

**THE CORPORATION OF THE MUNICIPALITY OF MISSISSIPPI MILLS**

**Meeting Date:** August 25, 2015

**To:** Committee of the Whole

**From:** Shaun McLaughlin, Mayor

**Subject:** Report on the Rapids Clubtail Dragonfly in Mississippi Mills

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On July 28, 2015, Council agreed to consider a report on threats to a rare insect, the Rapids Clubtail dragonfly, which exists in our municipality. This is that report.

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**Executive Summary**

Only a few hundred individuals of the Rapids Clubtail dragonfly exist in Canada, all in Ontario. Of the four locations in the province where this dragonfly has been spotted in the last 15 years, three are in Mississippi Mills. This insect is one of the most threatened in Ontario and is classified as endangered in provincial and federal legislation.

Of the three confirmed sites in Mississippi Mills—the falls at Pakenham, Blakeney and Almonte—the latter has activities pending that could harm the remnant population.

While the Ministry of Natural Resources and Forestry is charged with enforcing the Endangered Species Act, that ministry is often in conflict to balance interests. It represents the interests of the resource and energy industries, which are often a significant threat to this species.

The first and second falls in Almonte are prime habitat for this dragonfly. The proponent's environmental assessment reports do not include mitigating measures to protect Rapids Clubtail habitat at the site and downstream. This leaves the municipality to consider playing a role in protecting the Almonte habitat location of the Rapids Clubtail.

The questions posed by this report are:

1. Do we ensure protection of the Almonte habitat of this very rare species?
2. If so, what do we do?

## Description and Lifecycle

The adult Rapids Clubtail dragonfly (*Gomphus quadricolor*) is a small dragonfly, with a wingspan of 25-27 mm and a contrasting pattern of brownish-black and yellowish-green stripes on the thorax.

Adults fly between early June and early July in Ontario and live about three to four weeks. Males tend to fly along the open river looking for food. The females hunt in forests along the river.

Mating takes place over the river and females deposit eggs on the water surface over rapids. The current moves eggs or recently hatched larvae downstream to pools. Larvae spend most of their time buried just below the surface of the sediment in the bottom of the pool, breathing through the tip of the abdomen raised above the sediments. The duration of the larval stage is unknown, but is probably two or more years. When the nymphs emerge in early summer, they cling to rocks sheltered by vegetation to hide from predators (grackles are their main predator) until they emerge from their pupae cases and their wings dry.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) declared the Rapids Clubtail dragonfly endangered in 2008. Ontario added it to the species at risk list in 2009 with endangered status.



Rapids Clubtail dragonfly image from COSEWIC study

Source: COSEWIC 2008 report: [http://www.registrelep-sararegistry.gc.ca/virtual\\_sara/files/cosewic/sr\\_rapids\\_clubtail\\_0808\\_e.pdf](http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_rapids_clubtail_0808_e.pdf)

## **Population and Range**

The Rapids Clubtail dragonfly lives in Canada only in Ontario. It has occurred in 25 US states, though it is extirpated in several. Of the four Ontario rivers it once inhabited, COSEWIC declared it extirpated on the Credit and Thames Rivers. COSEWIC states that the disappearance of the Rapids Clubtail dragonfly from two Canadian sites suggests that it is unable to adapt to the pressures of broad landscape changes and development.

The 2008 COSEWIC report estimated the Canadian population at 318 individuals in all life stages (106 adults). The report estimated 30 Rapids Clubtail dragonfly near Blakeney and 120 near Pakenham. This report did not include the Almonte population because it was not a known Rapids Clubtail dragonfly site in 2008. The Natural Heritage Information Centre (NHIC) has a reported observation of Rapids Clubtail at Almonte falls in 2010 and a very recent 2015 observation. The report estimated the US population at 2500-10,000 individuals.

