COSEWIC
Rapid Review of Classification

on the

Island Blue
Icaricia saepiolus insulanus

in Canada

ENDANGERED
2022

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada

COSEPAC
Comité sur la situation
des espèces en péril
au Canada

The rapid review of classification process is used by COSEWIC for wildlife species that have not changed status since the previous COSEWIC assessment. Readily available information from the previous status report or status appraisal summary, recovery documents, recovery teams, jurisdictions, conservation data centres, and species experts is initially reviewed by the relevant Species Specialist Subcommittees before being reviewed by COSEWIC. The following is a summary of the relevant information.

COSEWIC Rapid Review of Classification 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:

COSEWIC. 2022. COSEWIC Rapid Review of Classification on the Island Blue *Icaricia saepiolus insulanus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xvi pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

Production note:
COSEWIC would like to acknowledge David B. McCorquodale for writing the rapid review of classification on the Island Blue, *Icaricia saepiolus insulanus*, in Canada, prepared under contract with Environment and Climate Change Canada. This report was overseen and edited by Jennifer Heron, Co-chair of the COSEWIC Arthropods Specialist Subcommittee.

For additional copies contact:

COSEWIC Secretariat
c/o Canadian Wildlife Service
Environment and Climate Change Canada
Ottawa, ON
K1A 0H3

Tel.: 819-938-4125
Fax: 819-938-3984
E-mail: ec.cosepac-cosewic.ec@canada.ca
www.cosewic.ca

Également disponible en français sous le titre Examen rapide de la classification du COSEPAC sur le Bleu insulaire (*Icaricia saepiolus insulanus*) au Canada.

Catalogue No. CW69-18/15-2023E-PDF
ISBN 978-0-660-48500-3

COSEWIC
Assessment Summary

Assessment Summary – December 2022

Common name
Island Blue

Scientific name
Icaricia saepiolus insulanus

Status
Endangered

Reason for designation
This species has not been documented in the wild since 1979 but search effort is insufficient to conclude that it is extinct. Any remaining subpopulations in its historical range must occur within a very small distributional range and are likely in decline due to declining habitat quality from invasive plants that out-compete native host plants.

Occurrence
British Columbia

Status history
Designated Endangered in November 2000. Status re-examined and confirmed in May 2012 and December 2022.

COSEWIC
Rapid Review of Classification

PREFACE

The Island Blue (*Icaricia saepiolus insulanus*) was first designated Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in May 2000. The status was re-examined and confirmed in May 2012 (COSEWIC 2012). The wildlife species was listed as Endangered on Schedule 1 under the federal *Species at Risk Act* (SARA) in 2003.

Since the COSEWIC (2000) status report, the former subgenus *Icaricia* has been elevated to genus (Pohl *et al.* 2018) and the scientific name for "Island Blue" is now *Icaricia saepiolus insulanus.* There are other subspecies of *Icaricia saepiolus*[1] that have been referred to as *I. saepiolus nr. Insulanus; however,* the consensus is that these are synonymous with *I. saepiolus littoralis* (USDA 2017).

The known global and Canadian range of the Island Blue is on southeastern Vancouver Island, with records from Victoria north to Saratoga Beach near Campbell River (COSEWIC 2000; BC CDC 2021). Records date from 1901 (Victoria) to 1979 (Malahat). The historical records are summarized in the species recovery strategy (GOIRIG 2007; Parks Canada Agency 2008).

The lower elevation areas of southeastern Vancouver Island are well surveyed for butterflies; particularly the open meadows, grasslands, and Garry Oak (*Quercus garryana*), and associated ecosystems where the Island Blue could potentially occur. Butterfly surveys within the potential range of the Island Blue are assembled from numerous sources; from 2001–2020, butterfly search effort totals a minimum of 1,834 survey hours and 2,908 km during the species' flight period (Heron pers. comm. 2021). Incidental observations posted to online butterfly forums (e.g., iNaturalist [2022], Victoria Natural History Invertebrate Alert [2022]) have no records. However, there is still a possibility that the Island Blue may be recorded from approximately 350,000 hectares of unsurveyed and potential habitat located on private land on southeastern Vancouver Island, as well as some areas in northwestern Washington State. No additional records have been found from unidentified or undatabased museum specimens.

