Ontario Species at Risk Evaluation Report for Rusty Blackbird (*Euphagus carolinus*)

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

Assessed by COSSARO as Special Concern

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Final

Quiscale rouilleux (*Euphagus carolinus*)

Le quiscale rouilleux est un quiscale de taille moyenne au bec mince. Les mâles reproducteurs sont d'un noir de jais, mais, en hiver, les mâles et les femelles arborent un plumage dans les teintes de roux. Le quiscale rouilleux niche dans toutes les provinces et tous les territoires du Canada. Aux États-Unis, c'est un oiseau nicheur commun en Alaska, qui niche parfois aussi dans certains états du Nord. L'aire de reproduction du quiscale rouilleux en Ontario se concentre dans les écozones que constituent les basses terres de la baie d'Hudson et le Bouclier boréal. On a aussi observé des nids dispersés le long de la frontière Sud de l'écozone du Bouclier boréal, notamment dans l'Algonquin Park et sur l'île St-Joseph. Le quiscale rouilleux se reproduit dans les forêts humides, entre autres près des marais, des tourbières oligotrophes, des fondrières de mousse et des étangs de castors. La responsabilité de l'Ontario à l'égard de la conservation de l'espèce est élevée, puisque la taille estimée de la population de quiscales rouilleux en Ontario durant la saison de reproduction représente environ 23 % de la population mondiale.

Le quiscale rouilleux migre sur de courtes distances, se déplaçant souvent en volée mixte avec les carouges à épaulettes et les quiscales bronzés. En hiver, son aire de répartition couvre l'essentiel du Centre et de l'Est des États-Unis. Il passe l'hiver près des marécages, dans les forêts humides, aux abords d'étangs et souvent dans les fourrages des terres agricoles.

Depuis 2007, le quiscale rouilleux figure sur la liste rouge de l'IUCN à titre d'espèce vulnérable en raison du déclin de sa population. Depuis 1970, la population nord-américaine a connu une baisse progressive d'environ 90 %. Les résultats à court terme indiquent un déclin annuel de 3,5 % de 2002 à 2012, soit une baisse générale de 70 % en dix ans. Au Canada, l'espèce est considérée comme étant préoccupante. On attribue le déclin du quiscale rouilleux à la perte de son habitat et aux programmes d'extermination dans son habitat hivernal, où il se regroupe en grand nombre.

De même, le quiscale rouilleux est considéré comme une espèce préoccupante en Ontario vu le déclin historique qui n'est peut-être pas encore terminé. Bien que l'espèce soit toujours relativement commune en Ontario, la population mondiale a connu une forte baisse. La responsabilité de l'Ontario à l'égard de la conservation de l'espèce est élevée, puisqu'environ 23 % des adultes reproducteurs vivent dans la province.

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Executive summary

Rusty Blackbird is a medium-sized blackbird with a slender bill. Breeding males are dark glossy black. In winter, both males and females have rusty-coloured feathers. It breeds across Canada in every province and territory. In the U.S. it is a common breeding bird in Alaska, with occasional nesting in some northern states. The breeding range of Rusty Blackbird in Ontario is concentrated in the Hudson Bay Lowlands and northern Boreal Shield ecozones. Scattered records of nesting also occur along the southern edge of the Boreal Shield ecozone including Algonquin Park and St. Joseph Island. It breeds in wet forests, including areas with fens, bogs, muskeg, and beaver ponds. Ontario has a high conservation responsibility for this species. The estimated population size of the Rusty Blackbird in Ontario during breeding season represents approximately 23% of the global population.

Rusty Blackbird is a short-distance migrant often travelling in mixed flocks with Red-winged Blackbirds and Common Grackles. Its winter range includes most of the central and eastern United States. The Rusty Blackbird winters in swamps, wet woodlands, and pond edges, and often forages on agricultural lands.

Rusty Blackbird has been listed as Vulnerable on the IUCN Red List of Threatened Species since 2007 because of a declining population. The North American population has undergone a long-term decline of approximately 90% since 1970. Short-term results show a 3.5% annual decline, equating to an overall decline of 70% from 2002-2012. It is assessed as Special Concern in Canada. These declines may be a result of habitat loss and extermination programs in its wintering habitat where it forms large aggregations.

Rusty Blackbird is assessed as Special Concern in Ontario because of historic declines that may not have ceased. Although still relatively common in Ontario, the global population of this bird has undergone a steep decline. Ontario has a high conservation responsibility for this species with approximately 23% of the breeding population.

