

**Ontario Species at Risk Evaluation Report for  
Greater Prairie-Chicken  
Tétras des prairies  
(*Tympanuchus cupido pinnatus*)**

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

Assessed by COSSARO as Extirpated

March 2022

Final

## Executive summary

Greater Prairie-Chicken is a large grouse that was once common in central and eastern North America. It is brown with light and dark barring and has a short-rounded tail. The male also has conspicuous yellow eye combs. During breeding, the male struts about in an elaborate courtship display in which it erects its wing, neck and tail feathers and releases air from orange air sacs on its neck to produce a loud booming sound.

Greater Prairie-Chicken inhabit large areas of undisturbed grasslands, with few shrubs or trees for nesting and dense grass stands and brush cover for overwintering.

The Greater Prairie-Chicken originally occurred in southwestern Ontario. By the end of the 19th century its range had expanded as far as Lake Simcoe. Through a combination of habitat loss and market hunting, the population completely disappeared from southern Ontario in the 1920s. As the southern Ontario range disappeared, its range in the northern US expanded into suitable habitats in the Sault Ste Marie area, Manitoulin Island and northwestern Ontario starting in the early 1900s. This range also eventually declined. By the 1960s it was gone from the northwest, and from the Sault Ste Marie area and Manitoulin Island in the 1970s.

In the US, Greater Prairie-Chicken range extends from North Dakota, Minnesota and Wisconsin, south to Kansas, Oklahoma and Missouri, west to Colorado and east to Wisconsin and Illinois. The core of the population is in parts of Kansas, Nebraska, and South Dakota. The Greater Prairie-Chicken was once found from Ontario to Alberta, but is no longer found in Canada and was designated as extirpated in 1990.

Clearing of forests was initially a benefit to the prairie-chicken, providing additional grassland habitat. However as land clearing and cultivation expanded Greater Prairie-Chicken were restricted to smaller and smaller areas. Overhunting, including market hunting may also of contributed to its decline. In Ontario, interbreeding with Sharp-tail Grouse eliminated the Greater Prairie-Chicken in the Manitoulin Island area.

Greater Prairie-Chicken was already listed as extirpated when the Endangered Species Act took effect in 2008. Greater Prairie-Chicken is assessed as Extirpated from Ontario.

# 1. Eligibility for Ontario status assessment

## 1.1. Eligibility conditions

### 1.1.1. Taxonomic distinctness

Three subspecies have been recognized for the Greater Prairie-Chicken (Chesser et al. 2020). Only the Greater Prairie-Chicken (*Tympanuchus cupido pinnatus*) is native to Ontario.

### 1.1.2. Designatable units

There is only one designatable unit from Ontario.

### 1.1.3. Native status

Prior to European settlement the Greater Prairie-Chicken was common and widespread through the Great Plains of central North America extending east into Ontario. There are specimens from Ontario in the Royal Ontario Museum that date back to the early 1800s.

### 1.1.4. Occurrence

Greater Prairie-Chicken once occurred in Ontario but is now extirpated.

## 1.2. Eligibility results

Greater Prairie-Chicken (*Tympanuchus cupido pinnatus*) is eligible for status assessment in Ontario.

## 2. Background information

### 2.1. Current designations

- GRANK: G4 (NatureServe 2022)
- IUCN: Near Threatened (2020) (Green List – Largely Depleted, 2021)
- NRANK Canada: NX
- COSEWIC: Extirpated (December 2021)
- SARA: Extirpated (Schedule 1)
- ESA 2007: Extirpated (June 2010)
- SRANK: SX

### 2.2. Distribution in Ontario

The historical range of the Greater Prairie-Chicken extended into southwestern Ontario from Windsor to Peterborough and north to Lake Simcoe. Collections from the 1800s in the Royal Ontario Museum are from Hamilton, Wallaceburg and Essex (although the specimens from Hamilton were purchased in a market). This range initially expanded northwards and into northwestern Ontario during the 1800s as land was cleared for agriculture and forestry, and numbers may have also increased in response to predator control programs.

### 2.3. Distribution, status and the broader biologically relevant geographic range outside Ontario

Once common and widespread across the prairies and into eastern North America, the historical range and population of the Greater Prairie-Chicken has been significantly reduced. It is found locally in much reduced numbers from eastern North Dakota, northwestern and central Minnesota, Wisconsin, south to northeastern Colorado, Kansas (except southwest), southern and northeastern Oklahoma, Missouri, southern Illinois and southeastern Texas. It is extirpated from Canada and from much of its range in US.

The broader biologically relevant geographic range would have included populations in eastern Manitoba, northern Minnesota and Michigan, and possibly Ohio and Pennsylvania, but it is now extirpated from these regions. Its range and numbers have recovered in some parts of the US because of conservation and translocation efforts, and it is considered globally secure.

