

Five-Year Review of Progress Towards the Protection and Recovery of Ontario's Species at Risk

2017



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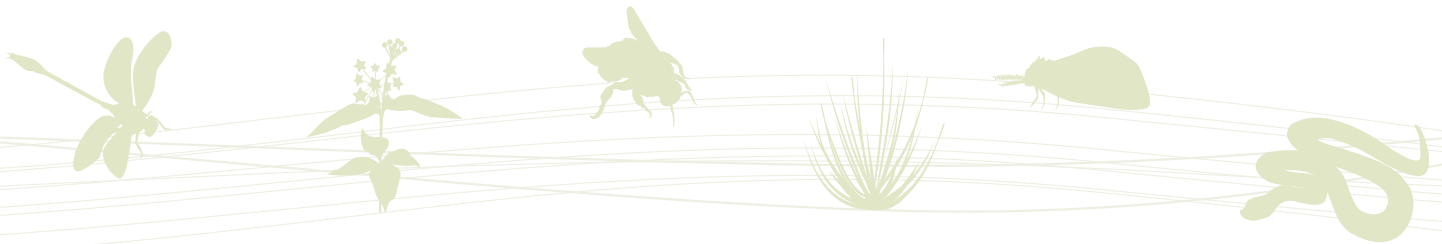
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To fulfill a commitment of the *Endangered Species Act, 2007* (ESA), the Ministry of Natural Resources and Forestry (MNR) publishes a Five-Year Review of Progress Towards the Protection and Recovery of Ontario's Species at Risk. The Review shows how the MNR and its partners are helping to protect and recover species at risk in Ontario. In 2017, the Review included the following six species at risk:

- **Bogbean Buckmoth**
- **Eastern Hog-nosed Snake**
- **Four-leaved Milkweed**
- **Horsetail Spike-rush**
- **Laura's Clubtail**
- **Rusty-patched Bumble Bee**

This document is a summary of the progress made from 2007 to 2016 for the six species listed above. Full-length chapters on each of the six species are found in the 2017 Five-Year of Review of Progress Towards the Protection and Recovery of Ontario's Species at Risk, which is available on the Government of Ontario website at www.ontario.ca/document/five-year-review-progress-towards-protection-and-recovery-ontarios-species-risk-2017.



Five-Year Review of Progress Towards the Protection and Recovery of

Bogbean Buckmoth



The recovery goal in the government response statement (GRS) for Bogbean Buckmoth is to sustain current population levels and distributions at existing locations, and to encourage the natural expansion of the species into suitable but currently unoccupied habitat within its current range in Ontario. Progress has been made toward both government-led actions and government supported actions for the species through:

- Protecting the Bogbean Buckmoth and its habitat through the ESA. Developing and implementing a regulation identifying the specific habitat of the species;
- Conducting multi-species surveys that included Bogbean Buckmoth; and
- Implementing the Ontario Invasive Species Strategic Plan and Ontario's *Invasive Species Act, 2015* that provide a comprehensive framework for invasive species management in Ontario.

In alignment with the GRS, work is continuing to determine whether natural expansion of the species into suitable habitat has occurred within its range, and to implement invasive species control within and adjacent to occupied fen ecosystems.



Provincial status:

Bogbean Buckmoth is classified as endangered under the *Endangered Species Act, 2007* (ESA). The species has been protected from being killed, harmed, harassed, captured or taken, and its habitat has been protected from damage or destruction under the ESA since 2010. Habitat protection for the species is now based on a habitat regulation that came into force in 2014.



Supporting Our Partners:

Through the Species at Risk Stewardship Fund, the Ministry of Natural Resources and Forestry (“the Ministry”) has enabled its stewardship partners to conduct one project that has supported the protection and recovery of multiple species at risk, including Bogbean Buckmoth.

The Ministry’s support helped its stewardship partners to involve four individuals who volunteered 28 hours of their time toward protection and recovery activities for species at risk, including Bogbean Buckmoth.