1. The English common name for *Icaricia saepiolus* is "Greenish Blue" (Guppy and Shepard 2001). "Island Blue" refers only to *Icaricia saepiolus insulanus*.

The definition of "wildlife species"[2] under the *Species at Risk Act* gives COSEWIC a mandate to assess units below the level of a recognized taxonomic species as a designatable unit (DU) if it has attributes that make it both discrete[3] and evolutionarily significant.[4] The Island Blue is one of twelve described subspecies of the Greenish Blue (*I. saepiolus*) (Pelham 2022), which has a broad range across North America (Pohl *et al.* 2018; Guppy pers. comm. 2022). The subspecies was described in 1919 (Blackmore 1919) and there are no taxonomic disputes in the literature (Guppy and Shepard 2001; Pelham 2008; Pohl *et al.* 2018; Guppy pers. comm. 2022; Pelham 2022). The following discusses how the Island Blue meets the criteria for both discreteness and significance.

A putative DU may be considered discrete based on one or both of the following criteria, each of which indicate little or no transmission of heritable information between it and other DUs:

- *D1. Evidence of heritable traits or markers that clearly distinguish the putative DU from other DUs (e.g., evidence from genetic markers or heritable morphology, behaviour, life history, phenology), indicating limited transmission of this heritable information with other DUs.* There is morphological information that separates the Island Blue from other subspecies (Blackmore 1920; Kondla and Guppy 2002; Guppy pers. comm. 2022). More specifically, wing colouration and pattern in both male and female specimens are used to differentiate subspecies *insulanus* from *amica* (see Table 1) (Blackmore 1920; Kondla and Guppy 2002; Guppy pers. comm. 2022). However, there is little additional information on the natural history, and genetic or heritable markers that are evidence to support this criterion.

Table 1. Comparison of wing colour and patterns that differentiate the Island Blue (*Icaricia saepiolus insulanus*) from the geographically closest subspecies, *I.s.amica*. Information drawn from Blackmore (1920), Guppy and Shepard (2001) and Guppy pers. comm (2022).

Icaricia saepiolus insulanus	*Icaricia saepiolus amica*
Female [wing] upper side is brown with little or no blue mixed in	Female [wing] upper side is brown with considerable blue mixed in
Male [wing] upper side is bright blue without a violet sheen	Male [wing] upper side is duller blue with a violet sheen
Male [wing] under side is near white (brownish in females)	Male [wing] under side is greyish or brownish white (darker in females)
Male [wing] under side marginal row of black spots poorly developed to absent (more strongly developed in females)	Male and female [wing] under side marginal row of black spots strongly developed

2. Under the *Species At Risk Act* (SARA), the definition of "wildlife species" is "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 **(a)** is native to Canada; or **(b)** has extended its range into Canada without human intervention and has been present in Canada for at least 50 years."

3. "Discrete" means that there is currently very little transmission of heritable (cultural or genetic) information from other such units.

4. "Evolutionarily significant" means that the unit harbours heritable adaptive traits or an evolutionary history not found elsewhere in Canada.

- *D2. Natural (i.e., not the product of human disturbance) geographic disjunction between putative DUs such that transmission of information (e.g., individuals, gametes) between these "range portions" has been severely limited for an extended time and is not likely in the foreseeable future. "Extended time" is intended to mean that sufficient time has passed that either natural selection or genetic drift are likely to have produced discrete units, given the specific biology of the taxon.* The Island Blue has a natural geographic disjunction between its range and the geographically closest *amica* subspecies (*I.s.amica*). *Icaricia saepiolus amica* ranges throughout mainland B.C. (except for the coastal regions) (Guppy and Shepard 2001), north to the Yukon, east to Alberta and across Canada (Layberry *et al.* 1998). The closest confirmed record of *I.s.amica* is at E. C. Manning Provincial Park, approximately 200 km straight-line distance through unsuitable habitat, including the Strait of Georgia, from the most recent record (Malahat in 1979) of the Island Blue on southeastern Vancouver Island. There are habitat differences between the Island Blue (see GOIRIG 2007; Parks Canada Agency 2008 for habitat information) and *I.s.amica* (see Layberry *et al.* 1998; Guppy and Shepard 2001 for habitat information). It is inferred that the Island Blue has been on an independent evolutionary trajectory since the retreat of the glaciers, approximately 11,700 years before present. The subspecies has a restricted geographic range (i.e., southeastern Vancouver Island and the Gulf Islands) and has been geographically separated from individuals on the adjacent mainland (i.e., *I.s.amica*) since glacial retreat (see Fuchs 2001; GOERT 2002 for background information on Garry Oak and associated ecosystems). The Island Blue meets this criterion for discreteness.

