

5-Year Review: Summary and Evaluation

Loach Minnow (*Tiaroga cobitis*)

Current Classification: Endangered

**U.S. Fish and Wildlife Service
Arizona Ecological Services Office
Phoenix, AZ**

1.0 GENERAL INFORMATION

1.1 Reviewers

Lead Regional Office: Southwest Regional Office, Region 2,
Susan Jacobsen, Chief, Threatened and Endangered Species (505) 248-6641
Wendy Brown, Recovery Coordinator, (505) 248-6664
Jennifer Smith-Castro, Recovery Biologist, (505) 248-6663

Lead Field Office: Arizona Ecological Services Field Office
Debra Bills, Assistant Field Supervisor, (602) 242-0210
Lesley Fitzpatrick, Fish and Wildlife Biologist, (602) 242-0210
Mary Richardson, Supervisory Fish and Wildlife Biologist, (602) 242-0210

Cooperating Field Office(s): New Mexico Ecological Services Field Office
Melissa Mata, Albuquerque, NM (505) 761-4743

1.2 Methodology used to complete the review:

This status review of loach minnow was provided in the final rule which published on February 23, 2012. In that final rule, we determined that reclassification from threatened to endangered was warranted and we revised the critical habitat designations. The rule became effective on March 26, 2012 (77 FR 10810). The warranted determination was developed by biologists at the Field, Regional, and National levels. Two public comment periods were provided, and comments received during those comment periods were considered and incorporated within the final rule as appropriate. In addition, in accordance with our July 1, 1994, peer review policy (59 FR 34270), we solicited expert opinions from 13 knowledgeable individuals outside the U. S. Fish and Wildlife Service (Service) with scientific expertise to review our technical assumptions, interpretations of

biology, and use of ecological principles with respect to the loach minnow, and our analysis of the primary constituent elements (PCEs) and areas essential to the conservation of this species. We also asked for review on our adherence to regulations related to species reclassification, and on whether we used the best available information. We received responses from 6 of the 13 peer reviewers. No part of the status review was contracted outside of the Service. In our review, we considered databases for species occurrence, gray literature in the form of monitoring reports provided by a variety of agencies, various articles regarding impacts of activities such as fire management, livestock grazing, and water diversion, and peer-reviewed journal articles on the species and factors affecting their habitats.

1.3 FR Notice citation announcing initiation of this review: 72 FR 20134

2.0 REVIEW ANALYSIS

2.1 Application of the 1996 Distinct Population Segment (DPS) Policy:

The loach minnow is a vertebrate species that was listed throughout its range on October 28, 1986 (51 FR 39468). There is no new information to indicate that revision of the listed entity is warranted; therefore, the DPS policy does not apply to this species.

2.2 Review Summary:

Please refer to the final rule published in the Federal Register on February 23, 2012, which became effective March 26, 2012 (77 FR 10810). In that rule, we determined that reclassification of loach minnow to endangered was appropriate as loach minnow are in danger of extinction throughout all or a significant portion of their range. A complete 5 factor analysis and a discussion of the species status including its biology, habitat, threats, and management efforts are included in that rule. Loach minnow are estimated to be extirpated from approximately 80 to 85 percent of their historical range. Prolonged drought, anticipated effects of climate change, and the increasing abundance and expanding range of competitive and predatory nonnative fishes have increased the threat of extinction for the species.

3.0 RESULTS

3.1. Recommended Classification:

Downlist to Threatened

Uplist to Endangered

___ **Delist** (*Indicate reasons for delisting per 50 CFR 424.11*):

___ *Extinction*

___ *Recovery*

___ *Original data for classification in error*

X No change is needed

3.2. New Recovery Priority Number: No change needed at this time.

Brief Rationale: The loach minnow has a recovery priority number of 4C indicating that it is a species with a monotypic genus that has a high degree of threat, a low recovery potential and there may be conflict between species recovery and economic development.