Sources:

COSEWIC 2008 report: [http://www.registrelep-sararegistry.gc.ca/virtual\\_sara/files/cosewic/sr\\_rapids\\_clubtail\\_0808\\_e.pdf](http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_rapids_clubtail_0808_e.pdf)

Federal species at risk list for the Rapids Clubtail dragonfly: [http://www.registrelep-sararegistry.gc.ca/species/speciesDetails\\_e.cfm?sid=1006](http://www.registrelep-sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=1006)

## **Habitat and Occurrence in Mississippi Mills**

The Rapids Clubtail dragonfly needs well-oxygenated, unpolluted streams with healthy forests on the shores. It inhabits cool, medium-to-large rivers and it breeds over rapids exclusively.

This June 2015, several local biologists confirmed the presence of the Rapids Clubtail dragonfly at Blakeney and Almonte. The photo below was taken at Metcalfe Park on June 15, 2015. Additional sightings in this area took place over the course of a few days. This sighting raised awareness of the need to protect the Almonte habitat for this species.



*Photo taken June 15, 2015 at Almonte Falls by local resident P. Donaldson*

Christine Lewis, co-author of the definitive book on local Ontario dragonflies, *A Checklist of the Dragonflies and Damselflies of Ottawa-Gatineau*, confirmed this image.

In September 2010, the Ministry of Natural Resources and Forestry (MNR) released “Ontario Recovery Strategy for the Rapids Clubtail.”

As this recovery strategy document explains, when a population is as small as that of the Rapids Clubtail, extirpation can be sudden and immediate: “The restricted distribution of the species in Ontario and its apparent small population sizes, mean that it is vulnerable to local extirpation due to the potential for one weather-related event or one human-caused incident to eliminate an entire population.”

The report states: “Human activities which are altering the natural river and forest habitat required by this species are a threat to its survival. Such activities include: dam construction, which eliminates rapids; shoreline alteration; pollution from industrial, residential, agricultural or road-salting activities; removal of shoreline forests for agriculture or urban development...”

Section 1.5 of the report states that the Rapids Clubtail dragonfly does not fly far from where it emerges as an adult and this fact tends to reduce its possible distribution to other suitable habitats. It also recommends that wooded shores on either side of river habitat within 200 metres should be considered habitat.

Only one location on the Humber River and three on the Mississippi River are confirmed to have remnant populations in the last 15 years. The Mississippi River is the better of the two rivers, where the Rapids Clubtail dragonfly still exists, because of multiple rapids sites surrounded by good forest cover. The report gives exact definitions of the three prime local habitats:

- Mississippi River at Pakenham: From the ball diamond at the south end of town north to include two sets of rapids and quiet water north of the Pakenham Bridge on Kinburn Sideroad;
- Mississippi River at Blakeney: From Blakeney Road at the bridge, north to include the rapids plus quiet water below the rapids.
- Mississippi River at Almonte: From Main Street West at the bridge, downstream including the rapids and the quiet waters below the rapids.

Note: The definition of Almonte habitat presumably includes all the falls; however this may be open to interpretation as there are two road bridges and one railway bridge on Main Street West over the river.

Sources:

COSEWIC 2008 report: [http://www.registrelep-sararegistry.gc.ca/virtual\\_sara/files/cosewic/sr\\_rapids\\_clubtail\\_0808\\_e.pdf](http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_rapids_clubtail_0808_e.pdf)

MNRF Recovery strategy: [http://files.ontario.ca/environment-and-energy/species-at-risk/stdprod\\_066829.pdf](http://files.ontario.ca/environment-and-energy/species-at-risk/stdprod_066829.pdf). Note, this strategy has not been implemented.

Checklist of local dragonflies: <http://www.ofnc.ca/tandl/DD-checklist.pdf>

## Laws Regarding Endangered Species

The principle legislation in Ontario for species protection is the Endangered Species Act (ESA) and its regulations. Sections of the act relevant to Mississippi Mills are the following:

ESA Section 5 (3) classes a species as endangered when:

A species shall be classified as an endangered species if it lives in the wild in Ontario but is facing imminent extinction or extirpation.

Section 9 (1) (a) says no person shall “kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species”

Section 10 (1) (a) says “No person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species.”

