

Appendix: D

Species at Risk Assessment and Mitigation Plan

April 15, 2024

**Replacement of Blakeney Bridge, on Blakeney Rd -
approx. 6km downstream of Almonte, County of Lanark**

**Species at Risk Impact Assessment and
Mitigation Plan**

Prepared for County of Lanark



**Stringer's
Environmental
Services**

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April 15, 2024

**Species at Risk Impact Assessment and Mitigation Plan - Replacement of
Blakeney Bridge on Blakeney Rd - approx. 6km downstream of Almonte,
County of Lanark**

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Species at Risk Impact Assessment and Mitigation Plan - Replacement of Blakeney Bridge on Blakeney Rd - approx. 6km downstream of Almonte, County of Lanark

1.0 Background

Lanark County is planning to replace the Blakeney Bridge over the Mississippi River located approx. 6.2 km downstream from Almonte (UTM: 18T 401926 5013436). The existing bridge is a 3 span single lane structure consisting of steel girders resting on concrete abutments at the ends of each span. It is located at a point in the river immediately upstream of Blakeney Rapids where two small bedrock islands divide the river's flow into 3 channels (Figure 1). The running surface is concrete placed over sheet steel supported by the girders and abutments. It has the appearance of a straight, single span bordered by steel beam guiderails when viewed from above.

The westernmost span is the longest of the three (approx. 26.32m) and has a single concrete pier centrally located in the span. The west abutment is on the west bank of the river and the east abutment is on a rocky island located part way across the river. The pier is located near mid channel and rests on footings placed on the bedrock. The rocky island is approx. 20m in width with concrete abutments and wingwalls placed on each side of the island.

The central span is slightly shorter (26.02m) and bridges the central channel of the river. It also has a center pier similar to the west span. The west end of this span rests on the east abutment on the westernmost island and its east end rests on a concrete abutment on the eastern, smaller (approx. 7m wide) island. This abutment and the one supporting the west end of the east span are an integral concrete unit.

The east span is the shortest (12.61m) and has no central pier. Its east end rests on an abutment and wingwalls on the east bank.

Figure 1: Blakeney Bridge



The bridge is located on Blakeney Rd in Lanark County and provides the only access across the Mississippi River between Almonte and Pakenham. The west approach to the bridge currently requires an abrupt 90 degree turn that includes access to Blakeney Park on the west bank of the river.

The new structure has been designed to be a 3 span, 2 lane bridge but the spans will be modular in structure and will not require center piers for the two longer spans (Appendix 1). The alignment will be adjusted to incorporate a slight curve over the larger island necessitating slight changes to the positioning of the abutments. There will also be a significant reduction in the angle of the curve at the west end of the bridge. This will require significant adjustments to the wingwalls and abutment at this location resulting in encroachment on the watercourse and a reduction in the area of naturalized riverbank between the roadway and the river.

A review of the proposed works regarding impacts on fish and fish habitat and aquatic species at risk has resulted in the Department of Fisheries and Oceans determining that an authorization under the Fisheries Act is not required so long as the recommendations in their 'Letter of Advice' are followed. Contract specifications have been modified to take these recommendations into consideration.

2.0 Ontario Endangered Species Act Considerations

Correspondence between Lanark County and the Ministry of Environment, Conservation and Parks, as well as a thorough review of available background information (notably information available from the Natural Heritage Information Center) confirms that there is the potential for species at risk (SAR) that are listed as endangered (END) or threatened (THR) to be found on or in the proximity of the site. These species include Rapids Clubtail (THR), Red-headed Woodpecker (END), Black Ash (END), Eastern Meadowlark (THR), and Bobolink (THR).

The screening also identified that 6 other species that are listed in the Endangered Species Act (ESA) as Species of Concern, may be present within the general area – Snapping Turtle, River Redhorse, Grasshopper Sparrow, Eastern Wood-pewee, Yellow-banded Bumble Bee, and Eastern Musk Turtle. Special Concern species and their habitat are not provided protection under the ESA.

Repair, maintenance or replacement of a structure that provides habitat for endangered or threatened species requires authorization under the *Endangered Species Act* (ESA) (e.g. permit or registration for exemption), assuming that the proposed works will destroy habitat, including nests, or will be undertaken during the active season and those works might disturb or harass individuals or their young during nesting.

