

Scarlet Ammannia

Ontario Government Response Statement



Photo: Sam Brinker

Protecting and Recovering Species at Risk in Ontario

Species at risk recovery is a key part of protecting Ontario's biodiversity. *The Endangered Species Act, 2007* (ESA) is the Government of Ontario's legislative commitment to protecting and recovering species at risk and their habitats.

Under the ESA, the Ministry of Natural Resources and Forestry (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.

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 response statement is the government's policy response to the scientific advice provided in the recovery strategy. In addition to the strategy, the government response statement considered (where available) input from Indigenous communities and organizations, stakeholders, other jurisdictions, and members of the public. It reflects the best available local and scientific knowledge, including Traditional Ecological Knowledge where it has been shared by communities, as appropriate, 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.

The Recovery Strategy for the Scarlet Ammannia (*Ammannia robusta*) in Ontario was completed on June 15, 2017.

Scarlet Ammannia is an annual plant with long, narrow leaves and small, pale lavender-coloured flowers where the leaves join the stem. It grows up to 1 metre tall and may branch off, with the lowest branches arising from the base and growing almost as long as the main stem.

Protecting and Recovering Scarlet Ammannia

Scarlet Ammannia is listed as an endangered species under the ESA, which protects both the plant 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.

Scarlet Ammannia occurs primarily in the United States and Mexico. Less than 1% of the species' global range occurs in Canada, where it is found in British Columbia and Ontario. It is close to the eastern limit of its range in Ontario where it appears to be part of a disjunct lower Great Lakes population mainly found in Michigan and Ohio. In Ontario, the species is found only in Essex County, the southernmost county in southwestern Ontario. There are four known Scarlet Ammannia populations in the province, with one in the Hillman Marsh near Elmdale, one near Kingsville, and two populations on Pelee Island. In addition, information is needed about two newly reported populations on Pelee Island, including one in a created wetland and one in a drainage canal. The newly reported populations may have resulted from deposition of substrate containing Scarlet Ammannia seeds. Two additional populations are considered to be extirpated (one near the Town of LaSalle and one on Pelee Island), but it is unknown whether the species has persisted as a dormant seed bank in seasonally wet areas near the sites of the extirpated populations.

Scarlet Ammannia is an annual plant that occupies dynamic habitat and must re-establish each year from a seed bank. Plants may be undetectable at a site for several years while buried seeds survive. It grows in open, shoreline and semi-aquatic habitats, where sites are submerged early in the year and plants emerge when water levels recede in summer months. This includes mudflats, sand beaches, wetland edges, dried-up pond bottoms, drainage canals/ditches, seasonally or intermittently-flooded fields, and moist sandy depressions. Scarlet Ammannia is dependent on water level fluctuations for the creation and maintenance of suitable early-successional habitat.

In Ontario, the main threats to this species are alteration of the natural hydrologic disturbance regime, competing vegetation and invasive plants, and habitat loss or degradation associated with development and agricultural land uses. Water supply systems (e.g., for irrigation or municipal use) and flood control systems (e.g., dykes and dams) within associated watershed drainage pathways can change water levels in the habitat of the species. Water levels that are artificially maintained at too-high or too-low levels, or prevented from fluctuating the required amounts at appropriate

times, can interfere with the species' life processes. Alteration of these processes can also facilitate growth of competing vegetation, and succession of woody vegetation, which has been identified as a potential threat for several populations in Ontario. Invasive plants such as Phragmites (European Common Reed)(*Phragmites australis* ssp. *australis*) and Creeping Yellow Loosestrife (*Lysimachia nummularia*) also compete with Scarlet Ammannia for resources and may displace it from its habitat.

Residential and agricultural developments can result in habitat loss if the seed bank and natural substrate are removed, covered or compacted, or other required components of habitat (e.g., site hydrology) are changed. Shoreline construction and development, and related activities such as water diversion, tree harvesting and vegetation clearing, can also contribute to habitat loss and water level changes in the species' habitat. Trampling and soil compaction may be occurring at one or more sites due to livestock access and recreational activities, such as operation of all-terrain vehicles, hiking and beach activities, and boating (e.g., dragging boats ashore or heavy boat wake).

Changes to the natural flood regime within the species' habitat and the resulting ecological succession may affect many or all individuals of a population. For this reason, recovery efforts are focused on actions to study and address the threats posed by altered water levels and competing vegetation. Restoration of habitat may be feasible at locations that have been overgrown by competing vegetation or where the habitat has been degraded by other reversible threats. Efforts to reduce the impact of other threats to the species (e.g., trampling and agricultural practices) and increase awareness of Scarlet Ammannia will also help to support recovery of the species. Gathering current information about location and abundance for all populations in Ontario and conducting further research on the species will support continued implementation of recovery actions. Studies to determine the feasibility of augmenting populations on conservation lands, where suitable habitat is available, will inform future recovery efforts.

