

5-Year Review Short Template

5-Year Review: Summary and Evaluation

Apache trout (*Oncorhynchus apache*) Current Classification: Threatened without Critical Habitat

**U.S. Fish and Wildlife Service
Arizona Fish and Wildlife Conservation Office
Pinetop, Arizona**

1.0 GENERAL INFORMATION

1.1 Reviewers

Lead Regional or Headquarters Office: Region 2

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Lead Field Office: Arizona Fish and Wildlife Conservation Office

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Cooperating Field Office: Arizona Ecological Services Field Office

Contact: Ryan Gordon, Fish and Wildlife Biologist, (602) 242-0210 x225.

1.2 Methodology used to complete the review:

The U.S. Fish and Wildlife Service (USFWS) conducts status reviews of species on the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.12) as required by section 4(c)(2)(A) of the Endangered Species Act (Act) (16 U.S.C. 1531 et seq.). This status review was conducted concurrently with the final Apache Trout (*Oncorhynchus apache*) Recovery Plan, Second Revision (74 FR 45649, Sept. 3, 2009). The original recovery plan was signed in 1979 and first revised in 1983.

This status review was conducted by the Arizona Fish and Wildlife Conservation Office in coordination with the Arizona Ecological Services Field Office using information from species survey and monitoring reports, the 2009 final revised recovery plan, peer-reviewed journal articles, documents generated as part of section 7 consultations, personal communications with members of the Apache Trout Recovery Team, and information provided by partner agencies. Information from the 2009 final revised recovery plan; survey/management data from the Arizona Game and Fish Department (AGFD), White Mountain Apache Tribe (WMAT), and USFWS; and a final genetics report from the University of Arizona was used to update the species status and threat sections of this review.

1.3 FR Notice citation announcing initiation of this review: 74 FR 20714-20716

2.0 REVIEW ANALYSIS

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

2.2 Review Summary:

Please refer to the following document for a complete five-factor analysis and a discussion on the species status:

U.S. Fish and Wildlife Service. 2009. Apache Trout Recovery Plan, Second Revision. Albuquerque, New Mexico.

The 2009 Apache Trout Recovery Plan, Second Revision, constitutes a thorough and up-to-date status review of the Apache trout range-wide. Although originally listed as endangered (March 11, 1967, 32 FR 4001), the species was downlisted in 1975 (July 16, 1975, 40 FR 29863) after a reanalysis of its status successful culturing in captivity and greater knowledge of existing populations. Its reclassification to threatened status included a 4(d) rule under the Endangered Species Act, allowing the Arizona Department of Game and Fish to regulate take of the species and to establish sportfishing opportunities (July 16, 1975, 40 FR 29863). Since the time of listing and because of implementation of the 1983 revised recovery plan actions, conservation measures have addressed and ameliorated the most significant threats to this species.

To date, certain threats to the species exist within the context of three of the five listing factors; although the severity of most has been reduced or eliminated through the on-going recovery efforts. Overutilization for commercial, recreational, scientific, or educational purposes (Factor B), and the inadequacy of existing regulatory mechanisms (Factor D) are no longer considered a threat (see below), and threats related to disease (Factor C) are of minor concern at this point. Disease has not been considered a factor in the decline of Apache trout (although it could become a threat in the future) and was not identified as such at the time of listing. Still, populations of Apache trout are monitored for disease and/or causative agents, parasites, and pathogens and information regarding future threats from disease is included in fisheries management plans.

The original listing of the Apache trout stated that the decrease of the species' distribution and population levels occurred primarily because of habitat alterations and negative interactions with non-native salmonids. Land-use practices including logging, livestock grazing, reservoir construction, agriculture, and road construction caused damage to Apache trout habitat (USFWS 1983). These threats varied in intensity, complexity, and damage depending on location, but ultimately reduced the ability of Apache trout to effectively persist at all life stages throughout its historical range. The 2009 recovery plan states that habitat improvements have been made through the development of an Apache Trout Habitat Improvement Project (USFS 1994), fencing

installments along critical sections of streams to exclude livestock on Apache-Sitgreaves National Forest (ASNF)/Fort Apache Indian Reservation (FAIR), implementation of Forest Management Plans that incorporate minimal stream standards for Apache trout and other salmonids, Allotment Management Plans designed to reduce the deterioration of riparian and stream habitats, and the utilization of protection measures that isolate Apache trout with non-native salmonids (e.g. construction of artificial fish barriers) (USFWS 2009). Periodically, these artificial barriers have been compromised, requiring chemical treatment and/or re-enforcement or re-structuring on the barriers (see Section 4.0 for future actions regarding barriers).

