

**COSEWIC**  
**Status Appraisal Summary**

on the

**Timber Rattlesnake**  
*Crotalus horridus*

in Canada

**EXTIRPATED**  
**2010**

**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 Gabriel Blouin-Demers for writing the status appraisal summary on the Timber Rattlesnake *Crotalus horridus* in Canada, prepared under contract with Environment Canada. This status appraisal summary was overseen and edited by Ronald J. Brooks, Co-chair of the Amphibians and Reptiles Specialist Subcommittee.

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## COSEWIC Assessment Summary

### Assessment Summary – November 2010

**Common name**

Timber Rattlesnake

**Scientific name**

*Crotalus horridus*

**Status**

Extirpated

**Reason for designation\***

*\* A reason for designation is not specified when a review of classification is conducted by means of a status appraisal summary.*

**Occurrence**

Ontario

**Status history**

Designated Extirpated in May 2001. Status re-examined and confirmed in November 2010.



*Significant new survey information* yes  no

Explanation:

There are no additional data from Canada since the previous assessment. Thus, estimates of the Canadian range remain unchanged. Michael Oldham from the Ontario Natural Heritage Information Centre wrote that "we have received no credible recent reports of Timber Rattlesnake in Ontario" (Email correspondence Mar. 2010).

**Population Information:**

*Change in number of mature individuals:* yes  no

*Change in total population trend:* yes  no

*Change in severity of population fragmentation:* yes  no

*Significant new survey information* yes  no

Explanation:

There are no additional data on the Canadian population since the previous assessment.

**Threats:**

*Change in nature and/or severity of threats:* yes  no

Explanation:

Since the previous assessment, there have been no data suggesting that there are extant Canadian populations, and thus the nature and severity of threats in Canada must be considered unchanged.

**Protection:**

*Change in effective protection:* yes  no

Explanation:

The SARA Recovery Strategy concludes that "recovery of this species is considered not technically or biologically feasible at this time" (Environment Canada 2009).

**Rescue Effect:**

*Evidence of rescue effect:* yes  no

Explanation:

Adjacent US populations have continued to decline. The southern shorelines of Lake Erie and Lake Ontario appear not to be inhabited by Timber Rattlesnakes, making rescue entirely unlikely.

**Quantitative Analysis:**

*Change in estimated probability of extirpation:* yes  no

Details:

No additional data since previous assessment.

**Summary and Additional Considerations:**

There have been no records of Timber Rattlesnakes in Canada since the previous assessment. The last credible record is still the specimen collected on the Niagara peninsula in 1941. The species is still extirpated from Canada and natural re-colonization of its former Canadian range seems nearly impossible.

**List of authorities contacted to review the status appraisal:**

The Status Appraisal Summary was sent to the following jurisdictions for review:

- Canadian Wildlife Service
- Parks Canada Agency
- Province of Ontario

**Consultations:**

The following persons responded to an email query sent March, 2010:

- Ronald Brooks. University of Guelph.
- Ross MacCulloch. Royal Ontario Museum.
- Michael Oldham. Ontario Natural Heritage Information Centre.
- Wayne Weller. Ontario Power Generation.

The following persons were also contacted via email, but did not respond:

- Bob Johnson. Toronto Zoo.
- Andrew Lentini. Toronto Zoo.
- Angela McConnell. Environment Canada.

**Sources of information:**

Allsteadt, J., A.H. Savitzky, C.E. Petersen and D. Naik. 2006. Geographic variation in the morphology of *Crotalus horridus* (Serpentes: Viperidae). Herpetological Monographs. (20): 1-63.

Clark, A.M., P.E. Moler, E.E. Possardt, A.H. Savitzky, W.S. Brown and B.W. Bowen. 2003. Phylogeography of the timber rattlesnake (*Crotalus horridus*) based on mtDNA sequences. Journal of Herpetology. 37(1): 145-154.

COSEWIC 2001. COSEWIC assessment and update status report on the timber rattlesnake *Crotalus horridus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp.

Environment Canada. 2009. Recovery Strategy for the Timber Rattlesnake (*Crotalus horridus*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. v + 17 pp.