Government's Recovery Goal

The government's goal for the recovery of Scarlet Ammannia is to maintain the distribution of the species at locations where it occurs in Ontario, and where feasible, enable natural increases in abundance by reducing threats to the species and its habitat. The government supports investigating the feasibility of augmenting populations located on conservation lands, where suitable habitat is available.

Actions

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 Scarlet Ammannia, the government will directly undertake the following actions:

- Continue to monitor Scarlet Ammannia populations and their habitat conditions in provincially protected areas.
- For populations that occur on Pelee Island:
 - Explore opportunities to work collaboratively with the Township of Pelee, including the Pelee Island Environmental Advisory Committee, the federal government and local partners to develop an integrated (landscape/place-based) approach to managing species at risk with consideration of ecosystem values and sustainable resources on Pelee Island. This may include developing a strategic plan for species at risk and their habitats on Pelee Island.
 - Explore opportunities to work collaboratively with the Township of Pelee, including the Pelee Island Environmental Advisory Committee, the federal government and local partners to integrate approaches to stewardship and implementation of recovery activities.
- Continue to implement the Ontario Invasive Species Strategic Plan to address the invasive species (e.g., Creeping Yellow Loosestrife) that threaten Scarlet Ammannia.
- Continue to implement *Ontario's Invasive Species Act* to address the invasive species identified in the Act (e.g., Phragmites) that threaten Scarlet Ammannia by restricting the importation, deposition, release, breeding/growing, buying, selling, leasing or trading of Phragmites.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Scarlet Ammannia 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.

- Continue to protect Scarlet Ammannia and its habitat through the ESA.
- Support conservation, agency, municipal and industry partners, and Indigenous communities and organizations to undertake activities to protect and recover Scarlet Ammannia. Support will be provided where appropriate through funding, agreements, permits (including conditions) and/or advisory services.
- Encourage collaboration, and establish and communicate annual priority actions for government support in order to reduce duplication of efforts.

Government-supported Actions

The government endorses the following actions as being necessary for the protection and recovery of Scarlet Ammannia. 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 ESA. 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: Habitat Management and Awareness

Objective: Maintain or improve habitat suitability for Scarlet Ammannia populations and increase awareness of the species.

While alteration of the natural hydrologic disturbance regime is a significant threat to the species, it may be difficult to restore suitable hydrological conditions for populations of Scarlet Ammannia at some sites. Where feasible, allowing appropriately-timed, natural or artificial water level fluctuations to occur in the species’ habitat may enable successful completion of all life processes and help to maintain suitable habitat for the species. There may be opportunities to use existing dyke infrastructure to simulate natural fluctuations at some sites. Additional methods may be identified to adjust land uses and activities to improve habitat suitability. Some sites may be restored through removal of invasive plants and other vegetation posing a direct threat to the species. At sites that are accessible to the public, raising awareness of the species and redirecting activities away from occupied habitat will help to reduce threats associated with recreational activities, such as trampling.

Actions:

1. **(High)** Work collaboratively with land owners, land managers and municipalities to develop, implement and evaluate habitat management plans to improve habitat conditions for the species. Plans may include practices such as:

- enabling suitable natural or artificial water level fluctuations to occur in the species' habitat, at appropriate times for the species, where feasible; and,
 - removing competing vegetation and invasive plants (e.g., Phragmites) posing a direct threat to Scarlet Ammannia, while ensuring that methods used do not adversely affect the species.
2. **(High)** Encourage land owners and land managers to identify and implement approaches to reduce the impacts of shoreline development, recreational activities and other land uses (e.g., agriculture) on Scarlet Ammannia and its habitat, including:
- undertaking site-specific land use best management practices to maintain or improve habitat conditions for the species;
 - installing signage to alert land users to the presence of the species and, where necessary and appropriate, installing physical barriers (e.g., fencing) to protect the species from trampling by humans, vehicles or livestock; and,
 - installing signage to alert boat operators to the presence of the species and the need to minimize boat wake and avoid dragging boats ashore.
3. Promote awareness among land owners, land managers and land users, about Scarlet Ammannia by sharing information on:
- how to identify the species;
 - the species' habitat requirements;
 - protection afforded to the species and its habitat under the ESA; and,
 - actions that can be taken to avoid or minimize impacts to the species and its habitat.

