

COSSARO Candidate Species at Risk Evaluation
for
Pink Milkwort (*Polygala incarnata*)

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



November 2009

Ce document décrit l'évaluation du polygale incarnat par le Comité de détermination du statut des espèces en péril en Ontario. Cette évaluation déterminera si cette espèce sera protégée en vertu de la *Loi sur les espèces en voie de disparition*.

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PART 1

Current designations:

GRANK – G5 - Secure
NRANK Canada – N1 – Critically imperiled
COSEWIC – Endangered (May 2000)
SARA – Endangered (June 2003)
General Status Canada – At Risk
ESA 2007 – Endangered
SRANK – S1
General Status Ontario – At Risk

Distribution and status outside Ontario:

The species is restricted to North America and occurs from Delaware to Florida in the east and from Wisconsin and Iowa, south to Texas in the western part of its range. It is most abundant in the central plains and along the states of the southeastern seaboard. It is extirpated from Michigan and New York and there are only historic records from New Jersey and Pennsylvania (NatureServe, 2009).

Eligibility criteria:

Native Status

Yes. There is no evidence to suggest that this species is not native in Ontario.

Taxonomic Distinctness

Yes. This is a well defined species with no taxonomic problems.

Designatable Units

There is a single DU in Ontario and Canada because the species only occurs in two locations in southwestern Ontario, both within the Mixedwood Plains Ecoregion in Ontario.

Priority-setting criteria:

Recent Arrival

No. Native populations of this species were first reported from Ontario in 1823 (Macoun, 1893). There is no evidence to suggest that it is a recent arrival.

Non-resident

No.

Primary Criteria (rarity and declines):

1. Global Rank

Not in any category. G5

2. Global Decline

Not in any category. There is no good evidence of widespread declines, although some populations near the northern edge of its range have declined or disappeared.

3. Northeastern North America Ranks

END. The species is ranked in 13 of 29 northeastern North American jurisdictions. It has an S-rank of S1, S2, SH or in 11 of the 13 jurisdictions (85%) as follows: Delaware (S1), Illinois (S1), Indiana (S1), Iowa (S2), Maryland (S2S3), Michigan (SX), New Jersey (SH), New York (SX), Ohio (S2), Pennsylvania (SH), Wisconsin (S1).

4. Northeastern North America Decline

THR. It is ranked as (extirpated) from Michigan and New York and historical (SH) in New Jersey and Pennsylvania so may no longer occur in 4 out of 13 NE North America jurisdictions (32.5%) where it has been recorded (NatureServe, 2009).

5. Ontario Occurrences

END. S-rank in Ontario is S1. There are 4 known extant populations in Ontario in two separate locations (Ojibway Prairie Provincial Nature Reserve and Walpole Island First Nation). Historically, it has been reported from two other sites in Niagara and Essex County (Macoun, 1893).

6. Ontario Decline

Special Concern. There are 4 extant occurrences, and the species is experiencing a decline in the number of populations, but there have never been more than 8 populations in known Canada, so the decline is approximately 30-50%.

7. Ontario's Conservation Responsibility

Not in any category. The Ontario portion of the global range extent is <10%.

Secondary Criteria (threats and vulnerability):

1. Population Sustainability

Not in any Category. Loss of populations through habitat loss and degradation is continuing, but there is no evidence for reproductive or recruitment failure.

2. Lack of Regulatory Protection for Exploited Wild Populations

Not in any category. This is not an exploited species.

3. Direct Threats

THR. Loss of habitat through mowing and continuous land use change is ongoing at one site on Walpole Island First Nation (WIFN), which represents 25% of populations,

and the population here may not survive. One other WIFN site may already be extirpated. Reduction in habitat quality owing to encroachment by woody species as a result of lack of fire and invasion and competition by exotic species is projected at all sites.

