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Hungerford's Crawling Water Beetle

Ontario Government Response Statement



Photo: Steve Marshall

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 Hungerford's Crawling Water Beetle (*Brychius hungerfordi*) was completed on January 11, 2013 (http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/stdprod_099156.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.

Hungerford's Crawling Water Beetle is a small aquatic beetle typically measuring less than five mm long. It lives in rivers and streams with good aeration and cool water temperatures. Individuals are often concentrated downstream of dams, weirs and culverts.

MOVING FORWARD TO PROTECT AND RECOVER HUNGERFORD'S CRAWLING WATER BEETLE

Hungerford's Crawling Water Beetle is listed as an endangered species under the ESA, which protects both the animal and its habitat. The ESA prohibits harm or harassment of the species and damage or destruction of their habitat without authorization. Such authorization would require that conditions established by the Ministry be met.

Hungerford's Crawling Water Beetle is a globally rare species found only in the Great Lakes region in Ontario and Michigan. There are three rivers in Bruce County, Ontario where the species has been found: the Rankin, the Saugeen and the North Saugeen. Individuals have not been detected in the North Saugeen River since 2001 so it is possible that it has been extirpated from that location. Hungerford's Crawling Water Beetle is thought to be a glacial relict that may have been more widespread before the formation of the Great Lakes. Alternatively, the populations may have always been small and scattered. The species is generally found within 1.5 km downstream of human made structures such as dams, weirs or culverts. It is not known if the species was formerly adapted to colonizing similar habitat created by beavers, or if it is currently more widespread but harder to detect in other areas. In general, the habitat requirements of Hungerford's Crawling Water Beetle are poorly understood.

The main threats to the survival and recovery of Hungerford's Crawling Water Beetle are believed to include changes in water flow or quality that alter or destroy habitat and removal or modification of human-made water control structures. Since the species requires pristine conditions, run-off of sediment or pollution from areas adjacent to streams and within the watershed have the potential to impact the species. This run-off may occur as a result of road building, industrial, and agricultural development. Predation from introduced species (such as brown trout) has also been identified as a potential threat. Lack of knowledge of the species' distribution and abundance in Ontario and its specific habitat needs are important information gaps that may affect the ability to recover the species.

The government's goal for the recovery of Hungerford's Crawling Water Beetle is to maintain or improve the viability of existing populations in Ontario.

At this time, reintroduction or translocation of individuals are not considered appropriate recovery tools to contribute to this goal. Once better information is available regarding the species' population levels, its specific habitat requirements and the causes of extirpation from the historic site, it may be possible to re-evaluate the potential contributions of these approaches.

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 Hungerford's Crawling Water Beetle, the government will directly undertake the following actions:

- Continue to research the role of natural lake outflows and human-made water control structures on downstream river ecology and rare species.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.
- Encourage the submission of Hungerford's Crawling Water Beetle 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 Hungerford's Crawling Water Beetle and its habitat through the ESA. Develop and enforce habitat protection provisions identifying the specific habitat of the species.
- Support conservation, agency, municipal and industry partners, and Aboriginal communities and organizations to undertake activities to protect and recover Hungerford's Crawling Water Beetle. 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 Hungerford's Crawling Water Beetle. 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: Protection and Management

Objective: Protect existing populations and habitat where Hungerford's Crawling Water Beetle is found.

Actions:

1. **(HIGH)** Develop a strategy at a watershed scale that identifies threats that are a priority for actions. The strategy may include mapping watershed natural features, identifying the locations of dams, weirs and culverts, and determining adjacent land use, and potential non-point source pollution.

2. Mitigate or remove threats by working with partners to strategically implement best management practices (BMPs) on a watershed basis, including:
 - working with landowners to educate and assist in maintaining healthy aquatic ecosystems by increasing natural cover in the watershed and planting strategic native shoreline buffers; and
 - encouraging development and use of Environmental Farm Plans and Nutrient Management Plans to incorporate BMPs for rural streams and drains. These BMPs should include restoring a healthy riparian zone, reducing access by livestock, establishing manure-storage and runoff collection systems, encouraging conservation tillage and improving faulty septic systems.

Focus Area: Inventory and Monitoring

Objective: Improve knowledge of the distribution and abundance of Hungerford's Crawling Water Beetle in Ontario.

Actions:

3. **(HIGH)** Conduct systematic surveys of adults using techniques appropriate for rare species that minimizes disturbance to habitat. Survey design should seek to better determine the distribution and abundance of Hungerford's Crawling Water Beetle by:
 - determining whether the North Saugeen River population is extirpated;
 - estimating population size on the Rankin and Saugeen Rivers;
 - increasing effort on surveys downstream (or upstream if habitat appropriate) of the known sites to determine whether the pattern observed is due to habitat specialization or detectability biases; and
 - conducting wider systematic surveys of suitable rivers to determine whether any other populations exist.
4. Design and implement a monitoring protocol at the existing locations to track long-term trends in population size, adjacent land use, and water quality and quantity (including dissolved oxygen, nutrient levels, flow rate, water temperature, and seasonal water levels).

Focus Area: Research

Objective: Improve knowledge of the habitat requirements of Hungerford's Crawling Water Beetle.

Actions:

5. Research the specific habitat requirements of Hungerford's Crawling Water Beetle, including the distribution and role of food algae, water quality and flow requirements, tolerance to sediment loads, habitat for reproduction and hibernation, and dispersal ability.
6. Investigate the role of natural and human-made water control structures in providing habitat for Hungerford's Crawling Water Beetle.

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 Hungerford's Crawling Water Beetle.

ACKNOWLEDGEMENT

We would like to thank all those who participated in the development of the "Recovery Strategy for the Hungerford's Crawling Water Beetle (*Brychius hungerfordi*) 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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