Focus Area: Inventory and Monitoring

Objective: Increase knowledge of the distribution, abundance and habitat conditions of the species in Ontario.

A challenge in surveying for Scarlet Ammannia is that the number of mature individuals of this annual species may fluctuate at each site between survey years. In some years, the species may be present only as seed. Targeted surveys are needed during low water years, when surveys are thought to be most effective, to complete an updated inventory of the species' distribution and abundance in Ontario. The most recent survey data for the four known populations are from 2001, 2003 and 2007. Inventory and monitoring data will enable confirmation of the number of populations, analysis of population

dynamics and detection of trends and changes in population size and habitat quality.

In addition to the four known and two newly reported populations, records indicate that Scarlet Ammannia could potentially occur in additional areas of Hillman Marsh and its tributary streams. As well, the species may persist as a dormant seed bank at the two sites considered to be extirpated.

It is thought that the two newly reported sites on Pelee Island resulted from deposition of substrate taken from the north end quarry site. Although the habitat at the specific location where Scarlet Ammannia was reported near LaSalle is now a subdivision, a dormant seed bank may persist in a nearby open, seasonally moist area. Surveys are needed to determine the number and the accuracy of locations of Scarlet Ammannia populations. Where possible, surveys should be conducted over multiple years and coordinated with surveys for other rare plant species.

Actions:

4. **(High)** Work collaboratively with land owners, land managers and researchers to develop, implement and evaluate standardized survey and monitoring protocols, which take into account the varying ability to detect plants at different life stages, to:
 - conduct targeted surveys for Scarlet Ammannia during low water years where populations occur and in areas where it has been reported or predicted to occur;
 - determine whether suitable habitat exists in areas that connect the habitat of known populations; and,
 - conduct regular monitoring of known populations to assess population trends, including abundance, extent, demographic variability (seed bank size versus mature plant abundance) and health. Compare data with habitat conditions and the presence and significance of threats to the species.

Focus Area: Research

Objective: Increase knowledge of the habitat requirements and species' biology of Scarlet Ammannia.

Studies of Scarlet Ammannia's habitat requirements are needed to inform habitat management and threat mitigation actions. Detailed information regarding the effects of water level fluctuation on Scarlet Ammannia germination, growth and abundance is needed to inform any actions related to water level alteration. Knowledge of the species' dispersal mechanisms

will assist in identification of areas connected to occupied sites that should be surveyed. Similarly, knowing the viability and longevity of its seeds will help to determine whether viable seed may exist in areas where the species has been reported, but conditions for growth have since been unfavourable (e.g., sustained high water levels, succession to woody vegetation, or competition with invasive plants). Research of Scarlet Ammannia's demography and population dynamics will improve understanding of how populations respond to changes in their environments and will inform the development and implementation of survey protocols. The outcome of augmentation feasibility studies will inform future recovery efforts.

Actions:

5. Conduct studies to better understand the habitat conditions required by Scarlet Ammannia, and methods to improve habitat conditions, including:
 - the location, water levels, timing and duration of flooding that occurs in the habitat of known populations;
 - the effects of within- and between-year water level fluctuation on Scarlet Ammannia during all life processes (e.g., germination, growth and flowering) and the relationship between water levels (e.g., location, level, timing and duration of flooding) and abundance at all sites;
 - the effects of competing and invasive vegetation on the habitat conditions required by Scarlet Ammannia;
 - the effects of agricultural practices on the habitat conditions required by Scarlet Ammannia; and,
 - developing and evaluating methods to improve habitat conditions, such as restoring suitable hydrological disturbances (natural or artificial), removal of competing vegetation or invasive plants, or modifying agricultural practices to be compatible with Scarlet Ammannia persistence.
6. Conduct research on Scarlet Ammannia biology, including studies of:
 - population dynamics and viability;
 - seed ecology (e.g., dispersal mechanisms and distance, duration of viability, germination requirements);
 - floral biology (e.g., pollination mechanisms); and,
 - whether seed supply is a significant limiting factor for any populations.
7. Investigate the feasibility of augmenting populations of Scarlet Ammannia on conservation lands, where suitable habitat is available for the species.

Implementing Actions

Financial support for the implementation of actions may be available through the Species at Risk Stewardship 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 Scarlet Ammannia.

Acknowledgement

We would like to thank all those who participated in the development of the Recovery Strategy for the Scarlet Ammannia (*Ammannia robusta*) 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 MNRF district office

Contact the Natural Resources Information Centre

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