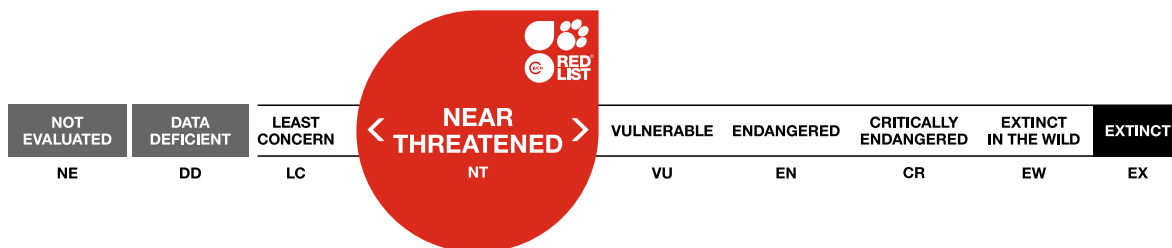


## *Phaedrotoma sanmiguelensis*

Assessment by: Nunes, R. & Borges, P.A.V.



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## Taxonomy

| Kingdom  | Phylum     | Class   | Order       | Family     |
|----------|------------|---------|-------------|------------|
| Animalia | Arthropoda | Insecta | Hymenoptera | Braconidae |

**Scientific Name:** *Phaeditoma sanmiguelensis* (Fischer, 2001)

**Synonym(s):**

- *Opius sanmiguelensis* Fischer, 2001

## Assessment Information

**Red List Category & Criteria:** Near Threatened B1ab(iii)+2ab(iii) [ver 3.1](#)

**Year Published:** 2021

**Date Assessed:** March 27, 2018

**Justification:**

*Phaeditoma sanmiguelensis* is an endemic braconid wasp species of the Azores (Portugal), known from Flores, Pico, S. Jorge and S. Miguel islands. From the historical data, this species has a limited extent of occurrence (EOO = 7,511 km<sup>2</sup>) and area of occupancy (AOO = 72 km<sup>2</sup>); and it is possible that this species has declined in the past as a result of human activity. The present situation of this species needs to be further assessed, and further research is needed into its population, distribution, threats, ecology, life history and indigenous host species. However, the EOO and AOO of the species are relatively small, on the global scale, and if there were more data available it is possible that the species could qualify as threatened under criterion B. Therefore, the species is assessed as Near Threatened. Conservation/restoration of native habitats, as well as invasive plant species control, could potentially aid this species' conservation.

