Developing Disaster

Exploring the Species and Ecosystems at Risk in the Greenbelt's Duffins Rouge Agricultural Preserve

A summary of *Species and Ecosystems at Risk in the Duffins Rouge Agricultural Preserve: Considerations for a Federal Cumulative Effects Study*, a report by Karl Heide, M.Sc.

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environmental defence

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The Red-headed Woodpecker, the Monarch Butterfly and the Tri-colored Bat are just some of the 33 species listed in the *Species at Risk Act* that will suffer if development in the Duffins Rouge Agricultural Preserve (DRAP) moves forward. Our new report overwhelmingly shows that large scale residential and commercial development in the DRAP poses numerous threats to ecological values under federal jurisdiction.

The DRAP is a 17-square-kilometer area of farms, forests and wetlands situated on the east side of the Greater Toronto Area (GTA). This is an essential part of the Greenbelt that protects some of the most valuable agricultural land in all of Canada and supports the ecological integrity of the neighbouring Rouge National Urban Park (RNUP), the only national urban park in Canada.

In December 2022, the provincial government stripped all legal protections for the DRAP and removed it from the Greenbelt, claiming the land was needed to build houses. Premier Ford made this decision despite massive public opposition and clear evidence that this area is ecologically sensitive and completely unnecessary to meet housing needs for either the Durham region or the province more generally.

Fortunately, the federal government has decided to take action. On March 21, 2023, the federal Minister of Environment and Climate Change Steven Guilbeault announced that the federal Impact Assessment Agency (IAA) would conduct a thorough assessment of the expected impact of any development within the DRAP area on species at risk, water quality, migratory birds, natural areas, the Rouge National Urban Park and biodiversity.

To help inform the design and execution of the federal study, we decided to gather and publish all the information that is currently known about the vulnerability of key wildlife species on the DRAP lands. Our resulting report describes the anticipated effects of development in the DRAP on species listed under the federal *Species at Risk Act* (SARA), fisheries habitat, migratory birds, other lands protected under provincial legislation and overall biodiversity. It draws on existing literature and, using data from a variety of sources, provides quantitative estimates, where possible, of the risks if development of the DRAP lands was to proceed.

Key Findings

Our analysis revealed that opening the DRAP to development would have detrimental impacts on at-risk species and local ecosystems, including:

- Threatening a minimum of 33 SARA listed species
- Threatening 49 species of birds protected under the Migratory Birds Convention Act
- Polluting 14 fish-bearing stream tributaries, 7 of which support coldwater benthic (stream-bed) communities
- Paving over up to 400 hectares of forest and a wetland in a headwater zone
- Compromising the ecological integrity of the nearby RNUP

In addition, our research concludes that the cumulative effects of ongoing urban expansion across the Golden Horseshoe will be expected to result in widespread habitat fragmentation and the further degradation of many natural communities and at-risk species populations found in the DRAP, meaning that the value of these areas remaining intact will likely increase over time.

In the pages below, we provide details on ten of the 33 listed SARA species that we identified will be negatively impacted by development in the DRAP.

33

species listed in the *Species at Risk Act* will suffer if development in the DRAP moves forward

Red-headed Woodpecker (Melanerpes erythrocephalus)

Red-headed Woodpeckers were once abundant across North America, but today, intensifying agriculture, wildfire mitigation, competition with invasive nest predators and loss of habitat have driven them out of many areas. They depend on open deciduous woodlands, savannas, hedgerows and other semi-wooded landscapes, particularly with an abundance of large dead trees. In Ontario, remnant suitable Red-headed Woodpecker habitat disproportionately occurs in agricultural areas, making this species especially vulnerable to negative impacts caused by development of farmland around the GTA.

While there have been no permits or exemptions issued under SARO specifically for Red-headed Woodpeckers, there has also been little to no reporting on recovery efforts at the provincial level. Because these woodpeckers forage over large areas during the migration and non-breeding seasons, individuals breeding outside the GTA may routinely be affected by development as they pass through more urbanized areas. Although there are no confirmed recent breeding occurrences of the species within the DRAP, based on the quality of habitat and geography, it is likely that the area may be used intermittently for breeding. During the breeding season of 2021, an individual was detected about 3km west of the DRAP, within RNUP, by an atlasser with the Ontario Breeding Bird Atlas project.

A comprehensive multi-year breeding study across the DRAP, in conjunction with the ongoing OBBA, would ensure that all habitat patches suitable to Red-headed Woodpeckers are identified and that the impacts of any new development projects are assessed accordingly.

Monarch Butterfly (Danaus plexippus)

One of North America's best-known butterflies, the Monarch, has experienced steep declines, largely due to pesticides and the loss of its Milkweed host plants. Eleven of 14 Milkweed species in Canada are used by Monarchs, and the butterflies can be found in any habitat where these plants grow (typically meadows, overgrown agricultural fields and roadsides).