Projects that avoid or reduce serious threat to human health and safety can proceed, even if there are possible effects to an Endangered or Threatened species, as outlined in Ontario Regulation 242/08 (Section 23.18) *Threats to Health and Safety, Non-imminent*, provided that a number of criteria are met. A complete list can be found in the ESA.

The project team concluded that the replacement of the Blakeney Bridge qualifies for this exemption, as the work is required to maintain and repair an existing structure related to a road, and the structure could eventually become a threat to public health and safety if the work is not completed.

The *Threats to Health and Safety, Non-imminent* exemption requires the proponent to complete the following:

- Register the activity and the affected species with the Ministry of Natural Resources and Forestry (MNRF) before work begins,
- Take reasonable steps to minimize and mitigate for adverse effects on the species and their habitat,
- Report sightings of rare species to the Natural Heritage Information Centre (NHIC) within three months of the observation (and update registration documents, if necessary),
- Keep a schedule of the work or a copy of the engineer's report outlining the work that must occur and make it available to the MNRF within 14 days of receiving a request, and
- Prepare and implement a species-specific Mitigation Plan for each registered species that may be impacted by the work.

The Mitigation Plan should:

- Be prepared before the work is carried out and affects a species or its habitat,
- Be prepared by a species expert,
- Incorporate the best available knowledge (including knowledge from MNRF, Aboriginal Traditional Knowledge, community knowledge, etc.),
- Be kept for five years following the end of construction, and
- Be made available to the MNRF within 14 days of receiving a request.

3.0 General Site Conditions

Blakeney Bridge is located on Blakeney Rd and provides important access across the Mississippi River, especially for residents of Blakeney, a small community on the east side of the river. The major N/S roadway in the area is County Rd 29, located just west of the river linking Almonte and Pakenham.

The bridge is located at the upstream end of Blakeney Rapids where the Mississippi River jogs northeasterly for 300 meters and descends approx. 15m in numerous channels over a series of limestone bedrock ledges. The rapids have a rich history of use by early settlers for waterpower with numerous mills having operated in the area up to the early 1900's. Little evidence of that era remains and the banks along the rapids have largely re-naturalized. Almonte Fish and Game Club has developed a network of trails and small bridges that provide public access to much of the area along the west bank downstream of the bridge. The community of Blakeney is located on the east side of the river.

Upstream of the bridge the landscape is dramatically different with agricultural fields extending almost to the water's edge in many areas. The gradient is low as are the water velocities.

In the immediate vicinity of the bridge (see Photo Diary), the substrate is primarily rock, both solid bedrock and broken particles of varying size up to >1m. There is little accumulated sediment except in small areas where the flow is directed elsewhere. Much of that sediment is covered in grasses and sedges.

4.0 Proposed Works

The planned operations to replace the bridge will include:

- Installation of erosion and sediment control measures,
- Removal of the existing deck sections
- Demolition of most of the existing abutments and wingwalls and the two piers
- Construction of the new wingwalls and abutments
- Installation of the new deck sections
- Installation of the new running surface and guiderails
- Site clean-up

It is anticipated that these operations will involve the use of typical construction equipment – excavators, trucks, compactors, pumps, etc.

Operations are scheduled to begin after July 1, 2024 and are expected to be completed by Dec. 31. Blakeney Rd. will be closed at the bridge throughout the construction period.

5.0 Species at Risk

The Ontario Endangered Species Act (ESA) provides for the designation and protection of species at risk and includes provisions for protecting the habitat of those species identified as endangered or threatened. Within the vicinity of the bridge, 5 species that are listed as endangered or threatened have been documented. A review of their habitat requirements and behavior indicates that only two have significant potential to be negatively impacted by the proposed operations required for this project (Table 1).

Table 1: Habitat Preferences and Pertinent Behaviour of Endangered and Threatened Species found on or in the vicinity of the project.

Listed Species	Status	Habitat Preference	Pertinent Behaviour	Potentially impacted by Project?
Rapids Clubtail	THR.	The Rapids Clubtail is typically found in clear, cool medium-to-large rivers with gravel shallows and muddy pools. Larvae occupy quiet muddy pools and crawl out of the water onto surrounding vegetation to transform into adults.	Adult males perch on exposed rocks and other projections in the rapids. Males are quite territorial and make short flights over the water, repeatedly returning to the same perch. Adult females typically inhabit forests along riverbanks, and only visit shallows and pools when they are ready to mate and lay eggs	Yes. Rapids Clubtail have been documented to be present at Blakeney Rapids and due to their mobility, adults may be present at the bridge.
Black Ash	End.	Black Ash is a medium-sized, shade-intolerant hardwood tree species that occurs on moist to wet sites such as swamps, bogs and riparian areas. Black Ash occurs throughout most of Ontario, except the Far North, Approximately 25% of the global range of Black Ash occurs in Ontario.	Black Ash is highly susceptible to the invasive emerald ash borer (EAB). It is expected that EAB will cause declines in the total number of Black Ash trees by greater than 70% over the next two generations (100 years).	Yes, if among the few trees requiring removal No If no trees are to be removed or if not present