## Geographic Range

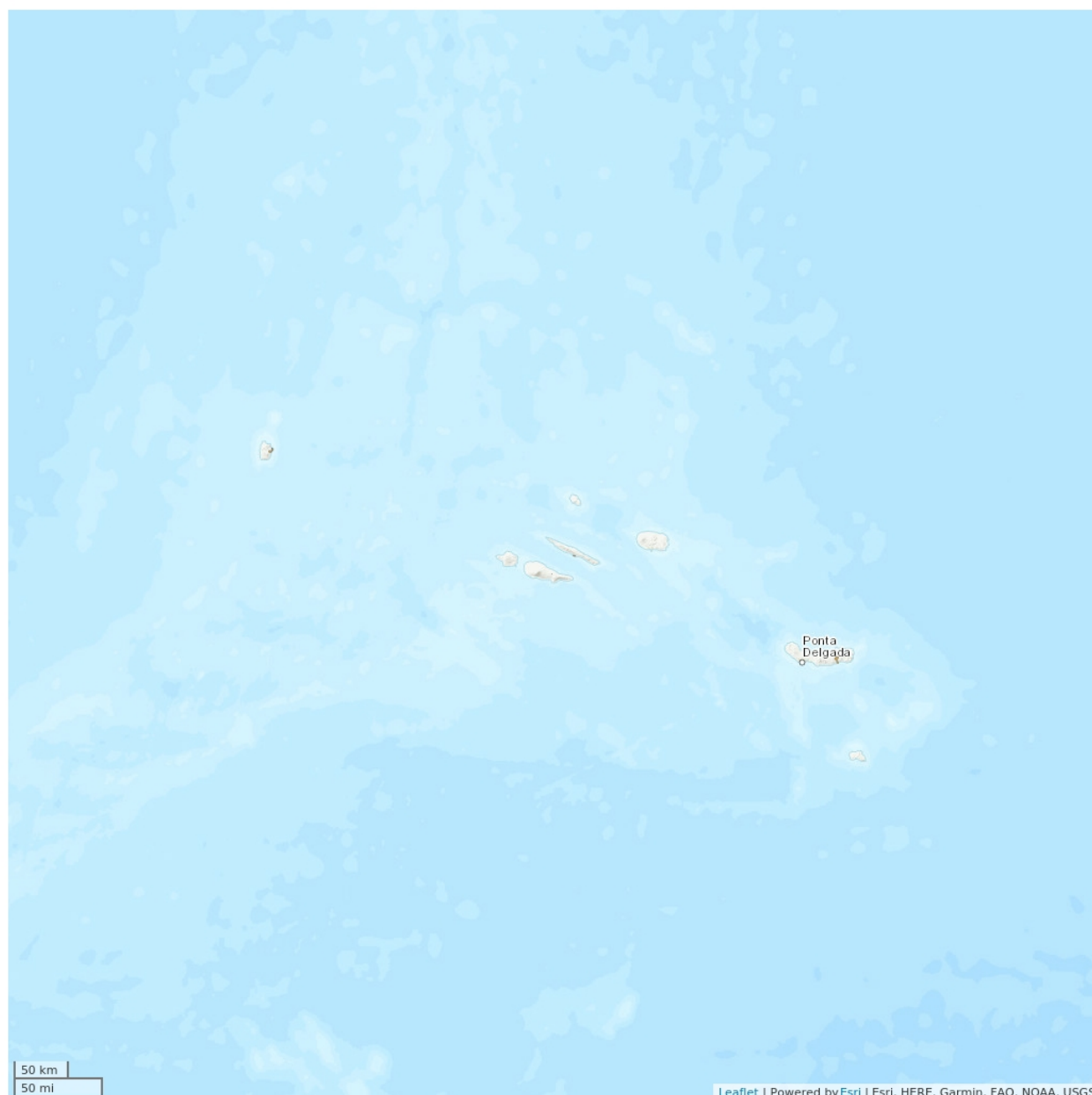
**Range Description:**

*Phaeditoma sanmiguelensis* is an Azorean-endemic braconid wasp species that was described from the islands of Flores, Pico, S. Jorge and S. Miguel (Azores, Portugal), being (in 1938) present in habitats that are currently degraded or that are a Natural Reserve (Lagoa do Caiado). Based on the data from the 1938 expedition of Frey, Stora and Cedercreutz, the Extent of Occurrence (EOO) is *ca.* 7,511 km<sup>2</sup> and the Area of Occupancy (AOO) is *ca.* 72 km<sup>2</sup>. However, there is no recent information regarding the distribution of this species.

**Country Occurrence:**

**Native, Extant (resident):** Portugal (Azores)

## Distribution Map

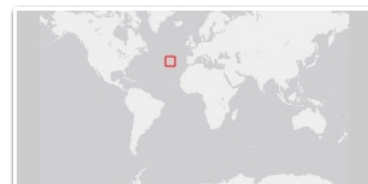


### Legend

■ EXTANT (RESIDENT)

Compiled by:

Azorean Biodiversity Group 2018



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

## Population

No current population size estimates exist for this species.

**Current Population Trend:** Unknown

## Habitat and Ecology (see Appendix for additional information)

The ecology and traits for this species are unknown. Braconid wasps from the subfamily Opiinae are solitary koinobiont endoparasitoids of Cyclorrhapha Diptera (like Tephritidae and Agromizidae) larvae, and for some species, of their eggs (Goulet and Huber 1993). This species was found in natural and urbanised areas and in the vicinity of streams, lakes and hot springs. Some areas were and are currently highly disturbed, while Lagoa do Caiado is currently a Nature Reserve.

**Systems:** Terrestrial

## Threats (see Appendix for additional information)

A lack of information regarding the present status of this species or its unknown indigenous hosts precludes an assessment of potential threats. Nevertheless, this species might be affected by future habitat declines as a consequence of climate change (Ferreira *et al.* 2016). This species is also known from several disturbed sites, and as such, it can be assumed that habitat degradation caused by past and present human disturbance and land use changes, or by invasive species might also potentially affect or have affected this species or its indigenous hosts.

## Conservation Actions (see Appendix for additional information)

The species is not protected by regional law. Further research is needed into its population, distribution, threats, ecology and life history as well as into its hosts. Conservation/restoration of native habitats, as well as invasive plant species control, could potentially aid this species' conservation. Historically at least, this species was present in areas that are currently included in the Natural Parks of Pico and S. Miguel.

## Credits

**Assessor(s):** Nunes, R. & Borges, P.A.V.

**Reviewer(s):** Danielczak, A.

## Bibliography

Ferreira, M.T., Cardoso, P., Borges, P.A.V., Gabriel, R., Azevedo, E.B., Reis, F., Araújo, M.B. and Elias, R.B. 2016. Effects of climate change on the distribution of indigenous species in oceanic islands (Azores). *Climate Change* 138(3-4): 603-615.

