

COSSARO Candidate Species at Risk Evaluation
for
Eastern Wood-Pewee (*Contopus virens*)

prepared by

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

Assessed by COSSARO as Special Concern

January 2013

FINAL

Pioui de l'Est (Contopus virens)

Le pioui de l'Est est un petit oiseau des forêts qui se reproduit dans la plupart de l'est et du centre de l'Amérique du Nord. Il a toujours été un résident estival commun du sud et du centre de l'Ontario et on estime que sa population actuelle dans la province est entre 250 000 et 300 000 individus, ou environ 5,3 % de la population globale. Le pioui de l'Est, tout comme bon nombre d'autres oiseaux qui migrent sur de longues distances et dont le régime alimentaire consiste d'insectes volants, semble être en déclin au Canada et aux États-Unis, avec une baisse d'environ 4,5 % en 45 ans dans son aire de répartition tout entière. En Ontario, ces déclins sont évidents; les données du Relevé des oiseaux nicheurs révèlent un déclin de 68 % de la population entre 1970 et 2011 et un déclin de 23 % entre 2001 et 2011. Cependant, le Relevé des oiseaux nicheurs indique qu'une population plus stable s'en vient vers le nord et la surveillance migratoire indique aussi une population stable. Le pioui de l'Est est désigné comme une espèce **préoccupante** en Ontario. Bien qu'il soit toujours un oiseau commun dans la province, il y a des déclins clairs et importants à long terme dans toute son aire de répartition et une incertitude à l'égard des tendances sur le plan des populations provinciales. On encourage des recherches supplémentaires, surtout en ce qui concerne l'expansion vers le nord de l'aire de répartition provinciale du pioui de l'Est.

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PART 1

COSSARO Candidate Species at Risk Evaluation January 2013

Eastern Wood-Pewee (*Contopus virens*)

1.1 CURRENT STATUS AND DISTRIBUTION

Current Designations:

GRANK – G5 (Assessed 02 December 1996) (NatureServe, accessed 14 December 2012); IUCN – **Least Concern** (Assessed 2012) (BirdLife International, accessed 14 December 2012)

NRANK Canada – N5B (Assessed 09 Sep 2011) (NatureServe, accessed 14 December 2012)

COSEWIC – Special Concern (COSEWIC 2012)

SARA – No schedule or status (Environment Canada 2012, accessed 14 December 2012)

ESA 2007 – None (OMNR 2012)

SRANK – S4B (NHIC/NatureServe, accessed 14 December 2012)

Distribution in Ontario:

The Eastern Wood-Pewee occurs across most of southern and central Ontario north to about 50° latitude, with decreasing frequency northward. It has been recorded from most Ontario Breeding Bird Atlas squares south from Sault St. Marie to North Bay (Cadman *et al.* 2007).

Distribution and Status Outside Ontario:

The breeding range of the Eastern Wood-Pewee extends from southeastern Saskatchewan, through southern Manitoba, Ontario and Québec, to the Canadian Maritimes, south to southern Texas and east to the Atlantic coast. It is generally common throughout its range (see Appendix 1). The highest breeding densities occur in the southwestern part of its range.

Eastern Wood-Pewee winters primarily in northern South America, from northwestern Colombia and northeastern Venezuela, south to southern Peru, northern Bolivia and northwestern Brazil.

PART 2

ELIGIBILITY FOR ONTARIO STATUS ASSESSMENT

2.1 APPLICATION OF ELIGIBILITY CRITERIA

Taxonomic Distinctness

Yes

Eastern Wood-Pewee is universally recognized as a full and separate species.

Designatable Units

There is only one Designatable Unit and no distinctions that warrant assessment below the species level.

Native Status

Yes

There are a number of early accounts that refer to the Eastern Wood-Pewee as a common bird in Ontario (Cadman *et al.* 2007). It is reported in Nash (1908) as a “common summer resident” in Ontario.

Presence/Absence

Present

Eastern Wood-Pewee is a common summer bird in Ontario (Cadman *et al.* 2007).

2.2 ELIGIBILITY RESULTS

1. The putative taxon or DU is valid. **Yes**
2. The taxon or DU is native to Ontario. **Yes**
3. The taxon or DU is present in Ontario, extirpated from Ontario or extinct? **Present**

PART 3

ONTARIO STATUS BASED ON COSSARO EVALUATION CRITERIA

3.1 APPLICATION OF PRIMARY CRITERIA (Rarity and Declines)

1. Global Rank

Not in any category

G5. (NatureServe, accessed 14 December 2012).

Least Concern (BirdLife International /IUCN Red List, accessed 14 December 2012).

The species is globally secure with an estimated total population of 6 million individuals (Partners in Flight 2012).

