

**Ontario Species at Risk Evaluation Report for
Louisiana Waterthrush (*Parkesia motacilla*)**

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

Assessed by COSSARO as Threatened

June 2016

Final

Paruline hochequeue (*Parkesia motacilla*)

La paruline hochequeue est un oiseau nicheur rare en Ontario présent surtout dans les plaines sablonneuses de Norfolk et l'escarpement du Niagara, mais se reproduisant de façon sporadique dans plusieurs autres secteurs. On retrouve principalement l'espèce, soit 99 % de sa population, dans l'Est des États-Unis. Il s'agit d'une espèce spécialiste, qui se reproduit et se nourrit principalement près de cours d'eau claire, et parfois de marécages, de forêts caducifoliées ou mixtes.

Si la population des plaines sablonneuses de Norfolk a diminué au cours des 10 dernières années, d'autres semblent avoir augmenté, ou étaient simplement passées inaperçues jusqu'à maintenant. Quoi qu'il en soit, la population en Ontario est très faible : on l'estime à 235 à 558 oiseaux. Le déclin de la paruline hochequeue en Ontario n'est pas attribuable à une seule cause, mais bien à plusieurs menaces, notamment la perte d'habitats due à l'exploitation forestière et au développement urbain, la réduction de la qualité et du débit de l'eau en raison de l'intensification de l'agriculture, l'augmentation des loisirs pratiqués dans les habitats riverains et les collisions avec les immeubles et les tours. Par ailleurs, la déforestation menace l'espèce dans ses terres hivernales d'Amérique centrale.

Le CDSEPO a déterminé que la paruline hochequeue était menacée en raison de sa population réduite en Ontario et du nombre de menaces existantes et émergentes à son habitat particulier.

Cette publication hautement spécialisée «COSSARO Candidate Species at Risk Evaluation for Louisiana Waterthrush» n'est disponible qu'en anglais conformément au Règlement 671/92, selon lequel il n'est pas obligatoire de la traduire en vertu de la Loi sur les services en français. Pour obtenir des renseignements en français, veuillez communiquer avec le ministère des Richesses naturelles et des Forêts au recovery.planning@ontario.ca.

Executive summary

The Louisiana Waterthrush is a rare breeder in Ontario, with main populations on the Norfolk Sand Plain and Niagara Escarpment, and with sporadic breeding in several other areas. It is much more widespread in the eastern United States, where approximately 99% of the population occurs. Louisiana Waterthrush is a habitat specialist; it breeds and forages mainly near clean flowing streams in large blocks of deciduous or mixed forest, and occasionally in deciduous swamps.

The Norfolk Sand Plain population has declined in the past decade but other populations appear to have increased, or they may have been previously undetected. Nevertheless, the Ontario population is very low, estimated at between 235 and 558 birds. There is no single major cause of decline, but Louisiana Waterthrush is affected by several threats in Ontario, including habitat loss from logging and urban development, changes in water quality and flow from agricultural intensification, increased recreation in riparian habitats, and collisions with buildings or towers. The species is also threatened by deforestation on its wintering grounds in Central America.

The Louisiana Waterthrush was assessed by COSSARO as Threatened based on its small population size in Ontario, combined with a number of current and emerging threats to its specialized habitat.

1. Background information

1.1. Current designations

- GRANK: G5 (NatureServe 2016)
- NRANK Canada: N3B
- COSEWIC: THR (2015)
- SARA: SC (Schedule 1)
- ESA 2007: SC (2004)
- SRANK: S3B

1.2. Distribution in Ontario

The Louisiana Waterthrush is a rare but regular breeder in southern Ontario near the north shores of Lakes Erie and Ontario. The majority of the provincial population occurs in two areas: the Norfolk Sand Plain and the Niagara Escarpment from Hamilton north to Owen Sound. The species is also established as a regular breeder at a few sites on Frontenac Axis, and breeds occasionally elsewhere such as the Oak Ridges Moraine and Rice Lake Plains (COSEWIC 2015). The species demonstrates high annual fidelity to breeding areas (Mulvihill et al. 2002; Allair et al. 2014).

1.3. Distribution and status outside Ontario

The Louisiana Waterthrush has a wide breeding range in the eastern US, extending from southern Maine west to Minnesota south to northern Florida and northeastern Texas. There are also a few breeding records from southwestern Quebec, although the species breeds only sporadically there. The Louisiana Waterthrush winters from central Mexico through Central America to northern western Colombia and the Caribbean.

1.4. Ontario conservation responsibility

Approximately 99% of the breeding range of this species occurs in the US with only 1% in Ontario (COSEWIC 2015). Consequently Ontario's conservation responsibility for this species is very small.

