

The Mottled Duskywing (*Erynnis martialis*): A Butterfly in Decline in Canada



Jessica E. Grealey



Project Overview

- **The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is a committee of experts which exists to provide Canadians and their governments with advice regarding the status of wildlife species that are nationally at risk of extinction or extirpation.**
 - » <http://www.cosewic.gc.ca/>
- **COSEWIC listed *Erynnis martialis* as a ‘candidate species’ for assessment in 2007 and retained NRSI to compile all existing data on this species and complete a Status Report.**



Project Overview

- **The Status Report on *Erynnis martialis* is currently under review by COSEWIC's Arthropod Subcommittee.**
- **This subcommittee will assign a national status**
- **If designated a “species at risk” *Erynnis martialis* will be protected by the Federal *Species At Risk Act* (SARA).**



Methods

- **Compilation of existing information**
 - **Databases, collections, local experts, ATK, government agencies.**
- **Field checks**
 - **Known localities in Ontario and Manitoba**
 - **Large colonies of hostplants**
- **Status Report**
 - **COSEWIC template**



***Erynnis martialis* (Scudder 1869)**

- **Family:** Hesperidae
- **Description:** medium-sized (wingspan: 25-29 mm), dark grey skipper with a very mottled appearance and a characteristic purplish hue
- **Hostplant(s):** New Jersey Tea (*Ceanothus americanus*) and Prairie Redroot (*C. herbaceous*)
- **Fight time:** mid-May to late June throughout most of their Canadian range; In extreme southwestern Ontario, a second brood are on the wing mid-July to late August.



Habitat

- **The Mottled Duskywing is only found where its hostplants, *Ceanothus* species, occur.**
- **In Canada *Ceanothus* colonies are known to occur within a variety of habitats including oak woodland, pine woodland, roadsides, river banks, oak savannahs, shady hillsides, tall grass prairies and alvars but it is always associated with dry, sandy soils.**



Hostplants



Ceanothus americanus



Ceanothus herbaceous



Marmora, Ontario



Burnt Lands, Ontario

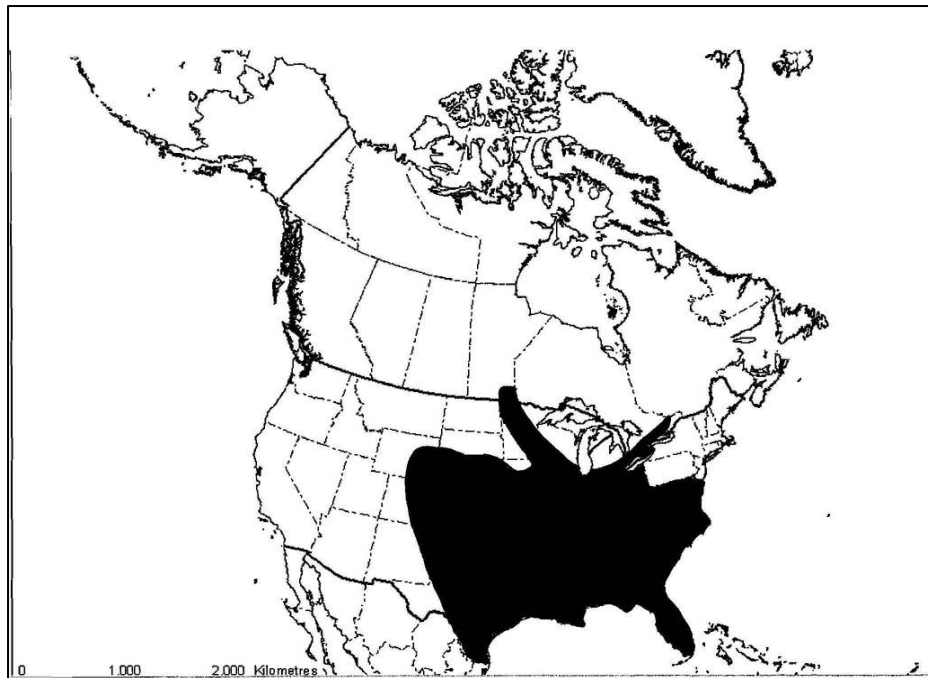


Sandilands, Manitoba



Historical Known Range

- **Historically distributed in small, clumped populations throughout the eastern United States and parts of adjacent Canada (Fig 1).**



Estimated North American Range of Mottled Duskywing.



