

U.S. Fish and Wildlife Service

Kendall Warm Springs dace (*Rhinichthys osculus thermalis*) 5-year Review



Lead Region: Mountain-Prairie Region (Region 6)

Cooperating Regions: None

Background and Methodology: Section 4(c)(2) of the Endangered Species Act (Act) requires that the U.S. Fish and Wildlife Service (Service) conduct a status review of each listed species at least once every 5 years. The Service initiated a 5-year status review of the Kendal Warm Springs dace (KWSD) on May 27, 2016 (81 FR 33698). In this review, the Service can recommend that the species should: (1) be removed from the list of endangered and threatened species; (2) be changed in status from endangered to threatened; (3) be changed in status from threatened to endangered; or (4) remain unchanged in its current status. If the review results in a recommended change in listing status, a separate rulemaking process must then be conducted to implement the recommendation.

In the case of KWSD, a recovery plan, recently revised in 2015 (Appendix A), includes an extensive review of the species status, population trends, threats, recovery objectives, recovery criteria, and recovery actions. This 5-year review relies on the analyses included in the revised recovery plan.

Review and Summary: KWSD is currently listed as endangered. It is endemic to a small section of a single, thermally-fed stream in Sublette County Wyoming, which is located entirely on property administered by the U.S. Forest Service, Bridger-Teton National Forest (BTNF). Population abundance of the KWSD has not been accurately estimated, but relative abundance data indicate a possible decline over the past decade. Principal threats to the species include limited distribution, small population size, and potential future changes to habitat from aquifer pollution, oil and gas development, and/or non-native species introductions. Given the narrow distribution and small population size of KWSD, threats to habitat have the potential to cause catastrophic impacts to the entire species. Recovery actions, therefore, focus on protecting Kendall Warm Springs from degradation and establishing captive populations of KWSD to protect against catastrophic loss. Conservation efforts currently include annual monitoring, restrictions on use of Kendal Warm Springs for bathing, recreation, fishing, and livestock grazing, as well as restrictions on introduction of non-native fishes and mineral extraction near the spring. The BTNF Land and Resource Management Plan includes provisions for KWSD conservation, such as establishing the spring as a Special Interest Area and establishing protection of KWSD as a management objective. In addition, the Service has begun planning for a captive refugia population. However, key recovery criteria have not yet been met (see Appendix A). Specifically, a potential decrease in abundance, the lack of established captive populations, and the lack of regulatory restrictions preventing development impacts to Kendal Warm Springs preclude down-listing or delisting KWSD. The Service, therefore, recommends no change to the current endangered status of KWSD at this time.

Approve: 

Doug Keinath, Status Review Lead, Wyoming ES

1/25/2017

Date

Approve: 

Tyler Abbott, Field Office Supervisor, Wyoming ES

1-30-17

Date

Appendix A

U.S. Fish and Wildlife Service. 2015. Recovery Plan for the Kendall Warm Springs Dace (*Rhinichthys osculus thermalis*). Revision: Original Approved July 12, 1982. U.S. Fish and Wildlife Service, Cheyenne, Wyoming.

Executive Summary reproduced below. Full recovery plan available online:

https://ecos.fws.gov/docs/recovery_plan/First%20Revised%20Kendall%20Warm%20Springs%20Dace%20Recovery%20plan_10.14.2015.pdf.

Executive Summary from Revised Recovery Plan

Current Species Status: The Kendall Warm Springs (KWS) dace (*Rhinichthys osculus thermalis*) was federally listed as endangered in 1970 under the Endangered Species Preservation Act of 1966. The species has a Recovery Priority Number of 12C indicating that it is a subspecies with a moderate degree of threat and low recovery potential and may be in conflict with development projects. It is endemic to one stream (984 feet in length) that originates from a series of thermal springs and seeps. The stream ends in a waterfall and empties into the Green River in Sublette County, Wyoming. The dace's entire habitat occurs on property administered by the U.S. Forest Service (USFS), Bridger-Teton National Forest. The number of fish present in the population has never been accurately estimated; however, catch per unit effort data may indicate a possible decline in relative abundance over the last decade.

Habitat Requirements and Limiting Factors: The KWS dace is found in only one small thermal spring-fed stream of fast-flowing waters over cobble and gravel substrate associated with emergent aquatic vegetation. Primary threats at the time of listing were a limited distribution, habitat manipulation, and small population size. Additional threats identified since the time of listing are potential catastrophic habitat loss due to manipulation or pollution of the aquifer that supplies the springs, degradation in habitat quality from potential oil and gas development, and potential non-native species introductions.

Recovery Strategy: The recovery strategy is to maintain a viable population at KWS at its one known location in the wild and to establish at least two refugia populations. Recovery actions are designed to protect the species' habitat and increase the knowledge of the species' genetics, life history, population dynamics, the relationship of the dace to its environment, and its responses to identified threats.