A DU is considered significant based on one or more of the following criteria.

- S1. Direct evidence or strong inference that the putative DU has been on an independent evolutionary trajectory for an evolutionarily significant period, usually intraspecific phylogenetic divergence indicating origins in separate Pleistocene refugia. See D2.

- S2. Direct evidence or strong inference that can be used to infer that the putative DU possesses adaptive, heritable traits, that cannot be practically reconstituted if lost. For example, persistence of the discrete, putative DU in an ecological setting where a selective regime is likely to have given rise to DU-wide local adaptations that could not be reconstituted. Historical records for the Island Blue are from the Garry Oak and associated ecosystems, which are restricted to southeastern Vancouver Island and a few isolated pockets of habitat near Sumas and Yale in the Fraser Valley. These ecosystems originate with the retreat of the glaciers, approximately 11,700 years before present, and reached their largest extent approximately 5,000 to 8,000 years ago (Erickson 1993). The Island Blue ranges only within these ecosystems, which have provided the unique ecological setting (see Fuchs 2001; GOERT 2002) for adaptive traits that are not likely to be reconstituted.

The Island Blue is globally listed as G5TH (subspecies possibly extinct or historical, not recently extant and with some reasonable hope of rediscovery) (NatureServe 2021), NH (possibly extinct or extirpated) for Canada and SH (possibly extirpated) for British Columbia (BC CDC 2021).

Status History

Designated Endangered in November 2000. Status re-examined and confirmed in May 2012 and December 2022.

Updated Map

☐ Required x Not required

No change in distribution known; see previous assessments (COSEWIC 2000; 2012).

TECHNICAL SUMMARY

Island Blue

Bleu insulaire

Icaricia saepiolus insulanus

Range of occurrence in Canada: British Columbia

Demographic Information

Generation time	Approximately 1 year	There is no evidence the species overwinters more than one year.
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?	Unknown	Insufficient data.
Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations, whichever is longer up to a maximum of 100 years]	Unknown	Insufficient data.
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations, whichever is longer up to a maximum of 100 years].	Unknown	Insufficient data.
[Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations, whichever is longer up to a maximum of 100 years].	Unknown	Insufficient data.
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over any period [10 years, or 3 generations, whichever is longer up to a maximum of 100 years], including both the past and the future.	Unknown	Insufficient data.
Are the causes of the decline clearly understood?	Unknown	Insufficient data.
Have the causes of the decline ceased?	Unknown, but not applicable if species no longer occurs in Canada.	Habitat at historical sites have multiple ongoing and cumulative threats.
Are the causes of the decline clearly reversible?	Unknown, but not applicable if species no longer occurs in Canada.	Habitat at historical sites have multiple ongoing and cumulative threats.

Are there extreme fluctuations in number of mature individuals?	No	There is no evidence of extreme fluctuations based on historical records and information on other Greenish Blue subspecies.

