

Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form Cascades axetail slug (*Carinacauda stormi*)

Oregon Biodiversity Information Center

SPECIES ASSESSED

Scientific Name *Carinacauda stormi*

ELCODE IMGAS0H010

Common Name Cascades axetail slug

Element ID 13117

Species Concept Reference Citation

Leonard, W. P., L. Chichester, C. H. Richart, and T. A. Young. 2011. *Securicauda hermani* and *Carinacauda stormi*, two new genera and species of slug from the Pacific Northwest of the United States (Gastropoda: Stylommatophora: Arionidae), with notes on *Gliabates oregonius* Webb 1959. *Zootaxa* 2746:43-56.

CONSERVATION STATUS RANK

Assigned Rank **S2S3**

Rank Assignment Author Gaines, Eleanor

Rank Review Date 11/02/2011

Rank Factors Author Eleanor Gaines

Rank Factors Date 11/10/2022

Calculated Rank S2S3

Rank Change Date 11/10/2022

Rank Methodology Used Rank calculation - Biotics v2

Assigned Rank Reasons

Range appears is limited, but species is abundant in some areas. Vulnerable to forest management activities. Surveys may find additional sites .

RANGE/DISTRIBUTION

Range Extent

Rating 5000-20,000 square km (about 2000-8000 square miles)

Estimate 5463

Unit Used for Estimate Square
Kilomete
rs

Comments This species has been detected at more than 70 localities in Oregon, United States. It is found in Clackamas, Marion, Linn and Lane counties, Oregon. Records range from 536 to 1402 m above sea level (NatureServe Network 2021). It occurs on the Willamette and Mt. Hood National Forests, and the Northwest Oregon Bureau of Land Management District (Blackburn et al. 2021). It is suspected from the Umpqua National Forest, though surveys have not detected it there (Blackburn et al. 2021).

Area of Occupancy

Grid Cell Size 4 km² Grid Cells

Rating (as Number of 4 km² Grid Cells) E = 26-125

Comments Approx 100 4-km sq grid cells. Known from Coast and West Cascade ranges, Oregon

ABUNDANCE AND CONDITION

Number of Occurrences

Rating 21 - 300

Estimate 79

Comments

There are 79 extant occurrences for this species in western Oregon. All records are post-2000 (NatureServe Network 2021). Blackburn et al. (2021) report more than 100 site localities for this species, though some of these are combined into single occurrences (NatureServe Network 2021). The assigned range in estimated number of occurrences takes into account the fact that there are likely additional undocumented occurrences.

Population Size

Rating Unknown

Comments

Population size unknown. Most occurrences are of fewer than 10 individuals (Blackburn et al. 2021, NatureServe Network 2021).

Good Viability/Ecological Integrity

Number of Occurrences with Good Viability/Ecological Integrity

Rating Unknown

Comments

Unknown, but most occurrences are of fewer than 10 individuals (Blackburn et al. 2021, NatureServe Network 2021).

THREATS

<u>Threat Category Code</u>	<u>Threat Category</u>	<u>Calculated Impact</u>	<u>Scope</u>	<u>Severity</u>	<u>Timing</u>	<u>Comments</u>
5.3	Logging & wood harvesting	BC = High - medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	
7.1	Fire & fire suppression	BC = High - medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	
7.1.1	Increase in fire frequency/intensity	BC = High - medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	
11	Climate change & severe weather	BC = High - medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	
11.2	Droughts	BC = High - medium	Pervasive: Affects all or most (71-100%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	
5	Biological resource use	BC = High - medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	Negaitve impacts from logging
7	Natural system modifications	BC = High - medium	Large: Affects most (31-70%) of the total population or occurrences or extent	Serious - moderate	High: Continuing	negative impacts from fire

Calculated Overall Threat Impact AB = Very high - high

Assigned Overall Threat Impact AB = Very high - high

Overall Threat Impact Comments

Carinacauda stormi requires damp microhabitats with a well-developed Douglas-fir needle/duff layer; fire or climate conditions such as drought that dry out the forest floor will degrade habitat (Blackburn et al. 2021, Young and Doerr 2011). Activities that remove or disturb the forest floor, deteriorate soil conditions, vine maple, down woody debris, and ground cover vegetation (including timber harvest, pile burning, broadcast burning or heavy thinning) may degrade habitat for this species (Young and Doerr 2011). Intensive harvest also results in soil compaction and degradation (Blackburn et al. 2021). Increasing fire frequency and intensity negatively affects habitat for this species by removing and drying out duff layers. Prescribed burning can also threaten small populations (Young and Doerr 2011, Blackburn et al. 2021). Drought and changing climate conditions can dry out moist forest floor habitat, making habitat unsuitable for this species (Young and Doerr 2011, Blackburn et al. 2021).

TRENDS

Short-Term Trend

Rating U = Unknown

Comments

Post-2011 surveys have documented this species at previously unknown locations, but trends are unknown (Blackburn et al. 2021). Few individuals are observed at each site but sites have not been revisited to determine their persistence (NatureServe 2021).

Long-Term Trend

Rating U = Unknown

Comments

Species was described in 2011, and thus long-term trends are not available.

OTHER FACTORS

Intrinsic Vulnerability Rating Unknown

Comments

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

Comments

Western hemlock/Douglas fir stands with vine maple present at an elevation band of approximately 600-1200 meters (Young et al. 2010).

ADDITIONAL SPECIES INFORMATION

Oregon Habitat Comments

Conifer and leaf litter in western hemlock/Douglas-fir stands with vine maple present. Downed wood (Douglas-fir) often present.

RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
Leonard, W.P. et al.		2011	Leonard, W. P., L. Chichester, C.H. Richart, and T. A. Young. 2011. <i>Securicauda hermani</i> and <i>Carinacauda stormi</i> , two new genera and species of slug from the Pacific Northwest of the United State (Gastropoda: Styommatophora: Arionidae), with notes on <i>Gliabates oregonius</i> Webb 1959.
Tiffany Young (WNF), Joe Doerr (WNF), Roy Price (SBLM) and Ray Davis		2010	Young, Tiffany; Doerr, Joe; Price, Roy & Davis, Ray. 2010. "FY2010 ISSSP Report on Two Salamander Slug (<i>Carinacauda stormi</i>) Survey Projects: 1. Mollusk and Amphibian Species Purposive Surveys on Salem BLM and Sweet Home/Detroit Rangers Districts of Willamette NF. 2. Salamander Slugs and Secondary Mollusk and Amphibian Species Purposive Surveys on Willamette and Umpqua NFs."

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 Cascades axetail slug (*Carinacauda stormi*). Institute for Natural Resources, Portland State University, Portland, OR.