Pisani, G.R., J.T. Collins, and S.R. Edwards. 1973. A re-evaluation of the subspecies of *Crotalus horridus*. Transactions of the Kansas Academy of Science 75(3):255-263.

## TECHNICAL SUMMARY

*Crotalus horridus*

Timber Rattlesnake

Crotale des bois

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(2008) is being used)  | 6 yrs |
| Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?   | NA    |
| Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations]  | NA    |
| [Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations].  | NA    |
| [Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations].   | NA    |
| [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. | NA    |
| Are the causes of the decline clearly reversible and understood and ceased?  | NA    |
| Are there extreme fluctuations in number of mature individuals?  | NA    |

### Extent and Occupancy Information

|  |                   |
|--|-------------------|
| Estimated extent of occurrence   | 0 km <sup>2</sup> |
| Index of area of occupancy (IAO)<br>(Always report 2x2 grid value).  | 0 km <sup>2</sup> |
| Is the total population severely fragmented?   | NA                |
| Number of locations*   | 0                 |
| Is there an [observed, inferred, or projected] continuing decline in extent of occurrence?                     | NA                |
| Is there an [observed, inferred, or projected] continuing decline in index of area of occupancy?               | NA                |
| Is there an [observed, inferred, or projected] continuing decline in number of populations?                    | NA                |
| Is there an [observed, inferred, or projected] continuing decline in number of locations*?                     | NA                |
| Is there an [observed, inferred, or projected] continuing decline in [area, extent and/or quality] of habitat? | NA                |
| Are there extreme fluctuations in number of populations?   | NA                |
| Are there extreme fluctuations in number of locations*?  | NA                |
| Are there extreme fluctuations in extent of occurrence?  | NA                |
| Are there extreme fluctuations in index of area of occupancy?  | NA                |

### Number of Mature Individuals (in each population)

| Population | N Mature Individuals |
|------------|----------------------|
|            |                      |
|            |                      |
| Total      | 0                    |

\* 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 20 years or 5 generations, or 10% within 100 years]. | EXTIRPATED |
|--|------------|

**Threats (actual or imminent, to populations or habitats)**

|    |
|----|
| NA |
|----|

**Rescue Effect (immigration from outside Canada)**

|   |   |
|---|---|
| Status of outside population(s)? Global G4; USA N4. Declining across most of its USA range. Status in USA states: Alabama (S5), Arkansas (S4), Connecticut (S1), District of Columbia (SH), Florida (S3), Georgia (S4), Illinois (S3), Indiana (S2), Iowa (S3), Kansas (S3), Kentucky (S4), Louisiana (S3S4), <b>Maine (SX)</b> , Maryland (S3), Massachusetts (S1), <b>Minnesota (S2)</b> , Mississippi (S5), Missouri (S3S4), Nebraska (S1), <b>New Hampshire (S1)</b> , New Jersey (S1), New York (S3), North Carolina (S3), <b>Ohio (S1)</b> , Oklahoma (S3), Pennsylvania (S3S4), Rhode Island (SX), South Carolina (SNR), Tennessee (S4), Texas (S4), <b>Vermont (S1)</b> , Virginia (S4), West Virginia (S3), Wisconsin (S2S3): States bordering Canada are in bold type. (Natureserve last updated 2006.) |   |
| Is immigration known or possible?   | It is quite unlikely, but remotely possible |
| Would immigrants be adapted to survive in Canada?   | Possibly                                    |
| Is there sufficient habitat for immigrants in Canada?   | Probably                                    |
| Is rescue from outside populations likely?  | No  |

**Current Status**

|                                     |
|-------------------------------------|
| COSEWIC: Extirpated (November 2010) |
|-------------------------------------|

**Status and Reasons for Designation**

|   |  |
|---|--|
| <b>Status:</b><br>Extirpated  | <b>Alpha-numeric code:</b><br>Not applicable |
| <b>Reasons for designation at previous assessment (May 2001):</b><br>The Timber Rattlesnake once occupied much of the Niagara Escarpment and other regions of southern Ontario, but has not been seen in the province since 1941 despite intensive searches and the fact that it is easy to identify. |  |

**Applicability of Criteria**

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



### 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 (2010)

|                        |  |
|------------------------|--|
| 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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