



## Magdalen Islands Grasshopper

Photo: © Cory Sheffield



Photo of a female Magdalen Islands Grasshopper.

### Scientific name

*Melanoplus madeleineae*

### Taxon

Arthropods

### COSEWIC Status

Special Concern

### Canadian range

Quebec

### Reason for Designation

This Canadian endemic is restricted to the Magdalen Islands in Quebec, where it is known to occur on seven of the eight main islands. Threats to this species are low, but recreational activities, road mortality and habitat loss through predicted coastal erosion may impact this species or its habitat.

### Wildlife Species Description and Significance

Magdalen Islands Grasshopper (*Melanoplus madeleineae*) is a large (21 – 29 mm) nondescript species endemic to the Magdalen Islands, Québec, Canada. The main diagnostic features are on the hind femur, which is dark crimson on the lower surface, and uniformly dark coloured (i.e., non-banded) on the outer surface.

The Magdalen Islands Grasshopper is a relic of the Wisconsinan ice age. The species may have derived from the smaller, yet morphologically similar and closely related Northern Spur-throat Grasshopper, which does not occur on the Magdalen Islands yet is widespread on the mainland.

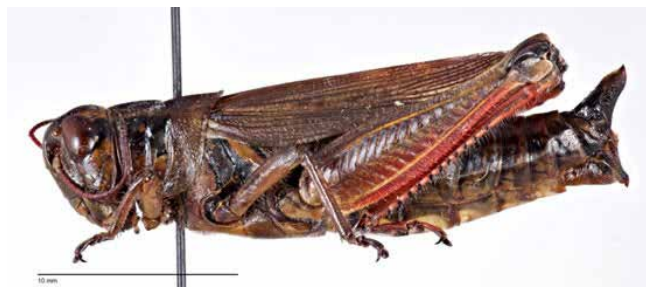
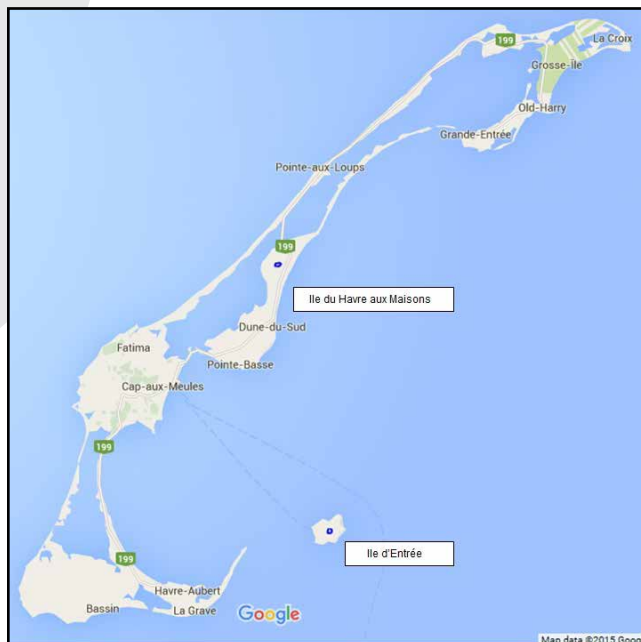


Photo: © Cory Sheffield

Photo of a male Magdalen Islands Grasshopper.

### Distribution

The global and Canadian range of the Magdalen Islands Grasshopper is restricted to the Magdalen Islands within the Gulf of Saint Lawrence, Québec. The Magdalen Islands archipelago is composed of eight main islands and several other small uninhabited islands. This grasshopper has been recorded from seven of the main islands. Six of these (Île du Havre Aubert, Île d'Entrée, Île du Cap aux Meules, Grosse Île, Île du Havre aux Maisons and Pointe aux Loups) are connected by sand bars and smaller islands, whereas Île d'Entrée is separated by about 4 km from the main group. This species is not known from Brion Island, which is approximately 13 km from Grosse Île.



Global distribution of Magdalen Islands Grasshopper. The species is confirmed most recently from Île du Havre aux Maisons and Île d'Entrée. Map GoogleEarth.

## Habitat

The Magdalen Islands Grasshopper occurs within open maritime meadow and grass/sedge hillside habitats containing plant communities.

## Biology

The Magdalen Islands Grasshopper overwinters as an egg, hatching as a nymph in the early spring. The species may have a two-year diapause, as has been reported with its sister taxon, the Northern Spur-throat Grasshopper. Growth is by gradual metamorphosis, with each of the five nymphal instars getting progressively larger, and with more pronounced morphological adult characteristics, as they moult. Both nymphs and adults share feeding habits. Adults are active from mid-July through to late September and mating and oviposition occur during this time. Females oviposit egg pods within soft soil substrates, on potentially bare ground such as trails and dirt roads. Like most spur-throated grasshoppers, this species probably feeds on a wide range of plant hosts, though specific feeding preferences (if any) are unknown.

## Population Sizes and Trends

There is no information on subpopulation size(s) and trends for the Magdalen Islands Grasshopper. Approximately 80 specimens have been collected and deposited as museum vouchers. Surveys to date have focused on recording new subpopulations, collecting natural history and habitat information, and genetic studies. Strategic surveys for this species have been primarily by sweep-netting for grasshoppers and collecting in suitable habitats. It is difficult to time collection events to correspond with peak adult emergence, suggesting that detection success and perceptions of rarity could vary considerably.

## Threats and Limiting Factors

There are several potential threats to the Magdalen Islands Grasshopper. Road mortality is potentially high for grasshoppers where roadways bisect suitable habitat or where adults may oviposit within the soft substrate of dirt roads. Recreational activities such as all-terrain vehicle operations on pathways through meadow habitats can cause direct mortality as well as compaction of soil and grasshopper forage plants. The species may also be subject to a range of natural predators, parasites and pathogens that regulate orthopteran populations. Overall threat impact is considered Low.

## Protection, Status, and Ranks

There are no federal or provincial laws that specifically protect the Magdalen Islands Grasshopper, mitigate specific threats to grasshoppers, or protect this species' habitat. The global conservation status rank is G2 (Imperilled), the Canadian national status rank is N2 (Imperilled) and the Québec provincial status is S2 (Imperilled). Approximately 30% of the main island group of the Magdalen Islands is public land, although the portion that is occupied by the Magdalen Islands Grasshopper is unknown.

Source: COSEWIC. 2016. COSEWIC assessment and status report on the Magdalen Islands Grasshopper *Melanoplus madeleineae* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 44 pp.

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