

Alaska Natural Heritage Program

Conservation Status Report

Bombus kirbiellus Curtis, 1835

Common Name: High Country Bumble Bee

ELCODE: IIHYM24060	Taxonomic Serial No.: 714786
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Synonyms: *Alpinobombus balteatus* Dahlbom, 1832; *Bombus balteatus* Dahlbom, 1832

Taxonomy Notes: Based on molecular analyses, Williams et al. (2015) suggest splitting *B. balteatus* into two geographically distinct species: *B. balteatus* for Old World (Europe, Asia) populations, and *B. kirbiellus* for North American populations. Sikes & Rykken (2020) accept Williams et al.'s assertion that *B. balteatus* is an invalid name for Alaska, to be replaced with *B. kirbiellus*.

Report last updated – November 2, 2020

Conservation Status

G5 S4

Occurrences, Range

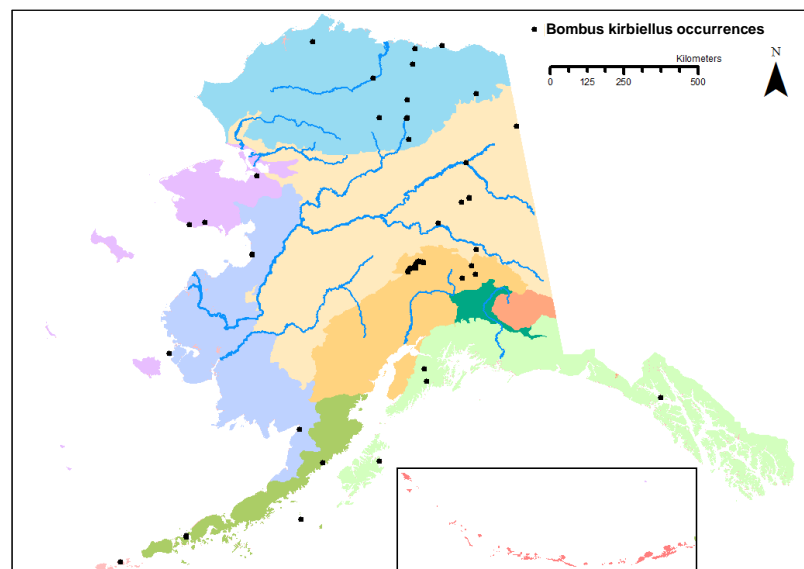
Number of Occurrences: 53; number of museum records: 172 (American Museum of Natural History, Canadian National Collection, U.C. Riverside, Illinois Natural History Survey, University of Kansas, University of Alaska Museum Insect Collection, University of Alberta Museums, Koch et al. 2015)

AK Range Extent: 1,944,614 km²; 4-km² grid cells: 56.

Occurs from the Arctic and south to Interior and Alaska Range Transition. Scattered occurrences in Seward Peninsula, Alaska Peninsula, Aleutian Islands, Kodiak Island, Kenai Peninsula, and Bartlett Bay.

North American

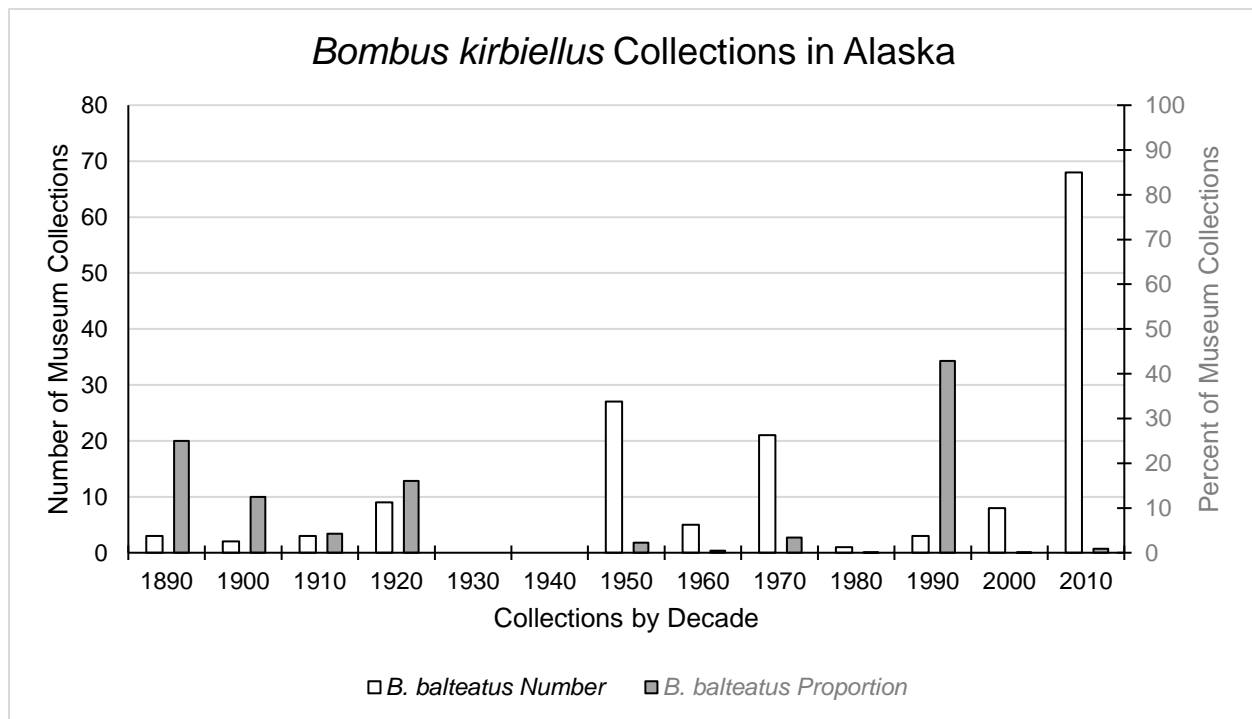
Distribution: Alaska and Yukon Territory south in British Columbia and



southwestern Alberta into the Rocky Mountains. Disjunct population in Sierra Mountains, and the High Arctic across North America.

