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

Assessed June 2010 by COSSARO as Threatened

June 2010

(Incorporating February 2011 Edits)
Final
PART 1

COSSARO Candidate Species at Risk Evaluation Form – June 2010

Bobolink (Dolichonyx oryzivorus)

Current Designations:
GRANK – G5; last reviewed 18 Mar 2009
NRANK Canada – N5B; last reviewed 12 Jun 2000
COSEWIC — Threatened; April 2010
SARA – not listed (June 2010)
General Status Canada – Secure (4)
ESA 2007 – not listed
SRANK – S4
General Status Ontario – Secure (4)

Distribution and Status Outside Ontario:
The Bobolink is widely distributed in its breeding range across southern Canada from B.C. to Québec, the Maritimes and the island of Newfoundland, and in the U.S. from northeastern Washington across the northern Midwest states to New England. The wintering range includes eastern Bolivia, southwestern Brazil, Paraguay, and northeastern Argentina, and this bird may winter in small numbers west of the Andes on the coast of Peru.

ELIGIBILITY CRITERIA

Native Status
✓ Yes Prior to European settlement the centre of the range was associated with the tall-grass prairie of the Mississippi Valley. Therefore, in Canada, it would have been associated with tall-grass prairie habitat where it occurred primarily on the southern prairies and in southern Ontario (COSEWIC 2010).

Taxonomic Distinctness
✓ Yes No subspecies have been recognized for the Bobolink (American Ornithologists’ Union 1998)

PRIORITY-SETTING CRITERIA

Recent Arrival
✓ No
Non-resident
✓ No

PRIMARY CRITERIA (rarity and declines)

1. Global Rank
✓ Not in any category. (G5).

2. Global Decline
✓ Endangered. Breeding Bird Survey (BBS) data for 1966-2007 indicate a significant decline averaging 1.8 percent per year, which amounts to a 53% decline for the time period. BBS abundance (average number of birds per route) declined from around 6 in the late 1960s and early 1970s to 3-4 in 2000-2007 (NatureServe Feb 2011).

3. Northeastern North America Ranks
✓ Not in any category. Identified as S1, S2, SH or SX in 4 of 26 jurisdictions (16%).

4. Northeastern North America Decline
✓ Not in any category. Breeding Bird Survey data for the U.S. indicate long-term significant declines of 0.8%/yr from 1966-2007 (27% loss), but short-term non-significant declines of only 0.41%/yr from 1997-2007 (4% loss) (Sauer et al. 2008).

5. Ontario Occurrences
✓ Not in any category. Despite evidence of both long-term and short-term significant declines in abundance and evidence of range reduction in the range periphery in the Southern and Northern Shield regions of the Atlas of the Breeding Birds of Ontario (OBBA), the species remains widespread in Ontario. The Ontario population was estimated at 400,000 breeding pairs based on OBBA data (Blancher and Couturier 2007).

6. Ontario Decline
✓ Endangered North American Breeding Bird Survey data show significant declines in Ontario of 7.1%/yr from 1998-2008, or a loss of 52% of the population. The rate of decline in the past 10 yr has been more rapid than the overall decline from 1968-2008 (2.6%; loss of 65% of the population) (COSEWIC 2010). The BBS is considered appropriate for surveying Bobolink because surveys are carried out in open habitat where the species occurs, and birds are easily detected by their song and flight (COSEWIC 2010; J. Nocera, personal communication, 19 May 2010). Bobolink was recorded in 141 fewer squares (9.3%) in the second Ontario Breeding Bird Atlas than in the first; much of the decline was in the Southern and Northern Shield regions where the species occurs sporadically. The probability of observation showed a significant decline of 28% in all 5 regions between the two atlas periods; these declines were highest in the Southern Shield (28%) and Northern Shield (68%) but less in the Lake Simcoe-Rideau (5%) and Carolinian (10%) regions (Cadman et al. 2007.)
7. Ontario’s Conservation Responsibility

**Threatened** Bobolinks in Canada represent 28% of the global breeding population and 33% of the global breeding range (COSEWIC 2010). Ontario has an estimated 800,000 Bobolinks (Blancher and Couturier 2007), and the estimated population in Canada is 1.8-2.2 million birds (COSEWIC 2010); thus, Ontario’s Bobolinks represent 36-44% of the Canadian population. Extrapolating these figures using Canada’s estimated portion of the global population, the Ontario population of Bobolinks represents 10-12% of the global population. Ontario’s estimated portion of the global range is slightly higher (11-15%). The definition for this COSSARO criterion indicates that the species’ Ontario range must comprise >10% of the global geographic range, or >10% of the global population. While the percent is higher for global range, both percent global range and percent global population meet the threshold for threatened for this criterion.

**SECONDARY CRITERIA (threats and vulnerability)**

1. **Population Sustainability**
   - **Special Concern** Bollinger et al. (1990) identified about 50% mortality of eggs and nestlings by mowing of hay fields, with subsequent losses to abandonment, predation, and raking and baling increasing to 94%. Although no PVA has been conducted, such high losses of young very likely translate into negative population growth if widespread.