46
observations of
this species were
submitted to the
NHIC since 2010

Occurrences and distribution:

Four populations of Bogbean Buckmoth have been documented in eastern Ontario. Currently, all of these populations are considered to be extant. Two populations in the Richmond Fen were reconfirmed in 2011. Since 2010, no change in status of the populations has occurred and all have good to excellent estimated viability.

Since the species was listed in 2010, the Ministry’s central depository at the Natural Heritage Information Centre (NHIC) has received approximately 46 records of the species. Records submitted have helped to redefine where the species is known and has been known to occur and can provide additional information on the species’ habitat and threats.

Species-specific documents and guidance published by the government:

- ➔ Recovery strategy for Bogbean Buckmoth (2011)
- ➔ Bogbean Buckmoth: Ontario Government Response Statement (2012)
- ➔ Bogbean Buckmoth Habitat Regulation (*Ontario Regulation 242/08*) (2014)

Five-Year Review of Progress Towards the Protection and Recovery of Eastern Hog-nosed Snake



The recovery goal in the government response statement (GRS) for Eastern Hog-nosed Snake is to maintain current population levels, and where possible, increase connectivity of existing populations and ensure the natural expansion of their range. Progress has been made toward both government-led actions and government-supported actions for the species through activities such as:

- Supporting partners to undertake activities to protect and recover the species;
- Conducting monitoring, inventory and reporting activities for at-risk reptiles, including Eastern Hog-nosed Snake;
- Developing and distributing outreach and education materials to a broad audience; and
- Developing best management practices for municipalities when carrying out public works activities that will minimize risks to Eastern Hog-nosed Snake.

In alignment with the GRS, more research is needed to estimate the effect of differing population sizes of Eastern Hog-nosed Snake on the likelihood of the population surviving, determine the dependence of the species on toad populations for survival, and investigate the food preferences of juvenile snakes.



Provincial status:

Eastern Hog-nosed Snake is classified as threatened under the *Endangered Species Act, 2007* (ESA). Prior to its transition to the ESA, Eastern Hog-nosed Snake was listed as threatened but was not regulated under the previous *Endangered Species Act*. The species has been protected from being killed, harmed, harassed, captured or taken since 2008. In addition, its habitat has been protected from being damaged or destroyed since June 30, 2013, based on the general habitat definition in the ESA.



Government-supported stewardship projects:

Through the Species at Risk Stewardship Program, the Ministry of Natural Resources and Forestry (“the Ministry”) has enabled its stewardship partners to conduct a total of 105 projects that have supported the protection or recovery of Eastern Hog-nosed Snake. Three projects (\$120,218) focused exclusively on Eastern Hog-nosed Snake, while the other 102 projects (\$4,428,435) focused on multiple species at risk, including Eastern Hog-nosed Snake.

The Ministry’s support helped its stewardship partners to involve 34,371 individuals who volunteered 80,708 hours of their time toward protection and recovery activities for species at risk, including Eastern Hog-nosed Snake. The estimated value of these voluntary contributions, as well as additional funding and in-kind support, is \$7,101,289.

Stewardship partners reported that through their actions 2,786 hectares of habitat were enhanced for Eastern Hog-nosed Snake and other species at risk that inhabit the same ecosystem.

Stewardship partners reported providing outreach on multiple species at risk, including Eastern Hog-nosed Snake, to 1,603,388 individuals.

Species at risk stewardship fund:





21

protection or
recovery permits

5

overall benefit
permits

33

agreements

64

registrations

Supporting human activities while ensuring appropriate support for species recovery:

The Ministry of Natural Resources and Forestry has issued 26 permits for this species: 21 'protection or recovery permits' were issued under clause 17(2)(b), and five 'overall benefit permits' were issued under clause 17(2)(c) of the ESA.