Non-native salmonids such as rainbow trout, cutthroat trout, brown trout, and brook trout were introduced throughout the range of Apache trout for fishing recreation, and their introduction resulted in competition for resources or habitats, direct predation, and hybridization (with rainbow and cutthroat trout). On-going actions that have been implemented to ameliorate the effects include the removal of non-native trout from several recovery streams in order to re-establish pure Apache trout; the discontinued stocking of non-native salmonids where hybridization, predation, and/or competition pose a threat to recovery populations of Apache trout; past and on-going re-establishment of populations of Apache trout into streams throughout its home range; and, production of Apache trout in hatcheries used in the past for recovery efforts and used at present to meet the recreational demand for sportfishing. Other aquatic nuisance species such as crayfish have become established in some Apache trout streams. Although the specific magnitude of the impact of crayfish to Apache trout has yet to be assessed, control of crayfish populations is being researched and implemented in some recovery streams. In addition to non-native threats, there is the potential for natural and/or human induced impacts such as wildfire, post-fire flooding, drought, and barrier failures to impact Apache trout populations. If a population is threatened with extirpation as a result of natural and/or human induced impacts, Apache trout will be salvaged and moved to other streams (within historical range) or into hatcheries (if feasible) until they can be repatriated into the wild.

Unregulated harvest of Apache trout and the inadequacy of existing regulatory mechanisms contributed to the species decline from the late 1800s to 1950s. Curtailment and control of harvest was initiated via the establishment of game laws by AGFD in 1929. In 1955, the WMAT closed most Apache trout streams within the FAIR boundaries of Mount Baldy Wilderness Area to fishing. The AGFD currently regulates take for Apache trout on non-Tribal lands through a 4(d) rule under the Endangered Species Act and Title 17 of the A.R.S, and WMAT regulates take for Apache trout on lands administered by the FAIR through the 4(d) rule and WMAT Tribal Code. Unregulated harvest is not currently considered a threat to the species.

The inadequacy of existing regulatory mechanisms is no longer considered a threat, as all projects on the ASNF go through NEPA/ESA compliance, projects on the FAIR go through the WMAT's similar environmental review process, and projects implemented by AGFD go through their internal Environmental Assessment Checklist to ensure that projects do not adversely affect Apache trout.

Recovery actions for Apache trout have been ongoing for over four decades, with limited sport fishing, delisting, and successful post-delisting management as the ultimate goals. Once all the recovery actions identified in the 2009 recovery plan are completed, delisting of Apache trout may be proposed.

At the time of this review, pure Apache trout are currently present in 32 populations within historical range across the FAIR and ASNF (28 were identified in the 2009 recovery plan, five “new” populations [Marshall Butte, Sun, Moon, Rock, and Little Diamond creeks) were recently confirmed as pure by the University of Arizona [Carlson and Culver 2009], but the loss of one new occurred in Bear Wallow Creek due to hybridization with rainbow trout as a result of barrier failure [Carlson and Culver 2009]). However, three populations may not fit the recovery plan criteria for self-sustaining at this time (Hayground, Lee Valley, and Stinky Creeks). These creeks will require further management actions and monitoring to determine if they can maintain a self-sustaining population of Apache trout.

The remaining pure populations continue to be self-sustaining, although several have non-native brown or brook trout that need to be continually suppressed or ultimately removed (Crooked, Little Bonito, Squaw, and Thompson Creeks; and the West Fork of the Black River). Brown trout and brook trout can prey on, and/or compete with Apache trout, but do not pose the more serious hybridization threat that occurs with rainbow trout. Ongoing management (mechanical removal and/or chemical treatments) and monitoring of these streams will be needed to identify, reduce, minimize, and/or eliminate potential risks to these populations. Based on the current risks and because the recovery criteria in the 2009 recovery plan have not been fully met, we recommend leaving the Apache trout listed as threatened. When the recovery criteria and site-specific management actions are met, pure Apache trout will exist in at least 30 populations in approximately 275 kilometers (km) (171 miles) of secured stream habitat.