5.1 Rapids Clubtail

The Rapids Clubtail is a small, brightly coloured dragonfly which lives in clear, cool, medium to large rivers with wooded shorelines, gravel shallows, and muddy pools. Adult males perch on exposed rocks in the rapids. Adult females inhabit shoreline forests, moving to the rapids when ready to mate. Eggs are laid over the rapids and the nymphs live in quiet, muddy, downstream pools.

The nymphs live in these downstream pools where they 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 sediment. They ambush prey (invertebrates, small fish and tadpoles) from the sediment using the prehensile labium.

Adults live about three to four weeks, emerging and flying from mid-May to mid-July, while larvae may live two or more years.

This species is a globally rare to uncommon dragonfly found throughout Eastern North America, in a range extending from Maine to Minnesota, including southern Ontario. In Ontario it has been found in only four rivers: the Credit, the Thames, the Humber and the Mississippi.

In the Mississippi River its presence has been documented in the rapids at Almonte, Blakeney and Pakenham.

5.1.1 Rapids Clubtail Habitat Protection

Specific provisions for protecting Rapids Clubtail habitat have been placed in O. Reg. 832/21.

“28. (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.*
- 2. The part of the geographic area of Middlesex composed of the lower-tier municipality of Thames Centre.*
- 3. The parts of the geographic area of Oxford composed of the lower-tier municipalities of South-West Oxford and Zorra.*
- 4. The part of the geographic area of Peel composed of the lower-tier municipality of Caledon.*
- 5. The parts of the geographic area of York composed of the lower-tier municipalities of King and Vaughan.*

(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 meters of the relevant high water mark.”*

Within the recovery strategy for this species, the specific area of concern at Blakeney Rapids has been described as “*Mississippi River at Blakeney: From Blakeney Road at the bridge, north to include the rapids plus quiet water below the rapids.*”

5.1.2 Anticipated Impacts on Rapids Clubtail Resulting From the Project

Environmental impacts associated with most construction activities can be divided into two categories – those that occur during the construction process and those that are a result of the presence of the completed project in the environment. Often the construction process has a greater impact than the presence of what results from the activity. For example – all the operations to install a structure are frequently of greater impact than the presence of the structure, once the site has stabilized.

5.1.3 Impacts Associated with the Project Itself and Their Mitigation

Since Blakeney Rd and the bridge have been a feature on the landscape for decades, there will be no additional impacts on Rapids Clubtail resulting from the presence of the new bridge.

5.1.4 During Construction Impacts and Their Mitigation

It is anticipated that planned activities will include installation of environmental protection measures, installation of erosion and sediment control measures, removal of the existing deck sections, demolition of most of the existing abutments and wingwalls and the two piers, construction of the new wingwalls and abutments, installation of the new deck sections, installation of the new running surface and guiderails, and site clean-up. Each of these activities has potential impacts and opportunities for mitigation. These activities will have both generalized and specific processes where impact mitigation is possible.

The planned timing of the in-water work (mid- July to year end) is such that encounters with adult Rapids Clubtail are unlikely. They have normally concluded their breeding and egg laying by mid-July and these adults then die. The eggs are laid on the water’s surface in the rapids and are swept downstream where the larvae burrow into the soft substrate of quieter pools.

Because the bridge is located at the head of the rapids and all impacts will be contained at that location, it is anticipated that there will be no negative impacts on Rapids Clubtail due to the construction activity itself.

5.2 Black Ash

Black ash is a broad-leaved hardwood tree in the Olive family, growing 15 to 20 m in height, but can grow to as high as 27 m, and 30 to 50 cm in diameter. The leaves are roughly 15-30 cm in size. It occurs on moist to wet sites such as swamps, bogs and riparian areas.

Black Ash is highly susceptible to the invasive Emerald Ash Borer (EAB). It is expected that EAB will cause declines in the total number of Black Ash trees by greater than 70% over the next two generations (100 years).