2. Global Decline

Threatened

Breeding Bird Survey data for North America indicate a range-wide decline of 7% (0.7% annual decline) over the last 10 years, and 45% decline over the last 45 years (1.31% annual decline) (Sauer *et al.* 2011). The 45-year decline satisfied the criterion for Threatened “from historic times to the present” although the rate of decline has moderated in the last 10 years.

3. Northeastern North America Ranks

Not in any category

Of northeastern North American jurisdictions in which the species is ranked, 0 of 27 have ranks of S1, S2, SH or SX (below threshold for Special Concern) (see Appendix 1).

4. Northeastern North America Decline

Threatened

Breeding Bird Survey data illustrate declining trends from most northeastern North America jurisdictions (see Appendix 1, data from Sauer *et al.* 2011). Eastern Wood-Pewee has declined in the Eastern North American Breeding Bird Survey Region at an average rate of 1.5% annually from 1966-2010 (Sauer *et al.* 2011). This is similar to the global decline of 45% over the last 45 years and meets the criterion for Threatened.

In most jurisdictions, the population appears to have been more stable in the last 10 years. From 2000-2010 it declined at an average rate of 0.9% in the Eastern North American Breeding Bird Survey Region (Sauer *et al.* 2011).

Eastern Wood-Pewee has been included as a priority species in Ontario’s landbird conservation plans for the Boreal Hardwood Transition Bird Conservation Region (BCR 12) and Lower Great Lakes/St. Lawrence Plain (BCR13) because of these regional declines (Ontario PIF 2008a, b).

5. Ontario Occurrences

Not in any category

The Eastern Wood-Pewee is not currently tracked by the Natural Heritage Information Centre. It was recorded from most atlas squares in surveys for the Ontario Breeding Bird Atlas in southern Ontario (Cadman *et al.* 2007). There are estimated to be 250,000 - 300,000 individuals present in Ontario (COSEWIC 2012) with the greatest populations in central and southern Ontario (Bird Conservation Regions 12 and 13).

6. Ontario Decline

Special Concern

Ontario Breeding Bird Survey data indicate average annual declines of 2.75% between 1970 and 2011, and 2.62% between 2001 and 2011 (using data presented in COSEWIC 2012). This translates to a 68% population decline between 1970 and 2011 and a 23% decline between 2001 and 2011. This information would suggest it meets the criterion for Threatened (long term decline) or Special Concern (10 year decline).

Breeding Bird Survey data from Sauer *et al.* (2011) show lower annual rates of decline in Ontario. The long term average decline for Ontario is 1.9% (1966-2010), and the 10-year average is -1.8% (see Appendix A). These data also suggest meeting the criterion for Threatened (long-term decline of > 50%), but the 10-year decline (-16.6%) would be below the threshold for Special Concern.

Breeding Bird Atlas data suggest that Eastern Wood-Pewee appears to have shifted its range in Ontario, but this has not resulted in a significant decline. A comparison of the species' probability of occurrence in Ontario from the first (1981-1985) to the second (2001-2005) atlas period showed no statistically significant change across the province (non-significant increase of 9%) (Cadman *et al.* 2007, in COSEWIC 2012). The probability of occurrence decreased significantly in the Lake Simcoe-Rideau area (-6%) and in the Southern Shield (-15%) and decreased non-significantly in the Carolinian region (-6%). These declines may have been balanced by a shift in the species distribution from the Southern Shield region northward into the adjacent Northern Shield region where the Eastern Wood-Pewee showed a 75% increase in probability of occurrence (Cadman *et al.* 2007, in COSEWIC 2012).

Other monitoring programs also do not show clear declines for this species. The Ontario Forest Bird Monitoring Program data show no significant population trend between 1987 and 2010. However, this program samples interior mature forest habitats, and may not fully sample this species (COSEWIC 2012). Spring and fall migration counts from the Long Point Bird Observatory suggest an increasing trend since 1961, and stable levels from 2000-2010 with a statistically significant increase of 6.6% per year in the spring. (COSEWIC 2012)

In summary, Ontario Breeding Bird Survey data indicate a decline of 68% between 1970

and 2011, but this decline is not supported by Breeding Bird Atlas, Forest Bird Monitoring Program, or migration monitoring data. COSEWIC (2012) suggests that BBS data are the most reliable monitoring program for Eastern Wood-Pewee, and BBS data for Ontario do show rates of decline that are similar to those reported from other jurisdictions. However, it is recognized that the BBS results may reflect a roadside bias if the species is negatively influenced by noise from increased vehicular traffic (i.e. song frequency is being reduced) (McCracken pers. comm.). BBS results could also be influenced by a northern shift in the species' range, where fewer BBS routes occur.

