

U.S. FISH AND WILDLIFE SERVICE
5-YEAR STATUS REVIEW
Desert yellowhead (*Yermo xanthocephalus*)

GENERAL INFORMATION:

Species: Desert yellowhead (*Yermo xanthocephalus*)

Date listed: April 15, 2002

Federal Register Notice of Listing Determination: March 14, 2002. Endangered and threatened wildlife and plants: listing the desert yellowhead as threatened (67 FR 11442).

Classification: Threatened species

Most recent status review: February 13, 2020. Desert yellowhead (*Yermo xanthocephalus*) 5-year review: summary and evaluation.

Federal Register Notice citation announcing this 5-year status review: March 13, 2023, Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 27 Listed Species in the Mountain-Prairie Region (88 FR 15448).

Lead Region: Region 6 Mountain-Prairie Region, Wyoming Ecological Services Field Office, Tyler Abbott, Field Supervisor, tyler_abbott@fws.gov, 307-757-3707.

Current Recovery Priority Number (RPN): 13, indicating a species with a low degree of threats and a high recovery potential.

Methodology used to complete this review: In accordance with section 4(c)(2) of the Endangered Species Act of 1973 (16 U.S.C Section 1531 *et seq.*), as amended (Act), the purpose of a 5-year status review is to assess each threatened and endangered species to determine whether its status has changed and it should be classified differently or removed from the Lists of Threatened and Endangered Wildlife and Plants. Status reviews are to be completed in accordance with sections 4(a) and 4(b) of the Act (16 U.S.C. Section 1533(c)). This 5-year review was conducted by the U.S. Fish and Wildlife Service's (Service's) Wyoming Ecological Services Field Office. Data for this review were solicited from interested parties through a *Federal Register* notice announcing this review on March 13, 2023. We also contacted species experts from Bureau of Land Management (BLM), Wyoming Natural Diversity Database (WYNND), and Wyoming Department of Agriculture to request any data or information we should consider in our review. Additionally, we conducted a literature search and a review of information in our files.

ASSESSMENT:

As a result of this status review, we have identified additional information generated since the 2020 5-year status review and the 2022 Recovery Plan. We received updated information from

the Bureau of Land Management (BLM) and Wyoming Natural Diversity Database (WYNND) in response to our Federal Notice initiating this 5-year status review. This information includes publications, reports, and raw monitoring data from WYNND, reports from BLM, and publications from University of Wyoming. This information is summarized in Appendix A. In summary, this new information clarified, but did not alter, our understanding of desert yellowhead status. Though there has been progress since the last status review and key protections remain in place, recovery criteria have not been met as defined in the species recovery plan (Service 2022). Further, monitoring and habitat management activities by partners indicate the presence of potential threats cited in the Desert Yellowhead Species Status Assessment (Service 2019) as well as potential population declines documented during monitoring. In the future, we recommend continued monitoring to document any declines and research to determine potential mechanisms of decline. In addition, we recommend continued habitat protection and management to ameliorate potential threats to species viability.

Conclusion:

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." After reviewing the best available scientific information, we conclude that the desert yellowhead should remain a threatened species. The evaluations of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species included in this 5-year status remains an accurate reflection of the species current status. Following this review, we recommend no change in status under the Act for desert yellowhead at this time.

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CURRENT CLASSIFICATION: Threatened

RECOMMENDATION RESULTING FROM THE 5-YEAR STATUS REVIEW:

- 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

APPROPRIATE LISTING/RECLASSIFICATION PRIORITY NUMBER, IF APPLICABLE:

Lead Field Office Approval:

Signature: _____ Date: 09/04/2025
Tyler Abbott
U.S. Fish and Wildlife Service
Wyoming Ecological Services Field Office

Literature Cited:

- Bureau of Land Management. 2014. Record of Decision and Approved Resource Management Plan for the Lander Field Office Planning Area.
- Freeland, Emma. 2025. Personal communication: Email from Emma Freeland of the BLM Lander Field Office to the Wyoming Ecological Services Field Office. Notes described Cheatgrass Removal Activities in 2022 and 2023.
- Freeland, Emma. 2025. Personal communication: Email from Emma Freeland of the BLM Lander Field Office to the Wyoming Ecological Services Field Office. Notes described discovery of a new patch of desert yellowhead plants approximately 300 meters north of the previous mapped boundary of the Sand Draw population.
- Freeland, Emma. 2025. Personal communication: Email from Emma Freeland of the BLM Lander Field Office to the Wyoming Ecological Services Field Office. Note described noxious weed management and wild horse management by the BLM.
- Freeland, Emma. 2025. Personal communication: Email from Emma Freeland of the BLM Lander Field Office to the Wyoming Ecological Services Field Office. Maps described locations of noxious weeds near desert yellowhead.
- Handley, J. and L.M. Tronstad. 2021. Low seed viability in a rare plant, Desert yellowhead (*Yermo xanthocephalus*), in central Wyoming. Report prepared by the Wyoming Natural Diversity Database, University of Wyoming for the Wyoming Bureau of Land Management.
- Handley, J. and L.M. Tronstad. 2022. Estimating how climate affects asexual and sexual reproduction in Desert yellowhead (*Yermo xanthocephalus*). Report prepared by the Wyoming Natural Diversity Database, University of Wyoming for the Wyoming Bureau of Land Management.
- Handley, J. and L.M. Tronstad. 2024. Low seed viability of a rare aster. *Journal of Pollination Ecology*. 36(14): 249-261.
- Huhn, Bridger. 2023. Why is Desert Yellowhead (*Yermo xanthocephalus*) so rare? *Castilleja: Publication of the Wyoming Native Plant Society*. 42(1): 1,7-8.
- Tronstad, L. 2025. Personal communication: Email from Lusha Tronstad of WYNND to the Wyoming Ecological Services Field Office. Note described overall declining population trends in desert yellowhead populations since monitoring began.
- U.S. Fish and Wildlife Service. 2019. *Yermo xanthocephalus* (desert yellowhead) Species Status Assessment. Wyoming Ecological Services Field Office. Cheyenne, Wyoming.

