Northern Bobwhite

Ontario Government Response Statement

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 Government of Ontario 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.

Generally, within nine months after a recovery strategy is prepared, the ESA requires the government 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 considers (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 and Knowledge Holders, as appropriate, and may be adapted if new information becomes available. In implementing the actions in the response statement, the ESA allows the government to determine what is feasible, taking into account social, cultural and economic factors.

The Recovery Strategy for the Northern Bobwhite (*Colinus virginianus*) in Ontario was completed on December 5, 2019.

Northern Bobwhite is a small grouse-like bird with a rounded body and short tail distinguished by their white throat and black eye stripe. This species is typically found in grasslands, savannas, early-successional forests and agricultural fields where observers may hear their distinctive call of "bob-*white*" for which they are named.

Protecting and Recovering Northern Bobwhite

Northern Bobwhite 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 its habitat without authorization. Such authorization would require that conditions established by the Ontario government be met. In addition to protection under the ESA, Northern Bobwhite is listed under Schedule 3 of the *Fish and Wildlife Conservation Act, 1997* (FWCA) as a Game Bird. Northern Bobwhite that are pen-raised from domestic stock may be used for hunting and dog training purposes.

The Northern Bobwhite can be found across eastern and southern North America with populations ranging from Guatemala north through Mexico and the southern United States extending along the east coast to Massachusetts. Populations can be found across the Great Plains, reaching into Wyoming, Colorado, and New Mexico to the west, and extending northwards to Wyoming, Michigan, and Ontario. Northern Bobwhite has also been introduced into other areas with suitable habitat, including Washington state, British Columbia, Quebec, and the Caribbean Islands, although it may be native to Cuba. Northern Bobwhite are resident birds and do not migrate outside of their established range.

In Canada, Ontario contains the only population of Northern Bobwhite considered to be native. Currently, wild Northern Bobwhite are found only on Walpole Island, within Walpole Island First Nation, located at the northeast end of Lake St. Clair. Although birds are occasionally documented on the mainland, it is believed these individuals are escaped or released pen-reared domestic stock. The Walpole Island Northern Bobwhite are considered to be one local population, comprised of multiple coveys (families or small flocks) and overlapping territories, although insufficient monitoring data exists to estimate the current population numbers. The most recent observations of birds occurred in 2013, at which point it was approaching extirpation, and it is unknown if wild reproducing populations still remain. Historically it is believed Northern Bobwhite were restricted to the southwestern corner of the province, but their range expanded with European settlement and the conversion of forest to farmland with populations covering much of southern Ontario. Wild birds were once found as far north as the Bruce Peninsula and as far west as Kingston in the mid-1800s, but by the 1950s the range had contracted to include only southwestern Ontario from Sarnia to Niagara Falls, and north to London and Hamilton. It is believed this distribution change resulted from a series of hard winters which decimated populations, and the increase in intensive farming practices which rendered more areas unsuitable for occupation. As late as 1990 small local populations of wild Northern Bobwhites were found to be persisting in southwestern Ontario, but by 2011 sightings of wild birds were restricted to Walpole Island First Nation. Due to widespread unregulated releases, it is unknown how many of the birds observed in later years were wild populations versus released birds.

Northern Bobwhite is a resident bird that does not migrate but will travel locally between habitat types to meet seasonal needs. Daily movements within territories rarely exceed a few hundred meters, and movements of greater than a kilometer are apparently rare. Adult birds are typically found in tallgrass prairie, savanna, open early-successional forests, or agricultural fields, particularly where these habitat types overlap. Although the species will utilize a variety of croplands and pastures for foraging, adjacent areas with tall grasses, herbaceous plants, shrubs, or young trees are required for roosting, nesting, and hiding from predators. Periodic natural disturbances, such as fire, help maintain ideal conditions and preserve foraging opportunities. Northern Bobwhite typically feeds on seeds, leaves of succulent plants, and invertebrates which are particularly important for growth and survival of juvenile birds.

The mix of habitat types that Northern Bobwhite prefers provides suitable conditions for foraging, roosting, hiding, and nesting and, when available in close proximity, adults will establish a small home range in which they will spend the entirety of their life. When habitat is fragmented or difficult to access, Northern Bobwhites will travel significantly greater distances to find suitable sites for life processes. This can make individuals particularly susceptible to winter mortality when they must forage farther in poor conditions.

The most significant threat to Northern Bobwhite populations in Ontario is residential development and agricultural expansion into key habitat areas that birds rely on for survival. The removal of hedgerows, scrubland, or other corridors between habitats can render the area unsuitable for Northern Bobwhite or force them to travel further between habitat patches increasing mortality risk and causing genetic isolation. The use of agricultural pesticides can also pose a threat to birds both directly, through exposure to spraying and consumption of treated seeds, and indirectly through reduction of invertebrate and plant food sources.

