

Alaska Natural Heritage Program

Conservation Status Report

Epeolus americanus – (Cresson, 1878)

Synonyms: *Phileremus americanus* Cresson, 1878; *Phileremus montanus* Cresson, 1878; *Epeolus montanus* (Cresson, 1878), *Epeolus lanhami* Mitchell, 1962

Taxonomy notes: Onuferko (2017) synonymized *Phileremus montanus* Cresson, 1878 and *Epeolus lanhami* Mitchell, 1962 with *E. americanus* based on examination of physical specimens and confirmation with DNA barcoding.

Common Name: American cuckoo nomad bee

ELCODE: IIHYMBT160

Taxonomic Serial No.: 694358

Report last updated – September 26, 2023

Conservation Status

GNR S2

Occurrences, Range

Number of Occurrences: 7 occurrences, 11 voucher records (University of Alaska Anchorage Entomology Collection; University of Alaska Museum Insect Collection)

AK Range Extent: 73,984 km²

Occupancy 4 km² grid cells: 7 occupied grids

Nowacki Ecoregions: Intermontane boreal, Alaska Range transition

North American Distribution: The known distribution for this species in Alaska is limited to several areas in Interior and Southcentral that have been relatively well-surveyed for bees, including steppe bluff sites in Denali, Bonanza Creek, Kenny Lake, and Copper Center (Figure 1). These are typical sites for their ground-nesting hosts, several *Colletes* species. Additional surveys in sandy and steppe bluff habitats, where *Colletes* are often found, will likely expand the known distribution for *Epeolus* also. Cleptoparasitic bees are usually much rarer in collections than their hosts.

Alaska eastwards across Canada to Yukon and British Columbia and across southern Canada to Quebec. In the lower United States, it has a primarily western distribution to Wyoming and Colorado, then scattered records in Michigan, Indiana, Virginia, Pennsylvania, and Maine (Ascher and Pickering 2023).

Ecology

Habitat: In Alaska this species has been found in various habitats including sandy steppe bluff, dry herbaceous, shrub-aspen, and open broadleaf forest.

Host Plants: There are no host plant records from Alaska. As a cleptoparasite, this species does not collect pollen for its young.

Life History: A cleptoparasite of *Colletes* species. An *Epeolus* female invades the nest of a host *Colletes* female while she is out foraging and lays their egg in an unsealed brood cell, often attaching the egg to the nest lining (Onuferko 2017). When the *Epeolus* larva emerges, it kills the host egg or larva and feeds on its nectar and pollen provisions throughout development to pupation.

Trends

Short-term: N/A, insufficient data

Long-term: N/A, insufficient data

Threats

Scope and Severity: Steppe bluff habitat faces threats of encroachment from invasive and native plant species (Flagstad et al. 2019). Climate change is likely to decrease the habitat size and range of the steppe bluff in Interior Alaska (Boucher et al. 2016).

References

Ascher J.S. and J. Pickering. 2023. Discover Life bee species guide and world checklist (Hymenoptera: Apoidea: Anthophila). <https://www.discoverlife.org/> (accessed September 26, 2023)

Boucher, T.V., J. R. Fulkerson, B. Bernard, L. Flagstad, T. Nawrocki, M. L. Carlson, N. Fresco. 2016. Terrestrial Coarse-filter Conservation Elements. In: Trammell, E.J., T. Boucher, M.L. Carlson, N. Fresco, J.R. Fulkerson, M.L. McTeague, J. Reimer, and J. Schmidt, eds. 2016. Central Yukon Rapid Ecoregional Assessment. Prepared for the Bureau of Land Management.

Flagstad, L.A., K.W. Boggs, T.V. Boucher, M.L. Carlson, M.A. Steer, B. Bernard, M. Aisu, P. Lema, and T. Kuo. 2019. Assessing the gap between conservation need and protection status for select rare ecosystems in Alaska. *Conservation Science and Practice* 1:e47.

Global Biodiversity Information Facility. <https://www.gbif.org>. GBIF occurrence download <https://doi.org/10.15468/dl.qdbe6u> (accessed April 20, 2021)

Onuferko, T.M. 2017. Cleptoparasitic bees of the genus *Epeolus* Latreille (Hymenoptera: Apidae) in Canada. *Canadian Journal of Arthropod Identification* No. 30, 2017.