Extent and Occupancy information

Estimated extent of occurrence (EOO)	Unknown, but not applicable if subspecies no longer occurs in Canada.	The most recent record in Canada is from 1979.
Index of area of occupancy (IAO), reported as 2x2 km grid value.	Unknown, but not applicable if subspecies no longer occurs in Canada.	The most recent record in Canada is from 1979.
Is the population "severely fragmented" i.e., is >50% of its total area of occupancy 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 distance larger than the species can be expected to disperse?	a. Unknown b. Unknown	Likely yes if it still occurs in Canada, and not applicable if it no longer occurs in Canada.
Number of "locations"*	Unknown; none if the subspecies no longer occurs in Canada.	The most recent record in Canada is from 1979.
Is there an [observed, inferred, or projected] continuing decline in extent of occurrence?	Unknown; but if the subspecies persists, probably in decline.	If the subspecies occurs in unchecked habitats; inferred continuing decline based on ongoing threats at historical sites and throughout potential habitat within the subspecies range.
Is there an [observed, inferred, or projected] continuing decline in index of area of occupancy?	Unknown; but if the subspecies persists, probably in decline.	If the subspecies occurs in unchecked habitats; inferred continuing decline based on ongoing threats at historical sites and throughout potential habitat within the subspecies range.
Is there an [observed, inferred, or projected] continuing decline in number of subpopulations?	No subpopulations known; but if the subspecies persists probably in decline.	Historical decline.
Is there an [observed, inferred, or projected] continuing decline in number of "locations"*?	No locations known, but if the subspecies persists probably in decline.	Historical decline.

* See Definitions and Abbreviations on COSEWIC website for more information on this term.

Is there an [observed, inferred, or projected] continuing decline in [area, extent and/or quality of] habitat?	Yes, inferred decline in quality based on continued threats to habitat.	Historical decline inferred in quality of habitat and unsurveyed potential habitat within the subspecies range.
Are there extreme fluctuations in number of subpopulations?	No, no subpopulations known.	There is no evidence of extreme fluctuations based on known records and information from other subspecies of Greenish Blue.
Are there extreme fluctuations in number of "locations"∗?	Not likely	No evidence of extreme fluctuations in extent of occurrence based on known records and information from other subspecies of Greenish Blue.
Are there extreme fluctuations in extent of occurrence?	Not likely	No evidence of extreme fluctuations in extent of occurrence based on known records and information from other subspecies of Greenish Blue.
Are there extreme fluctuations in index of area of occupancy?	Not likely	No evidence of extreme fluctuations in index of area of occupancy based on known records and information from other subspecies of Greenish Blue.

Number of Mature individuals (in each subpopulation)

Subpopulations	No. Mature Individuals (give plausible ranges)	Notes on individual estimates.
Total	No data	No data

Quantitative Analysis

Is the probability of extinction in the wild at least [20% within 20 years or 5 generations whichever is longer up to a maximum of 100 years, or 10% within 100 years]?	Unknown	Analysis not conducted.

Threats and Limiting Factors

Was a threats calculator completed for this species?	No	
Threats identified in the COSEWIC (2000) status report and the COSEWIC Status Appraisal Summary (2012) include: • Other ecosystem modifications: Displacement of native clovers (host plants) with non-native clovers; fire suppression. • Habitat loss from development (e.g., urban, agricultural). What additional limiting factors are relevant? • Host plant specificity; limited dispersal ability.		

∗ See Definitions and Abbreviations on COSEWIC website for more information on this term.

Rescue Effect (natural immigration from outside Canada)

Status of outside population(s) most likely to provide immigrants to Canada.	Not applicable	The subspecies is endemic to Vancouver Island.
Is immigration known or possible?	Not applicable	The subspecies is endemic to Vancouver Island.
Would immigrants be adapted to survive in Canada?	Not applicable	The subspecies is endemic to Vancouver Island.
Is there sufficient habitat for immigrants in Canada?	Not applicable	The subspecies is endemic to Vancouver Island.
Are conditions deteriorating in Canada?[+]	Not applicable	The subspecies is endemic to Vancouver Island.
Are conditions for the source (i.e., outside) population deteriorating?[+]	Not applicable	The subspecies is endemic to Vancouver Island.
Is the Canadian population considered to be a sink?[+]	Not applicable	The subspecies is endemic to Vancouver Island.
Is rescue from outside populations likely?	Not applicable	The subspecies is endemic to Vancouver Island.

