

# Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form Crater Lake tightcoil (snail) (*Pristiloma crateris*)

Oregon Biodiversity Information Center

## SPECIES ASSESSED

Scientific Name *Pristiloma crateris*

ELCODE IMGAS80011

Common Name Crater Lake tightcoil (snail)

Element ID 7899

### Species Concept Reference Citation

Pilsbry, H.A. 1946. Land Mollusca of North America (north of Mexico). Volume 2, Part 1. Monograph of the Academy of Natural Sciences of Philadelphia, 2(1): 1-520.

## CONSERVATION STATUS RANK

Assigned Rank **S3**

Rank Assignment Author E. Gaines

Rank Review Date 10/20/2011

Rank Factors Author E. Gaines

Rank Factors Date 11/11/2022

Calculated Rank S3

Rank Change Date 11/11/2022

Rank Methodology Used Rank calculation - Biotics v2

### Assigned Rank Reasons

A fair number of sites, but few individuals at each site. Surveys have found it at additional sites. Vulnerable to climate change, wetland alteration, grazing. Oregon endemic.

## RANGE/DISTRIBUTION

### Range Extent

Rating 20,000-200,000 square km (about 8000-80,000 square miles)

Estimate 51,384

Unit Used for Estimate Square  
Kilometers

Comments *Pristiloma crateris* is known from wet forested habitats at mid to high elevation sites in Clackamas, Deschutes, Douglas, Hood River, Jefferson, Klamath, Lane, Linn, Morrow, and Wasco Counties, Oregon, USA. Most records are from along the eastern and western crest of the Cascade Range, but there are a few recent (post-2000) records from the Blue Mountains and Klamath Mountains ecoregions (Roth 2015, NatureServe Network 2022). The species is documented on the Fremont-Winema, Deschutes, Willamette, Umpqua, Umatilla, and Mount Hood National Forests and the Roseburg and Northwest Oregon BLM Districts. It is suspected from the Rogue River-Siskiyou National Forest (Blackburn 2017).

### Area of Occupancy

Grid Cell Size 4 km<sup>2</sup> Grid Cells

Rating (as Number of 4 km<sup>2</sup> Grid Cells) E = 26-125

Comments

## ABUNDANCE AND CONDITION

### Number of Occurrences

Rating 21 - 80

Estimate 33

Comments

There are over 100 locations that have been combined into 33 element occurrences (Roth 2015, NatureServe Network 2022).

### Population Size

Rating Unknown

**Comments**

Population size information is not available for this species (Blackburn 2017).

**Good Viability/Ecological Integrity**

**Number of Occurrences with Good Viability/Ecological Integrity**

**Rating**            Unknown

**Comments**

Most collections have been of 1 to 3 individuals (Blackburn 2017) and the number of individuals at a site were not recorded.

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**THREATS**

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<u>Threat Category</u>		<u>Calculated Impact</u>		<u>Severity</u>	<u>Timing</u>	<u>Comments</u>
<u>Code</u>	<u>Threat Category</u>	<u>Impact</u>	<u>Scope</u>			
2.3.2	Small-holder grazing, ranching or farming	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%		
7.1.1	Increase in fire frequency/intensity	D = Low	Restricted: Affects some (11-30%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
7.2.7	Abstraction of ground water (agricultural use)	D = Low	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%		
2	Agriculture & aquaculture	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%		
2.3	Livestock farming & ranching	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	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%		
4.1	Roads & railroads	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%		
5	Biological resource use	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	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%	
6	Human intrusions & disturbance	D = Low	Large: Affects most (31-70%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	
6.1	Recreational activities	D = Low	Large: Affects most (31-70%) of the total population or occurrences or extent	Slight: Likely to only slightly degrade/reduce affected occurrences or habitat, or reduce population 1-10%	
7	Natural system modifications	D = Low	Restricted: Affects some (11-30%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	
7.1	Fire & fire suppression	D = Low	Restricted: Affects some (11-30%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	
7.2	Dams & water management/use	D = Low	Small: Affects a small proportion (1-10%) of the total population or occurrences or extent	Moderate: Likely to moderately degrade/reduce affected occurrences or habitat, or reduce population 11-30%	
11	Climate change & severe weather	Unknown	Large: Affects most (31-70%) of the total population or occurrences or extent	Unknown	
11.1	Habitat shifting & alteration	Unknown	Large: Affects most (31-70%) of the total population or occurrences or extent	Unknown	High elevation species likely vulnerable to climate change.

