

COSEWIC
Status Appraisal Summary

on the

Eastern Persius Duskywing
Erynnis persius persius

in Canada

ENDANGERED
2016

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada



COSEPAC
Comité sur la situation
des espèces en péril
au Canada

COSEWIC status appraisal summaries are working documents used in assigning the status of wildlife species suspected of being at risk in Canada. This document may be cited as follows:

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Production note:

COSEWIC would like to acknowledge Colin Jones for writing the status appraisal summary on the Eastern Persius Duskywing (*Erynnis persius persius*) in Canada, prepared under contract with Environment Canada. This status report and was overseen and edited by Dr. Paul Grant, Co-chair of the COSEWIC Arthropods Specialist Subcommittee.

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Également disponible en français sous le titre Sommaire du statut de l'espèce du COSEPAC sur l'Hespérie Persius de l'Est (*Erynnis persius persius*) au Canada.

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COSEWIC Assessment Summary

Assessment Summary – May 2016

Common name

Eastern Persius Duskywing

Scientific name

Erynnis persius persius

Status

Endangered

Reason for designation

This lupine-feeding butterfly has been confirmed from only two localities in Canada. It inhabits oak savannas in southern Ontario, a habitat that has undergone substantial declines and alterations. Larval host-plant populations have been greatly reduced. There have been no confirmed reports of this butterfly since 1987, but there have been no intensive surveys for the species since 2003. This, combined with its similarity with other duskywings, makes it possible that it still occurs but has been overlooked.

Occurrence

Ontario

Status history

Designated Endangered in April 2006. Status re-examined and confirmed in April 2016.



COSEWIC Status Appraisal Summary

Erynnis persius persius

Eastern Persius Duskywing

Hespérie Persius de l'Est

Range of occurrence in Canada (province/territory/ocean): Ontario

Status History

COSEWIC: Designated Endangered in April 2006. Status re-examined and confirmed in April 2016.

Wildlife species:

Change in eligibility, taxonomy or designatable units: yes ☐ no ☒

Explanation:

No changes since last assessment. There has been no further taxonomic or systematic work on the species over the past ten years and no debate on the species' status in the literature. There are no genetic or barcode data on the subspecies.

Range:

Persius Duskywing is presently separated into four described subspecies, one of which is the Eastern Persius Duskywing. In Canada, the Eastern Persius Duskywing is restricted to southwestern Ontario and its range doesn't overlap with that of other subspecies.

Change in Extent of Occurrence (EO): yes ☐ no ☒ unk ☐

Change in Index of Area of Occupancy (IAO): yes ☐ no ☒ unk ☐

Change in number of known or inferred current locations: yes ☐ no ☒ unk ☐

Significant new survey information yes ☐ no ☒

Explanation:

The Eastern Persius Duskywing is known from two sites in Canada: Pinery Provincial Park and St. Williams. Although no targeted surveys for Eastern Persius Duskywing have been conducted since 2006, butterfly enthusiasts have visited the two known sites many times over the past 10 years and have not recorded the species (Kulon pers. comm. 2015; Yukich pers. comm. 2015). Furthermore, it has never been collected elsewhere in Canada.

Population Information:

The Eastern Persius Duskywing has declined in much of its range, and is widely considered to be rare. In Ontario, it has only been collected from two sites and was last reported in 1987 (COSEWIC 2006). Ontario designated the species Extirpated in 2008 but unconfirmed sight records suggest there is a possibility this species could still exist in Canada.

Change in number of mature individuals:	yes <input type="checkbox"/> no <input checked="" type="checkbox"/> unk <input type="checkbox"/>
Change in population trend:	yes <input type="checkbox"/> no <input checked="" type="checkbox"/> unk <input type="checkbox"/>
Change in severity of population fragmentation:	yes <input type="checkbox"/> no <input checked="" type="checkbox"/> unk <input type="checkbox"/>
Change in trend in area and/or quality of habitat:	yes <input checked="" type="checkbox"/> no <input type="checkbox"/> unk <input type="checkbox"/>
Significant new survey information	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>

Explanation:

This species was last recorded in 1987. Since the last status assessment there has been no new survey information. Number of mature individuals or population trends are unknown. Quality of habitat at Pinery Provincial Park has improved since the last assessment due to habitat restoration activities such as prescribed burns, deer exclosures around lupine populations, and managed reduction of the White-tailed Deer (*Odocoileus virginianus*) population (Matthews pers. comm.). Quality of habitat at St. Williams, however, has declined due to lack of active management (Jarvis 2014).

