

**COSSARO Candidate Species at Risk Evaluation**

**for**

**Eastern Tiger Salamander (*Ambystoma tigrinum*)**

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

**Assessed by COSSARO as EXTIRPATED**

**January 2013**

**Final**

## **Salamandre tigrée de l'Est (*Ambystoma tigrinum*)**

La salamandre tigrée de l'Est est une grosse salamandre fousseuse dont l'aire de répartition occupe la majorité des terres basses de l'est des États-Unis, mais ne se rend que jusqu'à l'extrême sud-ouest de l'Ontario et sud-est du Manitoba. Sa présence en Ontario n'est fondée que sur un seul spécimen recueilli à la Pointe pelée en 1915, et deux spécimens recueillis sur l'île Pelée en 1950, bien qu'il existe des doutes sur les lieux de ces collectes de tous ces spécimens. Malgré des relevés exhaustifs effectués aux deux endroits depuis, ainsi qu'ailleurs dans le sud-ouest de l'Ontario, et de l'analyse génétique des salamandres de l'île Pelée, il n'y a eu aucun autre signalement. Puisqu'il est très peu probable qu'une population de salamandres tigrées de l'Est existe toujours, l'espèce est désignée comme étant **disparue** de l'Ontario.

*Cette publication hautement spécialisée « Ontario Species at Risk evaluation report prepared under the Endangered Species Act, 2007 by the Committee on the Status of Species at Risk in Ontario », 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 par courriel à [recovery.planning@ontario.ca](mailto:recovery.planning@ontario.ca).*

## **PART 1**

### **CURRENT STATUS AND DISTRIBUTION**

#### **Current Designations:**

**GRANK – G5** (Assessed 15/10/2003) (NatureServe, accessed 10/01/2013)

**NRANK Canada – N4N5** (Assessed 16/10/2012) (NatureServe, accessed 10/01/2013)

**COSEWIC – Extirpated** (November 2012)

**SARA – Extirpated** (Schedule 1) (Environment Canada, accessed 10/01/2013)

**ESA 2007 – Extirpated** (Ministry of Natural Resources, accessed 10/01/2013)

**SRANK – SX** (NHIC/NatureServe, accessed 10/01/2013)

#### **Distribution in Ontario:**

The Eastern Tiger Salamander has been known in Ontario from a single specimen collected at Point Pelee in 1915. In addition, specimens of an adult and transforming juvenile were collected on Pelee Island in 1950. The Pelee Island specimens were originally believed to be Spotted Salamanders but were later identified by several experts as Tiger Salamanders (SARA 2012).

#### **Distribution and Status Outside Ontario:**

Eastern Tiger Salamanders have a large disjointed range in eastern North America (COSEWIC 2012). They occur along the Atlantic Coastal Plain from Long Island, New York south to northern Florida and west to Louisiana. They are absent in the Appalachians but also occur on the west side from Tennessee north to Michigan west to Minnesota and southeastern Manitoba; and southwest to Arkansas and Texas (COSEWIC 2012). The species can be common within the core of its range, as it is ranked as S5 in some states (Appendix 1), and G5 overall. The species is considered to be endangered in Manitoba (COSEWIC 2012).

## PART 2

### ELIGIBILITY FOR ONTARIO STATUS ASSESSMENT

#### 2.1 APPLICATION OF ELIGIBILITY CRITERIA

##### Taxonomic Distinctness

**Yes.** The Eastern Tiger Salamander has long been known to be native and a distinct species in North America. However until recently the Tiger Salamander was considered to be a single polytypic species with six subspecies that ranged through much of North America (Bishop 1943, Petranka 1998). The Eastern Tiger Salamander was considered to be one of the subspecies: *A. t. tigrinum*. Genetic evidence based on mitochondrial DNA (Shaffer and McKnight 1996), as well as morphological evidence, indicates that the Eastern Tiger Salamander is a separate species (Powell *et al.* 1998). The other subspecies are all now recognized as part of the Western or Barred Tiger Salamander (*A. mavortium*) (Crother 2012).

##### Designatable Units

There is only one designatable unit in Ontario as there is only one record from one location. COSEWIC (2012) identifies this as the "Carolinian DU" of the Eastern Tiger Salamander in Canada.

##### Native Status

**Yes.** Since there is only a single record at Point Pelee from 1915, there was some doubt that there was a self sustaining population there. The contiguous range of the species in the US is very close to Point Pelee in southeastern Michigan and islands in the Ohio side of Lake Erie. It is therefore reasonable to assume that Point Pelee and Pelee Island, at least historically, were within the natural range of the species.

