

Habitat Protection Summary for Hine's Emerald

Hine's Emerald is a medium-sized dragonfly (about 60 millimetres long) with bright green eyes, a metallic green thorax with two lateral yellow stripes, and a blackish-brown abdomen. Hine's Emerald lives in groundwater-fed wetlands, such as fens. Larvae use crayfish burrows during periods of low water and during the winter. In Ontario, Hine's Emerald has only been documented in and around Minesing Wetland, near Barrie. It was assessed by the Committee on the Status of Species at Risk in Ontario (COSSARO) and listed as endangered on January 13, 2012 due to its extremely limited geographic range and potential threats to habitat. More information about the species' status can be found at: http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/research/stdprod_091159.pdf

Brief description of the proposed habitat regulation:

The proposed habitat regulation for Hine's Emerald would protect the part of a fen, marsh, spring or seepage area, or other aquatic feature that is being used for egg-laying or larval development. Wetland and aquatic areas would be protected within 1600 metres of an egg-laying or larval development site, plus up to 100 metres of natural vegetation such as forests, shrub thickets, old fields, or hedgerows, that border these areas. In addition, groundwater recharge or discharge areas located within 500 metres of those protected wetlands or aquatic features that are attached to and maintain the water quality and quantity of a breeding area, would be protected.

Habitat Categorization:

The following text indicates how the species' habitat would be categorized, as per the policy "Categorizing and Protecting Habitat under the Endangered Species Act" which can be found at: http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/stdprod_085648.pdf.

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Category 1 (Red)

- Any part of a wetland or aquatic feature used for breeding (e.g., egg-laying or larval development)

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Category 2 (Orange)

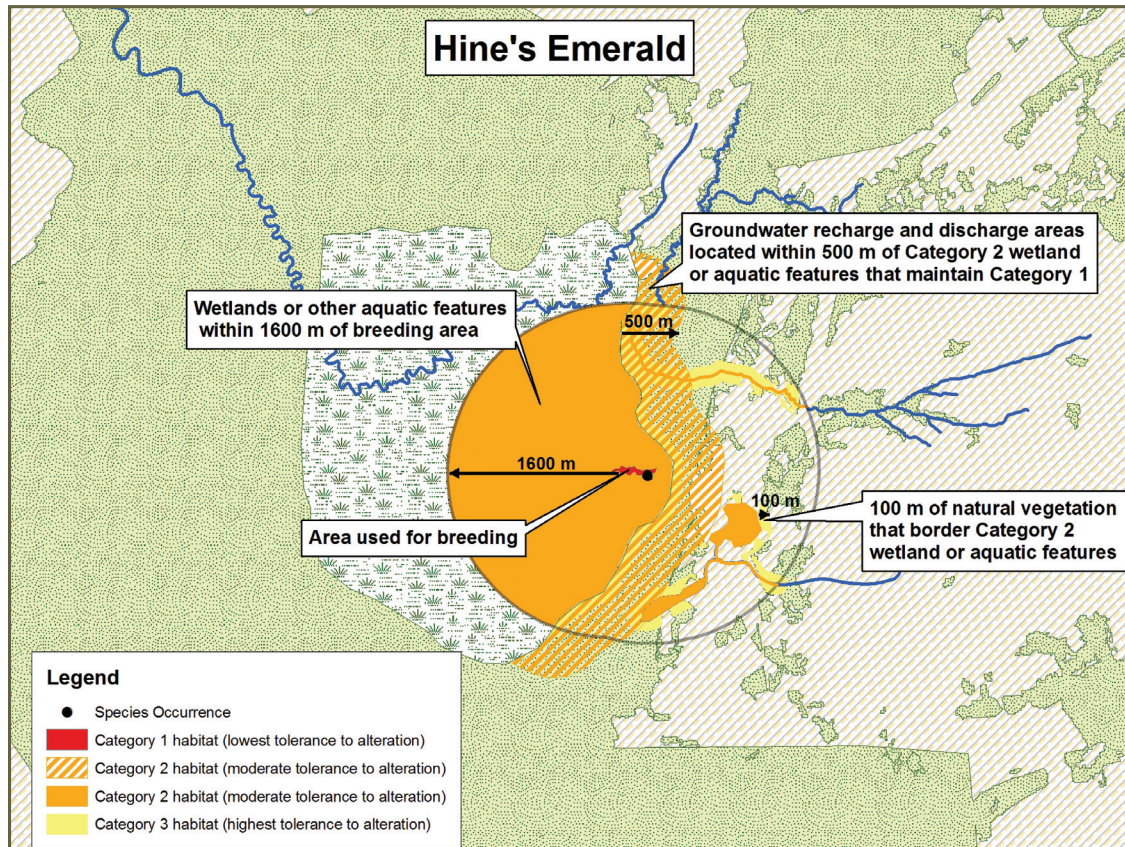
- Any part of a wetland or aquatic feature (including streams, ponds, or temporary pools) that is within 1600 metres of a breeding area
- Groundwater recharge or discharge areas located within 500 metres of those wetland or aquatic features listed above that are attached to and maintain the water quality and quantity of a breeding area