Threats:

It is believed that the Eastern Persius Duskywing has suffered from poor habitat management and habitat change, which resulted in sharp decreases and destruction of populations of host plants. In Ontario, Sundial Lupine (*Lupinus perennis*) is the only known host plant for the caterpillars of the Eastern Persius Duskywing. Natural succession of open woodland, fire suppression, and direct anthropogenic alterations of the habitat through resource extraction or tree-planting have adversely affected many areas that may have been occupied by this skipper in the past.

Change in nature and/or severity of threats:	yes <input type="checkbox"/> no <input checked="" type="checkbox"/> unk <input type="checkbox"/>
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Explanation:

No change since last assessment.

Protection:

Change in effective protection:

yes ☐ no ☒

Explanation:

In Canada the Eastern Persius Duskywing is now listed as Endangered under Schedule 1 of the federal *Species at Risk Act* (last assessed as Endangered by COSEWIC in 2006). It is also now listed as Extirpated under Ontario's *Endangered Species Act* (2008). In the United States this species is designated as Endangered in Indiana, New Hampshire, New York and Ohio; Threatened in Michigan and Massachusetts; and of Special Concern in Connecticut and Pennsylvania. It is considered to be extirpated from Maine.

Rescue Effect:

Change in evidence of rescue effect:

yes ☐ no ☒

Explanation:

No change since last assessment. Populations outside Canada are rare and declining and it is unknown but unlikely that immigration from such outside populations is possible. The closest extant populations of Eastern Persius Duskywing are in Wayne County, Michigan, approximately 150 km from Pinery Provincial Park.

Quantitative Analysis:

Change in estimated probability of extirpation:

yes ☐ no ☐ unk ☒

Details:

No data are available and no quantitative analysis has been performed on this species.

Summary and Additional Considerations: [e.g., recovery efforts]

Since the last assessment, while no targeted surveys for this species have been conducted, butterfly enthusiasts have visited the two known sites many times and yet have not encountered Eastern Persius Duskywing. The species has not been documented in Ontario since 1987. The Eastern Persius Duskywing does not yet qualify for extirpated because the last credible records were from less than 50 years ago.

Acknowledgements and Authorities Contacted

Brenda Kulon, Naturalist. Sarnia, Ontario.

Jess Matthews, Natural Heritage Education Group Leader, Pinery Provincial Park,
Ontario Parks.

Bob Yukich, Naturalist. Toronto, Ontario.

Information Sources

- COSEWIC 2006. COSEWIC assessment and status report on the Eastern Persius Duskywing *Erynnis persius persius* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 41 pp.
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- Matthews, J. pers. comm. 2015. Email correspondence to Colin Jones. 2015. Ontario Natural Heritage Education Group Leader, Pinery Provincial Park, Ontario.
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TECHNICAL SUMMARY

Erynnis persius persius

Eastern Persius Duskywing

Hespérie Persius de l'Est

Range of occurrence in Canada (province/territory/ocean): Ontario

Demographic Information

Generation time (usually average age of parents in the population; indicate if another method of estimating generation time indicated in the IUCN guidelines (2011) is being used)	1 year.
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?	Unknown. No extant population known
Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations]	Unknown. No extant population known.
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations].	Unknown. No extant population known.
[Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations].	Unknown. No extant population known.
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over any [10 years, or 3 generations] period, over a time period including both the past and the future.	Unknown. No extant population known.
Are the causes of the decline a. clearly reversible and b. understood and c. ceased?	a. no. b. partially understood. c. no
Are there extreme fluctuations in number of mature individuals?	No.