A total of 33 agreements were entered into for Eastern Hog-nosed Snake. These agreements were enabled through [Ontario Regulation 242/08](#) (prior to the July 1, 2013 amendment).

Sixty-four activities have been registered for the species. The activities were registered under 'Species protection, recovery activities' (section 23.17), 'Threats to health and safety, not imminent' (section 23.18), 'Pits and quarries' (section 23.14), 'Newly listed and transition species' (section 23.13), and 'Drainage works' (section 23.9) under [Ontario Regulation 242/08](#) of the ESA.



3,400

observations of
this species were
submitted to the
NHIC since 2008

Occurrences and distribution:

Sixty-seven populations of Eastern Hog-nosed Snake have been documented in Ontario. Most of the populations are scattered in southwestern and central Ontario, while one population is distributed across an area from Parry Sound to Kawartha Highlands Provincial Park. Currently, 32 of these populations are extant, 19 are considered historical, and 16 are considered extirpated. Since 2008, the status of eight populations changed from extant to historical based on the last observed date, and five populations that were previously considered historical are now considered extirpated. Since 2008, the Ministry's central depository at the Natural Heritage Information Centre (NHIC) has received over 3,400 records of the species, which have reconfirmed 19 extant populations and also identified nine new populations. In addition, four populations that were previously considered historical are now considered extant.

Species-specific documents and guidance published by the government:

- Recovery strategy for Eastern Hog-nosed Snake (2011)
- Eastern Hog-nosed Snake: Ontario Government Response Statement (2012)

Five-Year Review of Progress Towards the Protection and Recovery of Four-leaved Milkweed



The recovery goal in the government response statement (GRS) for Four-leaved Milkweed is to ensure the persistence of a self-sustaining population in Ontario. Progress has been made towards both government-led actions and government-supported actions for the species through activities such as:

- Supporting conservation, agency, municipal and industry partners and First Nations and Métis communities and organizations to undertake activities to protect and recover Four-leaved Milkweed;

- Developing a management plan for the Macaulay Mountain population of Four-leaved Milkweed that includes guidance on how to monitor the areas where the plants are found and reduce and manage invasive plant species;
- Creating habitat suitability models for the species; and
- Developing a survey and monitoring protocol for assessing habitat conditions and conducting searches for undiscovered populations of the species.

In alignment with the GRS, further research is required to address remaining questions about the species' ecology. Also, more work is needed to develop and implement best management practices for protecting alvar woodland ecological communities in areas that could be potential habitat for the species.



Provincial status:

Four-leaved Milkweed is classified as endangered under the *Endangered Species Act, 2007* (ESA). The species has been protected from being killed, harmed, harassed, captured or taken, and its habitat has been protected from damage or destruction under the ESA since 2010. Habitat protection for the species is now based on a habitat regulation that came into force in 2014.





Supporting Our Partners:

Through the Species at Risk Stewardship Program, the Ministry of Natural Resources and Forestry (“the Ministry”) has enabled its stewardship partners to conduct a total of five projects that have supported the protection and recovery of Four-leaved Milkweed. One project (\$8,650) focused exclusively on Four-leaved Milkweed, while the other four projects (\$93,500) focused on multiple species at risk, including Four-leaved Milkweed.

The Ministry’s support helped its stewardship partners to involve 42 individuals who volunteered 668 hours of their time toward protection and recovery activities for species at risk, including Four-leaved Milkweed. The estimated value of these voluntary contributions, as well as additional funding and in-kind support, is \$241,805.

Stewardship partners reported that through their actions 1.6 hectares of habitat were enhanced for Four-leaved Milkweed and other species at risk that inhabit the same ecosystem.

Stewardship partners reported providing outreach on multiple species at risk, including Four-leaved Milkweed, to 2,787 individuals.