1. Eligibility for Ontario status assessment

1.1. Eligibility conditions

1.1.1. Taxonomic distinctness

Rusty Blackbird has long been recognized as a distinct species (American Ornithological Society 2017).

1.1.2. Designatable units

There are two recognized subspecies of Rusty Blackbird, although the morphological differences are very subtle. Most of the population in central and western North America is *E. c. carolinus*. The eastern subspecies, *E. c. nigrans,* breeds in Newfoundland and Labrador, Nova Scotia, the Magdalen Islands in Quebec and possibly eastern New Brunswick. It apparently winters in the Carolinas and Georgia, where it likely overlaps with *E. c. carolinus*. Only *E. c. carolinus* is expected to occur in Ontario.

The COSEWIC status report considers Rusty Blackbird as a single designatable unit (DU). The two subspecies have only limited segregation on the breeding and wintering ranges and are insufficiently discrete and evolutionarily significant to be considered as separate DUs (COSEWIC 2017).

1.1.3. Native status

Rusty Blackbird is native to Ontario. In the early part of the 20th century it was described as a common migrant in Ontario (Nash 1908).

1.1.4. Occurrence

The regular occurrence of Rusty Blackbird is well-documented from Ontario (Bird Studies Canada 2017).

1.2. Eligibility results

Rusty Blackbird (*Euphagus carolinus*) is eligible for status assessment in Ontario.

2. Background information

2.1. Current designations

- GRANK: G4 (NatureServe 2017)
- NRANK Canada: N4B
- COSEWIC: Special Concern (April 2017)
- SARA: Special Concern (Schedule 1)
- ESA 2007: Not at risk (2007)
  SRANK: S4B (ranked in 2009)

2.2. Distribution in Ontario

The breeding range of Rusty Blackbird in Ontario is concentrated in the Hudson Bay Lowlands and northern Boreal Shield ecozones. Scattered records of nesting also occur along the southern edge of the Boreal Shield including Algonquin Park and St. Joseph Island. During migration, Rusty Blackbird can be found throughout the province, and wintering birds are occasionally recorded from southern Ontario (COSEWIC 2017).

2.3. Distribution and status outside Ontario

Rusty Blackbird only occurs in North America. It breeds across the Atlantic Maritime, Boreal and Montane Cordillera ecozones of Canada. Approximately 86% of the global population breeds in Canada, and breeding records have been documented in every Canadian province and territory. In the U.S. it is a common breeding bird in Alaska, with occasional nesting in some northern states. The winter range includes most of the central and eastern United States. It is an irregular winter bird in extreme southern Canada, including Ontario.

Rusty Blackbird has been listed as Vulnerable on the IUCN Red List of Threatened Species since 2007 because of a declining population (BirdLife International 2017). It was not included on the Watch List for the 2016 State of North America's Birds, although it is approaching the threshold. The North American population has undergone a long-term decline of approximately 90% since 1970. Short-term results show a 3.5% annual decline, equating to an overall decline of 70% from 2002-2012 (Sauer, et al. 2014). It is listed as Special Concern in Canada (COSEWIC 2017), and as a Bird of Conservation Concern by the USFWS (Partners in Flight 2017). It has been suggested that Rusty Blackbird numbers have been experiencing a long-term decline since the 1850s (Avery 2013).

2.4. Ontario conservation responsibility

Ontario has a high conservation responsibility for the Rusty Blackbird. The estimated population size of the Rusty Blackbird in Ontario represents approximately 23% of the total population (1 million/ 4.4 million individuals) (COSEWIC 2017). In addition, density models indicate the Hudson Bay Lowlands in Ontario include some of the highest breeding densities for this species (COSEWIC 2017). The Canadian Eastern Boreal Region, which includes Ontario, has the highest conservation responsibility for this species (62%) (Partners in Flight 2017).

2.5. Direct threats

As a short-distant migrant, Rusty Blackbird faces a wide array of threats in its breeding, migration and winter habitat. The COSEWIC threats calculator identified seven threats, each with a low impact. Cumulatively, these seven threats result in an overall medium threat assessment to the Rusty Blackbird.

With the exception of forestry, none of these threats are impacting the Rusty Blackbird within its Ontario breeding range. Most threats that could impact birds that breed in Ontario occur within their migration stopover and wintering habitats outside of the province.

Five threats: logging and wood harvesting, housing and urban areas, annual and perennial non-timber crops, oil and gas drilling, and dams and water management/use, can reduce the quality and availability of breeding, migration and wintering habitats for Rusty Blackbird.

