Bull Trout (*Salvelinus confluentus*)
Conservation Status Rank Summary

September 30, 2024

For details on assessment and ranking methodology, see: *Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species*

Rarity and Trends

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Rarity					
Range Extent	2024-01-10	Y: 66777.3 km²	3.930	MTNHP Range Maps	None
Area of Occupancy			-		*Factor not used in ranking.*
Number of Occurrences	2024-04-22	20	1.380	MTNHP Databases	None
Population Size			-		*Factor not used in ranking.*
# of Occurrences in Good Condition	2024-04-22		2.200		None
% of Area Occupied in Good Condition			-		*Factor not used in ranking.*
Environmental Specificity			-		*Factor not used in ranking.*

Rarity is calculated by averaging weighted factor scores:
((3.93 × 1) + (1.38 × 1) + (2.20 × 2)) / 4 = 2.43

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Trends					
Short-term Trend	2024-04-22	-28.0%	-0.070		U.S. Fish and Wildlife Service. 2024. Species Status Assessment for the bull trout (Salvelinus confluentus) in the coterminous United States. Version 1.1, January 21, 2024. Boise, Idaho. 179 pp. See Appendix D Growth Rate Low and High I used Scenario 1 (best case), Scenario 5 (worst case)
Long-term Trend	2024-04-22		0.000		Quigley, T.M., and S.J. Arbelbide. 1997. An assessment of ecosystem components in the Interior Columbia Basin and portions of the Klamath and Great Basins. Volumes 1-4, U.S. Forest Service - General Technical Report PNW-GTR-405. Rieman, B.E., D.C. Lee, and R.F. Thurow. 1997. Distribution, status, and likely future trends of bull trout within the Columbia River and Klamath River basins. North American Journal of Fisheries Management 17:1111-1125.

Trends score is calculated by summing weighted short and long-term trend scores:
((-0.07 × 2) + (0.00 × 1)) = -0.14

Threats

Rank Factor	Date Assessed	Value	Score	Data Source	Comments
Threats					
Overall Threat Impact		Very high	0.000		None
Intrinsic Vulnerability			*-*		*Factor not used in ranking.*
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: **(0.00) = 0.00**					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Human Intrusions & Disturbance	2024-04-22	High	Pervasive	Serious	High	U.S. Fish and Wildlife Service. 2024. Species Status Assessment for the bull trout (Salvelinus confluentus) in the coterminous United States. Version 1.1, January 21, 2024. Boise, Idaho. Appendix H, I, and G
Climate Change & Severe Weather	2024-04-22	High	Pervasive	Serious	High	Under S3, 43% of core areas will have less than 4 km of suitable spawning habitat, S5 49%)
Other Threats	2024-04-22	High	Large	Serious	High	Under S3 41% of core areas have 50 spawners/adults (under S5 84% of core areas have 50 spawners/adults)
Threat Tally: 0 - Very High, 3 - High, 0 - Medium, 0 - Low Overall Threat Impact* = Very high						

*See Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species for calculation of Overall Threat Impact based on the number and impact of individual threats.

Conservation Status Rank Calculation

Raw score

Rarity: (2.43 × 70%) + Threats: (0.00 × 30%) + Trends: (-0.14) = 1.56

Calculated Rank: S2

Accepted Rank	S2
Date Approved	2024-10-09
Approval Authority	Montana Species of Concern Committee
Rank Justification	Species inhabits rivers and streams west of the continental divide. It is declining and faces severe threats from habitat loss through warming temperatures and disturbance.

Supplementary Information

Montana Natural Heritage Program. 2021. Conservation Status Assessment Definitions, Process, Rank Factors, and Calculation of State Ranks for Montana Species. 18 p.
https://mtnhp.mt.gov/docs/Montana_State_Rank_Criteria_20211201.pdf

Montana Field Guide Species Account:
https://fieldguide.mt.gov/speciesDetail.aspx?elcode=AFCHA05020

Predicted Suitable Habitat Model:
https://mtnhp.mt.gov/resources/models/?elcode=AFCHA05020

Information Needs

Information needs are assessed by considering the availability of factors used to assess species status as well as the quality of these assessments. Current information availability and quality to inform Conservation Status Rank for this species are highlighted.

Rank Factor	Assessment Category	Value	Criteria
General Status	Status Quality	Adequate	Calculated rank has low uncertainty and is represented by a single rank (e.g. S3); accepted rank may be adjusted to a range rank (e.g. S2S3)
		Poor	Rank assessed as SU or calculated rank has notable uncertainty and corresponds to a range rank with 2 or more values (e.g. S2?, S1S3, or S4S5)
Rarity	Range Quality	Adequate	Range polygon adequately represents area of probable occupancy and does not include substantial unoccupied areas; range may be adequately defined and still include areas of unsuitable habitat (e.g. mountain ranges for plains species)
		Marginal	Range polygon defined, but may include or exclude notable areas where the species may or may not occur on the landscape
		Poor	Range polygon not defined
	Habitat Quality	Adequate	Species-habitat relationship is well-defined (e.g. relevant literature or robust habitat model available)
		Marginal	Understanding of species-habitat relationship is adequate among some but not all habitats (e.g. literature covers similar habitats outside of Montana or habitat model performance is only somewhat adequate)
		Poor	Species-habitat relationship is not well understood
Threats	Threat Quality	Adequate	Threat Impact is a single value (including "Unthreatened")
		Marginal	Threat Impact assessed at more than one value (e.g. "High - Medium")
		Poor	Threat Impact is Unknown but Intrinsic Vulnerability is assessed
		Unknown	Threat Impact is Unknown and Intrinsic Vulnerability is not assessed
Trends	Recency	Current	Short-term Trend assessment date less than 10 years old
		Out of Date but Adequate	Short-term Trend assessment date is more than 10 years old or Unknown, but species is Unthreatened
		Out of Date	Short-term Trend assessment date more than 10 years old
		Not Available	Short-term Trend data are not available
	Trend Quality	Sufficient	Short-term Trend assessed at a single value or multiple values with a minimum trend greater than -10% (stable or increasing)
		Unknown but Sufficient	Short-term Trend is Unknown, but species is Unthreatened
		Poor	Short-term Trend is less than -10% (in decline) with two or more values selected
		Unknown	Short-term Trend is Unknown

Summary of Information Availability
Species is well studied and all categories have sufficient data to inform status ranking efforts.

Summary of Information Needs
No additional information needs are recognized at this time. Ongoing monitoring of populations should continue to monitor declines and inform management actions and recovery.