

North American Snapping Turtle (*Chelydra serpentina*)

Conservation Status Rank Summary

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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 Factor Rating	Score	Data Source	Comments
Rarity					
Range Extent	2025-01-06	140734.8 km ² F = 20,000-200,000 km ²	3.930	MTNHP Range Maps	None
Area of Occupancy			-		Factor not used in ranking.
Number of Occurrences	2025-01-06	28 C = 21 - 80	2.750	MTNHP Databases	None
Population Size			-		Factor not used in ranking.
# of Occurrences in Good Condition			-		Factor not used in ranking.
% of Area Occupied in Good Condition			-		Factor not used in ranking.
Environmental Specificity	2018-09-27	Moderate C = Moderate; generalist or community with some key requirements scarce	-	MTNHP Species Rank Data Table	Factor not used in ranking. Found in lotic and lentic waterbodies associated with the Yellowstone and Missouri river drainages Methodology: NS (2003) Original Score: C
Rarity is calculated by averaging weighted factor scores: $((3.93 \times 1) + (2.75 \times 1)) / 2 = 3.34$					
Trends					
Short-term Trend	2025-01-06	* U = Unknown	-	MTNHP	Factor not used in ranking. Species is not monitored and trend is unavailable.
Long-term Trend	2018-09-27	* G = Relatively Stable (=10% change)	0.000	MTNHP Species Rank Data Table	Habitat is likely stable within +/- 25% since European settlement, stock ponds may have increased the amount of habitat for this species Methodology: NS (2003) Original Score: E
Trends score is calculated by summing weighted short and long-term trend scores: $((0.00 \times 1)) = 0.00$					

*Values may be absent if not precisely estimated; factors may still be assessed for rank if a Factor Rating can be assigned.

Threats

Rank Factor	Date Assessed	Value Factor Rating	Score	Data Source	Comments
Threats					
Overall Threat Impact		High B = High	1.830		Unknown. Unrestricted harvest of the species has been implicated in local declines elsewhere in the species range. As Montana is at the northern periphery of this species range, unusually cold winters or adverse weather events may effect recruitment.
Intrinsic Vulnerability	2018-09-27	Highly vulnerable A = Highly vulnerable	-	MTNHP Species Rank Data Table	Factor not used in ranking. Species has a very high age of maturity, and although a moderate number of eggs are produced relatively few young make it through their first winter. Methodology: NS (2003) Original Score: A
Threat score is calculated from Overall Threat Impact when available or Intrinsic Vulnerability if not: (1.83) = 1.83					

Individual Threats Data

Threat Category	Date Assessed	Impact Score	Scope	Severity	Immediacy	Comments
Agriculture & Aquaculture	2026-04-10	Low	Restricted	Moderate	High	Riparian habitat degradation due to overgrazing and lack of woody debris in creeks. Overgrazing by livestock and changes to riparian woody vegetation, hibernacula, woody debris in streams. Disturbance of nesting turtles by livestock while nesting, potential nest/hatchling trampling.
Transportation & Service Corridors	2025-01-06	Low	Restricted	Slight	High	Mortality of individuals dispersing across roads. Threat is poorly characterized, but some individuals are likely killed by vehicles
Biological Resource Use	None	Medium	Pervasive	Moderate	High	Multiple Level 2 threats - see Additional Threat Details below.
Natural System Modifications	2026-04-10	High	Large	Serious	High	Dredging, channelization and the removal of riparian vegetation can negatively impact nesting and foraging habitat. Loss of nesting habitat or use of construction site earth mounds as nesting habitat. Dams can create genetic bottlenecks by fragmenting populations, decreasing habitat heterogeneity, and altering snapping turtle habitats. Large irrigation canals result in entrainment and mortality and transport from home range. Low head irrigation barriers prevent connectivity. Intake pipes/grates for irrigation can entrap and cause mortality

Pollution	None	Low	Restricted	Moderate	High	Multiple Level 2 threats - see Additional Threat Details below.
<p style="text-align: center;">Threat Tally: 0 - Very High, 1 - High, 1 - Medium, 3 - Low Overall Threat Impact* = High</p>						

*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: $(3.34 \times 70\%)$ + Threats: $(1.83 \times 30\%)$ + Trends: $(0.00) = 2.89$

Calculated Rank: S3

Accepted Rank	S3
Author(s)	Dan Bachen
Rank Approved By	Legacy Assessment: MTNHP Staff
State Rank Reason	Species is uncommon to rare within its native range across eastern Montana. No trend data are available, but habitat seems stable. It faces threats from road-based mortality and collecting and hunting, but the impact of these threats are poorly characterized and more study is needed.

