

COSEWIC
Rapid Review of Classification

on the

Pacific Gophersnake
Pituophis catenifer catenifer

in Canada

EXTIRPATED
2023

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 was 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. 2023. COSEWIC Rapid Review of Classification on the Pacific Gophersnake *Pituophis catenifer catenifer* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix pp. (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>).

Production note:

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Également disponible en français sous le titre Examen rapide de la classification du COSEPAC pour la Couleuvre gaufre du Pacifique (*Pituophis catenifer catenifer*) au Canada.



COSEWIC Assessment Summary

Assessment Summary – May 2023

Common name

Pacific Gophersnake

Scientific name

Pituophis catenifer catenifer

Status

Extirpated

Reason for designation

There are only two confirmed records of this large snake in Canada, from Huntingdon and Galiano Island, both in extreme southwestern British Columbia. Native individuals have not been confirmed in the wild in Canada since 1957.

Occurrence

British Columbia

Status history

Designated Extirpated in May 2002. Status re-examined and confirmed in May 2012 and May 2023.



COSEWIC Rapid Review of Classification

PREFACE

Taxonomic and Common Name: The French common name for this snake has been changed to Couleuvre gaufre du Pacifique (Green 2012).

Designatable Units (DU): Two subspecies of Gophersnake are native to Canada, the Great Basin Gophersnake (*Pituophis catenifer deserticola*), which occurs in five discrete subpopulations in the interior Dry Belt of British Columbia (the valleys of the Thompson and Okanagan rivers and parts of the Fraser and Similkameen rivers) in the Cordillera Amphibian and Reptile Faunal Province, and the Pacific Gophersnake (*P. c. catenifer*), which formerly occurred in extreme southwestern coastal British Columbia in the Pacific Amphibian and Reptile Faunal Province (COSEWIC 2002). Previous status assessments (e.g. COSEWIC 2012) recognized two DUs based on distinctive differences in the colour patterns of snakes from the putative DUs, as maintained by Crother (2017), although with caveats pending genetic work. A third subspecies, the Bullsnake (*P. c. sayi*), occurs in mixed grassland in southern Alberta and southwestern Saskatchewan in the Prairie Amphibian and Reptile Faunal Province, and constitutes a third DU (COSEWIC 2002).

The Pacific Gophersnake is considered to be discrete based on significant natural geographic disjunction (criterion D2 [COSEWIC 2020]) (Rodriguez-Robles and De Jesús-Escobar 2000) and evolutionarily significant based on climatic differences between coastal and interior British Columbia, which may have given rise to physiological, behavioural, or other adaptations (e.g. related to hibernation and foraging) reflective of different ecological settings (criterion S2 [COSEWIC 2020]). In particular, many mammalian prey species taken by the interior subspecies *P. c. deserticola*—such as Northern Pocket-Gopher (*Thomomys talpoides*), most vole and mouse species, and rabbits—are not present on Galiano Island, so the subspecies must have had significant diet differences. Although undocumented, such adaptive differences are plausible; additionally, the distinctive colour pattern differences may also have adaptive significance. Unfortunately, the lack of extant specimens from Canada precludes exploration of these possibilities. The two subspecies occupy different Amphibian and Reptile Faunal Provinces (Pacific and Cordillera, respectively) in British Columbia, and thus quite different ecological settings.

The ranges of *P. c. catenifer* and *P. c. deserticola* are geographically separated by unsuitable mountainous habitat, except for a zone of contact (with intergrades) in northern California and central Oregon (Rodriguez-Robles and De Jesús-Escobar 2000). Rodriguez-Robles and De Jesús-Escobar (2000) conducted genetic analyses of snakes of the *Pituophis* species complex, including *P. c. deserticola* specimens from Utah, Nevada, California and Colorado. They reported that the *P. c. catenifer* and *P. c. deserticola* subspecies formed a distinct clade, and that there was intergradation between these two taxa. The northern distribution of *P. c. catenifer* is patchy, possibly reflecting habitat availability or historical factors. The two subspecies likely entered British Columbia using different post-glacial routes: the Pacific Coast and Western Interior routes (Rodriguez-Robles and De Jesús-Escobar 2000; O'Connor and Green 2016).

Status History

Designated Extirpated in May 2002. Status re-examined and confirmed in May 2012 and May 2023.

Updated map

Required Not required

Explanation / updated map provided:

Not required. See previous assessment (COSEWIC 2002).

TECHNICAL SUMMARY

Complete Technical Summary not required for Extirpated species assessed by Rapid Review of Classification.

Pituophis catenifer catenifer

Pacific Gophersnake

Couleuvre gaufre du Pacifique

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

Status and Reasons for Designation:

Status: Extirpated	Alpha-numeric codes: Not applicable
Reasons for designation: There are only two confirmed records of this large snake in Canada, from Huntingdon and Galiano Island, both in extreme southwestern British Columbia. Native individuals have not been confirmed in the wild in Canada since 1957.	

Applicability of Criteria

Criterion A (Decline in Total Number of Mature Individuals): Not applicable
Criterion B (Small Distribution Range and Decline or Fluctuation): Not applicable
Criterion C (Small and Declining Number of Mature Individuals): Not applicable
Criterion D (Very Small or Restricted Population): Not applicable
Criterion E (Quantitative Analysis): Not applicable

AUTHORITIES CONTACTED

- Leah Ramsay, head of Zoology (retired), BC Conservation Data Centre.

INFORMATION SOURCES

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RAMAS results graphic output

RAMAS text output

RAMAS not required for extirpated species.

Writer of Rapid Review of Classification

- David F. Fraser, 2021.



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 (2023)

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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