Occurrence Data Sensitivity

Are occurrence data of this species sensitive?	No	

Status and Reasons for Designation

Status: Endangered	**Alpha-numeric code:** B1ab(iii)+2ab(iii)
Reasons for designation: This species has not been documented in the wild since 1979 but search effort is insufficient to conclude that it is extinct. Any remaining subpopulations in its historical range must occur within a very small distributional range and are likely in decline due to declining habitat quality from invasive plants that out-compete native host plants.	
Reason for change of status:	No change.

Applicability of Criteria

A: Decline in total number of mature individuals Not applicable. Insufficient data to reliably infer, project, or suspect population trends.
B: Small distribution range and decline or fluctuation Meets Endangered, B1ab(iii)+2ab(iii). The possible areas where this species may persist are below the EOO and IAO thresholds for Endangered, and there is an inferred decline in habitat quality due to invasive plant species that out-compete native host plants.
C: Small and declining number of mature individuals Not applicable. Insufficient data to determine number of mature individuals and/or continuing decline.

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

D: Very small or restricted population Not applicable. Number of mature individuals and vulnerability to rapid and substantial population decline are unknown.
E: Quantitative analysis Not applicable. Analysis not conducted.

ACKNOWLEDGEMENTS

Funding was provided by Environment and Climate Change Canada. The Arthropods Specialist Subcommittee reviewed the document (Robert Buchkowski, Sydney G. Cannings, Jeremy deWaard, Allan Harris, Colin Jones, John Klymko, Jayme Lewthwaite, Jessica Linton, Dawn Marks, Julia Mlynarek, Jeff Ogden, Leah Ramsay, John Richardson, Sarah Semmler, Brian Starzomski, Jennifer Heron, Sue Chiblow ([ATK subcommittee], Dan Benoit [ATK subcommittee], Myrle Ballard [ATK subcommittee]). Dave Fraser (COSEWIC non-government scientist) provided review and incorporated editorial comments. Joanna James and Marie-Ève Corbin (COSEWIC Secretariat) provided support. The following individuals provided advice and contributed to null survey information: Crispin Guppy, Lea Gelling, James Miskelly, Claudia Copley, Darren Copley, Pascale Archibald, Jeremy Gatten, Mike Yip, Nick Page, Patrick Lilley, Bonnie Zand, Jennifer Heron, Dawn Marks.

AUTHORITIES CONTACTED

Gelling, Lea, Program Zoologist, British Columbia Conservation Data Centre, Biodiversity Branch, Ministry of Environment and Climate Change Strategy, Victoria, British Columbia.

Guppy, Crispin. Lepidopterist, Whitehorse, Yukon.

Heron, Jennifer. Invertebrate Conservation Specialist, Conservation Science Section, B.C. Ministry of Environment and Climate Change Strategy, Surrey, British Columbia.

Miskelly, James, Entomologist, Victoria, British Columbia.

INFORMATION SOURCES

BCCDC (British Columbia Conservation Data Centre). 2021. B.C. Species and Ecosystems Explorer. British Columbia Ministry of Environment and Climate Change Strategy. Victoria, B.C. Available: https://alpha.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre [accessed June 19, 2021].

Blackmore, E.H. 1919. The Lycaeninae of British Columbia. Proceedings of the Entomological Society of British Columbia 14: 5–11, 1 p.

COSEWIC. 2000. COSEWIC assessment and status report on the Island Blue *Plebejus saepiolus insulanus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 8 pp. https://species-registry.canada.ca/index-en.html#/documents/2445 [accessed September 22, 2022].

COSEWIC. 2012. COSEWIC status appraisal summary on the Island Blue *Plebejus saepiolus insulanus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x pp. https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/island-blue-appraisal-summary-2012.html [accessed June 19, 2021].

Erickson, W. 1993. Garry Oak Ecosystems. Province of British Columbia Ministry of Environment, Lands and Parks, Victoria, BC. 6pp. https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/conservation-data-centre/publications/erickson_garry_oak.pdf [accessed December 18, 2022].