Agricultural and forestry effluents and hunting and collecting terrestrial animals have also been identified as threats. This includes potential exposure to agricultural pesticides such as granular carbofuran pesticides and DDT (both now banned). Neonicotinoids may also be impacting Rusty Blackbirds but this has not been confirmed. Rusty Blackbirds and other blackbirds such as Common Grackles (*Quiscalus quiscula*) and Red-winged Blackbirds (*Agelaius phoeniceus*) are subject to bird control programs in the southern U.S. with poisoned baits. The period of greatest decline in Rusty Blackbird coincides with the use of PA-14 Avian Stressing Agent, a product that is no longer used (COSEWIC 2017). High levels of mercury have also been found in Rusty Blackbirds, particularly those that breed in the boreal, but this threat was ranked as unknown (COSEWIC 2017).

Climate change is a potential threat to the Rusty Blackbird although the impact is unknown based on the threats calculator. The boreal wetlands of Canada where it breeds are likely to be affected by climate change (Avery 2013). Climate suitability in the southern portion of their range is low, and projected to decrease. Climate change may be causing a range retraction in Rusty Blackbirds, and the southern range appears to have retracted northward by about 143 km since 1966. (COSEWIC 2017).

2.6. Specialized life history or habitat use characteristics

Rusty Blackbird nests in wetland habitats that are common and widespread across its breeding range. In the winter it forages in agricultural fields and forests, and roosts in trees, fields and marshes. During migration and on its wintering grounds it forms large flocks, potentially making it vulnerable to human persecution or natural mortality events.

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

Does not apply. The threshold of 30% decline over the last 10 years is not met in Ontario.

Breeding Bird Survey (BBS) data from Ontario for 2004-2014 shows a change of minus 2.68%/year, which equals a 24% decline for this period (COSEWIC 2017). In more

recent BBS data from 2005-2015 from Ontario, this annual change is minus 0.82% with a credible interval for trend estimate of -7.69% to 11.83% (Patuxent Wildlife Research Center 2017). Interpretation of BBS data must also be tempered by the fact that much of the breeding habitat is north of BBS routes (Avery 2013).

A comparison of Rusty Blackbird distribution between the first (1981-1985) and second (2001-2005) Ontario Breeding Bird Atlas periods shows a non-significant decline of 5% in the probability of observation for the province (COSEWIC 2017). However, there were some regional differences. There was a significant decline in the probability of observation of 30% in the Southern Shield and 32% in the Northern Shield. In contrast, there was a significant 37% increase in the Hudson Bay Lowlands. This may reflect a northward shift in distribution, but conclusions could not be made as effort particularly in the north varied between the two atlases (Cadman, et al. 2007).

Christmas Bird Count (CBC) Data indicate the North American population has undergone a long-term decline of >90%. Short-term results show a 3.5% annual decline, equating to an overall decline of 70% from 2002-2012 (Sauer, et al. 2014). This decline is not as steep for CBC data from Ontario, but this Ontario data represents a small fraction of the population during winter.

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

Does not apply. Range exceeds all thresholds. Extent of occurrence exceeds 20,000 km^2 and index of area of occupancy exceeds 2,000 km^2.

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

Does not apply. Number of mature individuals exceeds all thresholds. The population of adult birds in Ontario is estimated to be one million (COSEWIC 2017).

3.1.4. Criterion D – Very small or restricted total population

Does not apply. Population exceeds all thresholds. The population of adult birds in Ontario is estimated to be one million, index of area of occupancy exceeds 2,000 $km^{2,}$ and there are greater than five locations (COSEWIC 2017).

3.1.5. Criterion E – Quantitative analysis

Insufficient information. Analysis not conducted.

3.2. Application of Special Concern in Ontario

Rusty Blackbird is a species of Special Concern in Ontario because it is not yet clearly secure in Ontario. Although drastic past declines may have apparently ceased in recent years, this species is close to meeting the threshold for Threatened if Breeding Bird Survey data from 2004-2014 are applied. The most recent breeding bird data from Ontario and the range-wide Christmas Bird Count indicate that this species could be increasing, but more time is needed to verify if the rapid past declines have ceased.

Ontario has a large proportion of the global population and maintaining healthy breeding populations is essential for this species to recover across its range. If recent trends continue and the population decline of Rusty Blackbird is reversed over the next decade, it will likely be categorized as not at risk when reassessed.

3.3. Status category modifiers

3.3.1. Ontario's conservation responsibility

Ontario has a high conservation responsibility for this species. The estimated population size of the Rusty Blackbird in Ontario represents approximately 23% of the total population (1 million/ 4.4 million) (COSEWIC 2017).