U.S. Fish and Wildlife Service. 2020. Desert Yellowhead (*Yermo xanthocephalus*) 5-Year Review: Summary and Evaluation. Wyoming Ecological Services Field Office. Cheyenne, Wyoming.

U.S. Fish and Wildlife Service. 2022. Recovery Plan for the Desert Yellowhead (*Yermo xanthocephalus*). Wyoming Ecological Services Field Office. Cheyenne, Wyoming.

Weschler, Michelle. 2025. Personal communication: Email from Michelle Weschler of WYNND to Rachel Arrick of the Wyoming Ecological Services Field Office. Notes described results from population monitoring.

Wessel, Sienna. 2025. Personal communication: Email from Sienna Wessel of WYNND to Rachel Arrick of the Wyoming Ecological Services Field Office. Notes described surveys in potential habitat did not yield new desert yellowhead observations.

Appendix A: Summary of New Information

Several studies of desert yellowhead ecology were completed by BLM and WYNND since the publication of the 2020 desert yellowhead 5-year status review (Service 2020). The first publication (Handley and Tronstad 2021) evaluated two population monitoring methods (e.g., full population census and transects) to assess their usefulness for future monitoring efforts. While full census counts document all plants in a population and are best to track changes, they require a larger time commitment than transects, which subsample the population. Four monitoring locations were evaluated to document population trends. Modified transect methods detected declining numbers during the study period. Monitoring can detect population changes over time and provide evidence for mechanisms driving trends. Therefore, the authors recommended that transects are used annually and a census is completed every 3-5 years as resources allow. This report also assessed the pollination and seed-set of desert yellowhead, but results were published in Handley and Tronstad 2024, which is described in more detail below.

Handley and Tronstad 2022 evaluated how climate affects sexual and asexual reproduction in the desert yellowhead. Handley and Tronstad measured precipitation, air temperature, soil moisture as well as sexual and asexual reproduction over the course of two years. Only 15% of seeds were viable from the Sand Draw population and 1% were viable from the Cedar Rim population. Cedar Rim produced asexually more frequently than the Sand Draw population, likely because more stable soil moisture and less exposure in the Sand Draw population facilitated greater rates of sexual reproduction. The Cedar Rim population may be less adaptable when faced with environmental stochasticity as it presumably is less genetically diverse than the Sand Draw population.

Handley and Tronstad 2024 assessed the reproduction of desert yellowhead. Specifically, they determined: 1) the extent to which desert yellowhead can self-pollinate and self-fertilize, 2) the proportion of seed viability, 3) the degree to which seed production was limited by pollinators, and 4) the types of pollinators that carry desert yellowhead pollen. While desert yellowhead can self-pollinate, the number of viable seeds produced was lower than when reported in 1995 (e.g., 12% in the Sand Draw population and 0% viable in the Cedar Rim population). Further, seed viability is much lower than reported for other rare Asteraceae species. Handley and Tronstad 2024 suggest that abiotic factors may limit seed viability and should be investigated further because continued low viability could impact the species. In addition, the number of viable seed produced by insect pollination did not differ from those produced by hand-pollinated flowerheads, suggesting that pollinators did not limit seed production at the time of sampling. Lastly, nine bee genera were found to carry desert yellowhead pollen, which suggests the species does not rely on specific insect pollinators.

Additional communications from WYNND noted that while some efforts to identify new locations of desert yellowhead yielded no observations in potential habitats surveyed (Wessel 2025), a potential subpopulation was identified during annual monitoring activities (Weschler 2025). Preliminary population monitoring results from Tronstad and Weschler show continued trends of desert yellowhead declines since monitoring began (Tronstad 2025). A continued declining trend in overall abundance could warrant consideration of future uplisting if trends

continue. Preliminary research at the University of Wyoming also suggested that the desert yellowhead may use light more efficiently than surrounding species and is likely specialized to harsh environments in which it is found (Huhn 2023).

The BLM completed noxious weed management near the Sand Draw population of desert yellowhead, hand-pulling cheatgrass infestations annually from 2022-2025. The closest infestation was reported in 2023 to be approximately 20 meters northeast from the edge of the Sand Draw population and appeared to be moving downhill, closer to the desert yellowhead plants (Freeland 2025). While there is potential for this stressor to impact desert yellowhead plants in the future, current management actions by BLM aim to mitigate this threat. In 2024, the BLM gathered 2,577 wild horses out of the North Land Complex, which is the Wild Horse Management Area where desert yellowhead occurs. The wild horse populations are reported to be at Appropriate Management Level and activities led to reduced wild horse pressure (Freeland 2025). In 2020, BLM documented a previously undocumented small patch of desert yellowhead within the critical habitat. It is estimated that this patch may represent anywhere from 2 to 30 or more individuals. The plants were in a sparsely vegetated patch of white soils on a northeast facing slope, at approximately mid-slope. The slope is at the head of a dry drainage that flows on the east side of a tall butte at approximately 6,890 feet in elevation (Freeland 2025). No significant changes were reported in BLM regulations, and previously established protections including motor vehicle use closures, no surface occupancy stipulations, and mineral withdrawals, remain in place (BLM 2014).