

Ontario Species at Risk Evaluation Report

for

Broad-banded Forestsnail (*Allogona profunda*)

Committee on the Status of Species at Risk in Ontario
(COSSARO)

Assessed by COSSARO as ENDANGERED

MAY 2015

Final

Escargot-forestier écharge (*Allogona profunda*)

L'escargot-forestier écharge (*Allogona profunda*) est un gros escargot terrestre qui fait approximativement 3 cm de diamètre. Il vit dans des forêts de feuillus en Ontario et on le retrouve maintenant seulement dans le parc national de la Pointe-Pelée ainsi que sur l'île Pelée. Il existe des registres historiques à partir des plus petites îles du lac Érié et de plusieurs sites continentaux à proximité de Leamington, d'Oxley et de Chatham. Il y a peu d'information sur la biologie de l'escargot-forestier écharge. Il peut parvenir à maturité dès l'âge d'un an et vivre pendant au moins quatre ans. Il a probablement besoin d'un habitat humide pour s'alimenter, se déplacer et se reproduire. Les individus parcourent probablement quelques mètres à peine au cours de leur existence.

L'escargot-forestier écharge n'a pas été observé dans différents sites historiques, malgré des recherches ciblées. Il peut être disparu de ces sites en raison de la perte d'habitat au fil du temps sur le continent (c'est-à-dire le défrichage des forêts) et de la dégradation de l'habitat sur les plus petites îles de l'ouest du lac Érié provoquée par de fortes densités de cormorans à aigrettes nicheurs.

L'escargot-forestier écharge est évalué comme une espèce en voie de disparition en raison de sa répartition très limitée dans le sud-ouest de l'Ontario, où il a été aperçu à seulement deux emplacements (la Pointe-Pelée et l'île Pelée). Il a disparu récemment de plusieurs endroits. Bien que la plupart des occurrences connues soient dans des zones protégées, on projette un déclin continu, sur les plans de la superficie, de l'étendue et de la qualité de l'habitat et au niveau du nombre d'individus, qui est probablement attribuable aux activités récréatives, aux espèces envahissantes et à l'établissement récent du dindon sauvage.

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Executive summary

Broad-banded Forestsnail (*Allogona profunda*) is a large terrestrial snail that is approximately 3 cm in diameter. It lives in deciduous forests in Ontario and now occurs only at Point Pelee National Park and on Pelee Island. There are historical records from the smaller Lake Erie islands and several mainland sites near Leamington, Oxley, and Chatham. Little information is available about the biology of the Broad-banded Forestsnail. It may reach maturity as early as one year, and can live for at least four years. It likely requires damp habitat to feed, move, and reproduce. Individuals probably move only a few metres over the course of their lives.

Broad-banded Forestsnail has not been recorded at several historical sites despite targeted searches. It may have been lost from these sites due to historic habitat loss on the mainland (i.e. forest clearing) and habitat degradation on the smaller Western Lake Erie Islands from high nesting densities of Double-breasted Cormorants.

Broad-banded Forestsnail is assessed as Endangered because it has a very small range in southwestern Ontario occurring at only two locations (Point Pelee and Pelee Island). It has recently been lost from several locations. Although most of the known occurrences are within protected areas, there is a projected continuing decline in area, extent, and quality of habitat and number of individuals due to probably impacts of recreational activities, invasive species and the recent establishment of Wild Turkeys.

1. Background information

1.1. Current designations

- GRANK: G5 (NatureServe 2015)
- NRANK Canada: N1
- COSEWIC: Endangered (November 2014)
- SARA: No status, no schedule
- ESA 2007: Not assessed
- SRANK: S1

1.2. Distribution in Ontario

The Broad-banded Forestsnail's current distribution is restricted to Point Pelee National Park and Pelee Island. There are currently two locations for this species, comprised of five Element Occurrences (one at Point Pelee and four on Pelee Island).

There are historical records from the smaller Lake Erie islands and several mainland sites near Leamington, Oxley, and Chatham.

1.3. Distribution and status outside Ontario

Broad-banded Forestsnail is distributed from the Upper Peninsula in Michigan south to northern Alabama and from Iowa and Kansas east to Pennsylvania and North Carolina. It generally appears to be secure in the core part of its range (Kentucky, Tennessee, Virginia) and vulnerable or imperiled at the periphery.

