Ministry of Natural Resources

Natural. Valued. Protected.

Butternut

Ontario Government Response Statement


Photo: David Smith

PROTECTING AND RECOVERING SPECIES AT RISK IN ONTARIO

Species at risk recovery is a key part of protecting Ontario's biodiversity. Biodiversity – the variety of living organisms on Earth – provides us with clean air and water, food, fibre, medicine and other resources that we need to survive.

The *Endangered Species Act, 2007* (ESA) is the Government of Ontario's legislative commitment to protecting and recovering species at risk and their habitats. As soon as a species is listed as extirpated, endangered or threatened under the ESA, it is automatically protected from harm or harassment. Also, immediately upon listing, the habitats of endangered and threatened species are protected from damage or destruction.

Under the ESA, the Ministry of Natural Resources (the Ministry) must ensure that a recovery strategy is prepared for each species that is listed as endangered or threatened. A recovery strategy provides science-based advice to government on what is required to achieve recovery of a species.

GOVERNMENT RESPONSE STATEMENTS

Within nine months after a recovery strategy is prepared, the ESA requires the Ministry to publish a statement summarizing the government's intended actions and priorities in response to the recovery strategy. The recovery strategy for the Butternut (*Juglans cinerea*) was completed on May 31, 2013 (http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/mnr_sar_rs_bttrnt_en.pdf).

The response statement is the government's policy response to the scientific advice provided in the recovery strategy. All recommendations provided in the recovery strategy were considered and this response statement identifies those that are considered to be appropriate and necessary for the protection and recovery of the species. In addition to the strategy, the response statement is based on input from stakeholders, other jurisdictions, Aboriginal communities and members of the public. It reflects the best available traditional, local and scientific knowledge at this time and may be adapted if new information becomes available. In implementing the actions in the response statement, the ESA allows the Ministry to determine what is feasible, taking into account social and economic factors.

Butternut is a medium-sized tree in the walnut family that grows up to 30 m in height and 116 cm in diameter. Butternut leaves are made up of 11 to 17 leaflets. Young trees have smooth, grey bark, which becomes ridged as the trees age. Mature trees produce large, edible nuts in the fall, each containing a single seed.

Ontario

MOVING FORWARD TO PROTECT AND RECOVER BUTTERNUT

Butternut is listed as an endangered species under the ESA, which protects both the tree and its habitat. The ESA prohibits harm or harassment of the species and damage or destruction of its habitat without authorization. Such authorization would require that conditions established by the Ministry be met.

Butternut is a wide-ranging species that occurs throughout central and north-eastern North America. In Canada, Butternut is native to Ontario, Quebec and New Brunswick. In Ontario, natural populations of this species are generally found south of the Canadian Shield, ranging from the southwest, north to the Bruce Peninsula, and east to the Ontario-Quebec border, where the species reaches its northern limit in the province. Over the past 40 years, Butternut has suffered significant declines, primarily due to Butternut Canker (*Ophiognomonia clavigignenti-juglandacearum*), a fungal disease that kills trees of any size by restricting the flow of water and nutrients. In addition to causing the eventual death of the tree, stem cankers reduce the commercial value of the wood. This fungus has already devastated North American Butternut populations. The extent of infection in Ontario is not fully understood; however in parts of the U.S., Butternut Canker has infected more than 90 percent of Butternut trees. Other threats to the species in Ontario include hybridization with exotic species in the walnut family, harvesting of trees in anticipation of eventual infection and mortality, habitat loss and degradation in areas where forest cover is already limited (e.g. southwest Ontario), and other diseases, insects and exotic pests that would not likely affect declines on their own, but that weaken the trees, making them more susceptible to Butternut Canker. Threats to the species may also include excessive seed predation by hyper-abundant species such as insects and Common Grackles (*Quiscalus quiscula*); however the significance of this potential threat is unknown at this time.

The most important threat to the survival of Butternut populations in Ontario is the Butternut Canker. The successful recovery of the species in Ontario will depend on well-grounded management approaches that address the threat imposed by this disease. While infected trees typically exhibit a number of symptoms, including stem cankers, loss of crown and vigour, and the presence of epicormic shoots[1], some infected trees have few symptoms and live much longer than others. Researchers hypothesize that these trees may be resistant to the disease.

A tree is considered to exhibit resistance to Butternut Canker if there is evidence that it is immune to infection by the disease or if the symptoms of infection are less severe compared to other trees that have been infected to a similar extent.