There is no consensus on accepting the Pelee Island records however because of the extensive research on genetics of hybrid salamanders there and lack of further evidence of any Eastern Tiger Salamander genes in the population. The species has not been seen on Point Pelee since the sighting in 1915 despite extensive surveys. There is some uncertainty about the locations of all three specimens, but the contiguous range of the species in the US is very close to the Canadian locations in southeastern Michigan and islands in the Ohio side of Lake Erie. It is therefore reasonable to assume that Point Pelee and Pelee Island were within the natural range of the species. Based on the weight of evidence the Tiger Salamander is believed to be native to Ontario.

##### Presence/Absence

**Extirpated.** The only records of Eastern Tiger Salamander occurred at Point Pelee nearly a century ago, and on Pelee Island over 60 years ago. These sites have been extensively surveyed by biologists since, without any other records. The lack of any

other records of this distinctive species anywhere else in the province means that it is almost certainly not present.

## **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? **EXT**

## **PART 3**

### **ONTARIO STATUS DETERMINATION**

#### **3.1 RECOMMENDED STATUS**

Based on section 2.2, it is recommended that **Eastern Tiger Salamander** be classified as **Extirpated**.

#### **3.2 SUMMARY OF STATUS EVALUATION**

The Eastern Tiger Salamander is a large burrowing salamander that occurs through much of the lowland area of the eastern United States but only marginally extends into extreme southwestern Ontario and southeastern Manitoba. Its presence in Ontario is based on a single specimen that was collected at Point Pelee in 1915, and two other specimens from Pelee Island collected in 1950, although there is some question on the collection locality of all of these specimens. Despite extensive surveys at both locations since then, as well as elsewhere in southwestern Ontario, and genetic analysis of salamanders on Pelee Island, there have been no other reports. Since it is highly unlikely that an Eastern Tiger Salamander population still persists, the species is designated as Extirpated in Ontario.

## **Information Sources**

### **1. Literature Cited**

Bishop, S.C. 1943. Handbook of Salamanders: the Salamanders of the United States, of Canada, and of Lower California. Comstock Publ. Co., Ithaca NY.

Crother, B.I. (ed.). 2012. Scientific and standard English names of amphibians and reptiles of North America North of Mexico, with comments regarding confidence in our understanding. 7th Edition. Herpetological Circulars. Society for the Study of Amphibians and Reptiles, St. Louis, Missouri.

Petranka J.W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

SARA Registry 2012. Recovery Strategy for the Tiger Salamander (*Ambystoma tigrinum*)(Great Lakes population) in Canada.  
<http://www.sararegistry.gc.ca/default.asp?lang=En&n=AF3BCC8A-1&offset=2&toc=show#X-201202061445045>

Shaffer, H.B. and M.L. McKnight. 1996. The polytypic species revisited: Genetic differentiation and molecular phylogenetics of the tiger salamander *Ambystoma tigrinum* (Amphibia: Caudata) complex. *Evolution*. 50:417–433.

### **2. Community and Aboriginal Traditional Knowledge Sources**

ATK supplied to the COSEWIC (2012) report has been incorporated into this report where applicable.

### **3. Acknowledgements**

Michael Oldham at the Natural Heritage Information Centre and Dr. James Bogart at the University of Guelph provided insight into this species history in the province.

## Appendix 1

### NORTHEASTERN NORTH AMERICA RANK, STATUS AND DECLINE

*for each jurisdiction list S-rank or not present. Include any information available re declines. All rankings are from NatureServe for either the "Tiger Salamander" or the "Eastern Tiger Salamander"*

CT	Not Present
DE	SNR
IL	S5
IN	S4
IA	S5
LB	Not Present
KY	S4
MA	Not Present
MB	S2
MD	S2
ME	Not Present
MI	S3/S4
MN	SNR
NB	Not Present
NF	Not Present
NH	Not Present
NJ	S1
NS	Not Present
NY	S1/S2
OH	S3
ON	SX
PA	SX
PE	Not Present
QC	Not Present
RI	Not Present
VA	S1
VT	Not Present
WI	S4
WV	Not Present

Occurs as a native species in 16 of 29 (55%) northeastern jurisdictions  
 Srank or equivalent information available for 14 of 16 jurisdictions = (87%)  
 S1, S2, SH, or SX in 7 of 14 = (50%)