Species at risk stewardship fund:





65
observations of this
species were submitted
to the NHIC since 2010

Occurrences and distribution:

Five populations of Four-leaved Milkweed have been documented in Prince Edward County, the Greater Napanee area, and the Niagara region of Ontario. Currently, two of these populations are extant, two are considered historical, and one is considered extirpated. Since 2008, no new populations of Four-leaved Milkweed have been documented; however, the two extant populations in Prince Edward County that were discovered in 2006 were reconfirmed in 2012 by Ministry staff. Two new areas, discovered in the Macaulay Mountain population by stewardship partners, reconfirmed the population again in 2014, increasing the known extent of the species distribution at the site and resulting in an update to the population viability from unknown to good estimated viability.

Since 2010, the Ministry's central repository at the Natural Heritage Information Centre (NHIC) has received approximately 65 records of the species. Records submitted have helped redefine where the species is known to occur and have provided additional information on the species' habitat and threats.

Species-specific documents and guidance published by the government:

- ➔ Recovery strategy for Four-leaved Milkweed in Ontario (2011)
- ➔ Four-leaved Milkweed: Ontario Government Response Statement (2012)
- ➔ Four-leaved Milkweed Habitat Regulation (*Ontario Regulation 242/08*) (2014)



Five-Year Review of Progress Towards the Protection and Recovery of Horsetail Spike-rush



The recovery goal in the government response statement (GRS) for Horsetail Spike-rush is to ensure the persistence of the single existing population in Ontario. Progress has been made toward all of the government-led actions for the species through activities such as:

- Co-operating with federal partners to implement protection and recovery actions identified in the “Action Plan for the Horsetail Spike-rush” by Environment Canada;
- Encouraging the submission of Horsetail Spike-rush data to the Ministry’s central repository at the Natural Heritage Information Centre (NHIC); and
- Protecting Horsetail Spike-rush and its habitat through the ESA.

In alignment with the GRS, protection and recovery of Horsetail Spike-rush will continue to be a shared responsibility that will require the ongoing involvement of the federal government, as well as provincial and non-government organizations, if the plant is discovered at sites beyond the boundaries of the Long Point National Wildlife Area.



Provincial status:

Horsetail Spike-rush is classified as endangered under the *Endangered Species Act, 2007* (ESA). The species was also listed under the previous *Endangered Species Act*, and has retained the same status since transition to the ESA. Horsetail Spike-rush has received species and habitat protection since 2001.



**observations of
this species were
submitted to the
NHIC since 2008**

Occurrences and distribution:

Only one population of Horsetail Spike-rush has been documented in Ontario, within Long Point National Wildlife Area (LPNWA). The population is considered to be extant. Since 2008, the Ministry has received six records of the species, based on observations between 1999 and 2011, which indicate the species is persisting at the LPNWA site.

Species-specific documents and guidance published by the government:

- Recovery Strategy for Horsetail Spike-rush in Ontario (2011)
- Horsetail Spike-rush: Ontario Government Response Statement (2012)



Five-Year Review of Progress Towards the Protection and Recovery of

Laura's Clubtail



The recovery goal in the government response statement (GRS) for Laura's Clubtail is to ensure the long-term survival of a self-sustaining population within its current range in Ontario. Progress has been made toward both government-led and government-supported actions for the species through activities such as:

- Surveying for Laura's Clubtail to determine additional ranges for the species and to identify and document suitable habitat and study impacts of road mortality;
- Undertaking research on the basic biology of Laura's Clubtail to address knowledge gaps; and
- Providing recommendations for supporting and coordinating habitat improvement activities among local land managers and landowners.

In alignment with the GRS, more work needs to be done to determine the impacts of threats such as decreased water quality, invasive species, and road mortality on populations of Laura's Clubtail, determine why this dragonfly species appears to occur naturally in only a few of the apparently suitable rivers in Ontario, and undertake research on the basic biology of the species.



Provincial status:

Laura's Clubtail is classified as endangered under the *Endangered Species Act, 2007* (ESA). The species has been protected from being killed, harmed, harassed, captured or taken, and its habitat has been protected from damage or destruction under the ESA since 2010. Habitat protection for the species is now based on a habitat regulation that came into force in 2014.