Section 11 (1) says “The Minister shall ensure that a strategy is prepared for the recovery of each species that is listed on the Species at Risk in Ontario List as an endangered or threatened species.”

Ontario Regulation 242/08 of the ESA specifically mentions our municipality.

29.0.1 (1) For the purpose of clause (a) of the definition of “habitat” in subsection 2 (1) of the Act, the areas described in subsection (2) that are located in the following parts of geographic areas are prescribed as the habitat of Rapids Clubtail:

1. The part of the geographic area of Lanark composed of the lower-tier municipality of Mississippi Mills.

The next subsection clarifies the scope of the habitat:

(2) Subsection (1) applies to the following areas:

1. Any part of a river, stream or other body of water, up to the high water mark, that is being used by a Rapids Clubtail or on which a Rapids Clubtail directly depends in order to carry on its life processes.

2. Any part of a river, stream or other body of water, up to the high water mark, that was used by a Rapids Clubtail at any time during the previous 5 years and that provides suitable conditions for a Rapids Clubtail to carry on its life processes.

3. An area of deciduous or mixed forest or of deciduous or mixed treed swamp that is adjacent to an area identified in paragraph 1 or 2 and within 200 metres of the relevant high water mark.

At the federal level, the Rapids Clubtail dragonfly is protected under the Species at Risk Act (SARA), which is administered by the Minister of Environment. Sections 32 and 33 of the SARA have similar wording to Sections 9 and 10 of the ESA.

Sources:

ESA: <http://www.ontario.ca/laws/statute/07e06>

Ontario Regulation 242/08: <http://www.ontario.ca/laws/regulation/080242#BK75>

Guide to the SARA: <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=F3178B4D-1>

Sections 32 and 33 of SARA: <http://laws-lois.justice.gc.ca/eng/acts/S-15.3/page-9.html>

## **Possible Impact of Enerdu Expansion**

The main Enerdu Environmental Report and its annex II, Environmental Impact Assessment, prepared by OEL-HydroSys and released in August 2012, shrug off the dragonfly in one sentence: “No clubtails were observed during any of the site visits and as such this species is also considered absent.” The Annex lists the last observation of the dragonfly as occurring June 26, 2005. This contradicts the MNRF 2010 recovery strategy document which lists an Almonte observation in 2010.

The environmental impact assessment prepared for the Enerdu project falls short in several areas. Firstly, it ignores the location of the Almonte falls as habitat for the Rapids Clubtail, i.e. that it is known to occur and that even in the absence of sightings or indeed extirpation, habitat of an endangered species must be protected and recovery strategies for endangered species often require restoration of habitat. Secondly, it does not address mitigating measures for impact on habitat of the Rapids Clubtail downstream of the location. And thirdly, a survey for the Rapids Clubtail cannot rely solely on visual sightings of adults in the few weeks they fly each year. Qualified biologists need to search for larvae in the pools below rapids and for nymph exuviae on exposed rocks by the water—the report does not mention these were done.

A Class EA, under which the Enerdu expansion is managed, is designed to be self-reporting; that is, the province tends to take the proponent’s word for everything, especially when backed up by consultants. MNRF did not challenge the assertion that the Rapids Clubtail is absent, and that there was no attempt to mitigate effect on existing habitat at the location and downstream of the location, even though its own recovery strategy noted its existence at Almonte falls.

Professor Michael Runtz (Dept. of Biology, Carleton University) visited Almonte June 18 to look for the Rapids Clubtail. He offered the opinion that the river below the CPR bridge and the rocky island beside the flourmill, where the proposed Enerdu plant will be built, is perfect

Rapids Clubtail habitat because of still pools around it and the rocks shaded by bushes and long grass. Other local biologists agree.

Section 17 of the ESA provides an exemption for resource industries, including hydroelectric generation. The proponent must, however, apply for a permit, take all reasonable steps to reduce damage, and provide a mitigation plan. So, enforcement of the ESA in regards to the Rapids Clubtail dragonfly does not mean an end to Enerdu expansion.