4.0. RECOMMENDATIONS FOR FUTURE ACTIONS

Additional research, coordination, and active management are needed to improve the status of loach minnow. Recommendations for future actions include:

Studies

1. Updated genetic analyses to determine the status of the populations relative to one another. One study has been completed to date, and is now 20 years old (Tibbets 1993).
2. Improved knowledge of habitat use to verify the suite of characteristics most essential to suitable habitat. Information gathered would allow for better habitat renovation and site selection for future reintroduction projects, enhance our ability to analyze impacts from Federal activities, and recommend optimal minimization techniques (Recovery Plan Item 4).

Coordination

1. Regular meetings with Tribal, private, and multi-agency partners to stay current on captive propagation, habitat restoration, monitoring, and repatriation projects.
2. Completing revision of existing recovery plan. The revised plan should include adequate downlisting/delisting criteria, finalize a captive propagation plan, and prioritize reintroduction efforts.

Management

1. Complete the Verde River barrier and stream renovation and species reintroduction (Recovery Plan Items 1, 5, and 6).
2. Re-evaluate the suitability of Bonita Creek and, if deemed suitable, complete renovation at Bonita Creek and ensure appropriate measures are enacted to

minimize likelihood of subsequent reinvasion by nonnative species (Recovery Plan Items 1 and 5).

3. Revisit all potential areas through critical habitat redesignation analysis to ensure that all areas needed for survival and recovery are considered.
4. Work with Freeport McMoRan, the Apache-Sitgreaves National Forests, the San Carlos Tribe, the Arizona Game and Fish Department, and the Blue and Eagle Creek watershed group to assess the likelihood of renovating Eagle Creek (Recovery Plan Item 5).
5. Enhance captive propagation efficiency and/or duplicate the Bubbling Ponds Native Fish Conservation facility to minimize impacts on source populations while allowing for increased augmentation of introduced populations (Recovery Plan Item 8).
6. Minimize the spread of nonnative fishes (Recovery Plan Item 1).
7. Ensure adequate water supplies following appropriations through water settlements and losses due to drought or climate change through continued participation on appropriate interdisciplinary teams (Recovery Plan Item 1).
8. Complete additional stream renovations and species reintroductions, as determined by the Recovery Team (Recovery Plan Items 5 and 6).
9. Continue overseeing relevant section 7 consultations, developing minimization measures to improve or maintain habitat quality. Follow through on monitoring provisions and conservation measures.
10. Livestock grazing practices have been changed in many areas, minimizing or eliminating impacts in most loach minnow occupied streams. Visit those areas under new management and determine what other stressors may need to be addressed, and whether further rehabilitation is required (Recovery Plan Item 5).
11. Develop emergency procedures for protection or evacuation of loach minnow from catastrophic wildfires or other events.
12. Work with parties to provide updated, relevant information on native fishes, including loach minnow.
13. Continue to implement translocations and reintroductions in New Mexico and Arizona.

5.0 REFERENCES

Tibbets, C.A. 1993. Patterns of genetic variation in three cyprinid fishes native to the American southwest. M.S. Thesis. Arizona State University, Tempe, Arizona. 127 pages.

**U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of LOACH MINNOW (*Tiaroga cobitis*)**

Current Classification:

Recommendation resulting from the 5-Year Review:


- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Appropriate Listing/Reclassification Priority Number, if applicable: N/A

Review Conducted By: Mary Richardson, Arizona Ecological Services Field Office

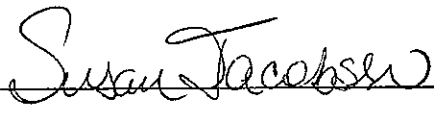
FIELD OFFICE APPROVAL:

Lead Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office

Approve  *Acting* Date 8/30/12

REGIONAL OFFICE APPROVAL:

Acting **Assistant Regional Director, Ecological Services, U.S. Fish and Wildlife Service, Region 2**

Approve  Date Aug 31, 2012