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Oregon State Rank Assessment for Western Toad (*Anaxyrus boreas*)

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Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form Western toad (*Anaxyrus boreas*)

Oregon Biodiversity Information Center

SPECIES ASSESSED

Scientific Name	<i>Anaxyrus boreas</i>	ELCODE	AAABB01030
Common Name	Western toad	Element ID	6289

Frost, D. R. 1985. Amphibian species of the world. A taxonomic and geographical reference. Allen Press, Inc., and The Association of Systematics Collections, Lawrence, Kansas. v + 732 pp.

CONSERVATION STATUS RANK

Assigned Rank	S4S5		
Rank Assignment Author	Nelson, Misty	Rank Review Date	6/20/2013
Rank Factors Author	Nelson, Misty	Rank Factors Date	10/18/2023
Calculated Rank	S4S5	Rank Change Date	01/08/2024
Rank Methodology Used	Rank calculation - Biotics v2		

Assigned Rank Reasons

Broad distribution and many recent observations suggest population is widespread and not experiencing significant declines in Oregon. See Pearl et al. 2009 for evidence that there have not been broad declines in OR Cascades.

RANGE/DISTRIBUTION

Range Extent

Rating	200,000-2,500,000 square km (about 80,000-1,000,000 square miles)		
Estimate	254800	Unit Used for Estimate	Square Kilometers
Comments	Range Extent is statewide = 254,800 sq km		

Area of Occupancy

Grid Cell Size	4 km ² Grid Cells		
Rating (as Number of 4 km ² Grid Cells)	FG = 126-2,500		
Comments	339 4 sq km grid cells based on PODS. If calculated using iNaturalist data, result is 682 4 sq km grid cells.		

ABUNDANCE AND CONDITION

Rating	81 to >300		
Estimate	87		
Comments	87 EOs in Biotics, but there are over 750 Research Grade records in iNaturalist with observation dates since 2000, suggesting species is more widespread than ORBIC data indicate.		

Rating	Unknown		
Comments	Little information exists on population size. Some sources suggest overall declines, but there is no specific information for Oregon.		

Number of Occurrences with Good Viability/Ecological Integrity

Rating Some to very many (13 to >125)

Estimate 16

Comments

16 EOs in Biotics with survey dates since 2000; there are over 750 Research Grade iNaturalist observations, with over 500 observations since 2020.

THREATS						
<u>Threat</u>	<u>Category</u>	<u>Calculated</u>				
<u>Code</u>	<u>Threat Category</u>	<u>Impact</u>	<u>Scope</u>	<u>Severity</u>	<u>Timing</u>	<u>Comments</u>
11	Climate change & severe weather	D = Low	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	High: Continuing	Drought may strand eggs or cause adults to forgo breeding. Increasing temperatures may also increase susceptibility to disease.
8	Invasive & other problematic species, genes & diseases	D = Low	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	High: Continuing	Western toads are highly susceptible to chytridiomycosis during larval and post-metamorphic stages, and high rates of mortality have been observed, but little is known about population-wide impacts. Saprolegniasis may also be impacting this species.
4	Transportation & service corridors	D = Low	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	High: Continuing	Roads may contribute to declines both directly, from automobiles and ATVs, but also indirectly by fragmenting habitat
Calculated Overall Threat Impact		D = Low				
Assigned Overall Threat Impact		D = Low				
Overall Threat Impact Comments						
Habitat fragmentation and degradation, disease, and climate change impacts (drought, warmer temperatures) may be contributing to declines. Western toads are also highly sensitive to increased ultraviolet radiation.						

TRENDS	
Short-Term Trend	
Rating	G = Relatively Stable (<=10% change)

Long-Term Trend

Rating G = Relatively Stable (<=10% change)

ADDITIONAL SPECIES INFORMATION**Oregon Habitat Comments**

Adult lives in a variety of habitats from forests to more arid, shrubby areas and move to shallow lakes, ponds, marshes and wet meadows to breed. Adapted to irrigated agricultural areas and even suburbs. Tadpoles live in the warmest, shallowest water available. Breeding habitat varies regionally: prefer mud-bottomed shallows of lakes in Cascades, freshwater ponds in dunes on Oregon coast, and uses stock ponds and reservoirs in desert regions.

RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
Bury			Bury, Bruce R. Biologist with USGS. He has provided <i>Rana</i> sp. sighting data for NRIS fauna database.
ORBIC		2019	Oregon Biodiversity Information Center. 2019. Point Observation Database (PODs). Unpublished species point observations collated from many sources across Oregon.
Pearl et al.		2009	Pearl, C. A., M.J. Adams, R.B. Bury, W. H. Wentz, and B. McCreary. 2009. Evaluating Amphibian Declines with Site Revisits and Occupancy Models: Status of Montane Anurans in the Pacific Northwest USA. <i>Diversity</i> 2009, 1, 166-181; doi:10.3390/d1020166.

RESOURCES

Oregon Biodiversity Information Center, Institute for Natural Resources
Portland State University, Mail Stop: INR, PO Box 751, Portland, OR 97207-0751 Phone: 503-725-9950

Additional ORBIC species ranking forms posted at
<https://inr.oregonstate.edu/orbic/rare-species/ranking-documentation>

Information on Natural Heritage ranking methodology is available at
<http://www.natureserve.org/biodiversity-science/publications/natureserve-conservation-status-assessments-methodology-assigning>

The Conservation Rank Calculator is developed and maintained by NatureServe and is available from
<http://www.natureserve.org/conservation-tools/conservation-rank-calculator>

ASSESSMENT CITATION

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