Sources:

Enerdu documents related to its Class EA.

Ontario government: <http://www.ontario.ca/environment-and-energy/hydro-electric-generating-stations-and-endangered-or-threatened-species>

Michael Runtz bio: <https://carleton.ca/biology/people/michael-runtz/>

## About the Environmental Review Tribunal

While the Province should enforce its own laws, it often ignores environmental legislation if it proves inconvenient. Fortunately, when the Environmental Bill of Rights appeared in 1993, the province created the Environmental Review Tribunal (ERT) to act as an arms-length judicial board in environmental matters, much like the OMB.

The ERT reviews decisions related to habitat loss under Section 3 of the Environmental Protection Act (EPA), which provides for “the protection and conservation of the natural environment.” The ERT can and does halt developments that may harm species at risk. It can also allow projects to go ahead under strict conditions.

In Section 142.1 (2), the EPA states that an appeal to the ERT must be made within 15 days of a decision by the minister. Subsection (3) is specific about energy projects:

142.1 (3) A person may require a hearing under subsection (2) only on the grounds that engaging in the renewable energy project in accordance with the renewable energy approval will cause,

- (a) serious harm to human health; or
- (b) serious and irreversible harm to plant life, animal life or the natural environment.

Note: The ERT cannot review decisions made in disregard of the ESA; this lets the MNRF off the hook. Instead, it is MOECC that must defend the Province for actions that may contravene the EPA.

Sources:

ERT website: <http://elto.gov.on.ca/ert/>

EPA: <http://www.ontario.ca/laws/statute/90e19>

## Possible Actions

The Municipality and/or residents have several options to take in defense of an endangered species. These actions range from “do nothing” to an appeal to the Environmental Review Tribunal (ERT). There are other actions available between those two extremes.

1. Do nothing. It is easy but avoids our inherent responsibility.

2. Council can use its influence (limited) to urge the MNRF to apply the ESA to the proposed hydro station expansion.
3. Get a legal opinion. A review by a lawyer with experience before the ERT would provide intelligence valuable in future decisions relating to conflicts in enforcement of the ESA in our municipality.
4. Take steps to gather evidence of impact to downstream habitat from Enerdu expansion and to prove the presence of the Rapids Clubtail in the immediate vicinity of the Enerdu project. Either urge the MNRF to undertake the research or hire a qualified biologist, who is licensed to collect samples of an endangered species. The purpose is to determine if Rapids Clubtail dragonfly nymphs do live in the pools below the first falls.
5. Hire an environmental consultant to do a peer review of the endangered species work undertaken by OEL-HydroSys for Enerdu. There is a precedent. This year, the Municipality hired a consultant to peer review an environmental study of the proposed property development in the alvar. That review highlighted inadequacies in the proponent's original environmental study of the alvar.
6. Appeal to the ERT. While this may be the most effective way to protect the Rapids Clubtail dragonfly habitat (because it removes provincial politics from the decision), it is the most expensive. It is clearly a last resort.

### **Tribunal Case Example from Prince Edward County**

The following is an example of where people appealed to the Environmental Review Tribunal a decision by the Province to allow a renewable energy project in the habitat of species at risk. This case could serve as a guide to any action related to our dragonfly.

In 2013, two groups, the Alliance to Protect Prince Edward County and the Prince Edward County Field Naturalists, appealed a provincial decision to allow wind turbines on environmentally sensitive public lands (Ostrander Point). They argued that the turbines would damage human health and cause irreversible harm to bats, migrating birds, whippoorwills, Blandings turtles, monarch butterflies and an alvar.

The ERT dismissed all the arguments about threat and damage, except for the Blandings turtle. The main judgment from the Tribunal is dated July 3, 2013. It ruled in favor of the applicants and put a stop to the wind farm project, mostly due to the potential impact of access roads on the turtle population.