Although NHIC does not track Monarch occurrences in Ontario, data from the Ontario Butterfly Atlas indicate that Monarchs are relatively common in the GTA but occur in slightly lower abundance there than more rural parts of the province, possibly due to lack of habitat. Road casualties of Monarchs have been reported to increase with traffic volume and road width. Developing the DRAP would mean widening roads and introducing vehicle traffic to the landscape.

While there is potential for urban gardens to provide habitat for Monarchs, there are few, if any, incentives to incorporate Milkweed into gardens, and some people still view it as a nuisance plant. In addition, Monarch populations may be affected by climate change and urban sprawl.

We recommend that a federal environmental assessment weighs the possible benefit of habitat creation in the form of gardens against the potential adverse effects of road mortality, carbon emissions and the direct loss of habitat (through bulldozing of overgrown fields) on the Monarch's global population.

Tri-colored Bat (Perimyotis subflavis)

Like the Little Brown Bat, Tri-colored Bats are hibernating bats that have succumbed to White-nose syndrome. While they may also roost in man-made structures, they are more strongly associated with forests and may therefore be more sensitive than the Little Brown Bat to urbanization.

Development pressure adjacent to forests may affect bat populations in unknown ways, and the cumulative effects with white-nose syndrome could spell disaster for the Tri-colored Bat in the Rouge Valley.

We therefore urge the IAA to reconsider repealing the DRAP Act and focus instead on strengthening conservation measures.

ENDANGERED

Cerulean Warbler

Cerulean Warbler (Setophaga cerulea)

Cerulean Warblers reach the northern limit of their breeding range in Southern Ontario, where they are a rare summer inhabitant of deciduous forests, especially those dominated by oaks and hickories. They are area-sensitive but may nest in forest fragments as small as 10 ha.

The southwest corner of the DRAP, near the Rouge Valley and Amos Pond, is known to provide habitat for breeding Cerulean Warblers. The current status of this population is not well known and should be investigated thoroughly before any redesignation of the lands within the DRAP occurs.

Because of the rarity of the species and difficulty of detection (nests are usually placed high in the canopy and songs can be easily overlooked), existing efforts to document bird species, like the OBBA and eBird, may not be sufficient. Targeted surveys should be carried out in forest fragments throughout the DRAP, and we recommend that automated recording units be placed in or near the canopy in areas of quality habitat.

ENDANGERED

Redside Dace

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Redside Dace (Clinostomus elongatus)

The Redside Dace is an endangered minnow with a global range restricted to certain tributaries of the lower Great Lakes.

Redside Dace have specific habitat requirements: clear rivers and streams with a sand or gravel bottom less than 10m wide with slow-moving sections, pools and overhanging vegetation, and a temperature of 14-23 degrees Celsius. Because of the intense urban development that has occurred in the GTA, many sections of river no longer meet these requirements and Redside Dace have been pushed upstream to occupy headwater sections that have not experienced disturbance.

The DRAP currently supplies clean water to both the Rouge River and Duffins Creek watersheds by way of 14 headwater streams. While Redside Dace have not been detected in the lower Rouge River or any of the streams within the DRAP during recent OMNMNRF water sampling efforts, NHIC data suggest a much more widespread occurrence. It is possible that the species persists in very low numbers throughout the Rouge River and its many tributaries, as well as the lower portion of the Duffins Creek watershed.

We encourage the IAA to carefully consider the implications of opening a large area of potentially suitable Redside Dace habitat to development. Because the global range is small and populations are also struggling elsewhere, the extirpation of Redside Dace from Ontario could have a significant impact on the global population. To improve the population, reintroduction efforts may be necessary in the future, and the DRAP is one important area where such efforts should be targeted.

ENDANGERED

Yellow-breasted Chat

Yellow-breasted Chat (Icteria virens)

One characteristic that makes the DRAP so valuable ecologically is its concentration of species with Southerly ranges, and the Yellow-breasted Chat is a prime example of this.

This bird is abundant in the United States, but its Canadian breeding population is extremely small and confined to a few localities, one being the lower Duffins Creek valley. Though it is not known whether any Chats still breed there, a probable breeding occurrence was documented between 2001 and 2005 during the 2nd OBBA.

Since that time, landcover data reveal that considerable succession has occurred adjacent to the river valley, potentially creating new suitable habitat (dense shrubland) extending into the southeast corner of the DRAP. This possibility should be explored further before new development projects are allowed to threaten the establishment of this federally endangered species.

THREATENED

Blanding's Turtle

Blanding's Turtle (Emydoidea blandingii)

Blanding's Turtles require shallow water bodies with clean water and mucky bottoms and are restricted to a relatively small global range encompassing the Great Lakes lowlands and U.S. Midwest. Their Canadian population has been severely diminished by wetland loss, shoreline alteration and road mortality. In the GTA, Blanding's Turtles occur in a few scattered locations, including the lower Rouge River and adjacent areas.