On January 25, 2024, the Ministry of Environment, Conservation and Parks made new regulations that focus the application of the *Endangered Species Act* protections on areas of the province where Black Ash has experienced significant mortality due to the invasive Emerald Ash Borer, the primary threat to the tree species. Since Lanark County is included within the area covered by these protections, consideration has been given to this species within the project area.

A review of the contract specifications revealed that only a very few trees located immediately adjacent to the existing bridge will be impacted by the project activities. These trees have been closely examined and none are black ash, not unexpectedly due to the habitat preferences of the species. As a result, no explicit mitigation measures are required.

6.0 Summary and Conclusions

This SAR Impact Assessment and Mitigation Plan was prepared by SES on behalf of Lanark County to meet the exemption requirements for a non-imminent health and safety project that affects threatened species. This Plan meets those requirements by outlining reasonable steps that will be taken to avoid or minimize the adverse effects of the project on Rapids Clubtail and Black Ash including:

- Scheduling operations outside the period of Rapids Clubtail adult activity in the vicinity of the project.
- Ensuring the contractor and their staff are aware of the ESA requirements and
- Documenting any encounters with SAR or other protected species.

Lanark County will update this Plan periodically (as required), keep it on record for five years post construction and maintain a Schedule of Work or an Engineer's Report. The Plan and Schedule of Work / Engineer's Report will be provided to the MNRF within 14 days of receiving a request. Any SAR observations will be recorded and submitted to the NHIC within three months of the observation.



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April 15, 2024

References

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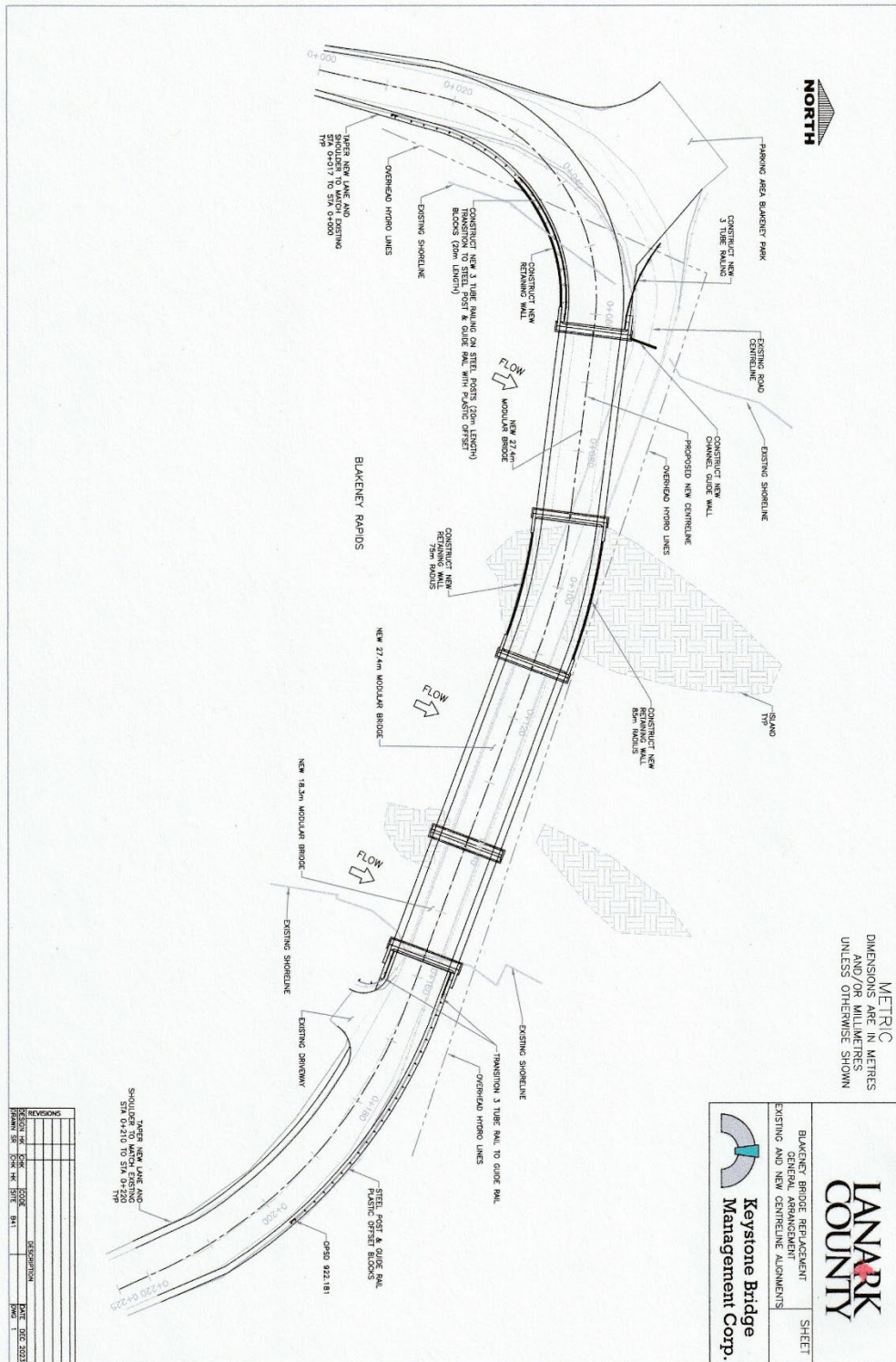
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Service Ontario e-Laws. 2016. Endangered Species Act, 2007 Ontario Regulation 242/08. Exemptions requiring notice to be given on registry: Section 23.18. <https://www.ontario.ca/laws/statute/07e06?search=endangered+species+act>

