifically animal waste, sediment, or spills of toxic materials in the watershed in which the cave occurs; and (2) unauthorized human entry to Beaver Cave (i.e., trash dumping, vandalism, physical habitat disturbance, and trampling of beetles). We now have determined that the potential risk of polluted stormwater runoff is limited, because these pollutants have been significantly reduced through full implementation of the CCRP contracts, LIP agreement, and Partners agreement specified above. These contracts and agreements and subsequent conservation efforts have eliminated these threats or reduced them to a point that any negative effects are unexpected or would be insignificant to the point that this listing factor no longer applies. The reduction in threats has been accomplished through the installation of two heavy-use feeding areas that are away from the cave and its entrance and associated

exclusion fencing, the development of a rotational grazing program that concentrates cattle away from the cave entrance and its watershed, and the installation of a hardened stream crossing within the Beaver Cave watershed. Also, these agreements and contracts provided funding for cattle exclusion fencing and native vegetation plantings surrounding the cave entrance, thereby protecting it from cattle disturbance and establishing a natural filter (barrier) for any potential non-point source pollutants that could potentially enter the cave during storm events. Toxic material spills from external sources are improbable, because the Beaver Cave watershed is small and not in an area where toxic chemicals are produced or stored, nor is there likely to be transport of toxic materials in the area due to the rural nature of the surrounding area. A trash and debris-filled sinkhole that is connected to Beaver was also unclogged and cleaned, providing further protection against contamination of the underground drainage basin.

To address the unlawful human trespass, trash dumping, vandalism, and habitat degradation of Beaver Cave, a bat-friendly cave gate was constructed just inside the cave entrance in 2004. The WHIP contract provided 53 percent of the funding for the cave gate construction, and the remaining 47 percent was obtained through a second LIP agreement. Under these agreements and contracts, unlawful entry to Beaver Cave is prevented, and the landowner has assumed responsibility for maintaining and inspecting the gate. This includes periodic inspections of the gate, taking necessary steps to repair the gate as needed, and ensuring the gate does not become blocked with rock or other debris that would block access to the cave for native bats or other species or prevent organic matter from entering the cave. Bat guano and other organic matter from the surface are important components of energy flow for the cave environment. Fencing has been erected around an approximate 1-acre area containing the entrance to Beaver Cave to promote the development of natural habitat around the cave entrance, provide further protection to the property, and control access to the cave entrance. These actions promote energy flow and eliminate the threats from dumping, vandalism, and unauthorized trespass such that this listing factor no longer applies.

Many aspects of these conservation efforts are on-going, such as the growth and monitoring of the riparian plantings, maintenance of the cave gate,

and control of access into the cave, but all of the primary habitat restoration and protection efforts (e.g., cave gate construction, fencing and subsequent cattle exclusion, hardened feeding areas, tree plantings, sinkhole clean-up) have already been completed.

Based on the information summarized above, the Beaver Cave beetle is not threatened by the present or threatened destruction, modification, or curtailment of its habitat or range.

#### *B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

We have no evidence of overutilization of the Beaver Cave beetle in the past for commercial, recreational, scientific, or educational purposes, and have no information that suggests such a threat exists in the foreseeable future. Under the inter-related agreements specified above, collection for scientific purposes would be allowed only with the permission of the landowner and the Service. The cave has been used for recreational purposes by spelunkers and by passive recreationists in the past, but placement of the locked metal gate across the cave entrance in 2004 has effectively eliminated such uses. Further, through maintenance of the metal gate at the cave entrance, as required by the LIP agreement and WHIP contract, all unauthorized access to the cave is prevented. Based on these considerations, overutilization for commercial, recreational, scientific, or educational purposes is not a threat to the species.

#### *C. Disease or Predation*

Disease and predation are not known to be threats for this species and are, instead, a normal part of its life history. Mortality from disease or predation likely occurs but has not eliminated this species in the past, and we have no reason to expect disease or predation to pose a substantial risk to the species in the future. Based on these considerations, disease or predation is not a threat to the species.

#### *D. The Inadequacy of Existing Regulatory Mechanisms*

Although the Beaver Cave beetle is listed as endangered in Kentucky by the

Kentucky State Nature Preserves Commission, such listings provide no substantive protection under the current Kentucky law. However, there are no foreseeable reasons why specific regulatory mechanisms are necessary to ensure the conservation of this species, because the landowner and the involved agencies have committed to and are implementing various conservation efforts to protect Beaver Cave and the Beaver Cave beetle. These include, but are not limited to, strictly controlling access to the cave and the property surrounding the cave opening and restoring and enhancing the vegetation communities surrounding the cave and in its watershed. The metal gate is effective in preventing unauthorized entry into the cave, and as described above, the landowner has committed to and is implementing measures to strictly control access to the cave. Based on these considerations, the inadequacy of existing regulatory mechanisms is not a threat to the species.

#### *E. Other Natural or Manmade Factors Affecting Its Continued Existence*

Populations of this beetle species are restricted to Beaver Cave and are generally thought to be represented by a small number of individuals. Although this is a natural situation, their limited distribution and numbers make this species vulnerable to extirpation due to effects from various manmade factors, such as spills of toxic substances, non-point source pollutants, and habitat-related damage, as described above under Factor A. As described above, the conservation efforts included in the five inter-related agreements summarized above have removed or substantially reduced these habitat-related risks. Small population sizes for these species may also limit the natural interchange of genetic material within the population, which could affect long-term genetic and population viability. However, this is an endemic species that has persisted over time (i.e., from at least the time of its discovery to the present time) and under conditions that were worse than the current, more-protective situation despite the perceived risks of limited genetic interchange. For the reasons described above, the Beaver Cave beetle is not

threatened by other natural or human-caused factors.

#### **Revised Petition Finding**

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the Beaver Cave beetle.

We have evaluated the threats to the Beaver Cave beetle and considered factors that, individually and in combination, presently or potentially could pose a risk to the species and its habitat. We conclude that listing this species under the Act is not warranted, because the species is not likely to become an endangered or threatened species within the foreseeable future throughout all or a significant portion of its range. This species no longer meets our definition of a candidate and is removed from candidate status.

We will continue to monitor the status of the Beaver Cave beetle, and to accept additional information and comments from all concerned governmental agencies, the scientific community, industry, or any other interested party concerning this finding. We will reconsider this determination in the event that new information indicates that the threats to this species are of a considerably greater magnitude or imminence than identified here.

#### **References**

A complete list of all references cited herein is available upon request from the Kentucky Ecological Services Field Office, U.S. Fish and Wildlife Service (see **ADDRESSES**).

#### **Author**

The primary author of this finding is Dr. Michael A. Floyd, U.S. Fish and Wildlife Service (see **ADDRESSES**).

#### **Authority**

The authority for this action is the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 28, 2006.

#### **Marshall Jones,**

*Acting Director, Fish and Wildlife Service.*

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