Since the last observation in Canada in 1987 there have been a few unconfirmed reports in western Canada, possibly of escaped birds and there have been some observations in northern Minnesota less than two km south of the Manitoba border (COSEWIC 2021 IN PRESS). There are continued efforts to improve habitat for the Greater Prairie-Chicken in northwestern Minnesota near the international border (Adkins et al. 2021).

Table 1. Condition of the Species in Adjacent Jurisdictions and Broader Biologically Relevant Geographic Range

<b>Adjacent Jurisdictions</b>	<b>Biologically Relevant to Ontario (n/a, yes, no)</b>	<b>Condition</b>	<b>Notes &amp; Sources</b>
Quebec	n/a	-	
Manitoba	Yes	SX	
Michigan	Yes	SX	
Minnesota	Yes	S3	Special Concern (Minnesota Department of Natural Resources 2020)
Nunavut	n/a	-	
New York	n/a	SX	
Ohio	Yes	SX	
Pennsylvania	yes	SX	
Wisconsin	n/a	S1	
<i>Other Relevant Jurisdiction</i>	n/a		

## 2.4. Ontario conservation responsibility

Greater Prairie-Chicken once occurred in Ontario but is now extirpated.

## 2.5. Direct threats

No formal threat assessment has been conducted for this species in Canada. Greater Prairie-Chicken declined as grassland habitats were lost. In Ontario, hybridization with Sharp-tail Grouse may have also contributed to its decline (COSEWIC 2009). Several of the early specimens from the Royal Ontario Museum were purchased from markets in the 1800s. Market hunting played a role in its decline in some areas of its range, but the magnitude of this threat is not known from Ontario.

## 2.6. Specialized life history or habitat use characteristics

In spring males form groups in open courtship areas known as leks or booming grounds. These congregations can make it vulnerable to disturbance.

Greater Prairie-Chicken occupies a wide range of habitat types including prairie, savannahs, woods, pastures and agricultural fields. It may be limited by the available of sites with large grasslands and declines when natural prairie to cropland ratio falls below 50:50 (COSEWIC 2009).

## 2.7. Existing Conservation and Recovery Actions

There are very limited conservation and recovery actions in Ontario or Canada. From 1949-1951 there were unsuccessful attempts to translocate birds from Manitoulin Island to Barriefield (Frontenac) and Prince Edward Country (Cadman et al. 1987).

No other recovery efforts have occurred. In 1993, a National Recovery Plan for the Greater Prairie-Chicken was prepared under the Recovery of Nationally Endangered Wildlife (RENEW) program, which recommended no recovery effort or special protection was warranted (Hjertaas, 1993). A draft recovery strategy was initiated in 2017 but has not yet been completed.

This Canadian response is in contrast conservation efforts in the US. From 1974 to 2011 Greater Prairie-chickens have been translocated to sites in Colorado, Idaho, Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska North Dakota, Oklahoma and Wisconsin (Johnson et al., 2011; Snyder et al., 1999), helping this species to recovery in parts of its former range.

The lack of recovery efforts in Canada may reflect uncertainty about its original range and native status. Documented observations of this species in Canada from the early to mid-1800s were dismissed as misidentification of the Sharp-tail Grouse. Even one of the first comprehensive reports on threatened species and habitats in Canada, identified the Greater Prairie-Chicken as a range edge species (Mosquin & Suchal, 1977, p. 86), and RENEW recommended no action because this species was not considered to be native. The COSEWIC assessment from 1990 includes a map that depicts the entire Canadian range as “acquired” (Aldrich, 1963; Johnsgard & Wood, 1968).

This “follow the plough hypothesis” was once considered a major factor in expanding the range of this species (Ross, 2011). However, the native origin of this species has now been confirmed with genetic evidence that the Greater Prairie-Chicken inhabited northern regions for 9,000 years (Ross et al., 2006).

## 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.

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

Does not apply.

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

Does not apply.

### 3.1.4. Criterion D – Very small or restricted total population

Does not apply.

### 3.1.5. Criterion E – Quantitative analysis

Does not apply.

## 3.2. Application of Special Concern in Ontario

Does not apply.

## 3.3. Status category modifiers

### 3.3.1. Ontario's conservation responsibility

Does not apply. Extirpated from Ontario.

### 3.3.2. Status modification based on level of risk in broader biologically relevant geographic range

Does not apply. Greater Prairie-Chicken is extirpated from Ontario.

### 3.3.3. Rescue Effect

Unlikely. While there have been some observations in northern Minnesota these are at the Manitoba border (COSEWIC 2021 IN PRESS). The Minnesota population adjacent to northwestern Ontario does not provide a likely rescue effect because large areas of suitable habitat are required for the species to persist.

## 3.4. Other status categories

### 3.4.1. Data deficient

Does not apply.

### 3.4.2. Extinct or extirpated

Greater Prairie-Chicken is extirpated from Ontario.

### 3.4.3. Not at risk

Does not apply. Greater Prairie-Chicken is extirpated from Ontario.