Fuchs, M.A. 2001. Towards a Recovery Strategy for Garry Oak and Associated Ecosystems in Canada: Ecological Assessment and Literature Review. Technical Report GBEI/EC-00-030. Environment Canada, Canadian Wildlife Service, Pacific and Yukon Region. 118pp. Available at http://parkscanadahistory.com/publications/fortroddhill/garry-oak-recovery.pdf [accessed December 19, 2022].

GOERT (Garry Oak Ecosystems Recovery Team). 2002. Recovery Strategy for Garry Oak and Associated Ecosystems and Their Associated Species at Risk in Canada, 2001–2006. Draft 20 February 2002. 201pp. Available at https://goert.ca/wp/wp-content/uploads/GOERT-Recovery-Strategy-GOE-SAR-2002.pdf [accessed December 19, 2022].

GOIRIG (Garry Oak Invertebrates Recovery Implementation Group). 2007. Recovery strategy for the Greenish Blue insulanus subspecies (*Plebejus saepiolus insulanus*) in British Columbia. Prepared for the British Columbia Ministry of Environment, Victoria, B.C. 13pp.

Guppy, C.S. 2022. *Email and personal communication with Jennifer Heron.* Private Lepidopterist, Whitehorse, Yukon.

Guppy, C.S. and J.H. Shepard. 2001. Butterflies of British Columbia. University of British Columbia Press, and Royal British Columbia Museum, Vancouver and Victoria, British Columbia.

Heron, J. personal communication 2021. *Email correspondence* with David McCorquodale. Provincial Invertebrate Conservation Specialist with the Conservation Science Section, British Columbia Ministry of Environment and Climate Change Strategy, Surrey, British Columbia.

iNaturalist. 2022. Online search for Island Blue (no records). Available at www.inaturalist.org/taxa/520398-Icaricia-saepiolus [accessed December 19, 2022].

Kondla, N. G., and C. S. Guppy. 2002. Name-bearing types and taxonomic synopsis of three Lycaenid butterfly taxa from western Canada (*Lepidoptera: Lycaenidae*). Taxonomic Report of the International Lepidoptera Survey 3(6):1–11.

Layberry, R., P. Hall, and D. Lafontaine. 1998. The Butterflies of Canada. University of Toronto Press. 354 pp.

NatureServe. 2021. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.115706/Icaricia_saepiolus_insulanus [accessed June 19, 2021].

Parks Canada Agency. 2008. Recovery Strategy for the Island Blue (*Plebejus saepiolus insulanus*) in Canada [proposed]. Species at Risk Act Recovery Strategy Series. Parks Canada Agency, Ottawa, ON. 30pp.

Pelham, J. 2022. Checklist of the butterflies of the United States and Canada, December 2022. Available at https://www.butterfliesofamerica.com/US-Can-Cat.htm [accessed December 19, 2022].

Pohl, G.R. J-F. Landry, B.C. Schmidt, J. D. Lafontaine, J. T. Troubridge, A.D. Macaulay, E. Van Nieukerken, J. R. deWaard, J. J. Dombroskie, J. Klymko, V. Nazari and K. Stead. 2018. Annotated checklist of the moths and butterflies (Lepidoptera) of Canada and Alaska. Pensoft Publishers. 580 pp.

USDA. 2017. Species Fact Sheet Coastal greenish blue *Plebejus saepiolus littoralis*. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiVzLnUm_D9AhV_kIkEHSqrCrIQFnoECA0QAQ&url=https%3A%2F%2Fwww.fs.usda.gov%2Fr6%2Fissssp%2Fdownloads%2Fupdates%2Fupdate-202108.pdf&usg=AOvVaw10-tBbsdwUDtijUWCGl8dC&cshid=1679511511629049 [accessed 16 August 2021].

Victoria Natural History Society Invertebrate Alert (online database, https://www.vicnhs.bc.ca/?cat=8) [accessed June 19, 2021].

Writer of Rapid Review of Classification:

- David B. McCorquodale

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
(2022)

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.

Environment and Climate Change Canada
Canadian Wildlife Service
Environnement et Changement climatique Canada
Service canadien de la faune
Canada

The Canadian Wildlife Service, Environment and Climate Change Canada, provides full administrative and financial support to the COSEWIC Secretariat.