Integrated Taxonomic Information System (ITIS). Available online: <https://www.itis.gov> (accessed September 26, 2023)

NatureServe Explorer. Available online: <https://explorer.natureserve.org/> (accessed September 26, 2023)

University of Alaska Museum Insect Collection. <http://dx.doi.org/doi:10.7299/X75D8S0H> (records accessed March 8, 2023)

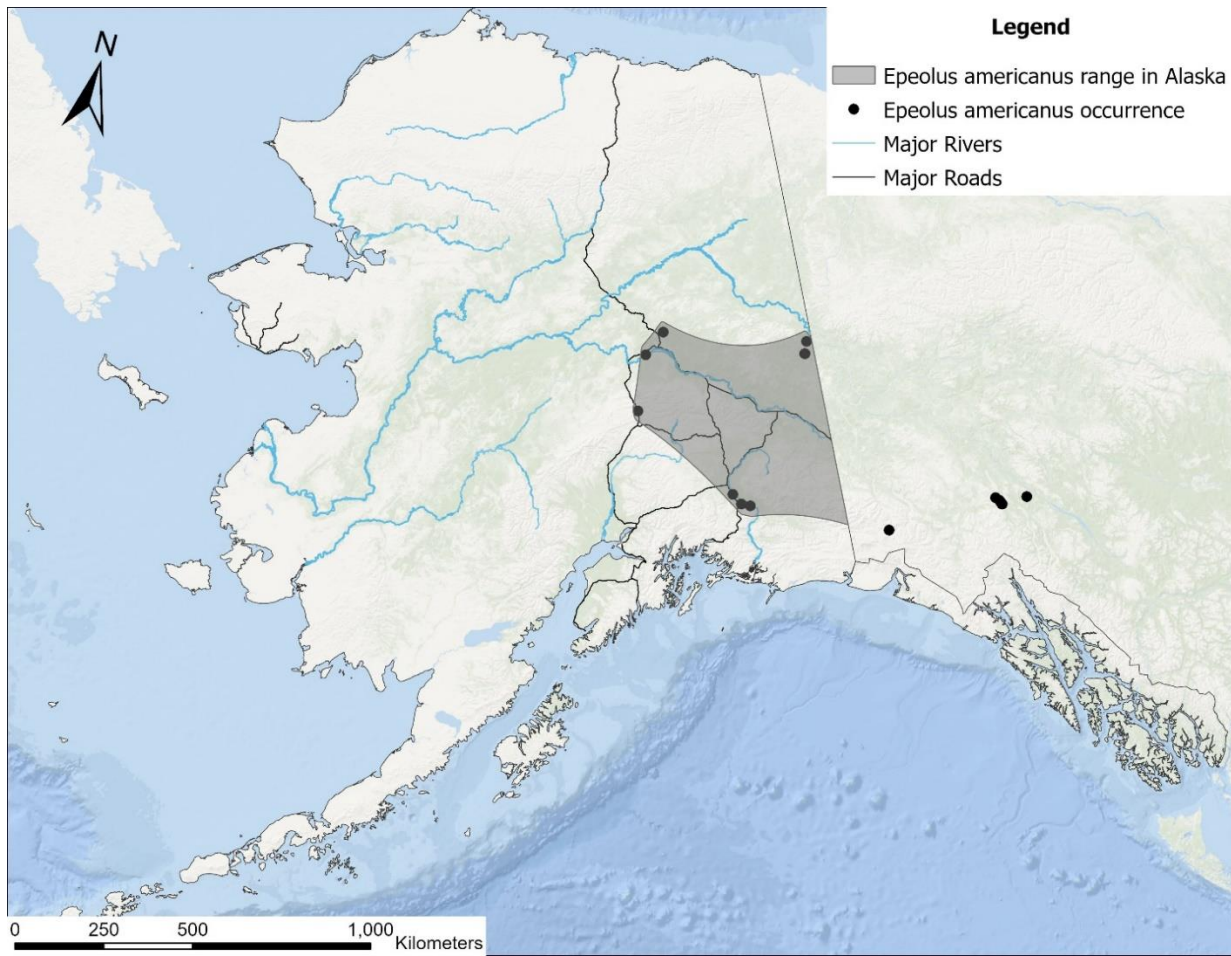


Figure 1 Range and occurrence of *Epeolus americanus* in Alaska

Photo Reference



Figure 2 <http://www.discoverlife.org>
Thomas Onuferko / Discover Life



Figure 3 <http://www.discoverlife.org>
Thomas Onuferko / Discover Life