The ERT judgment makes many references to a report for the proponent by Stantec consulting. While the report is generally favorable to Stantec's client, it makes the following points that the ERT seized on:

"Turtles using access roads as basking sites or for movement are also likely to be at an increased risk. Loss of adult Blanding's turtles, due to accidental mortality, could have a significant negative impact on the local populations."

"If predators within the Study Area use access roads to traverse through the habitat, Blanding's turtles that oviposition in newly created habitat along the edges of these access roads may be at higher risk of nest predation. Potential direct impacts may also arise from increased access and awareness of the local Blanding's turtle population, resulting in poaching for the pet trade."

It is worth noting that the Blandings turtle population is estimated in the many thousands in Ontario. Its status is threatened, one step below endangered.

The proponent successfully appealed the ERT decision to the Divisional Court. On further appeal, the Ontario Court of Appeal agreed with the Tribunal. (In the end, the windmill project went ahead after changes were made to the access roads.)

The cost to the appellants for the initial ERT case, which stretched 40 days, was \$100,000 for legal fees and witness costs. The appeals cost another \$100,000. The groups are fundraising to pay their bills. The municipal government donated \$20,000.

An ERT challenge for the Rapids Clubtail dragonfly in Almonte would likely cost less because it is one clear issue, not a multi-topic challenge, as was mounted in Prince Edward County. In the case of the Rapids Clubtail dragonfly, an appellant would need to prove the insect exists within 200 metres of the site and that constructing a building in the river would cause harm.

Sources:

ERT case report: <http://www.ert.gov.on.ca/CaseDetail.aspx?n=13-003>

Stantec report: [http://www.gileadpower.com/pdf/Dec-2011-Natural-Heritage-Assessment-Environmental-Impact-Study/OPWEP\\_NHA-EIS\\_AppD1\\_Blandings-Turtle.pdf](http://www.gileadpower.com/pdf/Dec-2011-Natural-Heritage-Assessment-Environmental-Impact-Study/OPWEP_NHA-EIS_AppD1_Blandings-Turtle.pdf)

Financial Post article on the appeals: <http://business.financialpost.com/legal-post/ontario-court-of-appeal-says-endangered-turtles-trump-wind-farms>

Conversation July 31 with Cheryl Anderson, a lead organizer for the Prince Edward County Field Naturalists.

## **Recommendations**

Like all species in Mississippi Mills, the Rapids Clubtail dragonfly is a natural heritage asset shared by all residents. As such, Council should defend that asset when it is under threat. This report makes two recommendations in that regard.

Recommendation 1. Pass a resolution in defense of the Rapids Clubtail dragonfly and send a copy to the Minister of Natural Resources and Forestry, cc'ed to the Minister of Environment and Climate Change. The proposed text is:

WHEREAS an endangered species, the Rapids Clubtail dragonfly, has been confirmed to live by the Mississippi River in Almonte as recently as 2015;

AND WHEREAS the 2008 Committee on the Status of Endangered Wildlife in Canada (COSEWIC) report estimated the remaining Canadian population at 318 individuals in all life stages;

AND WHEREAS the documents from the developer of a proposed new hydro generation station in Almonte incorrectly state that the Rapids Clubtail dragonfly does not exist in Almonte;

AND WHEREAS a proper scientific study, which specifically searches for larvae of the Rapids Clubtail dragonfly, is the most reliable way to determine if this insect lives in a specific location;

BE IT RESOLVED THAT the Municipality of Mississippi Mills requests that the Minister of Natural Resources and Forestry order a comprehensive study be undertaken by biologists to

determine if larvae of the Rapids Clubtail dragonfly inhabit the Mississippi River in Almonte below the first and second falls.

AND THAT, if the study shows that the Rapids Clubtail dragonfly does inhabit those waters, the Minister of Natural Resources and Forestry apply the relevant sections of the Endangered Species Act to the hydro generation project.

Recommendation 2. Consider which of the actions listed above the Municipality is also willing to undertake and when.

Respectively submitted by

Shaun McLaughlin,  
Mayor of Mississippi Mills