Trends

Trends are based on museum voucher collections of all *Bombus* species. Short-term trends are focus the past two decades (2000's and 2010s), whereas long-term trends are based on all years. Data originate from museum voucher collections only and are summarized by decade. White bars indicate the number of voucher collections for the species. Grey bars indicate the percent of *Bombus balteatus* to all *Bombus* species.



Short-term: Proportion collected has remained stable (<10% change).

Long-term: Proportion collected appears to have declined significantly (>10% change) since the late 1800s. However, the 1990s had seven *Bombus* collections, inflating the proportion number. While the proportion has declined, the actual number of collections has increased.

Threats

Scope and Severity: Unknown.

Comments: Unknown.

Intrinsic Vulnerability: Not intrinsically vulnerable. Found widespread in Alaska and associated with multiple floral resources.

Ecology

Habitat: Upper elevations in Continental U.S. Tundra and Boreal Forest.

Known Alaskan Floral Resources: *Betula* spp., *Chamerion latifolium*, *Epilobium parviflorum*, *Hedysarum alpinum*, *Oxytropis* spp., *Pedicularis sudetica*

Nesting behavior: Underground

Parasitism: Host to *Bombus hyperboreus*.

Ecological Integrity of Occurrences: Current and future Landscape Condition Models have occurrences intact with high ecological integrity.

Literature

GBIF.org (7th April 2017) GBIF Occurrence Download <http://doi.org/10.15468/dl.nvc9vf>

idigbio.org. (2017), 43395 records, accessed on 2017-03-01T21:39:42.991495, contributed by 10 Recordsets, Recordset identifiers:

<http://www.idigbio.org/portal/recordsets/a6eee223-cf3b-4079-8bb2-b77dad8cae9d> (43165 records); <http://www.idigbio.org/portal/recordsets/271a9ce9-c6d3-4b63-a722-cb0adc48863f> (56 records); <http://www.idigbio.org/portal/recordsets/4f436daa-01d5-4be6-b5c3-fdd255677536> (51 records); <http://www.idigbio.org/portal/recordsets/ea5f19e-ff6f-4d09-8b55-4a6810e77a6c> (37 records); <http://www.idigbio.org/portal/recordsets/5e893602-84ca-4c8c-bac1-99111c777582> (27 records); <http://www.idigbio.org/portal/recordsets/da67ebd9-52de-444d-b114-e23c03111ac6> (27 records); <http://www.idigbio.org/portal/recordsets/69037495-438d-4dba-bf0f-4878073766f1> (12 records); <http://www.idigbio.org/portal/recordsets/6539877e-82dc-485c-ad3d-038f383d5431> (9 records); <http://www.idigbio.org/portal/recordsets/db4bb0df-8539-4617-ab5f-eb118aa3126b> (6 records); <http://www.idigbio.org/portal/recordsets/fc628e53-5fdf-4436-9782-bf637d812b48> (5 records)

Koch JB, Cordes N, Solter LF, Griswold TL, Ikerd HW, Cameron SA, Lozier JD, Strange JP, Stewart I (2015): US *Bombus*, contemporary survey data of North American bumble bees (Hymenoptera, Apidae, *Bombus*) distributed in the United States. v2.4. ZooKeys.

Dataset/Occurrence. <http://ipt.pensoft.net/resource?r=usbombus&v=2.4>

Sikes, D., and J. Rykken. 2020. Update to the identification guide to female Alaskan bumble bees and a summary of recent changes to the Alaskan bumble bee fauna. AKES Newsletter 13: 31-38. doi:10.7299/X7GH9J8D.

Pampell, R., Sikes, D., Pantoja, A., Holloway, P., Knight, C., Ranft, R. (2015) Bumble Bees (Hymenoptera: Apidae: *Bombus* spp.) of interior Alaska: Species composition, distribution, seasonal biology, and parasites. Biodiversity Data Journal 3: e5085. doi: 10.3897/BDJ.3.e5085

Williams, P. H., Thorp, R. W., Richardson, L. L., & Colla, S. R. (2014). *Bumble bees of North America: an identification guide*. Princeton University Press.

Williams, P. H., A. M. Byvaltsev, B. Cederberg, et al. 2015. Genes suggest ancestral colour polymorphisms are shared across morphologically cryptic species in Arctic bumblebees. PLOS ONE 10:e0144544.

Woodard, H. (Feb. 28, 2017). Personal communication, email of collection data.

University of Alaska Museum Insect Collection. <http://dx.doi.org/doi:10.7299/X75D8S0H> (Records Accessed 24th February 2017).