Whether Butternut Canker resistance exists and, if so, the mechanism of resistance (i.e., genetic, environmental, or both), remains largely unknown.

In contrast, some Butternut trees are so diseased that they would not contribute to the protection and recovery of the species. In Ontario, an ESA regulatory system has been put in place to recognize that certain Butternut trees may contribute more than others to the protection and recovery of the species, and to streamline the authorization process for proponents undertaking activities that involve the removal of Butternut trees. The regulation identifies three different categories of Butternut, based on their ability to contribute to the protection or recovery of the species and utility in determining possible mechanisms of Butternut Canker resistance (s. 23.7, O. Reg. 242/08):

1. Epicormic shoots are shoots that sprout from buds that lay beneath the bark of a trunk after higher parts of the plant are damaged.

- Category 1: the tree is in the advanced stages of disease as a result of Butternut Canker; retention would not contribute to protection or recovery of the species.
- Category 2: the tree does not have Butternut Canker or disease is not as advanced; retention could contribute to the protection or recovery of the species.
- Category 3: the tree could be useful in determining how to prevent or resist Butternut Canker.

Under the regulation, the conditions for the removal of a Butternut tree vary depending on the category to which the tree belongs, as determined by a designated Butternut Health Assessor. The regulation allows for the removal of Butternut trees assessed as Category 1. The regulation also provides for the removal of a limited number (i.e. 10 or less) of Category 2 Butternut, subject to conditions specified in the regulation, including requirements to plant replacement seedlings in suitable habitat for the species. Given the importance of Category 3 Butternut trees to the protection and recovery of the species in Ontario, harm or removal of these trees is not authorized by the regulation.

For more detail on Butternut health assessment, please refer to the *Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act, 2007*, available to the public on the Ministry's website.

Given the knowledge gaps about Butternut Canker and the importance of retaining healthy Butternut trees on the landscape, recovery efforts at this time are focused on surveying and monitoring Butternut and their habitat in Ontario, identifying and protecting healthy (i.e. Category 2 and 3) trees, and continuing research on Butternut Canker resistance and control, for the purpose of protecting and restoring disease-resistant populations of Butternut across the species' range in Ontario.

The government's long-term goal for the recovery of Butternut is to maintain existing populations, or increase them, such that they are self-sustaining throughout the species' current range in Ontario.

As research into Butternut Canker progresses over the next five years, the government's goal for the recovery of Butternut may be re-evaluated as the potential feasibility and options for addressing Butternut Canker evolve.

Protecting and recovering species at risk is a shared responsibility. No single agency or organization has the knowledge, authority or financial resources to protect and recover all of Ontario's species at risk. Successful recovery requires inter-governmental co-operation and the involvement of many individuals, organizations and communities.

In developing the government response statement, the Ministry considered what actions are feasible for the government to lead directly and what actions are feasible for the government to support its conservation partners to undertake.

GOVERNMENT-LED ACTIONS

To help protect and recover the Butternut, the government will directly undertake the following actions:

- Continue to apply provincial direction for Crown forestry practices in areas occupied by Butternut.
- Continue to apply section 23.7 of Ontario Regulation 242/08 and monitor its implementation. The government will re-assess the direction provided in this regulation within five years, through the review of progress towards protecting and recovering Butternut. The review will evaluate whether the implementation of the regulation continues to align with the government's goal for the recovery of Butternut in Ontario.
- Maintain the Ministry of Natural Resources' Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act, 2007 and the list of designated Butternut Health Assessors that are in good standing.
- Set standards for the training of Butternut Health Assessors and coordinate training in collaboration with partners.
- Co-operate with federal partners where appropriate to support their implementation of the protection and recovery actions identified in the "Recovery Strategy for the Butternut (Juglans cinerea) in Canada" by Environment Canada.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Butternut occurrence data to the Ministry's central repository at the Natural Heritage Information Centre.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario.
- Protect Butternut trees and their habitat through the ESA.
- Support conservation, agency, municipal and industry partners, and Aboriginal communities and organizations to undertake activities to protect and recover Butternut. Support will be provided through funding, agreements, permits (including conditions) and/or advisory services.
- Establish and communicate annual priority actions for government support in order to encourage collaboration and reduce duplication of efforts.

