

COSEWIC
Status Appraisal Summary

on the

Blanchard's Cricket Frog
Acris blanchardi

in Canada

ENDANGERED
2011

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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COSEWIC Assessment Summary

Assessment Summary – May 2011

Common name

Blanchard's Cricket Frog

Scientific name

Acris blanchardi

Status

Endangered

Reason for designation

This small frog is widespread, but declining rapidly, in the U.S. In Canada, it is known only from extreme southwest Ontario. There have been no confirmed records in Canada since the early 1970s despite frequent searches. However, there have been unconfirmed reports of the species as recently as the mid-1990s. Consequently, it is slightly possible that the species still exists in Canada. Threats to this frog include destruction and alteration of its habitat and effects of pesticides, herbicides and other contaminants.

Occurrence

Ontario

Status history

Designated Endangered in April 1990. Status re-examined and confirmed in May 2001 and May 2011.



COSEWIC Status Appraisal Summary

Acris blanchardi
Blanchard's Cricket Frog
Jurisdictions: Ontario

Rainette grillon de Blanchard

Current COSEWIC Assessment:

Status category:

XT E T SC

Date of last assessment:
May 2011

Reason for designation at last assessment:

Due to continuing declines in the extent of the species' occurrence, area of occupancy, extent of habitat and number of individuals, any remaining individuals of this frog species would exist in a single small population on Pelee Island.

New reason for designation (only if different from above):

This small frog is widespread, but declining rapidly, in the U.S. In Canada, it is known only from extreme southwest Ontario. There have been no confirmed records in Canada since the early 1970s despite frequent searches. However, there have been unconfirmed reports of the species as recently as the mid-1990s. Consequently, it is slightly possible that the species still exists in Canada. Threats to this frog include destruction and alteration of its habitat and effects of pesticides, herbicides and other contaminants.

Criteria applied at last assessment: B1+2abcde; C2b; D1

If earlier version of criteria was applied¹, provide correspondence to current criteria:
B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(ii); D1

If different criteria are proposed based on new information, provide explanation:
The new proposed criteria are the following: B1ab(iii)+2ab(iii); D1.

B1ab(i,ii,iv,v) and B2ab(i,ii,iv,v) have been dropped as there is no evidence of continuing decline in EO, IAO, number of locations, or number of mature individuals since the last report (no confirmed records for this species since the early 1970s). C2a(ii) has been dropped as there is no evidence of decline in number of mature individuals in the past 10 years.

If application of current specific criteria is not possible, provide explanation:
NA

¹ An earlier version of the quantitative criteria was used by COSEWIC from October 1999 to May 2001 and is available on the COSEWIC website: http://www.cosewic.gc.ca/eng/sct0/original_criteria_e.cfm

Recommendation: Update to the status report NOT required (wildlife species' status category remains unchanged)

Reason:

- sufficient information to conclude there has been no change in status category
 not enough additional information available to warrant a fully updated status report

Evidence (indicate as applicable):

Wildlife species:

Change in eligibility, taxonomy or designatable units: yes no

Explanation:

The former subspecies, *Acris crepitans blanchardi*, in the northern U.S. Midwest and Canada has been re-classified as Blanchard's Cricket Frog, *Acris blanchardi* Harper 1947, based on DNA sequence data from the genes cytochrome b, tyrosinase, beta-crystallin and POMC by Gamble *et al.* (2008). Based on DNA microsatellite variation, Beauclerc (2009) found that populations residing in previously glaciated regions in the north of the range were genetically depauperate compared to more southerly populations. She suggested that the Canadian populations, which were not examined, would be similar genetically to populations in Ohio and Michigan, which thus could be used as sources for possible re-introduction of the species into Canada.

Range:

Change in extent of occurrence (EO): yes no unk
Change in area of occupancy (AO) : yes no unk
Change in number of known or inferred current locations: yes no unk
Significant new survey information yes no

Explanation:

No additional data from Canada since previous assessment; thus estimates of the Canadian range remain unchanged.

Population Information:

Change in number of mature individuals: yes no unk
Change in total population trend: yes no unk
Change in severity of population fragmentation: yes no unk
Change in trend in area and/or quality of habitat: yes no unk
Significant new survey information yes no

Explanation:

No additional data on the Canadian population since previous assessment. Last confirmed records were in 1970s on Pelee Island. There have been several anecdotal records from 1980s and 1990s. Most of these records were based on calls (COSEWIC 2001, Environment Canada 2010).

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

Explanation:

There are no additional data on Canadian populations since the previous assessment, and thus the nature and severity of threats in Canada must be considered unchanged. However, there is further information concerning a variety of potential threats facing U.S. populations (Gray and Brown 2005). Based on studies of cricket frog populations in Illinois, Beasley *et al.* (2005) concluded that the tendency for landowners to alter naturally occurring shallow-banked ponds by excavating the banks to make them deeper deprives the frogs of the gently sloping banks they require and allows predatory fish more easily to become established (see also Irwin 2005). Furthermore, the widespread practice of removing aquatic vegetation from ponds both contaminates sites with herbicides and is associated with increased parasitic trematode infections among the frogs. Russell *et al.* (2002) have implicated chemical contamination by chlorinated organic pesticides, such as hexachlorobenzene, heptachlor epoxide, dieldrin and DDE, in declines in cricket frogs in northern Ohio. Reeder *et al.* (2005) showed that endocrine disruption attributable to the presence of organochloride pesticides and PCBs likely contributed to the decline of cricket frogs in Illinois. Steiner and Lehtinen (2008) have found infection by the lethal amphibian fungal pathogen, *Batrachochytrium dendrobatidis*, in Blanchard's Cricket Frogs in the U.S. Midwest.