Extent and Occupancy Information

Estimated extent of occurrence	500 km ²
Index of area of occupancy (IAO) (Always report 2x2 grid value).	8 km ²

Is the population “severely fragmented” i.e., >50% of its total area of occupancy is in habitat patches that are (a) smaller than would be required to support a viable population, and (b) separated from other habitat patches by a large distance?	No. No extant population known
Number of locations* (use plausible range to reflect uncertainty)	2
Is there an [observed, inferred, or projected] continuing decline in extent of occurrence?	Unknown. No extant population known.
Is there an [observed, inferred, or projected] continuing decline in index of area of occupancy?	Unknown. No extant population known.
Is there an [observed, inferred, or projected] continuing decline in number of subpopulations?	Unknown. No extant population known.
Is there an [observed, inferred, or projected] continuing decline in number of locations*?	Unknown. No extant population known.
Is there an [observed, inferred, or projected] continuing decline in [area, extent and/or quality] of habitat?	Yes, Inferred decline in area, extent and quality of habitat. While there have been habitat improvements at Pinery Provincial Park, habitat has declined at St. Williams.
Are there extreme fluctuations in number of subpopulations?	No.
Are there extreme fluctuations in number of locations*?	No.
Are there extreme fluctuations in extent of occurrence?	No.
Are there extreme fluctuations in index of area of occupancy?	No.

Number of Mature Individuals (in each subpopulation)

Subpopulation (give plausible ranges)	N Mature Individuals
Pinery Provincial Park, Ontario.	Unknown
St. Williams	Unknown
Total	Unknown

* See Definitions and Abbreviations on [COSEWIC website](#) and [IUCN 2010](#) for more information on this term.

Quantitative Analysis

Probability of extinction in the wild is at least [20% within years or 5 generations, or 10% within 100 years].	Not applicable.
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Threats (actual or imminent, to populations or habitats)

No threat calculator was completed for this species.
7.1 Habitat loss and degradation due to fire suppression.
7.3 Other ecosystem modifications including natural succession, and herbivory of host plants.
9.3 Application of pesticides.

Rescue Effect (immigration from outside Canada)

Status of outside population(s) most likely to provide immigrants to Canada?	Declining and rare.
Is immigration known or possible?	Unknown, but unlikely
Would immigrants be adapted to survive in Canada?	Yes
Is there sufficient habitat for immigrants in Canada?	Possibly
Are conditions deteriorating in Canada?+	Yes
Are conditions for the source population deteriorating?+	Yes
Is the Canadian population considered to be a sink?+	No
Is rescue from outside populations likely?	No

Data Sensitive Species

Is this a data sensitive species? No

Status History

COSEWIC: Designated Endangered in April 2006. Status re-examined and confirmed in April 2016.

+ See [Table 3](#) (Guidelines for modifying status assessment based on rescue effect).

Status and Reasons for Designation

Status: Endangered	Alpha-numeric Code: B1ab(iii)+2ab(iii)
Reasons for Designation: This lupine-feeding butterfly has been confirmed from only two localities in Canada. It inhabits oak savannas in southern Ontario, a habitat that has undergone substantial declines and alterations. Larval host-plant populations have been greatly reduced. There have been no confirmed reports of this butterfly since 1987, but there have been no intensive surveys for the species since 2003. This, combined with its similarity with other duskywings, makes it possible that it still occurs but has been overlooked.	

Applicability of Criteria

Criterion A (Decline in Total Number of Mature Individuals): Not applicable. The number of mature individuals is unknown; there are no data to support declines.
Criterion B (Small Distribution Range and Decline or Fluctuation): Meets Endangered B1ab(iii)+2ab(iii) because the (B1) EOO is less than 5000 km ² (8 km ²), the (B2) IAO is less than 500 km ² (8 km ²), (a) there are less than 5 locations (2) and there is (b) a continuing decline in the (iii) area, extent and quality of habitat.
Criterion C (Small and Declining Number of Mature Individuals): Not applicable. Number of mature individuals unknown.
Criterion D (Very Small or Restricted Population): Not applicable. Number of mature individuals unknown.
Criterion E (Quantitative Analysis): Not applicable. No data available.



COSEWIC HISTORY

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list. On June 5, 2003, the *Species at Risk Act* (SARA) was proclaimed. SARA establishes COSEWIC as an advisory body ensuring that species will continue to be assessed under a rigorous and independent scientific process.

COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. Designations are made on native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fishes, arthropods, molluscs, vascular plants, mosses, and lichens.

COSEWIC MEMBERSHIP

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biodiversity Information Partnership, chaired by the Canadian Museum of Nature), three non-government science members and the co-chairs of the species specialist subcommittees and the Aboriginal Traditional Knowledge subcommittee. The Committee meets to consider status reports on candidate species.

DEFINITIONS (2016)

Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)**	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)***	A category that applies when the available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.

** Formerly described as "Not In Any Category", or "No Designation Required."

*** Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994. Definition of the (DD) category revised in 2006.



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