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=ARAAB01010>

Predicted Suitable Habitat Model:

<https://mtnhp.mt.gov/resources/models/?elcode=ARAAB01010>

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

Information to assess rank is generally available, but considerable uncertainty exists within these factors. Outside of the southeast corner, records of the species are sparse, with significant areas of suitable habitat that lack observational support. Extralimital records exist from individuals that may have been introduced or naturally occur in the area. Species is not monitored, so no trend data are available. Threats are known, but scope and impact are not well studied in the state. As the species nests on gravel bars, hydrological changes to dammed rivers may impact suitability of habitat.

Summary of Information Needs

Structured surveys of historic sites would provide trend data. Surveys across the species current range would provide better data on how common they are within much of the central and northern regions of the state.

Genetic testing might help determine whether extralimital populations in northcentral Montana are native or introduced. Further research on collecting and hunting will allow better threats assessments.

Additional Threat Details

The table below contains the complete threats assessment for this species. While the Conservation Status Rank Calculation is based on cumulative, broadly categorized (Level 1) threats data, threats are assessed and tracked for more specifically categorized (Level 2) threats when available.

Threat Category	Date Assessed	Assessed By	Data Source	Scope	Severity	Immediacy	Comments
Agriculture & Aquaculture - 2.3 - Livestock Farming & Ranching	2026-04-10	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	Riparian habitat degradation due to overgrazing and lack of woody debris in creeks. Overgrazing by livestock and changes to riparian woody vegetation, hibernacula, woody debris in streams. Disturbance of nesting turtles by livestock while nesting, potential nest/hatchling trampling.
Transportation & Service Corridors - 4.1 - Roads & Railroads	2025-01-06	Dan Bachen	Expert Opinion	Restricted	Slight	High	Mortality of individuals dispersing across roads. Threat is poorly characterized, but some individuals are likely killed by vehicles
Biological Resource Use - 5.1 - Hunting & Collecting Terrestrial Animals	2025-01-06	Dan Bachen	Expert Opinion	Pervasive	Moderate	High	Species is collected and consumed in other regions of the country, it is unknown to what extent this occurs in Montana. Collection for individuals as pets also occurs as demonstrated by the relocation of individuals to areas outside of their current range. Scope and impacts are poorly characterized.
Biological Resource Use - 5.4 - Fishing & Harvesting Aquatic Resources	2026-04-10	Dan Bachen	SWAP Assessment	Large	Slight	High	Injury and mortality from incidental capture and release by anglers with hook still attached or ingestion of hooks
Natural System Modifications - 7.2 - Dams & Water Management/Use	2026-04-10	Dan Bachen	SWAP Assessment	Large	Serious	High	Dredging, channelization and the removal of riparian vegetation can negatively impact nesting and foraging habitat. Loss of nesting habitat or use of construction site earth mounds as nesting habitat. Dams can create genetic bottlenecks by fragmenting populations, decreasing habitat heterogeneity, and altering snapping turtle habitats. Large irrigation canals result in entrainment and mortality and transport from home range. Low head irrigation barriers prevent connectivity. Intake pipes/grates for irrigation can entrap and cause mortality
Pollution - 9.1 - Domestic & Urban Waste Water	2026-04-10	Dan Bachen	SWAP Assessment	Restricted	Slight	High	Water Pollution from urban waste water (e.g., wastewater treatment plants, golf courses, etc.). Chemical constituents including POPs, PFAS, PAHs, heavy metals and others. Bioaccumulation and maternal transfer to eggs, deformities in hatchlings, increase in number of nonviable eggs, decline in hatchling fitness, navigation abilities, etc.
Pollution - 9.2 - Industrial & Military Effluents	2026-04-10	Dan Bachen	SWAP Assessment	Restricted	Moderate	High	Chemical constituents including POPs, PFAS, PAHs, heavy metals and others. Refinery or industrial discharge, semitruck spill, railroad spill, pipeline breach, etc. Both immediate and cumulative effects. Chemical constituents including

							POPs, PFAS, PAHs, heavy metals and others. Bioaccumulation - maternal transfer to eggs, deformities in hatchlings, increase in number of nonviable eggs, decline in hatchling fitness, navigation abilities, etc. Loss of prey. Dietary shifts, body condition, disease susceptibility. Cumulative and chronic effects of spills on Yellowstone River.
Climate Change & Severe Weather - 11.4 - Storms & Flooding	2026-04-10	Dan Bachen	SWAP Assessment	Large	Unknown	Moderate	Flooding and drought would have negative impacts that could impact population demography into the future