Incompatible habitat management may also pose a threat to Northern Bobwhite: primarily inappropriate or indiscriminate burning. While prescribed fires have been effectively used to preserve the open early-successional habitat Northern Bobwhite prefers, excessive or poorly timed fires may result in the deaths of individual birds, or may remove the cover needed for winter survival. Little research has been completed to confirm the optimal timing and extent of fires to manage Northern Bobwhite habitat.

Northern Bobwhite populations are also threatened by a variety of both native and non-native species found within their range. Predator populations such as raccoons (*Procyon lotor*), foxes (*Vulpes spp*.) and coyotes (*Canis latrans*) have increased in proximity to human settlements where additional food and shelter has been made

available to them. The presence of domestic cats (*Felis catus)* has also been documented in the area and on the adjacent mainland. These species prey on Northern Bobwhite and may have an increased impact on birds that must travel greater distances in fragmented habitat. Domestic cats in particular are known to have detrimental effects on Northern Bobwhite populations with high rates of mortality recorded.

European Reed, also known as Phragmites (*Phragmites australis ssp. australis*) is an invasive plant that has been documented on Walpole Island since 1948 and has been observed taking over tallgrass prairie habitat area. Although Northern Bobwhite may occasionally use stands of European Reed for cover, it replaces valuable foraging and nesting habitat with dense, tall stands and outcompetes the species' preferred vegetation types. European Fire Ants (*Myrmica rubra)* are another invasive species that may pose a threat to Northern Bobwhite as they are known to outcompete native ants and other insect prey species thereby decreasing food availability. Additionally, European Fire Ants have been observed killing the chicks of other ground nesting bird species and may pose a threat to juvenile survival, although interactions with Northern Bobwhite have not been observed to date.

One of the more complex threats facing Northern Bobwhite in Ontario is the raising and release of captive-bred and pen-reared Northern Bobwhite. Efforts have been underway to breed captive Northern Bobwhite since the 1800s with birds released for hunting and dog training activities. There are concerns that these released birds may harm native populations through the transfer of parasites or the introduction of diseases. Additionally, captive-raised birds that breed with native populations may create offspring with decreased genetic diversity, or that are less adapted to survive winter conditions if released birds are not carefully selected for appropriate traits. Despite repeated failures to establish or augment populations in the past, recent studies have suggested that selective interbreeding and release of captive-bred birds may be a management tool that could contribute to restoring native populations. Any captive release program must be done as part of a comprehensive and carefully controlled program to limit the risk to remaining wild Northern Bobwhite.

There is currently little information available on population numbers for Northern Bobwhite in Ontario, due to lack of comprehensive monitoring, and likely also in part due to steadily decreasing numbers over the past century. The Walpole Island population may continue to persist, but research has not been completed to assess the genetic population structure or determine the overall viability of the remaining population. As a result, recovery efforts for Northern Bobwhite will focus on preserving the existing populations and supporting their natural and sustainable reproduction through management of direct threats and biological limitations. In order to improve the

prospect for natural increases in abundance and distribution of Northern Bobwhite, efforts are required to identify and promote appropriate habitat management strategies that maintain the diverse mix of early-successional habitat they occupy. Recovery efforts also need to focus on addressing the threats limiting the survival of existing birds including invasive species and predation.

Government's Recovery Goal

The government's goal for the recovery of Northern Bobwhite is to support the persistence of this species in Ontario and enable natural increases in abundance and distribution by filling knowledge gaps, reducing threats and maintaining or enhancing suitable habitat and habitat connectivity. The government supports investigating the necessity and feasibility of augmentation and reintroduction in order to promote the viability and long-term persistence of the species.

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 government 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 Northern Bobwhite, the government will directly undertake the following actions:

- Continue to protect Northern Bobwhite and its habitat through the ESA.
- Undertake communications and outreach to increase public awareness of species at risk in Ontario.
- Educate other agencies and authorities involved in planning and environmental assessment processes on the protection requirements under the ESA.

- Encourage the submission of Northern Bobwhite data to Ontario's central repository (Natural Heritage Information Centre, NHIC) through the NHIC (Rare species of Ontario) project in iNaturalist or directly through the NHIC.

- Continue to support conservation, agency, municipal and industry partners, and Indigenous communities and organizations (particularly Walpole Island First Nation) to undertake activities to protect and recover Northern Bobwhite. Support will be provided where appropriate through funding, agreements, permits (including conditions) and/or advisory services.