North American Range

- **In the United States it is historically known from New England to Minnesota, west to Wyoming, south to Georgia and eastern and central Texas (Burns 1964; Howe 1975).**
- **Severe population declines have been observed in many U.S. states, especially east of Ohio.**
- **It is presumed extirpated in New Hampshire and possibly Pennsylvania (Natureserve 2008).**

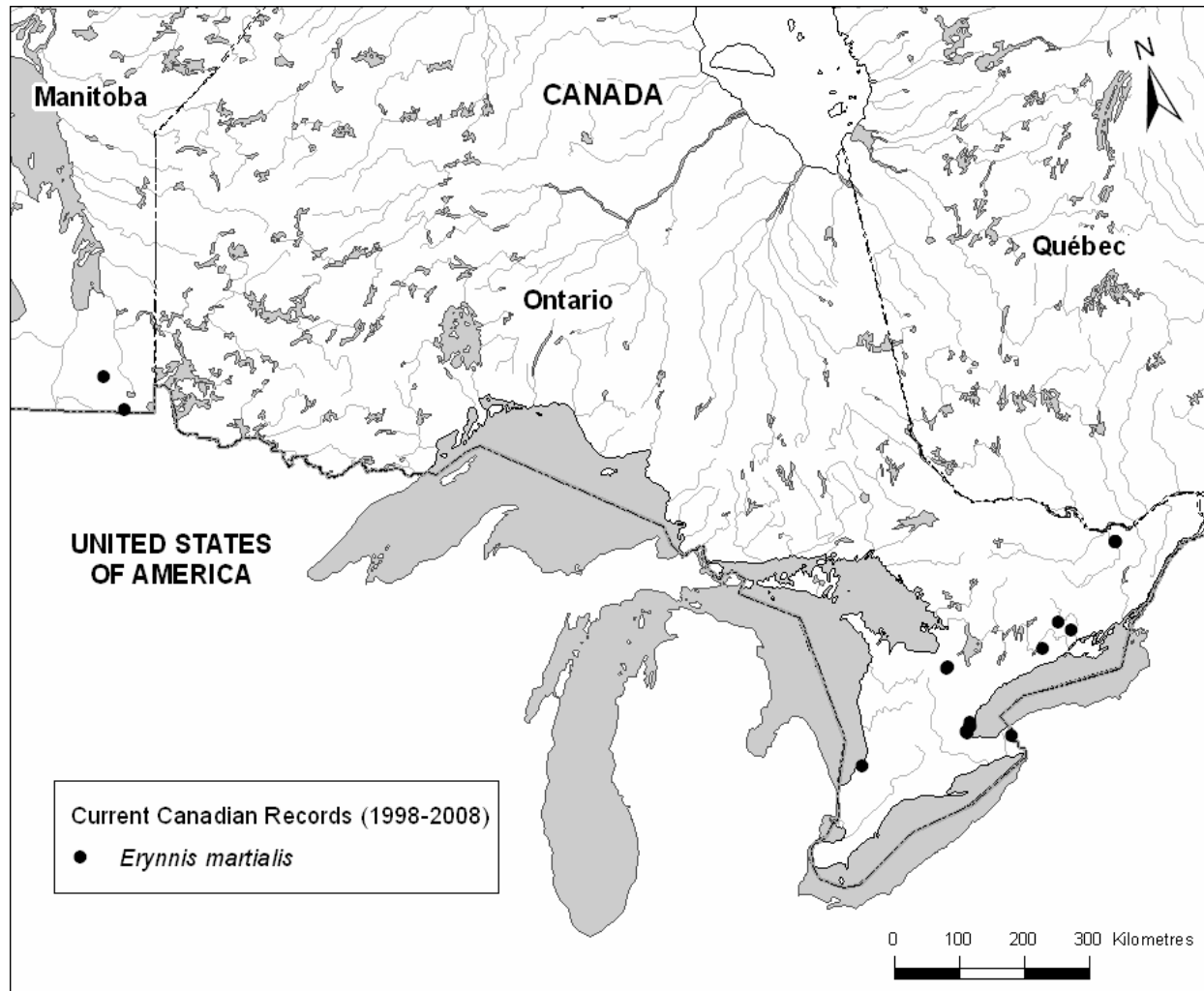


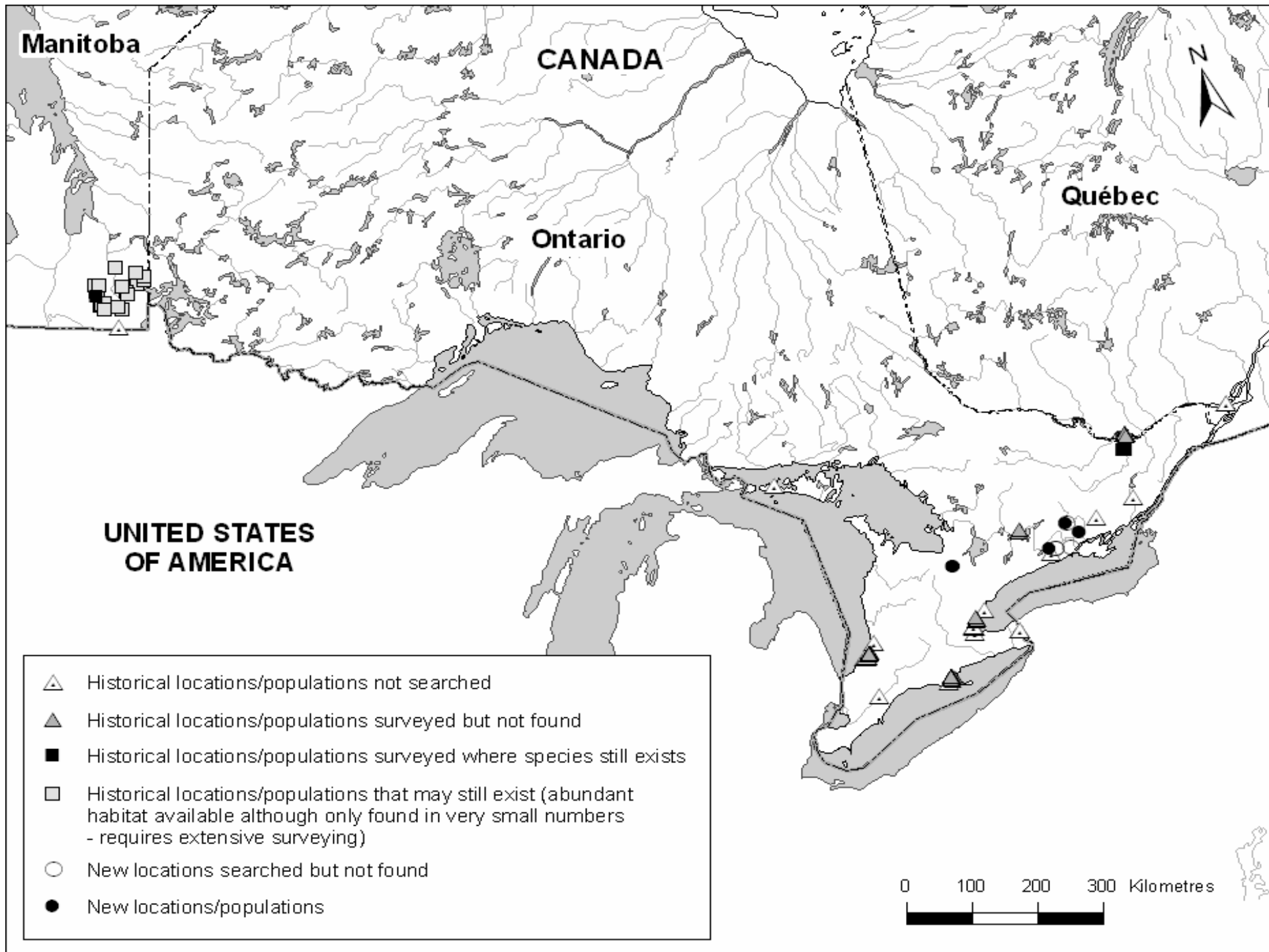
Canadian Range

- **The Mottled Duskywing has experienced a general decline in distribution and abundance in Canada since the early 1990's.**
- **It is believed to be extirpated from Quebec (P. Hall pers. comm. 2007; R. Layberry pers. comm. 2008).**
- **Small local colonies are still found in southeastern Manitoba and sporadically in southern Ontario.**



Canadian Range (1998-2008)







Population Trends

- Although always observed as very local and never described as abundant, *Erynnis martialis* has experienced a general decline throughout its range
- Extirpated from Quebec
- Populations appear to be declining or have disappeared entirely in Ontario
- Populations generally thought to be stable in southeastern Manitoba



Reasons for Decline

- **Habitats often targeted for development**
- **Natural succession/tree planting**
- **Natural fires/prescribed burning**
- **Extensive deer browsing**
- **Blanket spraying for gypsy moths (*Lymantria dispar*)**
- **Combination of these factors**



Reasons for Decline

- In several locations, *E. martialis* has been reported as associated with other imperiled butterflies and their habitats (Swengle and Swengle 1997, Haglund 2006).
- This trend has also been observed in Canada where *E. martialis* was historically known to occur, along with the Karner Blue (*Plebejus melissa samuelis* (Nabokov 1944)) and Frosted Elfin (*Callophrys irus* (Godart 1824)) butterflies, both of which are now considered extirpated in Canada (COSEWIC 2008).



Next Steps

- **More surveying required to accurately estimate current population sizes and trends.**
- **Recommended status “Threatened.”**
 - **Recovery Strategy**
- **Habitat protection and enhancement required**



Thank You

Jessica Grealey

Natural Resource Solutions Inc.

University of Waterloo

jgrealey@nr.si.on.ca