

Portland State University

PDXScholar

Institute for Natural Resources Publications

Institute for Natural Resources - Portland

12-11-2023

Oregon State Rank Assessment for Yellow Bumblebee (*Bombus fervidus*)

Misty Nelson

Portland State University

Follow this and additional works at: https://pdxscholar.library.pdx.edu/naturalresources_pub



Part of the [Zoology Commons](#)

Let us know how access to this document benefits you.

Citation Details

Nelson, Misty, "Oregon State Rank Assessment for Yellow Bumblebee (*Bombus fervidus*)" (2023). *Institute for Natural Resources Publications*. 56.

https://pdxscholar.library.pdx.edu/naturalresources_pub/56

This Report is brought to you for free and open access. It has been accepted for inclusion in Institute for Natural Resources Publications by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

Natural Heritage Ranking Form - Oregon State Rank

Oregon Ranking Form Yellow bumblebee (*Bombus fervidus*)

Oregon Biodiversity Information Center

SPECIES ASSESSED

Scientific Name	<i>Bombus fervidus</i>	ELCODE	IIHYM24110
Common Name	Yellow bumblebee	Element ID	365420

Williams, P.H., R.W. Thorp, L.L. Richardson, and S.R. Colla. 2014b. Bumble bees of North America: an Identification Guide. Princeton University Press. 208 pp.

CONSERVATION STATUS RANK

Assigned Rank	S4		
Rank Assignment Author	Nelson, Misty	Rank Review Date	12/11/2023
Rank Factors Author	Nelson, Misty	Rank Factors Date	12/11/2023
Calculated Rank	S4	Rank Change Date	01/08/2024
Rank Methodology Used	Rank calculation - Biotics v2		

Assigned Rank Reasons

2023: Declines throughout global range, although details for Oregon are lacking; widespread distribution with recent observations throughout known range. 2019: This species has declined elsewhere in its range, but status in OR is unclear. There are 13, widely spread, recently documented populations in OR. Surveys are needed. Threats and trends are unknown.

Rank Adjustment Reasons

2019: Although this widespread species has experienced substantial declines in many places, its status in OR is not clear. Surveys needed.

RANGE/DISTRIBUTION

Range Extent

Rating	200,000-2,500,000 square km (about 80,000-1,000,000 square miles)		
Estimate	248607	Unit Used for Estimate	Square Kilometers
Comments	2023: Range Extent of 248,607 sq km calculated using NatureServe RARECAT tool and locality data from Chesshire et al. (2023). 2019: Range extent based on Xerces records: 243,161 sq km.		

Area of Occupancy

Grid Cell Size	4 km ² Grid Cells		
Rating (as Number of 4 km² Grid Cells)	F = 126-500		
Comments	2023: 249 4-sq-km grid cells calculated using NatureServe RARECAT tool and locality data from Chesshire et al. (2023). 2019: Area of occupancy, based on Xerces records buffered to 5 km: 3665 4-km ² grid cells.		

ABUNDANCE AND CONDITION

Number of Occurrences

Rating	81 - 300		
Estimate	151		
Comments	2023: No EOs mapped in Biotics; 151 occurrences calculated using NatureServe RARECAT tool and locality data from Chesshire et al. (2023), with a recommended separation distance of 10km. 2019: Approximately 80 EOs when the 460 Xerces records are buffered to 5 km.		

Rating Unknown

Number of Occurrences with Good Viability/Ecological Integrity

Rating Many (41-125)

Comments

2023: Chesshire et al. (2023) locality data include 300 observations dated 2008-2021, which translate into 87 occurrences when calculated using NatureServe RARECAT tool and a 10km separation distance. 2019: Unknown, but only 73 collections at 13 sites post-2000. Status of these populations is unknown. At least one site had many individuals collected (Xerces data).

THREATS

Calculated Overall Threat Impact

Assigned Overall Threat Impact U = Unknown

Overall Threat Impact Comments

2023: Threats are not well understood for this species, but are likely to resemble threats affecting other bumble bee species, including habitat loss, agricultural activity and pesticides, and parasites. 2019: Threats not documented but likely include pesticides, habitat loss, parasites.

TRENDS

Short-Term Trend

Rating U = Unknown

Comments

2023: Information on short-term population trends in Oregon is unknown. 2019: IUCN reports an average decline of 30% in the US. Declines in OR are not clear. (Hatfield 2014, Colla 2012).

Long-Term Trend

Rating FG = Decline of <30% to relatively stable

Comments

2023: Pacific Northwest Bumble Bee Atlas Surveys (Xerces 2021) detected this species less often than would be expected from historic data, suggesting at least some level of population decline.

RANKING REFERENCES

<u>Short Citation</u>	<u>Author</u>	<u>Year</u>	<u>Full Citation</u>
Colla et al.		2012	Colla, S.R., Gadallah, F., Richardson, L., Wagner, D. and Gall, L. 2012. Assessing the Conservation Status of North American bumble bees using museum records. <i>Biodiversity and Conservation</i> 21(14): 1379-1391.
Hatfield et al.		2014	Hatfield, R., Jepsen, S., Thorp, R., Richardson, L., Colla, S. & Foltz Jordan, S. 2015. <i>Bombus fervidus</i> . The IUCN Red List of Threatened Species 2015: e.T21215132A21215225. http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T21215132A21215225.en . Downloaded on 28 June 2016.
Xerces Society		2016	Xerces Society. 2016. Rare invertebrate dataset sent to ORBIC incl. multiple species with collection data.

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

Nelson, Misty. 2023. Oregon state rank assessment for Yellow bumblebee (*Bombus fervidus*). Oregon Biodiversity Information Center. Institute for Natural Resources, Portland State University, Portland, OR.