- Continue to ensure the issuance of permits for the release of pen-reared Northern Bobwhite for non-reintroduction purposes does not result in a negative impact on native Northern Bobwhite.

- Continue to implement Ontario's *Invasive Species Act* to control the spread of invasive species (e.g., European Reed) that threaten Northern Bobwhite by restricting the importation, deposition, release, breeding/growing, buying, selling, leasing or trading of the species.

- Continue to implement the *Ontario Invasive Species Strategic Plan* (2012) to address the invasive species (e.g., European Reed) that threaten Northern Bobwhite.

- Conduct a review of progress toward the protection and recovery of Northern Bobwhite within five years of the publication of this document.

Government-supported Actions

The government endorses the following actions as being necessary for the protection and recovery of Northern Bobwhite. Actions identified as "high" may be given priority consideration for funding under the Species at Risk Stewardship Program. 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.

Focus Area:	**Survey and Monitoring**
Objective:	Increase knowledge of the status and distribution of Northern Bobwhite in Ontario.

As there have been no concentrated efforts to thoroughly document the remaining Northern Bobwhite on Walpole Island, it is important to confirm the size and distribution of the current native population. This undertaking will require working collaboratively with the community and developing an approach to monitoring sites that accounts for the movement of adult birds between habitat types and the potential for overlapping ranges. The results of these surveying and monitoring efforts will help identify what habitat types are being most heavily relied on by the species, measure the current impacts of existing threats on remaining birds, and identify where restoration efforts may be of greatest benefit to the species. Collection of genetic data may also inform research into population dynamics and viability.

Actions:

1. **(High)** Confirm the distribution and status of Northern Bobwhite in Ontario by developing a survey and monitoring program conducted in a manner that may contribute to research actions. Program may consist of:
    - surveying known extant bird or covey locations, historic population locations, and other areas of potential habitat;
    - documenting detections and non-detections together with relevant site conditions (e.g., cover type, vegetation community, etc.) to help inform habitat use research; and
    - monitoring populations with respect to size, demographics, environmental conditions and the presence of threats.
2. **(High)** Collect genetic samples from Northern Bobwhite individuals found on Walpole Island in combination with location data.
3. Characterize the habitats in which Northern Bobwhite is found through:
    - classification of occupied sites under the Ecological Land Classification system;
    - documentation of all site types found within identified Ontario ranges or adjacent to occupied habitat; and
    - improved evaluation of habitat use in other jurisdictions to identify species' preference in areas where populations are thriving.

Focus Area:	**Research**
Objective:	Improve understanding of population dynamics, habitat needs, threats to the species, and methods for managing identified threats.

In order to ensure proper management of Northern Bobwhite and mitigate identified threats, it is necessary to gain a more thorough understanding of factors influencing the species in Ontario. Research is needed to better understand the biology and genetic composition of the species to assess the long-term viability of existing populations and determine if augmentation or reintroduction to historically occupied sites is necessary or feasible to promote long-term persistence. Information on habitat use and what conditions or threats may influence reproductive success is also vital to ensuring proper management of Northern Bobwhite habitat.

Actions:

4. **(High)** Undertake appropriate actions to investigate Northern Bobwhite population dynamics at the local and landscape scale. Related research actions may include:
    - completing a genetic analysis of the existing population on Walpole Island and/or mainland birds of interest to recovery efforts;
    - examining the reproductive biology of the species and increasing understanding of factors most affecting recruitment (e.g., adult mortality, chick survival);
    - investigating feeding habitats of Northern Bobwhite and the availability of food sources; and
    - improving understanding of the species' habitat requirements, including identifying factors or changes that may render a site unsuitable for occupation.
5. Investigate potential threats to the species and methods for mitigating impacts including:
    - evaluating impacts to the species from establishment of invasive plants in habitat areas;
    - assessing predation rates from domestic cats and other predators;
    - determining optimal prescribed burning approaches that improve habitat with the least risk to the species;
    - evaluating impacts to Northern Bobwhite recruitment and survival resulting from European Fire Ants; and
    - identifying suitable best management practices (e.g., invasive plant removal, predator management) for the habitat in which the species is found.

6. Investigate the need for and feasibility of augmentation or reintroduction of Northern Bobwhite populations including:
    - assessing the viability of the existing genetic stock present on Walpole Island;
    - evaluating the potential impacts and/or benefits of:
        - captive-breeding of native wild stock;
        - release of existing pen-reared stock; and
        - selective breeding utilizing both native and pen-reared stock.
    - determining if sufficient suitable habitat is available to support augmented or introduced populations; and
    - developing a comprehensive plan for how reintroduction or augmentation would be implemented in a manner that maintains or improves genetic diversity.
7. Evaluate habitat use and movement patterns of Northern Bobwhite on Walpole Island to better characterize the conditions required by the species for survival.