**Calculated Overall Threat Impact** B = High

**Assigned Overall Threat Impact** B = High

**Overall Threat Impact Comments**

Loss or degradation of wetland habitat is the primary threat to *Pristiloma crateris* (Duncan 2004). Activities, including logging, agriculture, water diversion, and road construction disturb wet microhabitats and negatively affect abundance of this species and damage habitat (Frest and Johannes 1998, Duncan 2004, Jordan and Black 2012, Blackburn 2017). Logging and grazing are widespread in the range of this species and have been shown to be detrimental to the genus (Jordan and Black 2012). This species is often found associated with small hydrologic features that do not receive the protection that larger riparian areas receive (Duncan 2004). Much habitat is currently open to grazing which can damage microhabitats (Frest and Johannes 1998). This species is not found in heavily grazed areas (Duncan 2004). Road development and maintenance, including logging roads, can compact and otherwise damage microhabitats including ground litter, moisture regimes, and porous soils (Blackburn 2017). Most of the known occurrences for this species are on National Forest lands and are likely directly and indirectly impacted by logging activities. Removal of woody debris and canopy cover alter microhabitat humidity regimes (Frest and Johannes 1998, Duncan 2004, Jordan and Black 2012, Blackburn 2017). Recreational activities, including snowmobiling, skiing, and camping, can compact and degrade habitat (Duncan 2004). Increasing fire frequency and intensity may damage microhabitats by removing woody debris, ground vegetation, and canopy cover, resulting in altered moisture and temperature regimes. Water diversion for agriculture or livestock can damage habitat for this species (Frest and Johannes 1998, Duncan 2004, Blackburn 2017). This is a high elevation wetland species that is likely threatened by climate change.

### TRENDS

#### Short-Term Trend

**Rating** U = Unknown

#### Comments

Trends for this species are unknown; it was only recently determined to be a full species. Although it has relatively narrow habitat requirements, surveys between 2001 and 2007 revealed previously unknown locations (Roth 2015, NatureServe Network 2022). Most collections have been of few (1-4) individuals (Roth 2015).

#### Long-Term Trend

**Rating** U = Unknown

#### Comments

Long-term trends for this species are unknown (Blackburn 2017), however narrow habitat requirements and sensitivity to disturbance suggest long-term declines may have occurred.

### OTHER FACTORS

**Intrinsic Vulnerability Rating** Unknown

#### Comments

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

#### Comments

Requires wet microhabitats.

### ADDITIONAL SPECIES INFORMATION

#### Oregon Habitat Comments

Uncertain. Related species found at high elevations live along small streams, in leaf litter in forest, near the edges of seeps or bogs, and under cushion plants in open mountain meadows. (Frest and Johannes, 1995; U95FRE01ORUS).

### RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
Andrews		2010	Andrews, H. 2010. Species Fact Sheet: <i>Pristiloma arcticum crateris</i> . USDA Forest Service and Bureau of Land Management.
Duncan		2004	Duncan, N. 2004. Conservation Assessment for <i>Pristiloma arcticum crateris</i> , Crater Lake tightcoil. USDA Forest Service. <a href="https://www.fs.fed.us/r6/sfpnw/issssp/documents/planning-docs/20050713-moll-crater-lake-tight-coil.doc">https://www.fs.fed.us/r6/sfpnw/issssp/documents/planning-docs/20050713-moll-crater-lake-tight-coil.doc</a>

**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. 2011. Oregon state rank assessment for Crater Lake tightcoil (snail) (*Pristiloma crateris*). Institute for Natural Resources, Portland State University, Portland, OR.