1.4. Ontario conservation responsibility

Less than 0.1% of the global range of the Broad-banded Forestsnail is in Ontario (COSEWIC 2014). The percentage of global population is unknown, but likely very low given its sub-national status compared to other jurisdictions.

1.5. Direct threats

Historical and recent threats included forest clearing and Double-crested Cormorants (*Phalacrocorax auritus*). Mainland sites and those on Pelee Island were likely more affected by forest clearing, while those on islands in Lake Erie have been impacted by habitat changes resulting from high densities of nesting Double-crested Cormorants. Threats to the current locations include trampling from recreational use of trails, invasive species and introduced Wild Turkeys (*Meleagris gallopavo*) and Ring-necked Pheasants (*Phasianus colchicus*).

1.6. Specialized life history or habitat use characteristics

Little information is available about Broad-banded Forestsnail biology, but it does not appear to have any specialized life history traits or require special habitats.

2. Eligibility for Ontario status assessment

2.1. Eligibility conditions

2.1.1. Taxonomic distinctness

Yes

2.1.2. Designatable units

No. There is only one population in Ontario and Canada.

2.1.3. Native status

Yes

2.1.4. Occurrence

Currently occurs in Ontario. Specimens were collected in 2013 from Point Pelee National Park and Pelee Island.

2.2. Eligibility results

Broad-banded Forestsnail (*Allogona profunda*) is eligible for status assessment in Ontario.

3. Ontario status assessment

3.1. Application of endangered/threatened status in Ontario

3.1.1. Criterion A – Decline in total number of mature individuals

Insufficient information. The number of mature individuals is unknown.

3.1.2. Criterion B – Small distribution range and decline or fluctuation

Meets Endangered B1ab(iii,v)+B2ab(iii,v). Both the EO (116 km²) and IAO (32 km²) are well below the thresholds for Endangered (<5,000 km² and <500 km², respectively), the species is found in 2-5 locations, and there is a projected continuing decline in area, extent, and quality of habitat (iii), which is commensurate with a projected decline in number of mature individuals (v). This projected continuing decline is due high levels of recreational use, invasive species and problematic native species. In particular, newly established populations of Wild Turkey may impact this species.

3.1.3. Criterion C – Small and declining number of mature individuals

Insufficient information. The number of mature individuals is unknown.

3.1.4. Criterion D – Very small or restricted total population

Insufficient information and does not apply. D1 is not applicable as the number of mature individuals is unknown and D2 Threatened also is not applicable. Although the IAO (32 km²) is slightly above the less than 20 km² threshold and the number of locations is below the typical threshold (= 5), the impact of the major threats are not expected to act within a short time frame (1-2 generations).

3.1.5. Criterion E – Quantitative analysis

Insufficient information.

3.2. Application of Special Concern in Ontario

Not applicable. Qualifies as Endangered.

3.3. Status category modifiers

3.3.1. Ontario's conservation responsibility

Not applicable. Broad-banded Forestsnail is ranked G5 and there is less than 25% of the global range in Ontario. The percentage of the global population is unknown. Although Canadian populations of Broad-banded Forestsnail may be genetically isolated from other populations and have significance for conservation, there is insufficient information to use this modifier.

3.3.2. Rescue effect

Not applicable. Rescue from populations in the U.S. is unlikely.

3.4. Other status categories

3.4.1. Data deficient

Not applicable.

3.4.2. Extinct or extirpated

Not applicable.

3.4.3. Not at Risk

Not applicable.

4. Summary of Ontario status

Broad-banded Forestsnail (*Allogona profunda*) is classified as Endangered in Ontario.

Broad-banded Forestsnail is assessed as Endangered because it has a very small range in southwestern Ontario. Presently it is only known from Point Pelee and Pelee Island, and has recently been lost from several locations. Although most of the known occurrences are within protected areas there is a projected continuing decline in area, extent, and quality of habitat and number of individuals due to probable impacts of recreational activities, invasive species and the recent establishment of Wild Turkeys.