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Category 3 (Yellow)

- Up to 100 metres of naturally-vegetated areas such as forests, shrub thickets, old fields, or hedgerows that border the wetlands or aquatic features mentioned above (Category 2 habitat)

Sample Application of the Proposed Habitat Regulation:



This protection applies to areas that were used by the species anytime in the past seven years. If the species was last observed more than seven years ago, the MNR considers the species to still be present at the site unless one of the following occurs:

- seven consecutive years of MNR-approved surveys have been conducted and indicate that the species no longer exists at the site, or
- the species has been designated as extirpated at the specific site.

The proposed regulation would apply where the species occurs in the geographic townships of Essa, Flos, Innisfil, Sunnidale, Tosorontio, and Vespra within Simcoe County.

Supporting Rationale:

- Hine's Emeralds rely on slow-moving, calcareous water with emergent vegetation for egg-laying and larval development. These conditions are associated with fens, marshes or areas where groundwater rises to the surface.
- Larvae depend on crayfish burrows for refuge from drought and for over-wintering. Crayfish burrows can be found along riparian edges.
- Adults of Hine's Emerald travel to areas of natural vegetation for foraging, mating, refuge, and rest. Because of the difficulty of flying through thickets and forests, Hine's Emeralds typically stay near the edge of these types of habitats, which is approximately the first 100 metres.
- 1600 metres represents the average distance Hine's Emerald will travel to carry out these life processes.
- The wetlands the species occurs in are threatened by changes to the quantity and quality of water flowing into them. Protecting groundwater recharge and discharge areas within 500 metres of these wetlands will help to reduce these threats and is essential to maintaining breeding habitat for Hine's Emerald.
- The seven-year term allows sufficient time to determine that the site is no longer being used.

Activities in Hine's Emerald habitat:

Activities in regulated habitat can continue as long as the function of these areas for the species is maintained and individuals of the species are not *killed, harmed, or harassed*.

Generally compatible:

- Removal of an individual shrub or tree for maintenance purposes
- Yard work such the maintenance of existing lawns and gardens
- Renovations of small structures, such as a shed or a deck
- Regular use of well water for household and farm purposes
- Non-motorized vehicle use of existing recreational trails

Generally not compatible:*

- Alteration of aquatic or wetland habitat, such as altering water quality, flows, levels, vegetation characteristics, or increasing sediment deposition
- Large-scale construction, such as housing development or roads
- Significant reduction or clearing of forests and other natural vegetation
- Broad-scale application of road salt, fertilizers, or pesticides, including drift or run-off into protected habitat

* If you are considering an activity that may not be compatible with regulated habitat, please contact your local MNR office for more information and/or to discuss ESA authorization options. Please note that any activity that occurs outside of regulated habitat but that has a reasonable potential to negatively impact regulated habitat could require authorization under the ESA.

Key Terms:

- **Fen:** A fen is a type of wetland that accumulates peat. They are located in areas where mineralized groundwater discharges to the surface. Water pH is slightly acidic to neutral. Typical fen vegetation includes sedges and mosses, grasses, reeds, low shrubs, and sometimes a sparse layer of tamarack and white cedar. Fen communities are defined according to the Ecological Land Classification (ELC) for Southern Ontario: First Approximation and its Application, dated September, 1998 and published by the Ontario Ministry of Natural Resources.
- **Groundwater discharge area:** An area where groundwater is flowing up towards the surface and may escape as a spring, seep, or into rivers and wetlands.
- **Groundwater recharge area:** An area where water from the surface is moving downward into the deeper parts of an aquifer.
- **Vernal pool:** A temporary pool of water which collects in a landform depression following snowmelt and heavy spring rains.