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Appendix A – General Arrangement – New Bridge



Appendix B: Pertinent Sections of the Endangered Species Act, 2007

“habitat” means,

- (a) with respect to a species of animal, plant or other organism for which a regulation made under clause 55 (1) (a) is in force, the area prescribed by that regulation as the habitat of the species, or
- (b) with respect to any other species of animal, plant or other organism, an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding,

and includes places in the area described in clause (a) or (b), whichever is applicable, that are used by members of the species as dens, nests, hibernacula or other residences; (“habitat”)

9. (1) No person shall,

- (a) 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;

10. (1) No person shall damage or destroy the habitat of,

- (b) (a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species;

17. (1) The Minister may issue a permit to a person that, with respect to a species specified in the permit that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species, authorizes the person to engage in an activity specified in the permit that would otherwise be prohibited by section 9 or 10. 2007, c. 6, s. 17 (1).

(2) The Minister may issue a permit under this section only if,

- (a) the Minister is of the opinion that the activity authorized by the permit is necessary for the protection of human health or safety;
- (b) the Minister is of the opinion that the main purpose of the activity authorized by the permit is to assist, and that the activity will assist, in the protection or recovery of the species specified in the permit;
- (c) the Minister is of the opinion that the main purpose of the activity authorized by the permit is not to assist in the protection or recovery of the species specified in the permit, but,
 - (i) the Minister is of the opinion that an overall benefit to the species will be achieved within a reasonable time through requirements imposed by conditions of the permit,
 - (ii) the Minister is of the opinion that reasonable alternatives have been considered, including alternatives that would not adversely affect the species, and the best alternative has been adopted, and
 - (iii) the Minister is of the opinion that reasonable steps to minimize adverse effects on individual members of the species are required by conditions of the permit;

Appendix C

Species At Risk Encounter Reporting Form

Following any contact with a species protected under the *Endangered Species Act, 2007* this form is to be completed by a qualified person involved in the project and forwarded to Lanark County staff.

Name of Observer

Date and Time of Encounter

Species Encountered

Location of Encounter (Township, Sta., O/S, etc.)

UTM Coordinates (NAD 84)

18 T			
Zone	Easting	Northing	Accuracy (m) – if available

General description of observation (size of specimen, description of site, were pictures taken? – if so, please forward via e-mail to Sean Derouin by e-mail - SDerouin@lanarkcounty.ca)

Photo Diary

Photo 1 – Looking westerly across the current bridge.



Photo 2 - Looking easterly at the southerly side of the bridge. The west span is visible showing the pier and the abutment on the larger of the two Islands.



Photo 3 – Looking easterly at the northerly side of the center span showing the central pier and the concrete abutment on the small island.



Photo 4 – Looking downstream from the bridge deck at the westerly channel.



Photo 5 – Looking downstream from the deck at the central channel showing the top of the rapids.



Photo 6 – Looking downstream at the smaller, easterly channel.



Photo 7 Looking at the top of the main rapids from the westerly bank 50m downstream of the bridge



Photo 8 – Looking westerly at the SW corner of the current bridge. It is in this area that most of the changes to the bridge alignment will occur.