Government-supported stewardship projects:

Through the Species at Risk Stewardship Program, the Ministry of Natural Resources and Forestry (“the Ministry”) has enabled a stewardship partner to conduct one project that has supported the protection and recovery of multiple species at risk, including Laura's Clubtail.

Three main activities involving Laura's Clubtail were undertaken: 1) inventory surveys for the species were

conducted along Big Creek, Big Otter Creek and several other rivers and tributaries in the area; 2) suitable habitat areas were geo-referenced and; 3) mortality surveys were conducted at locations where roads crossed the waterways. Recommendations for habitat management were also made as a result of the project.



1
protection or
recovery permit

Supporting human activities while ensuring appropriate support for species recovery:

The Ministry of Natural Resources and Forestry (“the Ministry”) has issued one ‘protection or recovery permit’ for Laura's Clubtail under clause 17(2) (b) of the ESA.



67
observations of this
species were
submitted to the
NHIC since 2010

Occurrences and distribution:

Two populations of Laura's Clubtail have been documented in southwestern Ontario. Currently, they are both extant. No changes in the status of the populations have occurred since 2010.

In 2011, additional targeted surveys resulted in the documentation of 99 Laura's Clubtail exuviae (the skins left behind after the adults emerge), and the discovery of Laura's Clubtail at two sites where the species had not been previously documented, one site along South Otter Creek and another site along Little Otter Creek. This is strong evidence that the two known populations of Laura's Clubtail in Ontario continue to persist.

Species-specific documents and guidance published by the government:

- Recovery Strategy for Laura's Clubtail (2011)
- Laura's Clubtail: Ontario Government Response Statement (2012)
- Laura's Clubtail Habitat Regulation (*Ontario Regulation 242/08*) (2014)

Five-Year Review of Progress Towards the Protection and Recovery of **Rusty-patched Bumble Bee**



The recovery goal in the government response statement (GRS) for Rusty-patched Bumble Bee is to maintain the current population level, and if possible, encourage the natural expansion of self-sustaining populations into suitable areas of its current and historic range in Ontario. Progress has been made toward both government-led and government-supported actions for the species through activities such as:

- Supporting partners to undertake activities to protect and recover the species;
- Continuing restoration efforts, such as prescribed burning, in habitat where the Rusty-patched Bumble Bee has been found in Pinery Provincial Park; and
- Engaging visitors in bee survey activities that provide a learning experience and help to inform the Ministry of Natural Resources and Forestry of bumble bee activity within Pinery Provincial Park.

In alignment with the GRS, more work needs to be done to determine the cause of the rapid and widespread decline of the Rusty-patched Bumble Bee, including understanding its basic biology, and researching the lethal and sub-lethal effects of pesticides on native bumble bee species in general.



Provincial status:

Rusty-patched Bumble Bee is classified as endangered under the *Endangered Species Act, 2007* (ESA). The species has been protected from being killed, harmed, harassed, captured or taken, and its habitat has been protected from damage or destruction under the ESA since 2010. Habitat protection for the species is now based on a habitat regulation that came into force in 2014.



Government-supported stewardship projects:

Through the Species at Risk Stewardship Program, the Ministry of Natural Resources and Forestry (“the Ministry”) has enabled its stewardship partners to conduct a total of seven projects (\$318,155) that have supported the protection and recovery of multiple species at risk, including Rusty-patched Bumble Bee.

The Ministry’s support helped its stewardship partners to involve 401 individuals who volunteered 4,343 hours of their time toward protection and recovery activities for species at risk, including Rusty-patched Bumble Bee. The estimated value of these voluntary contributions, as well as additional funding and in-kind support, is \$727,355.

Stewardship partners reported that through their actions 4.4 hectares of habitat were enhanced for Rusty-patched Bumble Bee and other species at risk that inhabit the same ecosystem.