2. **Lack of Regulatory Protection for Exploited Wild Populations**
   - **Not in any category.** The Bobolink and its nests and eggs are protected under the Migratory Birds Convention Act, 1994.

3. **Direct Threats**
   - **Threatened** The primary threat to Bobolink populations is thought to be the trend towards earlier cutting of hay fields, especially by farmers with dairy operations. These farmers wish to cut hay when it has the highest protein content (generally as clover begins to flower). Timing of the first cut of hay is advancing due to climate warming so that this now occurs about 2 weeks earlier than in the 1950s. Mowing destroys about half of eggs and nestlings; subsequently, nest abandonment by adults, enhanced predation, and raking and baling of hay result in total mortality of about 94% (Bollinger et al. 1990; J. Nocera, personal communication, 19 May 2010). A second threat is loss of habitat due to conversion of pastures and hayfields to cereal crops (soybean and corn), an increase in the use of alfalfa as the principal forage plant, abandonment of farms, and afforestation of abandoned hay and pasture fields. Pesticide use on both breeding and wintering grounds may result in increased mortality and sub-lethal effects.

4. **Specialized Life History or Habitat-use Characteristics**
   - **Threatened** Historically, the Bobolink would have been associated with tall-grass prairie habitat, but now nests primarily in hayfields and pastures due to the plant cover
present at the start of the nesting season (Nocera et al. 2007). Microhabitat requirements include moderate litter depth, high grass-to-legume ratios, and a high proportion of forb cover (e.g., clover) (COSEWIC 2010; J. Nocera, personal communication, 19 May 2010). Birds avoid nesting in areas with dense shrub cover and deep litter layer (> 1-2 cm). The Bobolink is likely unable to colonize graminoid peatlands of the Hudson Bay lowlands and boreal forest because it arrives late and leaves early from its breeding grounds (J. Nocera, personal communication, 19 May 2010). The round-trip migration distance (~20,000 km) is one of the longest of any North American passerine (COSEWIC 2010). Northward migration from the wintering grounds is slow because the birds feed on seeds en route (primarily dandelion seeds) and so must wait for plants to mature (J. Nocera, personal communication, 19 May 2010).

**COSSARO CRITERIA MET** (primary/secondary)

ENDANGERED – [2/0]
THREATENED – [1/2]
SPECIAL CONCERN – [0/1]

**SUMMARY**

This wide-ranging native species occurs in Canada from Newfoundland and Labrador to British Columbia and winters in southern South America. The Bobolink originally occurred and nested mainly in tall-grass prairie of central North America and so may have been less common in Ontario in presettlement times. The birds switched to hayfields with the spread of agriculture in its range. Breeding Bird Survey data indicate long term declines in Ontario of 2.6% per year for the past 40 years equivalent to a 65% decline between 1968 and 2008. Over the past 10 years (1998 to 2008), the rate of decline increased to 7.1% per year for a total decline of 52% in the Ontario population since 1998. In Ontario, the current breeding population is estimated at 400,000 pairs, but continuing population declines combined with decreases in the extent of occurrence, identify the Bobolink as a species at risk. Ontario now supports about 40% of the Canadian population and therefore has a greater responsibility for protection of the species than it may have had historically. The main causes of mortality are associated with the timing of mowing of hayfields. Early mowing directly destroys 51% of nests and young. Mortality increases to 94% as a result of nest abandonment, predation and baling. On average, hayfields are now mowed 2 weeks earlier than they had been in the 1950s, and mowing now coincides with the peak of the Bobolink nesting season. Loss of habitat is associated with a change of land use, from hay to intensive crops and alfalfa, and with pesticide use on both summer and winter habitat. In spite of decreases in population and continued threats, the estimated population of Bobolink in Ontario is 400,000 pairs and there remains the strong likelihood of rescue effect from the United States. Therefore, although the species qualified as Endangered in some respects, species is assessed as **Threatened** in Ontario.
Information Sources


**Appendix 1**

**NORTHEASTERN NORTH AMERICA RANK, STATUS AND DECLINE**

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Occurs as a native species in 27 of 29 northeastern jurisdictions
Srank or equivalent information available for 26 of 29 jurisdictions = (90%)
S1, S2, SH, or SX in 4 of 26 = (16%)
Regiona (Ontario) COSEWIC Criteria Assessment

Criterion A – Declining Population
Yes. (END; 2b). Meets Endangered A2b because the population has declined by > 50% over the last 10 years (~ 3 generations) based on an appropriate index of abundance.

Criterion B – Small Distribution and Decline or Fluctuation
No. Does not meet criterion, range exceeds threshold values.

Criterion C – Small Population Size and Decline
No. Does not meet criterion. Estimated population size (400,000 breeding pairs) exceeds threshold.

Criterion D – Very Small or Restricted
No. Does not meet criterion. Both population and distribution exceed thresholds.

Criterion E – Quantitative Analysis
No. None conducted.

Rescue Effect
Yes. A migratory species which could facilitate the rescue effect. Immigrants would be adapted to survive in Ontario. Species is widely distributed in U.S. and populations are faring better than in Ontario. Rescue is highly likely.