

Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form Umatilla megomphix (snail) (*Megomphix lutarius*)

Oregon Biodiversity Information Center

SPECIES ASSESSED

Scientific Name *Megomphix lutarius*

ELCODE IMGASB2030

Common Name Umatilla megomphix (snail)

Element ID 7912

Species Concept Reference Citation

Turgeon, D.D., J.F. Quinn, Jr., A.E. Bogan, E.V. Coan, F.G. Hochberg, W.G. Lyons, P.M. Mikkelsen, R.J. Neves, C.F.E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F.G. Thompson, M. Vecchione, and J.D. Williams. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks. 2nd Edition. American Fisheries Society Special Publication 26, Bethesda, Maryland: 526 pp.

CONSERVATION STATUS RANK

Assigned Rank S1S2

Rank Assignment Author E. Gaines

Rank Review Date 6/20/2013

Rank Factors Author E. Gaines

Rank Factors Date 11/11/2022

Calculated Rank S1S2

Rank Change Date 11/11/2022

Rank Methodology Used Rank calculation - Biotics v2

Assigned Rank Reasons

Known from only two-three extant sites in Oregon, with few individuals documented at each. Surveys by qualified biologists at historical (1930's) sites have not found this species. This species is threatened by logging, grazing, road maintenance and development, changed fire regimes, and drought. These threats alter the species' cool, moist microclimate.

RANGE/DISTRIBUTION

Range Extent

Rating 1000-5000 square km (about 400-2000 square miles)

Estimate 4474

Unit Used for Estimate Square
Kilomete
rs

Comments This species occurs in the Blue and Willowa Mountains of northeast Oregon. It is documented on the Umatilla and Willowa-Whitman National Forests in Oregon. It is suspected present on the Vale and Prineville BLM Districts in Oregon. Frest and Johannes (1995) were unable to locate the species at a number of sites in the Blue Mountains between 1991-1994, including at the type locality, but surveys in 2012 and 2016 located extant records in Umatilla and Union Counties, Oregon (Jespersen et al. 2012, Blevins et al. 2017).

Area of Occupancy

Grid Cell Size 4 km² Grid Cells

Rating (as Number of 4 km² Grid Cells) CD = 3-25

Comments Known from 6 small sites in Oregon, including historic sites. Extant records encompass 3 4km² grid cells.

ABUNDANCE AND CONDITION

Number of Occurrences

Rating 6 - 20

Estimate 6

Comments

Frest and Johannes (1995c) report this species as originally described from widely separated sites in the Blue Mountains but were unable to locate it in a number of sites in the Blue Mountains between 1991-1994, including at the type locality. Surveys in 2012 and 2016 located extant records in Umatilla and Union Counties, Oregon (Jespersen et al. 2012, Blevins et al. 2017).

Population Size

Rating 50 - 1000 individuals

Comments

Population size is unknown but known sites have few individuals. Population size is likely very small.

Good Viability/Ecological Integrity

Number of Occurrences with Good Viability/Ecological Integrity

Rating Unknown

THREATS

<u>Threat Category</u>		<u>Calculated</u>		<u>Severity</u>	<u>Timing</u>	<u>Comments</u>
<u>Code</u>	<u>Threat Category</u>	<u>Impact</u>	<u>Scope</u>			
2	Agriculture & aquaculture	CD = Medium - low	Large - restricted	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		grazing
5	Biological resource use	BD = High - low	Large - restricted	Serious - moderate		logging
2.3	Livestock farming & ranching	CD = Medium - low	Large - restricted	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
2.3.2	Small-holder grazing, ranching or farming	CD = Medium - low	Large - restricted	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
4	Transportation & service corridors	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
4.1	Roads & railroads	C = Medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
5.3	Logging & wood harvesting	BD = High - low	Large - restricted	Serious - moderate		
7	Natural system modifications	BC = High - medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Serious - moderate		
7.1	Fire & fire suppression	BC = High - medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Serious - moderate		
7.1.1	Increase in fire frequency/intensity	BC = High - medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Serious - moderate		

11	Climate change & severe weather	C = Medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%
11.2	Droughts	C = Medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%

Calculated Overall Threat Impact AB = Very high - high

Assigned Overall Threat Impact AB = Very high - high

Overall Threat Impact Comments

This species relies on moist, shady, stable microclimates. Activities such as grazing, logging, road construction, fire suppression, or droughts that remove or compact woody debris, riparian corridors, ground cover, or talus can negatively alter the temperature and humidity of this snail's microhabitat and therefore constitute threats (Frest and Johannes 1995c, Blackburn et al. 2021). Logging, and grazing of logged areas, occurs across the species' range and negatively impacts microhabitats (Frest and Johannes 1995c, Blackburn et al. 2021). Grazing compacts soil and damages litter, woody debris, and porous soil (Frest and Johannes 2004, Denmead et al. 2015, Blackburn et al. 2021). This species has limited mobility and poor dispersal ability to avoid large fires and the associated destruction and desiccation of moist microhabitats (Jordan and Black 2012, Blackburn et al. 2021). Known sites are downslope from gravel roads (Jepsen et al. 2012, Blevins et al. 2017). Road development and maintenance can compact soil, destroy habitat, lead to increased erosion, and increase opportunities for dispersed camping in snail habitat (Jordan and Black 2012, Blackburn et al. 2021). Warming temperatures and increased drought are likely to negatively affect this species that is associated with cool, moist habitats (Blackburn et al. 2021). Known populations are disjunct and small.

TRENDS

Short-Term Trend

Rating U = Unknown

Comments

This species was believed extirpated (repeated surveys had not found it since it was originally described in the 1930s) until located at new sites in 2012 (Frest and Johannes 1995c, Jepsen et al. 2011, 2012). Trends are not known.

Long-Term Trend

Rating U = Unknown

Comments

Long term trends largely unknown, but presumed to be a decline because the species no longer occurs at sites from which it was originally described (Frest and Johannes 1995c, Jepsen et al. 2011).

OTHER FACTORS

Intrinsic Vulnerability Rating Moderately vulnerable

Comments

This species is vulnerable because of its limited mobility. Known populations are very small.

Environmental Specificity Rating Narrow. Specialist or community with key requirements common.

Comments

This species relies on moist, shady, stable microclimates.

RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
BLM			Bureau of Land Management. 2019. GeoBOB spatial and tabular data, received Spring 2019. Found at shared PSU files, \GeoBob\Master
ORBIC		2019	Oregon Biodiversity Information Center. 2019. Point Observation Database (PODs). Unpublished species point observations collated from many sources across Oregon.

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-assign>

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

Oregon Biodiversity Information Center. 2013. Oregon state rank assessment for *Umatilla megomphix* (snail) (*Megomphix lutarius*). Institute for Natural Resources, Portland State University, Portland, OR.