4. Specialized Life History or Habitat-use Characteristics

THR. The species is at a high level of risk from environmental change due to its narrow habitat tolerances and because it is restricted to Tallgrass Prairie habitats, which are provincially rare (S1) vegetation communities (Bakowsky, 1995). Furthermore, for an annual, this species produces relatively few fruits per year (COSEWIC, 2009).

COSSARO Criteria Met (primary/secondary)

Endangered – [2/0]

Threatened – [1/2]

Special concern – [1/0]

Summary

Pink Milkwort (*Polygala incarnata*) is a slender annual found only in tallgrass prairie habitats. It is known to be extant at one population at Ojibway Prairie Nature Reserve and at 3 populations at Walpole Island First Nation (WIFN). It is likely to be extirpated at one of the WIFN populations due to habitat change (mowing and trampling) and is likely extirpated at another population where it has not been recorded since 1996. Direct threats to the species include loss of habitat and habitat degradation as a result of encroachment by woody species (due to lack of fire) and invasion by exotic species.

Information Sources

Bakowsky W. 1995. Community type S-ranks. Natural Heritage Information Centre. Ministry of Natural Resources. 11 pp.

COSEWIC. 2009. COSEWIC status report on Pink Milkwort, *Polygala incarnata*. 2-month Interim Report. 21 pp.

Macoun, J. 1893. Notes on the flora of the Niagara Peninsula and shores of Lake Erie. Hamilton Association Journal Proceedings 9: 78-86.

NatureServe Explorer. 2009. An Online Encyclopedia of Life. *Polygala incarnata*. Accessed on 19 Oct 2009. <http://www.natureserve.org/explorer/> Data on website updated as of 2 February 2009.

Wildspecies. 2009. The general status of species in Canada. Web site: <http://www.wildspecies.ca/wildspecies2005/index.cfm?lang=e> [accessed October 2009] [Link no longer active.]

Appendix 1: Northeastern North America rank, status and decline

Location	Rank
CT	Not present
DE	S1
IL	S1
IN	S1
IA	S2
KY	S4?
LB	Not present
MA	S2S3
MB	Not present
MD	Not present
ME	Not present
MI	SX
MN	Not present
NB	Not present
NF	Not present
NH	Not present
NJ	SH
NS	Not present
NY	SX
OH	S2
ON	S1
PA	SH
PE	Not present
QC	Not present
RI	Not present
VA	S4
VT	Not present
WI	Not present
WV	Not present

Occurs as a native species in 13 of 29 northeastern jurisdictions = 45%
Srank or equivalent information available for 13 of 13 jurisdictions = 100%
S1, S2, SH, or in 11 of 13 = 85%

PART 2 Ontario evaluation using COSEWIC criteria

Regional (Ontario) COSEWIC criteria assessment

Criterion A – Declining population

No. There is no evidence of a substantial population decline in the last 10 years. Extirpated populations are small compared with the main populations.

Criterion B – Small distribution and decline or fluctuation

Yes (END 1,2, (a) (b) ii, iii, iv). The extent of occurrence is 52 km² and the Area of Occupancy index is 20 km² based on 2 × 2 km squares. There are 4 (or possibly 3) extant locations in Ontario and continuing decline is observed, and projected in i) area of occupancy; ii) area; extent and quality of habitat; and iv) number of populations.

Criterion C – Small population size and decline

Yes (END 2 (a) ii) . The total number of mature individuals is about 1,800 of which 1,700 (94%) occur in one population. A continuing decline is projected in the number of individuals due to loss in the extent and quality of habitat.

Criterion D – Very small or restricted

Yes (THR (2)). The IAO is 20 km², but the actual area occupied is much less than this. The extremely limited distribution, the annual life history, and the concentration of most individuals in a single population suggest that the species is vulnerable to sudden stochastic events such as a late season prairie fire.

Criterion E – Quantitative analysis

No. No data available.

Rescue effect

No. Short distance dispersal, very limited suitable habitat and extirpation of the species from the neighbouring state of Michigan make rescue extremely unlikely.