Although the BBS data suggest a long term decline of over 50%, meeting the threshold for Threatened under this criterion, this decline has moderated in the last 10 years. Breeding bird atlas, migration monitoring and forest bird monitoring data support the hypothesis that populations are not declining significantly, and may have just shifted to northern areas with less BBS coverage. Although there are multitudes of monitoring data that are not all consistent for this species, it does appear that, using BBS information - but considering the potential limitations and other results – the threshold of Special Concern is likely met for this criterion.

7. Ontario's Conservation Responsibility

Not in any category

Approximately 5.3% of the global population of Eastern Wood-Pewee is within Ontario. This does not meet the COSSARO criterion of $\geq 10\%$ for Threatened.

3.2 APPLICATION OF SECONDARY CRITERIA (Threats and Vulnerability)

8. Population Sustainability

Not in any category

There is no evidence of reproductive or recruitment failure in Ontario.

9. Lack of Regulatory Protection for Exploited Wild Populations

Not in any category

This criterion applies to exploited populations. The Eastern Wood-Pewee and its nest and eggs are not exploited in Ontario and are protected under the federal *Migratory Birds Convention Act* and the provincial *Fish and Wildlife Conservation Act*.

10. Direct Threats

Not in any category

There are no demonstrated threats that have been linked to a change in range or population size of this species. Loss of habitat does not appear to be a significant issue for the Eastern Wood-Pewee, which nests in mature and intermediate-age deciduous and mixed forests (COSEWIC 2012). The Eastern Wood-Pewee is a flycatcher that forages by "hawking" small insects from a perch in the subcanopy of the forest (COSEWIC 2012). Therefore it could be negatively affected by decreasing aerial insects, a phenomenon that appears to have affected some other species of birds (COSEWIC 2012). Potential threats to this species could also include high populations of White-tailed Deer, which can influence forest structure, and nest predation, which is relatively high in some areas (COSEWIC 2012). However, as noted by COSEWIC (2012), the evidence that deer and nest predation are significant threats to the Eastern Wood-Pewee is weak.

11. Specialized Life History or Habitat-use Characteristics

Not in any category

The Eastern Wood-Pewee uses a range of forest habitats and patch sizes for breeding, migration and wintering (COSEWIC 2012; NatureServe 2012).

3.3 COSSARO EVALUATION RESULTS

1. Criteria satisfied in each status category

Number of primary and secondary criteria met in each status category:

ENDANGERED – [0/0]

THREATENED – [2/0]

SPECIAL CONCERN – [1/0]

Ontario-specific criteria met in each status category:

ENDANGERED – [0]

THREATENED – [0]

SPECIAL CONCERN – [1]

2. Data Deficiency

No

The number of criteria assessed as “insufficient information” is 0.

3. Status Based on COSSARO Evaluation Criteria

The application of COSSARO evaluation criteria suggests that **Eastern Wood-Pewee** is **Special Concern** in Ontario.

Although two primary criteria for Threatened are met (Global and Eastern North American Decline), these are generally based on the same trend data since most of this species’ range is in eastern North America. As a result, this decline is considered to meet only one criterion. In any case while two primary criteria met Threatened level neither of them was an Ontario specific criterion. The evaluation result is Special Concern.

PART 4

ONTARIO STATUS BASED ON COSEWIC EVALUATION CRITERIA

4.1 APPLICATION OF COSEWIC CRITERIA

Regional (Ontario) COSEWIC Criteria Assessment

Criterion A – Decline in Total Number of Mature Individuals

Not in any category

Does not meet criterion. Population has not declined by >30% in the last 10 years or 3 generations (COSEWIC 2012).

Criterion B – Small Distribution Range and Decline or Fluctuation

Not in any category

Does not meet criterion. Extent of Occurrence is >20,000 km² and Index of Area of Occupancy is >2,000 km² (COSEWIC 2012).

Criterion C – Small and Declining Number of Mature Individuals

Not in any category

Does not meet criterion. Population is >10,000 mature individuals. Population approaches (27%), but does not meet 30% decline in 10 years (COSEWIC 2012).

Criterion D – Very Small or Restricted Total Population

Not in any category

Does not meet criterion. Population is >10,000 mature individuals.

Criterion E – Quantitative Analysis

Not in any category

No Population Viability Analysis has been conducted for the species in Ontario. Nevertheless, given the current population size and area occupied, the probability of extirpation is very low (COSEWIC 2012).

Rescue Effect

Yes. While declining in adjacent U.S. regions it is still common.

Special Concern Status

Yes.

This is one of the most common and widespread songbirds associated with North America's eastern forests. Even though the species is apparently resilient to many kinds of habitat changes, like most other long-distance migrants that specialize on a diet of flying insects, it seems to be experiencing largely-inexplicable, persistent declines over the past 40 years both in Ontario, Canada and the United States. The causes of the decline are not understood, but might be linked to habitat issues faced on its wintering grounds in South America and/or changes in changes in availability of insect prey. If the population declines persist, then the species may become more threatened in the foreseeable future.