Because water quality is important to their survival, any upstream activities that may leach contaminants, such as a new road or housing project, could hinder the long-term viability of these populations. In addition, Blanding's Turtles travel several km between breeding and overwintering sites and adding new roads to the landscape only increases the probability that turtles will cross a road during this already risky journey.

With 1,403 SARO permit approvals impacting them since 2007, Blanding's Turtles are a prime example of how provincial legislation has failed Species at Risk in Ontario.

Removing protections from development across the DRAP would likely impact Blanding's Turtle in a variety of ways, including increased road mortality, downstream pollution of waterways and cumulative effects of other current development projects in the area.

To better assess threat levels for this species, we encourage the IAA to consider modelling the future trajectory of Blanding's Turtle abundance under a range of landscape-level development scenarios.

SPECIAL CONCERN

Eastern Milksnake

Eastern Milksnake (Lampropeltis triangulum)

This non-venomous member of the Kingsnake family is often mistaken throughout its global range for venomous lookalike species. In Ontario, it can be found in rocky outcrops, along forest edge and in rural areas around barns.

In addition to deliberate persecution by misinformed people, Milksnakes are threatened by road mortality and habitat loss.

Milksnakes are common in the Rouge Valley and have been reported in the DRAP near York-Durham Townline and Amos Pond. In assessing the level of threat to this species, we advise that all barns and other existing older structures within the DRAP are thoroughly checked by a trained biologist for evidence of Eastern Milksnake nesting sites and hibernacula.

SPECIAL CONCERN

Snapping Turtle

Snapping Turtle (Chelydra serpentina)

Canada's largest land turtle, the Snapping Turtle, utilizes all types of shallow water bodies with a soft mud or sand bottom and abundant vegetation, including roadside ditches and ephemeral wetlands.

Because of their habit of burrowing into gravel road shoulders for nesting, Snapping Turtles are frequently reported as road casualties. This is a serious problem for the species, whose long-lived, slow reproductive strategy means that the loss of even a few individuals can lead to population decline.

Snapping Turtles are known to breed in parts of the DRAP, particularly in the southern end of the property near Amos Pond. Introducing new suburban roads to this landscape would likely result in a high number of road casualties.

Given the poor performance of the provincial legislation in creating overall benefit for Species at Risk from approved projects, a federal IAA is necessary to ensure the protection of the Snapping Turtle.

We recommend that the federal IAA assess the level of threat posed by the rezoning with and without mitigation measures incorporated into the design of new roadways. These measures could include inexpensive ecopassages and exclusion fencing, which have both been shown to be effective at reducing turtle mortality.

SPECIAL CONCERN

Yellow-banded Bumblebee

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Yellow-banded Bumble Bee (Bombus terricola)

Native North American bumble bees have declined substantially across their range since the 1970s. Bumble Bee declines are likely a result of several factors working together, including pesticide use, habitat loss and climate change.

The Yellow-banded Bumble Bee is a habitat generalist, meaning that it exploits a wide range of open and semi-wooded environments for foraging and pollinates a variety of native wildflowers and crops. The Yellow-banded Bumble Bee has been found in the Rouge Valley and the southeastern corner of the DRAP.

Landscape development may affect struggling Bumble Bee populations both directly through the loss of habitat and indirectly by contributing to climate change. As stated in the COSEWIC status report for the American Bumble Bee, "Any activities that have impacts on nesting sites and/or local floral resources potential could impact colony success." If development goes forward, the incorporation of pollinator-friendly, native landscaping into urban design may create habitat for Bumble Bees and other declining pollinators.

Many Bumble Bee species, including the Yellow-banded, are restricted to temperate climates and are highly sensitive to rising temperatures linked to climate change. Vehicles burning fossil fuels are a major source of climate change-inducing carbon emissions, and evidence suggests that building new communities on the urban fringe will encourage people to drive more. As such, we recommend that the IAA reevaluate the rationale of opening the DRAP to development given the current climate crisis and the city’s capacity to add density to its core.

Recommendations for the Federal Study

- Include forecasted long-term contaminant levels of DRAP lands and downstream water bodies under a range of infrastructure and climate scenarios and ensure that these predictions account for cumulative impacts of other current and future development projects in the region.
- Emphasize the importance of ensuring that all natural lands within the DRAP are evaluated for their significance and protected accordingly.
- Encourage the IAA to revisit the need and scope of the province's decision to open DRAP to housing and commercial development and explore possible alternatives and mitigation measures.

So much is at stake with the provincial government's attack on the Greenbelt, and the DRAP lands in particular. We hope this new report helps the public and the federal government with their important study of development impacts and ultimately leads to the protection of the DRAP.

DEVELOPING DISASTER: EXPLORING THE SPECIES AND ECOSYSTEMS AT RISK IN THE GREENBELT'S DUFFINS ROUGE AGRICULTURAL PRESERVE

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