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*
- No change is needed** (see rationale in part 2.2)

3.2. New Recovery Priority Number: 14C

Brief Rationale:

A Recovery Priority Number of 14C represents a species with a low degree of threat, high recovery potential, and conflict. The status of Apache trout has improved and a change in the Recovery Priority Number from 8C to 14C is warranted (Jacks 2008). Due to recent and ongoing activities to increase the distribution and number of streams occupied by Apache trout and ongoing removal of threats that led to listing, the “high recovery potential” category is still appropriate. However, the “moderate” degree of threat category (as indicative of 8C) was changed to “low” to reflect ongoing activities that are 1) increasing the range and distribution of Apache trout, and 2) removing, reducing, or eliminating threats that led to the listing of Apache trout. Range is increased through stream-to-stream translocations, and threats are removed by eliminating non-native trouts from important recovery streams and managing the watersheds to allow for stream conditions to benefit all life stages of Apache trout. The “conflict” is still relevant due to economic activities (such as ranching, timber harvest, and recreation), which, if unmitigated, may increase threats facing Apache trout.

4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

At this time the maintenance of artificial barriers, chemical and mechanical removal of non-native trouts, and restocking of pure Apache trout in some of the existing recovery populations is needed to reach recovery (recovery actions 1, 1.2, and 1.3). The locations where these actions are needed are described in the recovery plan (USFWS 2009). However, prior to completing these actions, NEPA compliance and section 7 consultation are still required (recovery action 1.1).

Recently, one of the major setbacks to non-native fish removal was the compromised strength of the formulated product Fintrol® found in antimycin-A. The chemical is currently out of production because of quality control problems. As a result, the ASNF reinitiated consultation and completed an Environmental Assessment (EA) supplement to include the use of CFT Legumine™ as a piscicide and sodium permanganate as a piscicide neutralizing agent for use in renovating Apache trout recovery streams. The draft Biological Opinion has been completed and is currently being reviewed by the ASNF.

Also, in 2008 several Apache trout streams had artificial barrier failures and were subsequently reinvaded by non-native trout. NEPA compliance for barriers that require only minimal maintenance can be categorically excluded under the existing EA for barrier construction and maintenance. However, some of the barriers will require a supplement to the current EA (or a new EA) and a subsequent Biological Assessment and Biological Opinion will be required prior to barrier maintenance.

Other critical needs that are necessary for recovery within the next five years (funded in

large part through the National Fish and Wildlife Foundation's Apache Trout Keystone Initiative business plan [NFWF 2008]) include:

- salvage and provide refugia for populations of Apache trout that are affected by wildfire, drought, barrier failures, or other natural or human induced threats (recovery action 1.5);
- establish and maintain additional populations through the construction and/or maintenance of barriers (recovery action 1.2);
- reduce or eliminate threats from non-native trouts (recovery action 1.3);
- stock pure Apache trout into protected streams (recovery action 1.4);
- conduct population and habitat surveys (recovery action 1.6);
- monitor for presence of disease and/or causative agents, parasites, and pathogens through wild fish health surveys (recovery action 3.2); and,
- identify, assess, and ameliorate threats to Apache trout (recovery action 5).

5.0 LITERATURE CITED

Carlson and Culver. 2009. Detection of hybridization in Apache trout in Arizona through incorporation of both sequence and microsatellite data. Final Report to Arizona Game and Fish Department, Phoenix, Arizona. 16 pp.

Jacks, S. 2008. Recovery Priority Number Change for Apache Trout. Memo to Files, September 16, 2008.

National Fish and Wildlife Foundation (NFWF). 2008. A business plan for the conservation of Apache trout. National Fish and Wildlife Foundation.

U.S. Fish and Wildlife Service (USFWS). 1983. Recovery plan for Arizona trout, *Salmo apache*, Miller, 1972. Apache Trout Recovery Team. USFWS, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service (USFWS). 2009. Apache Trout Recovery Plan, Second Revision. Albuquerque, New Mexico.

U.S. Forest Service (USFS). 1994. Environmental Analysis for an Apache trout habitat improvement project. USFS, Southwestern Region, Springerville, Arizona.

FIELD OFFICE APPROVAL:

Field Supervisor, Arizona Ecological Services Field Office

Approve  Date 3/31/10

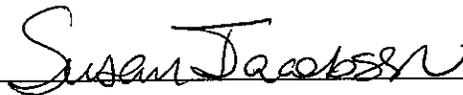
Project Leader, Arizona Fish and Wildlife Conservation Office

Approve  Date 3-22-10

REGIONAL OFFICE APPROVAL:

Assistant Regional Director, Ecological Services, Fish and Wildlife Service, Region 2

Acting

Approve  Date 4.28.10

Assistant Regional Director, Fisheries and Aquatic Resource Conservation, Fish and Wildlife Service, Region 2

Approve  Date 4/29/10