1.5. Direct threats

Although there is no single clear serious threat to the Louisiana Waterthrush population in Ontario, there are many threats which may be affecting different life stages, and cumulatively are having an effect. The most substantial threats to Louisiana Waterthrush on its breeding ground include habitat loss, and changes in water quality and quantity due to agricultural intensification, pesticide use and residential expansion. Residential and recreational development may have contributed to declines observed in parts of southern Ontario.

There are also anticipated threats to Louisiana Waterthrush which include the spread of Hemlock Woolly Adelgid (*Adelges tsugae*), an exotic forest pest that kills hemlocks,

since hemlock is often an integral part of the riparian habitats where they occur. The Hemlock Woolly Adelgid has recently been found in both Etobicoke and Niagara Falls, within the range of the Louisiana Waterthrush, and is expected to spread throughout southern Ontario in the coming years (Canadian Forest Service 2014). Habitat loss and degradation, especially deforestation due to agricultural and development activities, are ongoing threats in the wintering range in Mexico and Central America.

During migration, this species also experiences relatively high rates of mortality due to collisions with tall buildings and communication towers (COSEWIC 2015). The Canadian population of Louisiana Waterthrush is believed to be dependent on constant recruitment from the robust U.S. population (COSEWIC 2015).

1.6. Specialized life history or habitat use characteristics

Louisiana Waterthrush shows a strong preference for nesting along relatively pristine, headwater streams and ravines situated in large tracts of mature forest (Mattsson *et al.* 2009). It prefers to nest at sites with running water, but also inhabits heavily wooded swamps. The Louisiana Waterthrush is often associated with steep-sided forested ravines in sand plains, or rocky streams in defined valleys: of 40 nests found at several sites in Ontario in 2010-2014, 28 (79%) were found in ravines (COSEWIC 2015). Less frequently it inhabits wooded swamps with standing water, where its territories can overlap with Northern Waterthrush (Craig 1985).

Louisiana Waterthrush is often considered an area sensitive species because it requires large tracts of contiguous closed canopy forest (Freemark and Collins 1992).

The Louisiana Waterthrush mostly walks and forages on or near the ground, particularly along the margins of streams and pools where it feeds mostly on aquatic macroinvertebrates, especially insects.

2. Eligibility for Ontario status assessment

2.1. Eligibility conditions

2.1.1. Taxonomic distinctness

Yes. Only one other species is in same genus, the Northern Waterthrush (*Parkesia noveboracensis*). The two species are closely related and quite similar in appearance but Louisiana Waterthrush is clearly a distinct species with a different song, behavior and habitat requirements in addition to physical characteristics.

2.1.2. Designatable units

No. There are no subspecies recognized and breeding range in Ontario, although sporadic, is fairly continuous. There are no geographic distinctions that would warrant recognizing more than one DU in Ontario.

2.1.3. Native status

Yes. Louisiana Waterthrush has been known to occur in Ontario since at least the early 1900s (MacClement 1915).

2.1.4. Occurrence

Extant. Louisiana Waterthrush is known to breed in Ontario at many sites across southern Ontario (COSEWIC 2015).

2.2. Eligibility results

Louisiana Waterthrush (*Parkesia motacilla*) is eligible for status assessment in Ontario.

3. Ontario status assessment

3.1. Application of endangered or threatened status in Ontario

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

Does Not Apply. A current population estimate of the number of individuals in Ontario has been determined to be 235 to 558 adults which is considerably greater than the 105 to 195 adults estimated in 2005 (COSEWIC 2015). Surveying has been improved which could account for the apparent increase (COSEWIC 2015). While some subpopulations have declined there is no clear evidence of an overall decline, and rates of change cannot be specified with the information available.

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

Does not Apply. The Extent of Occurrence for this species is 110,000 km² and Index of Area of Occupancy is 368 km² (within the threshold for Endangered in criteria B2). Although there is a continuing decline in habitat quality, the Louisiana Waterthrush is known from many more than 10 locations, and does not demonstrate extreme fluctuations. Therefore, this criterion does not apply.

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

Does not Apply. The Ontario population size meets the threshold for Endangered because there are fewer than 2500 individuals. However there is no clear evidence of a declining population.

3.1.4. Criterion D – Very small or restricted total population

Threatened. The population estimate for Louisiana Waterthrush (235 to 558 adults) in Ontario meets the threshold for Threatened (<1000) for this criterion.

3.1.5. Criterion E – Quantitative analysis

Insufficient information. A quantitative analysis has not been conducted for this subspecies in Canada.

3.2. Application of Special Concern in Ontario

Does not apply since Louisiana Waterthrush meets criteria as Threatened in Criterion D.