Goulet, H. and Huber, J.T. 1993. *Hymenoptera of the World: an identification guide to families*. Research Branch, Agriculture Canada, Ottawa.

IUCN. 2021. The IUCN Red List of Threatened Species. Version 2021-1. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: 25 March 2021).

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## External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

## Appendix

### Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| Habitat                                                                                                | Season   | Suitability | Major Importance? |
|--------------------------------------------------------------------------------------------------------|----------|-------------|-------------------|
| 1. Forest -> 1.4. Forest - Temperate                                                                   | Resident | Suitable    | -                 |
| 5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls) | Resident | Suitable    | -                 |
| 5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)        | Resident | Suitable    | -                 |
| 5. Wetlands (inland) -> 5.12. Wetlands (inland) - Geothermal Wetlands                                  | Resident | Suitable    | -                 |
| 14. Artificial/Terrestrial -> 14.5. Artificial/Terrestrial - Urban Areas                               | Resident | Unknown     | -                 |

### Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| Threat                                                                                                                                       | Timing    | Scope                                                                                                                                                                 | Severity                   | Impact Score  |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------|
| 1. Residential & commercial development -> 1.1. Housing & urban areas                                                                        | Ongoing   | -                                                                                                                                                                     | -                          | Low impact: 3 |
|                                                                                                                                              | Stresses: | 1. Ecosystem stresses -> 1.1. Ecosystem conversion<br>1. Ecosystem stresses -> 1.2. Ecosystem degradation                                                             |                            |               |
| 6. Human intrusions & disturbance -> 6.1. Recreational activities                                                                            | Ongoing   | -                                                                                                                                                                     | -                          | Low impact: 3 |
|                                                                                                                                              | Stresses: | 2. Species Stresses -> 2.2. Species disturbance                                                                                                                       |                            |               |
| 8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.1. Unspecified species | Ongoing   | Unknown                                                                                                                                                               | Slow, significant declines | Unknown       |
|                                                                                                                                              | Stresses: | 1. Ecosystem stresses -> 1.2. Ecosystem degradation<br>1. Ecosystem stresses -> 1.3. Indirect ecosystem effects                                                       |                            |               |
| 11. Climate change & severe weather -> 11.1. Habitat shifting & alteration                                                                   | Future    | Unknown                                                                                                                                                               | Slow, significant declines | Unknown       |
|                                                                                                                                              | Stresses: | 1. Ecosystem stresses -> 1.1. Ecosystem conversion<br>1. Ecosystem stresses -> 1.2. Ecosystem degradation<br>1. Ecosystem stresses -> 1.3. Indirect ecosystem effects |                            |               |

### Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

| Conservation Action in Place     |
|----------------------------------|
| In-place research and monitoring |
| Action Recovery Plan: No         |

|                                            |
|--------------------------------------------|
| <b>Conservation Action in Place</b>        |
| Systematic monitoring scheme: No           |
| In-place land/water protection             |
| Occurs in at least one protected area: Yes |

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

|                                                                        |
|------------------------------------------------------------------------|
| <b>Conservation Action Needed</b>                                      |
| 2. Land/water management -> 2.1. Site/area management                  |
| 2. Land/water management -> 2.2. Invasive/problematic species control  |
| 2. Land/water management -> 2.3. Habitat & natural process restoration |

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

|                                                            |
|------------------------------------------------------------|
| <b>Research Needed</b>                                     |
| 1. Research -> 1.2. Population size, distribution & trends |
| 1. Research -> 1.3. Life history & ecology                 |
| 1. Research -> 1.5. Threats                                |
| 3. Monitoring -> 3.1. Population trends                    |
| 3. Monitoring -> 3.4. Habitat trends                       |

## Additional Data Fields

|                                                               |
|---------------------------------------------------------------|
| <b>Distribution</b>                                           |
| Estimated area of occupancy (AOO) (km <sup>2</sup> ): 72      |
| Continuing decline in area of occupancy (AOO): Unknown        |
| Extreme fluctuations in area of occupancy (AOO): Unknown      |
| Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 7511 |
| Continuing decline in extent of occurrence (EOO): Unknown     |
| Extreme fluctuations in extent of occurrence (EOO): Unknown   |
| Number of Locations: 4                                        |
| Continuing decline in number of locations: Unknown            |
| Extreme fluctuations in the number of locations: Unknown      |

|                                                   |
|---------------------------------------------------|
| <b>Distribution</b>                               |
| Lower elevation limit (m): 5                      |
| Upper elevation limit (m): 800                    |
| <b>Population</b>                                 |
| Continuing decline of mature individuals: Unknown |
| Extreme fluctuations: Unknown                     |
| Population severely fragmented: Unknown           |

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