

American Chestnut

Ontario Government Response Statement



Photo: Allen Woodliffe

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 American Chestnut (*Castanea dentata*) was published on June 15, 2012 (http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/STDPROD_075644.html).

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.

American Chestnut is a large, deciduous canopy tree that can grow up to 30 metres tall and have a trunk up to 1.5 metres in diameter with smooth dark brown/olive bark that separates into broad flat-topped ridges as it ages. Trees flower in late May to early July and are wind and insect-pollinated.

MOVING FORWARD TO PROTECT AND RECOVER AMERICAN CHESTNUT

American Chestnut is listed as an endangered species under the ESA. The ESA prohibits harm or harassment of the species without authorization. Such authorization would require that conditions established by the Ministry be met. The American Chestnut's habitat will be protected from damage or destruction under the Act by June 30, 2013.

American Chestnut was a dominant forest tree species in northeastern North America until the early 1900s when populations were devastated by a fungal pathogen that causes chestnut blight. Chestnut blight continues to be the greatest threat to American Chestnut in Ontario, as well as loss and degradation of habitat. In southwestern Ontario, American Chestnut populations have been reduced to less than one percent of the original 1.5 to 2 million trees. The species' native range in Ontario accounts for less than five percent of its native range in North America, which extends from southern New England to the southern Appalachian mountains. Historically, American Chestnut held significant economic and cultural importance in North America for indigenous and for non-indigenous peoples.

American Chestnut populations in Ontario are gravely threatened by chestnut blight, with many trees surviving only as stumps with coppice shoots¹, while large mature trees are considered extremely rare. The Ontario population is unlikely to become self-sustaining without effective measures to control or halt the impact of chestnut blight. At this time, however, there remains a significant amount of uncertainty around the feasibility and effectiveness of blight control measures and appropriate methods of intervention. To date, recovery actions targeted at weakening the blight virus on affected trees and finding disease-resistant American Chestnuts have not been found to be effective in Ontario. The recovery action with the greater potential to establish blight resistance in American Chestnut in a reasonable time appears to be the production of a modified American Chestnut with genes from blight-resistant or blight-tolerant Chestnut species (e.g., Chinese Chestnut). At this time recovery efforts will focus on the continued support of research into various blight control measures, as well as on ensuring the persistence of the existing American Chestnuts in Ontario by supporting the conservation and enhancement of their genetic diversity, promoting blight tolerance, and preventing the spread of the disease.

The government's goal for the recovery of American Chestnut is to retain the current population level and distribution in Ontario while increasing genetic diversity and reproductive success, and where possible, explore the feasibility of implementing blight control measures to restore the species to a self-sustaining state.

As research into blight control measures, such as inter-breeding, progresses over the next five years, the government's goal for the recovery of American Chestnut may be re-evaluated as the potential feasibility and policy options of implementing blight control measures 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.

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

GOVERNMENT-LED ACTIONS

To help protect and recover American Chestnut, the government will directly undertake the following actions

- Undertake and consult on an evaluation of when and how intervention, such as inter-breeding to create blight resistant American Chestnuts, is appropriate for the purposes of recovery. Although in some cases these types of actions may be the only viable method of recovery, the role of species at risk that have been genetically modified raises policy questions that require further investigation and analysis.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of American Chestnut 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 American Chestnut and its habitat through the ESA. Apply and implement habitat protection provisions of the Act by June 30, 2013.
- Support conservation, agency, municipal, industry partners and Aboriginal communities to undertake activities to protect and recover the American Chestnut. Support will be provided through funding, agreements, permits (including conditions) and 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 the American Chestnut. Actions identified as "high" will be given priority consideration for funding or for authorizations under the ESA. The government will focus its support on these high-priority actions over the next five years.

Focus Area: **Inventory and Monitoring**
Objective: Survey and monitor known American Chestnut populations and habitat in Ontario.

Actions:

1. **(HIGH)** Develop and implement a standardized survey monitoring program for naturally-occurring populations of American Chestnut to:
 - detect undiscovered occurrences;
 - regularly complete population surveys and health assessments of American Chestnut occurrences; and
 - assess habitat conditions at occupied sites.

2. Identify and assess planted populations of American Chestnut across Ontario to:
 - determine the genetic parentage (i.e., which one or more species of chestnut the tree is derived from) and geographical source of the trees, where possible;
 - act as potential sources of genetically-resistant trees for future restoration efforts and research purposes; and
 - reduce the risk of spreading blight from planted chestnut trees to naturally-occurring American Chestnuts.

Focus Area: Threat Management

Objective: Develop and evaluate management measures to control the threat of chestnut blight.

Actions:

3. **(HIGH)** Conserve and enhance genetic diversity of American Chestnuts through the establishment of quarantined plantations (e.g., from seed or clones) and facilitated propagation (e.g., cross pollination) in naturally-occurring populations.
4. **(HIGH)** Investigate the effectiveness of producing a modified American Chestnut with genes from blight-resistant or blight-tolerant Chestnut species (e.g., Chinese Chestnut).
5. Investigate the effectiveness of breeding American Chestnut with other American Chestnuts for blight resistance.
6. Investigate the effectiveness of inoculating the species with a viral infection to weaken the blight fungus and decrease the species' vulnerability to the disease.

Focus Area: Awareness

Objective: Increase public awareness about chestnut blight and the need to protect American Chestnuts.

Actions:

7. Promote awareness among land management authorities, private landowners, conservation partners, and Aboriginal communities of the need to increase protection of American Chestnut, reduce the movement of all chestnut species, and limit the spread of blight.

The planting or moving of American Chestnuts without appropriate precautions may introduce chestnut blight into populations that may not yet have been exposed, thus increasing the risks to the species' survival and recovery.

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, Species at Risk Farm Incentive Program or Community Fisheries and Wildlife Involvement 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 the American Chestnut.

ACKNOWLEDGEMENT

We would like to thank all those who participated in the development of the "Recovery Strategy for the American Chestnut (*Castanea dentata*) 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
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