Alaska Natural Heritage Program
Alaska Center for Conservation Science
University of Alaska Anchorage

Alaska Natural Heritage Program Conservation Status Report

Osmia maritima – Friese, 1885

Common Name: Maritime mason bee

ELCODE: IIHYMA2530

Taxonomic Serial No.: 756939

Taxonomy Notes: This species is presumed to be Holarctic. The ACCS collected the first male specimen in North America in 2017. Rightmyer et al. (2010) stated that "once male specimens are discovered they may prove to be a distinct species from their palearctic relatives…however, since a holarctic distribution is well established for other *Osmia* species…until proven otherwise we conservatively retain the name *O. maritima* for this species."

Report last updated – August 28, 2023

Conservation Status

GNR S2

Occurrences, Range

Number of Occurrences: 5 occurrences, 16 voucher records (University of Alaska Anchorage Entomology Collection; University of Alaska Museum Insect Collection; USDA-ARS Bee Biology and Systematics Laboratory)

AK Range Extent: 27,936 km^2

Occupancy 4 km^2 grid cells: 5 occupied grids

Nowacki Ecoregions: Intermontane boreal

North American Distribution: Holarctic species. In the Nearctic, it is known only from Alaska, the Yukon, and Northwest Territories (Figure 1) (Ascher and Pickering 2023, GBIF 2023).

Ecology

Habitat: This species is likely rare and patchy in distribution as it prefers sandy soil for nesting (Rightmyer et al. 2010). Several AK records have no habitat information recorded. In Alaska, this species has been documented in sandy steppe bluffs and dry herbaceous habitats. Three other AK locations did not have habitat type recorded.

Host Plants: *Dodecatheon frigidum, Oxytropis campestris, Penstemon gormanii* (Rightmyer et al. 2010).

Life History: This is a solitary bee species, with individual females known to nest in sandy soil. Brood cells are constructed with chewed leaves and sand grains (Rightmyer et al. 2010 and references therein).

Trends

Short-term: N/A, insufficient data

Long-term: N/A, insufficient data. There have been only two occurrences recorded in AK since 1991: males collected along the Taylor Highway in 2017 and males collected above the Nenana River in Denali National Park and Preserve in 2021.

Threats

Scope and Severity: In Europe, this species is associated with coastal dunes which have been impacted by development, tourism, and invasive vegetation (NatureServe 2023). Populations are fragmented and the European regional assessment assigned a Red List status of Endangered, although there is insufficient data to assign a global rank (Nieto et al. 2014). 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).

More information about the distribution and habitat requirements of this seemingly rare species in Alaska are needed to make informed threat assessments.

References

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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.

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Rightmyer, M.G., T. Griswold, and M.S. Arduser. 2010. A review of the non-metallic *Osmia* (*Melanosmia*) found in North America, with additional notes on palearctic *Melansomia* (Hymenoptera, Megachilidae). ZooKeys 60:27-77.

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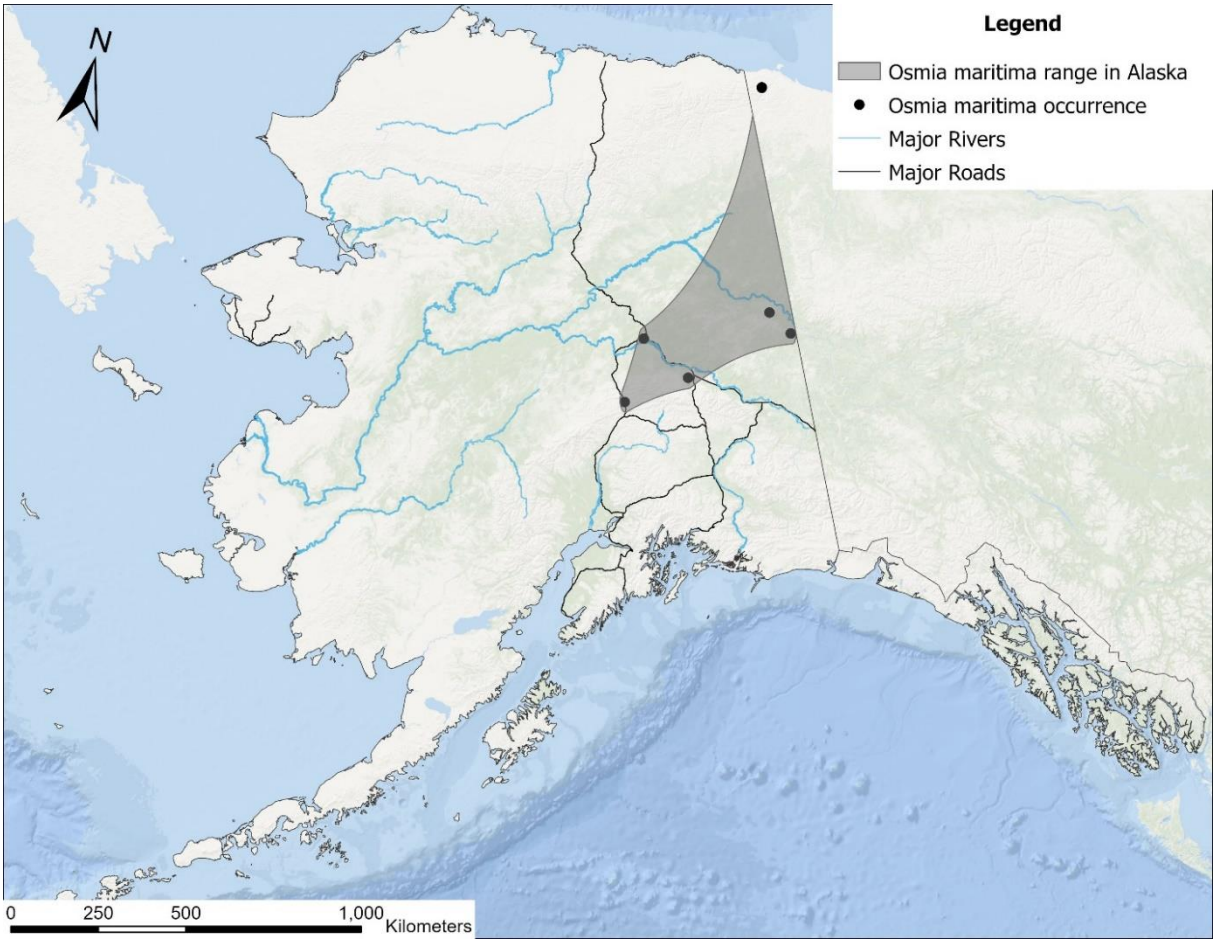

Figure 1 Range and occurrence of Osmia maritima in Alaska

Photo Reference

Figure 2