Meets criterion B1ab(iii,v)+2ab(iii,v) for Endangered. Both the EO (116 km²) and IAO (32 km²) are well below the thresholds for EN (<5,000 km² and <500 km², respectively), the species is found in 2-5 locations, and there is a projected continuing decline in area, extent, and quality of habitat (iii), with a commensurate projected decline in number of mature individuals (v). This projected continuing decline is due high levels of recreational use, invasive species and problematic native species. In particular, newly established populations of Wild Turkey are suspected to impact this species.

5. Information sources

COSEWIC. 2014. In Press. [COSEWIC assessment and status report on the Broad-banded Forestsnail *Allogona profunda* in Canada](#). Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 53 pp.

NatureServe. 2015. [NatureServe Explorer: An online encyclopedia of life](#) [web application]. Version 7.1. NatureServe, Arlington, Virginia. [website accessed 10 May 2015].

Wisconsin Department of Natural Resources. 2015. [Broad-banded Forestsnail \(*Allogona profunda*\)](#).

Appendix 1: Technical summary for Ontario

Species: Broad-banded Forestsnail (*Allogona profunda*)

Demographic information

Demographic attribute	Value
Generation time. Based on average age of breeding adult: age at first breeding = X year; average life span = Y years.	Age of first breeding: 1 year Average life span: 3-4 years
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Possibly
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	Unknown
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over any 10 years, or 3 generations, over a time period including both the past and the future.	Unknown
Are the causes of the decline a. clearly reversible and b. understood and c. ceased?	a. No b. No c. Yes/No (habitat loss yes, others no) or Unknown
Are there extreme fluctuations in number of mature individuals?	No

Extent and occupancy information in Ontario

Extent and occupancy attributes	Value
Estimated extent of occurrence. (Request value from MNR or use http://geocat.kew.org/)	116 km ²
Index of area of occupancy (IAO). (Request value from MNR or use http://geocat.kew.org/)	32 km ² Historical 72 km ²

Is the total population severely fragmented? (i.e. is >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 distance larger than the species can be expected to disperse?)	a. No b. No
Number of locations (<i>as defined by COSEWIC</i>).	2-5 Likely 2 (Pelee Island and Point Pelee)
Number of NHIC Element Occurrences (<i>Request data from MNR</i>)	5
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	Yes
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	Yes
Is there an observed, inferred, or projected continuing decline in number of populations?	Yes
Is there an observed, inferred, or projected continuing decline in number of locations?	Yes/ Unknown
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 sub-population or total population (if known)

Unknown.

Quantitative analysis (population viability analysis conducted)

Probability of extinction in the wild is unknown. No PVA conducted.

Rescue effect for Forestsnail

Rescue effect attribute	Likelihood
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Possible but unlikely
Would immigrants be adapted to survive in Ontario?	Probably

Is there sufficient suitable habitat for immigrants in Ontario?	Possibly
Is the species of conservation concern in bordering jurisdictions?	Perhaps not but not ranked (SNR) in several adjacent jurisdictions
Is rescue from outside populations reliant upon continued intensive recovery efforts?	No

Appendix 2: Adjoining jurisdiction status rank and decline

Information regarding rank and decline of Broad-banded Forestsnail

Jurisdiction	Subnational rank	Population trend	Sources
Ontario	S1	declining	COSEWIC 2014
Quebec	Not present	n/a	n/a
Manitoba	Not present	n/a	n/a
Michigan	SNR	n/a	n/a
Minnesota	SNR	n/a	n/a
Nunavut	Not present	n/a	n/a
New York	SNR	n/a	n/a
Ohio	SNR	n/a	n/a
Pennsylvania	S2S3	n/a	n/a
Wisconsin	S2S3	Special Concern	Wisconsin Department of Natural Resources 2015

Acronyms:

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

COSSARO: Committee on the Status of Species at Risk in Ontario

ESA: Endangered Species Act

GRANK: global conservation status assessments

IAO: index of area of occupancy

MNRF: Ministry of Natural Resources and Forestry

NHIC: Natural Heritage Information Centre

NNR: Unranked

NRANK: National conservation status assessment

SARA: Species at Risk Act

SNR: unranked

SRANK: subnational conservation status assessment

S1: Critically imperiled

S2: Imperiled

S3: Vulnerable