## 4. Summary of Ontario status

Greater Prairie-Chicken (*Tympanuchus cupido pinnatus*) is classified as Extirpated in Ontario.

*This status of this species is consistent with the definition of Extirpated under the Endangered Species Act, 2007.*

## 5. Information sources

- Adkins, K., Roy, C. L., Wright, R. G., & Andersen, D. E. (2021). Simulating Strategic Implementation of the CRP to Increase Greater Prairie-Chicken Abundance. *The Journal of Wildlife Management*, 85(1), 27-40.
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- COSEWIC. (2009). *COSEWIC assessment and status report on the Greater Prairie-Chicken Tympanuchus cupido pinnatus in Canada*. Retrieved from Ottawa: [www.sararegistry.gc.ca/status/status\\_e.cfm](http://www.sararegistry.gc.ca/status/status_e.cfm)
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- Hjertaas, D. (1993). *National recovery plan for the greater prairie-chicken*. Ottawa: Canadian Wildlife Service. p. vii+18
- Minnesota Department of Natural Resources. (2020). Minnesota's endangered, threatened, and special concern species. Retrieved from <https://www.dnr.state.mn.us/ets/index.html>



## Appendix 1: Technical summary for Ontario

Species: Greater Prairie-Chicken (*Tympanuchus cupido pinnatus*)

### 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 years (Bellinger et al. 2003)
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Extirpated
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Extirpated
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	Extirpated
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	Extirpated
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.	Extirpated
Are the causes of the decline (a) clearly reversible, and (b) understood, and (c) ceased?	Extirpated
Are there extreme fluctuations in number of mature individuals?	Extirpated

### Extent and occupancy information in Ontario

Extent and occupancy attributes	Value
Estimated extent of occurrence (EEO). <i>If value in COSEWIC status report is not applicable, then use <a href="http://geocat.kew.org">geocat.kew.org</a>. State source of estimate.</i>	0 km <sup>2</sup>
Index of area of occupancy (IAO). <i>If value in COSEWIC status report is not applicable, then use <a href="http://geocat.kew.org">geocat.kew.org</a>. State source of estimate.</i>	0 km <sup>2</sup>
Is the total population severely fragmented? i.e., is >50% of its total area of occupancy in habitat patches that are:	Extirpated

<b>Extent and occupancy attributes</b>	<b>Value</b>
(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. <i>See Definitions and Abbreviations on COSEWIC and IUCN websites for more information on the term "location". Use plausible range to reflect uncertainty if appropriate.</i>	0
Number of NHIC Element Occurrences <i>Request data from MNRF.</i>	0
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	Extirpated
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	Extirpated
Is there an observed, inferred, or projected continuing decline in number of sub-populations or EOs?	Extirpated
Is there an observed, inferred, or projected continuing decline in number of locations?	Extirpated
Is there an observed, inferred, or projected continuing decline in [area, extent and/or quality] of habitat?	Extirpated
Are there extreme fluctuations in number of populations?	Extirpated
Are there extreme fluctuations in number of locations?	Extirpated
Are there extreme fluctuations in extent of occurrence?	Extirpated
Are there extreme fluctuations in index of area of occupancy?	Extirpated

Number of mature individuals in each sub-population or total population (if known)

<b>Sub-population (or total population)</b>	<b>Number of mature individuals</b>
Extirpated	

Quantitative analysis (population viability analysis conducted)

Probability of extinction in the wild is not applicable (extirpated).

## Threats

No formal threat assessment has been conducted for this species in Canada. Threats to the Greater Prairie–Chicken include fragmentation and modification of suitable habitat that results in population isolation and loss of genetic variation, competition and hybridization with Sharp–tailed Grouse, nest parasitism by Ring–necked Pheasants and hunting. (COSEWIC 2009)

## Rescue effect

Rescue effect attribute	Value
Does the broader biologically relevant geographic range for this species extend beyond Ontario?	Yes
Status of outside population(s) most likely to provide immigrants to Ontario	Minnesota (S3). Continued recovery efforts in the northern part of the state. Formerly Michigan and Ohio, but it is now extirpated from these states
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	No
Would immigrants be adapted to survive in Ontario?	Unknown. Recovery strategy is outdated and dismisses its native status (Hjertaas 1993)
Is there sufficient suitable habitat for immigrants in Ontario?	Unknown. Recovery strategy is outdated and dismisses its native status (Hjertaas 1993)
Are conditions deteriorating in Ontario?	Possibly
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?	No

## Sensitive species

No

### 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

IUCN: International Union for Conservation of Nature and Natural Resources

MNRF: Ministry of Natural Resources and Forestry

NHIC: Natural Heritage Information Centre

NNR: Unranked

NRANK: National conservation status assessment

SARA: Species at Risk Act

*Template last updated: Oct. 14, 2021.*  
*Previous version: Oct 14, 2020.*

SNR: unranked

SRANK: subnational conservation status assessment

S1: Critically Imperiled

S2: Imperiled

S3: Vulnerable

S4: Apparently Secure

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