Focus Area:	**Management and Habitat Protection**
Objective:	Maintain or improve the quality of habitat available for Northern Bobwhite, and where feasible and appropriate undertake habitat restoration activities.

The specific habitat needs of Northern Bobwhite require a specific combination of land cover types found in proximity to each other. Its habitat is limited in scope due to these restrictions and is likely to be highly fragmented, with roads and lands with unsuitable habitat separating areas with appropriate conditions. Intensive development or incompatible land management occurring in Northern Bobwhite habitat can have a significant effect on the persistence of the species. A collaborative approach is needed to effectively implement broadscale measures to manage existing populations, maintain suitable habitat where it exists, to restore sites where appropriate, and to effectively manage threats. On-the-ground actions, such as invasive species management and site-level restoration may need to be implemented to ensure existing populations are not crowded out by other species, or to render historical sites appropriate for population expansion. Encouraging an adaptive approach and the use of best management practices by those involved will help support the recovery of the species.

Actions:

8. **(High)** Work collaboratively with Walpole Island First Nation, landowners, land managers, and researchers to develop, implement and evaluate management plans and best management practices to maintain or improve the quality of Northern Bobwhite habitat and viability of populations at existing sites. Plans may include:
    - encouraging the use of agricultural practices that allow for sustainable production while maintaining or improving habitat conditions;
    - identifying steps to minimize impacts of development in proximity to Northern Bobwhite habitat;
    - development of a best practices for prescribed burning in areas that may contain Northern Bobwhite habitat;
    - strategies to remove, manage and/or monitor the presence and impacts of invasive plants (e.g., European Reed), invasive insects (e.g., European Fire Ants), and native or non-native predators (e.g., domestic cats, coyotes) in areas with or adjacent to populations;
    - development of protocols for implementing supplemental feeding where it is deemed necessary and appropriate; and
    - habitat and land management approaches that encourage the establishment and maintenance of natural vegetated corridors, that support the survival and movement of Northern Bobwhite.
9. Where deemed necessary and where there are willing partners, undertake on-the-ground efforts to restore, maintain or enhance Northern Bobwhite habitat within Ontario in collaboration with organizations, agencies and interested Indigenous communities and organizations. This may include:
    - **(High)** implementing habitat restoration to improve sites on Walpole Island that are currently used or deemed suitable for occupation; and
    - identifying locations near Walpole Island that may be rendered suitable for population expansion or reintroduction following appropriate restoration efforts.
10. As opportunities arise, work with local landowners and community partners to support the securement of habitat and potential habitat of

Northern Bobwhite through existing land securement and stewardship programs.

11. Based on the results of research completed under Action 6, implement, monitor and adapt actions identified as necessary, feasible and appropriate to promote long-term genetic viability and persistence of the species.

Focus Area:	**Outreach and Awareness**
Objective:	Increase public awareness of and participation in efforts to minimize threats to Northern Bobwhite.

Northern Bobwhite and its habitat is found on lands utilized for a variety of purposes. Therefore, the education and involvement of the public is a key factor in supporting recovery of the species, particularly to encourage best management practices on agricultural lands and to promote appropriate predator management strategies. Ensuring landowners are aware of the presence of the species and potential threats will require collaboration between agencies with an emphasis on sharing the best available information.

Actions:

12. Promote general awareness about Northern Bobwhite among landowners, land managers and land users by sharing information on:
    - how to identify the species;
    - the species' habitat requirements; and
    - protection afforded to the species and its habitat under the ESA.
13. Utilize published materials, workshops, or training events to increase awareness of:
    - the impact of domestic cats and other predators on Northern Bobwhite;
    - actions that may inadvertently subsidize these predators, such as providing food sources or shelter, and how they can be avoided; and
    - other activities that can be undertaken to reduce threats to the species (e.g., avoiding invasive species introductions, ecologically sound prescribed burning practices).

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 Ministry of the Environment, Conservation and Parks staff. The Ontario government 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 Ontario government to conduct a review of progress towards protecting and recovering a species no later than the time specified in the species' government response statement, or not later than five years after the government response statement. The review will help identify if adjustments are needed to achieve the protection and recovery of Northern Bobwhite.

Acknowledgement

We would like to thank all those who participated in the development of Ontario's Recovery Strategy and Government Response Statement for the Northern Bobwhite (*Colinus virgianus*) for their dedication to protecting and recovering species at risk.

For Additional Information:

Visit the species at risk website at ontario.ca/speciesatrisk
Contact the Ministry of the Environment, Conservation and Parks
1-800-565-4923
TTY 1-855-515-2759
www.ontario.ca/environment