3.3. Status category modifiers

3.3.1. Ontario's conservation responsibility

The Ontario population Louisiana Waterthrush accounts for less than 1% of the global population consequently, Ontario's Conservation Responsibility for this species is insignificant.

3.3.2. Rescue effect

Does not apply. The Ontario population of Louisiana Waterthrush is believed to be dependent on recruitment of individuals from the more robust US population (COSEWIC 2015). However, to date there is no strong evidence that population rescue is occurring. Declines have also been observed in adjacent states (e.g. Wisconsin and Michigan, see Appendix 2), which may reduce the probability of dispersal to Ontario. Overall, although rescue is possible, there is no strong evidence that is occurring, and rescue effect is not used as a status modifier because it cannot be concluded that it will effectively reduce the risk of decline or extirpation.

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

Louisiana Waterthrush (*Parkesia motacilla*) meets the criteria for Threatened in Ontario based on criterion D1 (very small population).

5. Information sources

Allair, J., S. Dobney, H. Polowyk, J. Kloepfer, M. Falconer, and A. Heagy. 2014. Forest birds at risk in the Carolinian Forest region of southwestern Ontario: 2014 summary report. Report produced for Environment Canada. Bird Studies Canada, Port Rowan, ON.

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Freemark, K. and Collins, B. 1992. Landscape ecology of birds breeding in temperate forest fragments. Pp. 443-454 In *Ecology and conservation of neotropical migrant landbirds* (eds. J.M. Hagan and D.W. Johnston). Smithsonian Institution Press, Washington, D.C.

MacClement, W.T. 1915. *The New Canadian Bird Book*. Dominion, Toronto.

Mattsson, B.J., T.L. Master, R.S. Mulvihill and W.D. Robinson. 2009. [Louisiana Waterthrush \(*Parkesia motacilla*\) in The Birds of North America Online \(A. Poole, Ed.\).](#) Ithaca: Cornell Lab of Ornithology.

Mulvihill, R.S., A. Cunkelman, L. Quattrini, T.J. O'Connell, and T.L. Master. 2002. Opportunistic polygyny in the Louisiana Waterthrush. *Wilson Bulletin* 114:106-113.

Appendix 1: Technical summary for Ontario

Species: Louisiana Waterthrush (*Parkesia motacilla*)

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 to 3 years
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Unknown
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, but overall population estimates have generally been stable
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?	Not Applicable since decline has been established
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/)	110,000 km ²
Index of area of occupancy (IAO). (Request value from MNR or use http://geocat.kew.org/)	368 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>).	Unknown, but more than the threshold of 10 locations
Number of NHIC Element Occurrences	61
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?	No
Is there an observed, inferred, or projected continuing decline in number of locations?	No
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)	N of mature individuals
Southwestern Ontario Estimated 116 to 254 adults (66 to 145 males and 50 to 109 females)	Southwestern Ontario Estimated 116 to 254 adults (66 to 145 males and 50 to 109 females)
South-central Ontario Estimated 93 to 234 adults (53 to 134 males and 40 females)	South-central Ontario Estimated 93 to 234 adults (53 to 134 males and 40 females)
TOTAL	Estimated 235 to 558 adults (134 to 329 males and 101 to 246 females)

Quantitative analysis (population viability analysis conducted)

Not conducted.

Rescue effect

Rescue effect attribute	Likelihood
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Possible but not demonstrated.
Would immigrants be adapted to survive in Ontario?	Yes
Is there sufficient suitable habitat for immigrants in Ontario?	Yes
Is the species of conservation concern in bordering jurisdictions?	Yes (Wisconsin and Michigan)
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 for Louisiana Waterthrush

Jurisdiction	Subnational rank	Population trend (Numerical trends in brackets originate from the NA BBS data, 1966-2013)	Sources
Ontario	S3B	Unknown (insufficient data)	NatureServe 2016; BBS 2016
Quebec	S1B	Unknown (insufficient data)	NatureServe 2016; BBS 2016
Manitoba	not present	n/a	n/a
Michigan	S2S3	Declining (-5.1)	NatureServe 2016; BBS 2016
Minnesota	S3B	Unknown	NatureServe 2016; BBS 2016
Nunavut	not present	n/a	n/a
New York	S5B	Stable (0.5)	NatureServe 2016; BBS 2016
Ohio	S5B	Stable (0.0)	NatureServe 2016; BBS 2016
Pennsylvania	S5B	Stable or Increasing (0.9)	NatureServe 2016; BBS 2016
Wisconsin	S3B	Declining (-7.2)	NatureServe 2016; BBS 2016

Acronyms:

AOO: area of occupancy

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

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

EOO: extent of occurrence

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

B : Breeding