Stewardship partners reported providing outreach on multiple species at risk, including Rusty-patched Bumble Bee, to 37,692 individuals.

Through the Species at Risk Research Fund for Ontario, the Ministry supported a research partner to learn more about the phenology, distribution, abundance and habitat needs of Rusty-patch Bumble Bee by studying a very similar and more numerous species, the Yellow-banded Bumble Bee. The research also included an investigation into captive breeding techniques.

Species at risk stewardship fund:





3

protection or
recovery permits

13

registrations

337

observations of
this species were
submitted to the
NHIC since 2010

Supporting human activities while ensuring appropriate support for species recovery:

To date, the Ministry has issued three 'protection or recovery permits' for Rusty-patched Bumble Bee under clause 17(2)(b) of the ESA.

Thirteen activities have been registered for the species. The activities were registered under 'Ecosystem protection' (section 23.11) and 'Drainage Works' (section 23.9) under [Ontario Regulation 242/08](#) of the ESA.

Occurrences and distribution:

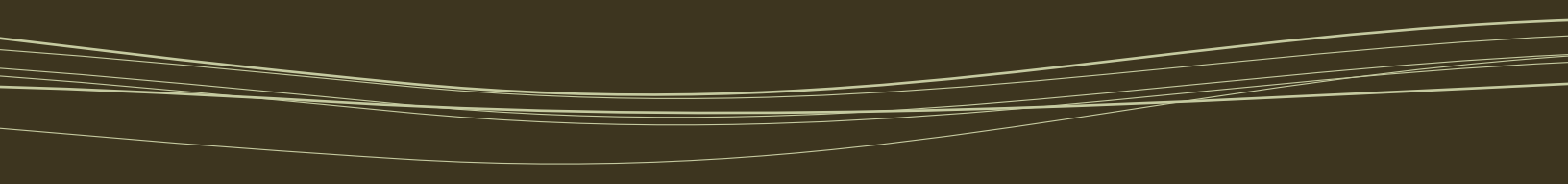
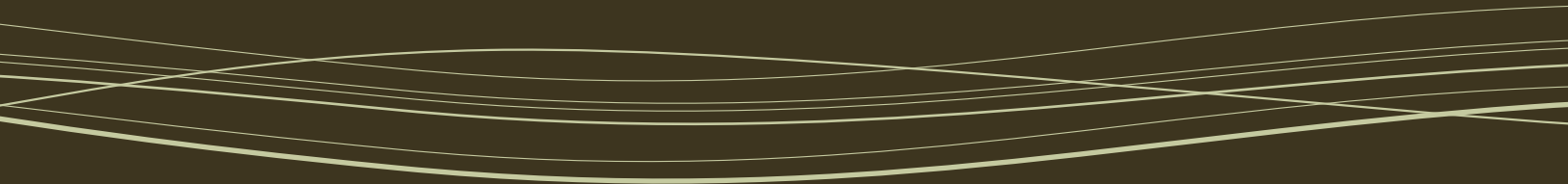
Ninety-three populations of Rusty-patched Bumble Bee have been documented in southern Ontario. Currently, seven of these populations are considered to be extant, whereas the remaining 86 are considered historical. Despite multiple targeted surveys for the species since 2004, Rusty-patched Bumble Bee was last observed in 2009 in Pinery Provincial Park.

Since the species was listed as endangered in 2010, the Ministry's central repository at the Natural Heritage Information Centre (NHIC) has received approximately 337 records. Records submitted have helped to redefine where the species is known and has been known to occur and have provided additional information on the species' habitat and threats.

Species-specific documents and guidance published by the government:

- Recovery strategy for Rusty-patched Bumble Bee (2011)
- Rusty-patched Bumble Bee: Ontario Government Response Statement (2012)
- Rusty-patched Bumble Bee Habitat Regulation ([Ontario Regulation 242/08](#)) (2014)





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