

# Alaska Natural Heritage Program

## Conservation Status Report

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### *Osmia bucephala* – Cresson, 1864

*Synonyms:* *Osmia megacephala* Cresson, 1864; *Osmia latitarsis* Cresson, 1864; *Osmia lignivora* Packard, 1867; *Osmia lignicola* Provancher, 1882; *Osmia subornata* Cockerell, 1897; *Centrosmia bucephala* (Cresson, 1864)

**Common Name:** Bufflehead mason bee

**ELCODE:** IIHYMA2080

**Taxonomic Serial No.:** 715517

**Report last updated – August 23, 2023**

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### Conservation Status

G5 S2S3

### Occurrences, Range

*Number of Occurrences:* 13 occurrences, 50 voucher records (University of Alaska Anchorage Entomology Collection; University of Alaska Museum Insect Collection; USDA-ARS Bee Biology and Systematics Laboratory)

*AK Range Extent:* 103,320 km<sup>2</sup>

*Occupancy 4 km<sup>2</sup> grid cells:* 14 occupied grids

*Nowacki Ecoregions:* Intermontane boreal, Alaska Range transition

*North American Distribution:* Almost all of the records for this species are from steppe bluff habitat along the Nenana, Tanana, Yukon, and Copper Rivers (*Figure 1*).

Alaska eastwards across Canada to Quebec and Nova Scotia. Widespread across much of the western lower United States, and in the eastern U.S., south to Georgia and Tennessee. Absent from much of the mid-western U.S.

### Ecology

*Habitat:* This species appears to be strongly associated with sandy habitats in Alaska which are patchy in distribution and often associated with river bluffs. However, the species is known to nest in pre-existing cavities in wood (Cane et al. 2007).

*Host Plants:* *Hedysarum alpinum*, *H. boreale*

*Life History:* This is a solitary bee species, with individual females nesting in pre-existing cavities in wood. The species is unique among *Osmia* in using a mix of wood fibers and leaf pulp for constructing and partitioning the nest (Gibbs et al. 2017).

## Trends

*Short-term:* N/A, insufficient data

*Long-term:* N/A, insufficient data

## Threats

*Scope and Severity:* Two records from the UAF experimental farm in Palmer indicate the species also occurs in agricultural settings which are more prone to physical disturbance and pesticide application. 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. 2014. Discover Life bee species guide and world checklist (Hymenoptera: Apoidea: Anthophila). Available online: <https://www.discoverlife.org/> (accessed August 25, 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.
- Cane, J.H., T. Griswold, and F.D. Parker. 2007. Substrates and materials used for nesting by North American *Osmia* bees (Hymenoptera: Apiformes: Megachilidae). *Annals of the Entomological Society of America* 100:350-358.
- 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.
- Gibbs, J., J.S. Ascher, M.G. Rightmyer, and R. Isaacs. 2017. The bees of Michigan (Hymenoptera: Apoidea: Anthophila), with notes on distribution, taxonomy, pollination, and natural history. *Zootaxa* 4352:001-160.
- Global Biodiversity Information Facility. <https://www.gbif.org>. GBIF occurrence download <https://doi.org/10.15468/dl.qdbe6u> (accessed April 20, 2021)
- Integrated Taxonomic Information System (ITIS). Available online: <https://www.itis.gov> (accessed August 25, 2023)
- NatureServe Explorer. Available online: <https://explorer.natureserve.org/> (accessed August 25, 2023)

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

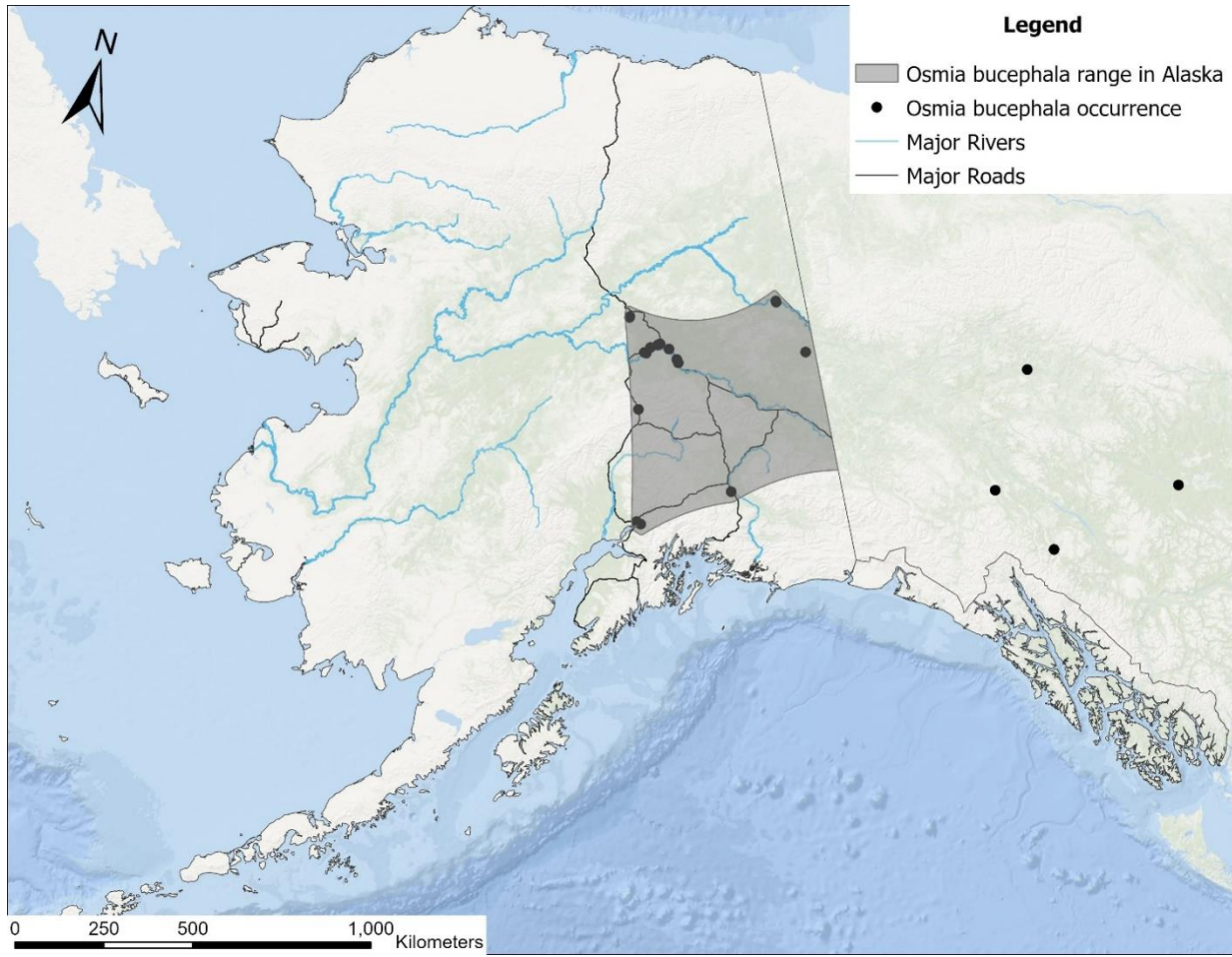


Figure 1 Range and occurrence of *Osmia bucephala* in Alaska

## Photo Reference



Figure 2 © Copyright Laurence Packer 2014