Recovery Goal: The ultimate goal of this revised recovery plan is to minimize the threats to the KWS dace to the point that protection under the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*) is no longer required and the KWS dace can be delisted.

Recovery Objectives: The recovery objectives for the KWS dace are to reduce and/or remove threats to the species and its habitat, to ensure a population persists at KWS, to establish at least two captive refugia populations, and to obtain an increased understanding of the relationship of the KWS dace to its physical, chemical, and ecological environment. The accomplishment of these objectives is intended to provide reasonable assurance for the continued survival of the species even if ESA protections are removed.

Recovery Criteria: The ESA requires recovery plans to include "objective, measurable criteria" which, when met, would result in the determination...that the species be removed from the list." Recovery criteria describe discrete targets with standards for measurement to determine that species have achieved recovery objectives and may be delisted. Developing precise measurable criteria for recovery of KWS

dace is challenging because many of the largest potentially devastating threats to the species have not yet manifested and are currently not affecting the population. However, the threats could manifest at any time and could cause a drastic reduction in population levels or extinction of the dace in a short time period. Many of the recovery actions in this recovery plan will allow for future development of more specific criteria.

The KWS dace will be considered ready for reclassification from Endangered to Threatened when all of the below criteria are realized:

- (1) The population of KWS dace and its habitat are shown to be protected by the effective implementation of a no drilling zone (e.g., buffers, administratively unavailable areas, withdrawals, etc.) that significantly reduces the threats associated with the *introduction of toxins (petroleum products or fracking fluids)* to its habitat by oil and gas extraction activity that could intercept the spring recharge zone that supplies water to its habitat. These protections should be assured through formal inclusion as regulatory mechanisms in an approved land management plan or other regulatory means.
- (2) The population of KWS dace and its habitat are shown to be protected by the effective implementation of a no drilling zone (e.g., buffers, administratively unavailable areas, withdrawals, etc.) that significantly reduces the threats associated with *manipulation of the spring's flow (and associated hydrologic regime) or thermal regime* by interception of the water table from oil and gas exploration activities in the spring's recharge zone. These protections should be assured through formal inclusion as regulatory mechanisms in an approved land management plan or other regulatory means.
- (3) The naturally-occurring KWS dace population is experiencing a stable or increasing trend in relative abundance over a five-year period as indicated by Catch per Unit Effort (CPUE) survey methodologies or other methods as determined by the Recovery Team.
- (4) A captive KWS dace population is established and successfully propagated and maintained in at least one location, including complete documentation of propagation methods and hatchery requirements. The captive population will consist of the number of individuals and pairs that will ensure the maintenance of long-term genetic diversity and integrity necessary for long-term species viability as documented in the best available scientific information.

The KWS dace (*Rhinichthys osculus thermalis*) will be considered recovered and ready for removal from the list of endangered and threatened wildlife (delisted) when all of the additional criteria listed below are realized:

- (1) The population of KWS dace and its habitat are shown to be protected from present and foreseeable threats to the point where listing is no longer required through implementation of activities including stewardship, protection of groundwater in the spring recharge zone, and ensuring adequate regulatory enforcement. These protections should be assured through formal inclusion as regulatory mechanisms in an approved land management plan or other regulatory means.
- (2) The naturally-occurring KWS dace population is experiencing a stable or increasing trend in relative abundance over a ten-year period as indicated by Catch per Unit Effort (CPUE) survey methodologies or other methods as determined by the Recovery Team.
- (3) Necessary administrative measures are implemented to ensure flows are maintained. Suitable flows and water quality in the KWS stream are determined through recovery tasks and assured

through formal inclusion as regulatory mechanisms in an approved land management plan or other regulatory means.

- (4) Captive KWS dace populations are established and successfully propagated and maintained in at least two locations, including complete documentation of propagation methods and hatchery requirements. Captive populations will consist of the number of individuals and pairs that will ensure the maintenance of long-term genetic diversity and integrity necessary for long-term species viability as documented in the best available scientific information.
- (5) Non-native species, if present, are controlled within the KWS ecosystem and are not causing declining trends in relative abundance of the KWS dace population there. Additionally, develop and implement a management strategy to monitor the site for the presence of non-native species and promptly take action to address any concerns from any non-native species for which presence has been verified. This management strategy should be formally adopted by incorporation as a regulatory mechanism in an approved land management plan or other regulatory means.

Types of Actions Needed: (1) Habitat protection, (2) Habitat enhancement, (3) Catastrophe planning, (4) Non-native species control, (5) Genetics studies, (6) Captive population establishment, (7) Reporting, (8) Post-delisting monitoring, (9) Adaptive management, (10) Life history studies, and (11) Cooperation with multiple agencies.