GOVERNMENT-SUPPORTED ACTIONS

The government endorses the following actions as being necessary for the protection and recovery of Butternut. Actions identified as "high" will be given priority consideration for funding under the ESA. Where reasonable, the government will also consider the priority assigned to these actions when reviewing and issuing authorizations under the Endangered Species Act. Other organizations are encouraged to consider these priorities when developing projects or mitigation plans related to species at risk. The government will focus its support on these high-priority actions over the next five years.

Focus Area: **Inventory and Monitoring**

Objective: Improve knowledge about the distribution, abundance, and health of Butternut populations and habitat in Ontario.

Actions:

1. **(HIGH)** Develop and implement a standardized survey and monitoring protocol for collecting tree and stand information for use in conjunction with the Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act, 2007, published by the Ministry of Natural Resources. This program should:
   - identify the locations, numbers, and health of Butternut trees and hybrids in Ontario;
   - assess habitat conditions at occupied sites;
   - locate and monitor putatively resistant trees;
   - assess population demographics, such as age structure, recruitment, and mortality rates; and,
   - submit detailed data to the Ministry.
2. Support capacity development for Aboriginal communities to collect, store and manage Aboriginal traditional knowledge they hold about the distribution, abundance and historic use of Butternut. Encourage information sharing within the recovery community.

Focus Area: **Research**

Objective: Improve knowledge of Butternut and its threats, including Butternut Canker, and hybridization with other species in the walnut family.

Actions:

3. **(HIGH)** Continue investigations into whether there is a genetic or environmental basis to Butternut Canker resistance, which may include:
   - assessing the genetic diversity of the Ontario Butternut population;
   - developing and implementing reliable methods to screen trees for resistance;
   - evaluating the influence of environmental conditions such as habitat type and the prevalence of stressors (e.g. other diseases, insects and exotic pests) on resistance to Butternut Canker; and,
   - as appropriate, investigating approaches to increase resistance through breeding or modifications to the environment.
4. Research approaches to kill or control Butternut Canker, or to provide resistance to individuals (e.g., inoculation, habitat management).

5. Investigate the extent, and potential threats and benefits of hybridization of Butternut with other species in the walnut family. This may include further investigation into the severity of the threat posed by hybridization to the protection and recovery of Butternut in Ontario, whether hybrids exhibit genetic resistance to Butternut Canker, and if so, whether this knowledge may assist Butternut recovery in Ontario.
6. Investigate new and emerging threats to Butternut (e.g. Thousand Cankers disease).

Focus Area: **Stewardship and Management**
Objective: Increase public awareness about Butternut Canker and the need to protect healthy Butternut trees.

Actions:

7. **(HIGH)** Promote awareness among private landowners, land management authorities, conservation partners and Aboriginal communities and organizations about Butternut, including:
   - negative effects of Butternut Canker;
   - protection afforded to the species and its habitat under the ESA; and,
   - actions they can take to help protect or recover the species, such as implementing forest management practices that support the growth and recruitment of healthy Butternut trees in their woodlots.
8. Collect and archive genetic material from Butternut trees that may contribute to the recovery of the species. This may include collecting and storing seeds, establishing and monitoring orchards of archived Butternut trees to support research and stewardship efforts, and exploring opportunities to store back-up seed/germplasm from Butternut trees.

IMPLEMENTING ACTIONS

Financial support for the implementation of actions may be available through the Species at Risk Stewardship Fund, Species at Risk Research Fund for Ontario, or the Species at Risk Farm Incentive Program. Conservation partners are encouraged to discuss project proposals related to the actions in this response statement with the Ministry. The Ministry can also advise if any authorizations under the ESA or other legislation may be required to undertake the project.

Implementation of the actions may be subject to changing priorities across the multitude of species at risk, available resources and the capacity of partners to undertake recovery activities. Where appropriate, the implementation of actions for multiple species will be co-ordinated across government response statements.

REVIEWING PROGRESS

The ESA requires the Ministry to conduct a review of progress towards protecting and recovering a species not later than five years from the publication of this response statement. The review will help identify if adjustments are needed to achieve the protection and recovery of Butternut.

ACKNOWLEDGEMENT

We would like to thank all those who participated in the development of the "Recovery Strategy for Butternut (*Juglans cinerea*) in Ontario" for their dedication to protecting and recovering species at risk.

For additional information:
Visit the species at risk website at ontario.ca/speciesatrisk
Contact your MNR district office
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