3.3.2. Rescue effect

Rescue effect is very likely because of the abundance of Rusty Blackbird in Quebec, Manitoba and other regions of Canada. However, it would be very unlikely that the extirpation of this species from Ontario would occur in isolation.

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

Rusty Blackbird (*Euphagus carolinus*) is assessed as Special Concern in Ontario because of historic declines that may not have ceased. Although still relatively common in Ontario, the North American population of this bird has undergone a long-term decline of approximately 90% since 1970. Although drastic past declines may have apparently ceased in recent years, this species is close to meeting the threshold for Threatened if Breeding Bird Survey data from 2004-2014 are applied. Ontario has a high conservation responsibility for this species, providing habitat for approximately 23% of the breeding population.

5. Information sources

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Appendix 1: Technical summary for Ontario

Species: Rusty Blackbird (*Euphagus carolinus*)

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.	2-3 years
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Yes observed decline based on Breeding Bird Survey (Ontario) and Christmas Bird Count (Canada).
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Unknown, population may now be increasing.
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	ON BBS data for 2004-2014 was -2.68%/year = 24% decline
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	Unknown, population may now be increasing.
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) 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 (EOO).	Unknown, but extent of occurrence greatrly exceeds 20,000 km^2.
Index of area of occupancy (IAO).	Unknown, but index of area of occupancy exceeds 2,000 km^2.
Is the total population severely fragmented?	a. No b. No

Extent and occupancy attributes	Value
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?	
Number of locations.	Unknown, but very large and much greater than 10
Number of NHIC Element Occurrences *Request data from MNRF.*	Unknown, but very large
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	No
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	No
Is there an observed, inferred, or projected continuing decline in number of populations?	Unknown
Is there an observed, inferred, or projected continuing decline in number of locations?	Unknown
Is there an observed, inferred, or projected continuing decline in [area, extent and/or quality] of habitat?	No
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)

Sub-population (or total population)	Number of mature individuals
Ontario	*1,000,000* (COSEWIC 2017)

Quantitative analysis (population viability analysis conducted)

Probability of extinction in the wild is unknown.

Threats

The COSEWIC threats calculator was prepared as part of the COSEWIC assessment (COSEWIC 2017). The calculator identified seven threats with a low impact. Cumulatively, these threats result in an overall medium threat to the Rusty Blackbird.

1. Logging & wood harvesting
2. Housing & urban areas

3. Annual & perennial non-timber crop
4. Hunting & collecting terrestrial animals
5. Agricultural & forestry effluents
6. Oil & gas drilling
7. Dams & water management/use

Rescue effect

Rescue effect attribute	Value
Status of outside population(s) most likely to provide immigrants to Ontario	Vulnerable on the IUCN Red List of Threatened Species since 2007 (BirdLife International 2017). Special Concern in Canada (COSEWIC 2017).
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Yes, but a decline in the Ontario population would probably be part of a range-wide decline
Would immigrants be adapted to survive in Ontario?	Yes
Is there sufficient suitable habitat for immigrants in Ontario?	Yes
Are conditions deteriorating in Ontario?	No, not in the core breeding range
Is the species of conservation concern in bordering jurisdictions?	Yes
Is the Ontario population considered to be a sink?	No
Is rescue from outside populations likely?	Yes

Sensitive species

Occurrences are not data sensitive in Ontario.

Appendix 2: Adjoining jurisdiction status rank and decline

Information regarding rank and decline for Rusty Blackbird (*Euphagus carolinus*)

Jurisdiction	Subnational rank	Population trend	Sources
Ontario	S4B	BBS short-term decline of -2.68%/year	(COSEWIC 2017) (NatureServe 2017)
Quebec	S3S4	BBS short-term decline of -2.61%/year	(COSEWIC 2017) (NatureServe 2017)
Manitoba	S3S4B	BBS short-term decline of -2.65%/year	(COSEWIC 2017) (NatureServe 2017)
Michigan	SNRN	Non-breeding	(NatureServe 2017)
Minnesota	SNRB	Non-breeding	(NatureServe 2017)
Nunavut	SUB	Unknown	(NatureServe 2017)
New York	S2B	Decreasing. Occupancy declining in Adirondack region	(McCormack 2012)
Ohio	SNA	Accidental	(NatureServe 2017)
Pennsylvania	S3N	Non-breeding	(NatureServe 2017)
Wisconsin	SNA	Accidental	(NatureServe 2017)

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
EO: element occurrence (as defined by NHIC)
EOO: extent of occurrence
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
S3: Vulnerable
S5: Secure
IUCN: International Union for Conservation of Nature and Natural Resources
CDSEPO: Le Comité de détermination du statut des espèces en péril en Ontario