4.2 COSEWIC EVALUATION RESULTS

1. Criteria satisfied in each status category

ENDANGERED – no
THREATENED – no
SPECIAL CONCERN – yes

2. Data Deficiency

No

Although there is some inconsistency in the data and some identified research gaps, there is sufficient information on the population and habitat.

3. Status Based on COSEWIC Evaluation Criteria

The application of COSEWIC evaluation criteria suggests that **Eastern Wood-Pewee** is **Special Concern** in Ontario.

PART 5

ONTARIO STATUS DETERMINATION

5.1 APPLICATION OF COSSARO AND COSEWIC CRITERIA

COSSARO and COSEWIC criteria give the same result. **Yes**

5.2 SUMMARY OF STATUS EVALUATION

Eastern Wood-Pewee is classified as Special Concern in Ontario.

The Eastern Wood-Pewee is a small woodland bird that breeds throughout most of eastern and central North America. It has always been a common summer resident in southern and central Ontario, and the current population in the province is estimated to be 250,000 to 300,000 individuals, representing approximately 5.3% of the global population. The Eastern Wood-Pewee, like many other long-distance migrants that specialize on a diet of flying insects, seems to be declining in Canada and the United States, with a range-wide population decline of approximately 45% over the last 45 years. In Ontario, these declines are evident in Breeding Bird Survey data which show a 68% population decline between 1970 and 2011 and a 23% decline between 2001 and 2011. However, the Ontario Breeding Bird Atlas shows a more stable population that is shifting northward, and migration monitoring also indicates a stable population. Eastern Wood-Pewee is classified as Special Concern in Ontario. Although, it is still a common bird in the province, there are clear and significant long-term declines throughout its range and uncertainty regarding provincial population trends. Further research should be encouraged, particularly in regard to a northward shift in the Eastern Wood-Pewee's provincial range.

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2. Community and Aboriginal Traditional Knowledge Sources

None. No community information or ATK received.

3. Acknowledgements

Jon McCracken from Bird Studies Canada kindly provided insight into the trend data for Ontario.

Credit Valley Conservation provided some recent monitoring and habitat information on the Eastern Wood-Pewee.

APPENDIX 1

NORTHEASTERN NORTH AMERICA STATUS RANK AND DECLINE

	Subnational Rank	Sources	Annual Change 1966 - 2010	Annual Change 2000-2010	Regional Credibility*	Sources
CT	S5B	1	-0.9	-0.7	3	4
DE	S5B	1	0.4	-0.3	3	4
IL	S5	1	-0.3	-0.2	3	4
IN	S4B	1	-0.7	-0.3	3	4
IA	S4B,S4N	1	0.1	0.8	3	4
LB	Not Present	1, 3	-	-	-	4
KY	S5B	1	-2.0	-2.3	3	4
MA	S5B	1	-1.0	-1.0	3	4
MB	S4S5B	1	-2.1	-2.0	2	4
MD	S5B	1	-0.9	-0.6	3	4
ME	S4B	1	-3.2	-3.0	3	4
MI	S5	1	-0.1	0.1	3	4
MN	SNRB	1	-0.7	-0.1	3	4
NB	S4B	1	-3.8	-4.7	3	4
NF	Accidental or Not Present	2, 3	-	-	-	4
NH	S5B	1	-1.8	-2.3	3	4
NJ	S4B	1	0.4	0.9	3	4
NS	S3S4B	1	-1.4	-1.3	3	4
NY	S5	1	-1.5	-1.1	3	4
OH	S5	1	-1.2	-1.0	3	4
ON	S4B	1	-1.9	-1.8	2	4
PA	S5B	1	-1.7	-1.1	3	4
PE	S4B	1	-1.3	-1.8	1	4
QC	S3S4	1	-4.2	-4.2	2	4
RI	S5B,S5N	1	1.2	1.3	2	4
VA	S5	1	-1.8	-0.6	3	4
VT	S5B	1	-2.3	-2.2	3	4
WI	S5B	1	-0.2	0.5	3	4
WV	S5B	1	-3.2	-1.5	3	4

*Regional Credibility: 1 = Important Data Deficiencies, 2 = Data Deficiencies; 3 = Moderate Data Precision

1: NatureServe

2: Avibase - Bird Checklists of the World; Newfoundland-Labrador:

<http://avibase.bsceoc.org/checklist.jsp?region=canl&list=howardmoore>

3 Godfrey 1986

4 Sauer et al. 2011 <http://www.mbr-pwrc.usgs.gov/bbs/trend/guild10.html>

Occurs as a native species in **27 of 29 northeastern jurisdictions**

SRANK or equivalent information available for 27 of 29 jurisdictions = (93.1%)

S1, S2, SH, or SX in 0 of 27 = (0.0%)