Protection:*Change in effective protection:*yes X no

Explanation:

Blanchard's Cricket Frog has been listed as an endangered species under the Ontario *Endangered Species Act* (OMNR, 2007). A Recovery Plan for the cricket frog focuses on renewed field surveys, mapping of habitats and potential re-introduction (Kellar *et al.* 1997).

Rescue Effect:*Evidence of rescue effect:*yes no X

Explanation:

Adjacent U.S. populations have continued to decline (Brodman *et al.* 2002, Gray and Brown 2005, Gray *et al.* 2005, Lehtinen 2002, Lehtinen and Skinner 2006), making rescue entirely unlikely.

Quantitative Analysis:*Change in estimated probability of extirpation:*yes X no unk

Details:

There have been no records of Blanchard's Cricket Frog in Canada since the previous assessment. Given the tiny area occupied by this frog, its loud distinctive mating call and the large number of naturalists and biologists who visit Pelee Island annually, it seems more probable that the species is extirpated from Canada than was the case at the previous assessment.

Summary and Additional Considerations:

There have been no records of Blanchard's Cricket Frog in Canada since the previous assessment. The species has declined throughout the northern portion of its range in the United States and shows no sign of recovery. The species may be extirpated in Canada but does not yet satisfy the guidelines for declaring it so. It has been less than 50 years since the last confirmed records, and suitable habitat may still exist. Although there have been several targeted surveys, the small size and cryptic nature of the frog allow a miniscule probability that it still occurs in Canada. Its status in Canada (endangered) thus remains unchanged.

List of authorities contacted to review the status appraisal:

The following persons responded to an email query sent in February 2010:

Kaela B. Beauclerc. Natural Resources DNA Profiling and Forensic Centre, Trent University, Peterborough, Ontario

James P. Bogart. Department of Integrative Biology, University of Guelph, Guelph, Ontario.

James H. Harding. Dept. of Zoology, Michigan State University Museum, East Lansing, Michigan

Bob Johnson. Curator of Amphibians and Reptiles, Toronto Zoo, Toronto, Ontario

Ross MacCulloch. Centre for Biodiversity and Conservation Biology, Royal Ontario Museum, Toronto, Ontario

The following persons were written to via email in February 2010, but did not respond:

Michael Oldham. Ontario Natural Heritage Information Centre, Ministry of Natural Resources, Peterborough, Ontario

Barbara Slezak. Canadian Wildlife Service, Downsview, Ontario.

Jenny Pearce and Jeff Hathaway. Sciensational Sssnakes!! Oro-Medonte, Ontario

Ben Porchuk. Pelee Island, Ontario

Sources of information:

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TECHNICAL SUMMARY

Acris blanchardi

Blanchard's Cricket Frog

Range of occurrence in Canada: Ontario

rainette grillon de Blanchard

Demographic Information

Generation time	1 yr
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?	Unlikely, may be extirpated
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?	No
Are there extreme fluctuations in number of mature individuals?	No

Extent and Occupancy Information

Estimated extent of occurrence	Likely 0 km ²
Index of area of occupancy (IAO) (Always report 2x2 grid value).	Likely 0 km ²
Is the total population severely fragmented?	No
Number of locations*	0 or 1
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?	Yes
Are there extreme fluctuations in number of populations?	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 population)

Population	N Mature Individuals
	0
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].	NA
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Threats (actual or imminent, to populations or habitats)

Loss of habitat and very small population size.

Rescue Effect (immigration from outside Canada)

Status of outside population(s)? Declining in northern U.S. states (Michigan, Indiana, West Virginia, Wisconsin), stable elsewhere (Natureserve; Jan. 2011), although the Natureserve site seems out of date on this species.	
Is immigration known or possible?	Unlikely
Would immigrants be adapted to survive in Canada?	Possibly
Is there sufficient habitat for immigrants in Canada?	Unknown
Is rescue from outside populations likely?	No

Current Status

COSEWIC: Endangered (May 2011)

Status and Reasons for Designation

Status: Endangered	Alpha-numeric Code: B1ab(iii)+2ab(iii); D1
Reasons for Designation: This small frog is widespread, but declining rapidly, in the U.S. In Canada, it is known only from extreme southwest Ontario. There have been no confirmed records in Canada since the early 1970s despite frequent searches. However, there have been unconfirmed reports of the species as recently as the mid-1990s. Consequently, it is slightly possible that the species still exists in Canada. Threats to this frog include destruction and alteration of its habitat and effects of pesticides, herbicides and other contaminants.	

Applicability of Criteria

Criterion A (Decline in Total Number of Mature Individuals): Not applicable. No data on trends in abundance.
Criterion B (Small Distribution Range and Decline or Fluctuation): Meets Endangered B1ab(iii)+2ab(iii) as both the extent of occurrence (EO) and the index of area of occupancy (IAO) are estimated at 0 km ² because there have been no confirmed records of the species in Canada since its last assessment; there are fewer than 5 locations; and there has been a continuing decline in area, extent and quality of habitat.
Criterion C (Small and Declining Number of Mature Individuals): Not applicable as there is no evidence of continuing population decline.
Criterion D (Very Small or Restricted Total Population): Meets Endangered D1 as the total population contains fewer than 250 mature individuals.
Criterion E (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 (2011)

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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