



NORTHERN PULP NOVA SCOTIA

# Herptile Survey

Focus Report – Replacement Effluent Treatment Facility

## Appendix Focus Report Item 8.4 Herptile Survey

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As required in item 8.4 of the Terms of Reference (ToR) for the Focus Report (Nova Scotia Environment (NSE) 2019), a herptile survey was conducted along the re-aligned pipeline route and at the Effluent Treatment Facility (ETF) site as described in Focus Report Overview. The results of this survey are described in this section.

### 8.4.1 Herptile Survey Methodology

A desktop database search was conducted as part of the Environmental Assessment Registration Document (EARD) (Northern Pulp Nova Scotia; NPNS 2019) by J. Gilhen (herptile specialist) for potential federally or provincially listed amphibian or reptile species at risk/priority species. The re-aligned pipeline and Effluent Treatment Facility (ETF) project area is within range of two herpetofaunal species at risk: the wood turtle (*Glyptemys insculpta*) (listed as Threatened by the Committee on the Status of Endangered Wildlife in Canada - COSEWIC, Species at Risk Act – SARA, and the Nova Scotia Endangered Species Act –NS ESA), and the snapping turtle (*Chelydra serpentina*) (listed as Special Concern by COSEWIC and SARA and Vulnerable by NS ESA). An additional turtle species, eastern painted turtle (*Chrysemys picta picta*), is listed as Special Concern by COSEWIC. With respect to the ETF property, the EARD concluded that no federal or provincial herptile species at risk are anticipated with this landscape, and that the old field and edge habitat, as well as isolated wetland/alder swale areas, and second growth mixed forest areas at the NPNS property provide habitat for a variety of non-priority amphibians and snakes.

A herptile survey program was conducted in 2019 as an update to the existing environment (as described in the EARD) based on the revised project description. The desktop assessment undertaken for the EARD is relevant to the proposed re-aligned pipeline route and was used to inform targeted herptile surveys. Herptile field surveys were conducted during the spring and summer of 2019 as detailed below.

The herptile survey was conducted in two parts; (i) targeted searches for potential habitat for the turtle species at risk identified during the desktop assessment (i.e., the wood turtle, the snapping turtle, and painted turtle), and (ii) incidental herptile observations and detections made during the completion of other field programs. The targeted searches for potential turtle habitat were focused on those watercourses identified as potential turtle habitat in the EARD, namely Haliburton Brook (watercourse WC09), and watercourses WC11, WC12, and WC13. In addition, adjacent roadside areas were also assessed. These surveys took place in June and July of 2019 and were primarily focused on identifying potential nesting, basking, foraging, or overwintering sites. In particular, habitats with sand or gravelly areas near and along Haliburton Brook were searched for evidence of any turtle nesting or breeding activity. The incidental herptile surveys coincided with the timing of surveys for wetlands, watercourses, fish habitat, birds, and plants between May and late July 2019. As noted by the Nova Scotia Department of Lands and Forestry, herptile activity in Nova Scotia typically peaks in the spring and fall. As such,

during the course of the various field programs undertaken within the Nova Scotia Transportation and Infrastructure (NSTIR) Right-of-Way (ROW) in 2019, the presence of herptile species observed or detected was recorded. This included incidental detections of the nocturnally active spring peeper (*Pseudacris crucifer*, a species of tree frog) made during the nocturnal owl survey conducted on May 8, 2019.

## 8.4.2 Results of Herptile Surveys

Table A8.4-1 (below) is a list of observances of herptile species throughout the spring/summer 2019 field surveys. Most incidental herptile observations were made during the course of the wetland and watercourse field programs and so have been listed according to the wetland or watercourse where the observation was made. Representative photos of herptile species observed are presented in Photo Plate A8.4-1.

### Snakes

The only snake species observed was the common garter snake (*Thamnophis sirtalis*). This species was observed on five occasions, and each time they were observed basking along the edges of roadside wetlands. Locations of observances are listed in Table A8.4-1. The common garter snake is ranked as S5 by the Atlantic Canada Conservation Data Centre (AC CDC) and is considered common and widespread throughout Nova Scotia. It is not listed under SARA or the NS ESA.

### Frogs

In total, five species of frog were detected during field surveys conducted in 2019, including American bullfrog (*Lithobates catesbeianus*), green frog (*Lithobates clamitans*), northern leopard frog (*Lithobates pipiens*), spring peeper, and wood frog (*Lithobates sylvaticus*). During the earlier surveys (i.e., May and June 2019), amphibian egg masses and tadpoles were observed in several wetlands with ponded water, as well as the relatively stagnant, backchannels of some watercourses. In particular, a number of observations were made in the pond located in the center of the Pictou Roundabout. Observations of egg masses and tadpoles were not identified to species, but were noted nevertheless in order to confirm amphibian breeding. Most species of frog were identified through direct observation within the NSTIR Highway 106 ROW. The only exception was the spring peeper, which was identified by their unmistakable 'chorus' of mating sounds that usually begins at dusk and continues late into the night. All of the frog species observed are ranked as S5 (secure populations) by the AC CDC and are considered common and widespread throughout Nova Scotia. None of the species are listed under SARA or the NS ESA.

Table A8.4-1: Summary of Incidental Herptile Observations Made During the Spring and Summer Surveys in 2019

Species	Location
Common garter snake	WL-9-2019, WL-13, in ditch near Haliburton Road and Highway 106, WL-11-2019, WC14 (observed on slope beside road)
Unidentified frog(s) – observed or heard	WL-20, WC05-D, Pine Tree Road ditch, WL-11-2019, WL-10, WL-5C, WL-5B
Unidentified amphibian egg masses	WL-20, WC15-D, WL-13
Unidentified tadpoles	WL-13, WC07 Pond, WC15, WC12 (caught in a minnow trap during the freshwater fish habitat survey)
Northern leopard frog	WL-10
Green frog	WL-10
Spring peepers	WL-10, WL-13, WL-5D, WL-5C
American bullfrog	WL-13, WC14, WC15
Wood frog	WL-5D, WL-5C

See Annex A5.1 and A7.1 for locations of wetlands and watercourses assessed.

Photo Plate A8.4-1



Green frogs in typical amphibian habitat located in WL-10



Pictou Roundabout Pond illustrating typical frog habitat.



Female common garter snake observed along the edges of WL-9-2019.

## Turtles

The watercourses encountered along the re-aligned pipeline route were examined for potential turtle habitat, with particular focus on the main Haliburton Brook tributary. Most freshwater turtles in Nova Scotia such as the eastern painted turtle (*Chrysemys picta picta*) (COSEWIC Special Concern, S4S5, provincially common and widespread), Blanding's turtle (*Emydoidea blandingii*) (SARA Threatened, NS ESA Endangered) and the common snapping turtle (COSEWIC/SARA Special Concern, NS ESA Vulnerable) prefer shallow waters and slow currents, with soft mud and aquatic vegetation with the exception of the wood turtle (SARA/NS ESA Threatened), which prefers hard substrate and clear waters. As detailed in the EARD, Blanding's turtle are mainly isolated in southwestern Nova Scotia are rarely observed in other regions of Nova Scotia (J. Gilhen, pers. comm.) and are therefore unlikely to be present in the vicinity of the project ROW.

There were no turtles observed during any of the assessments; however, observations of turtle habitat (i.e., nesting, foraging, overwintering) which includes freshwater bodies with high plant cover; as well as roadsides and fields near freshwater sources were made. During the field observations, the potential for low to moderate quality nesting habitat for the snapping turtles and potentially wood turtles was present along the areas of the Highway 106 ROW due to the presence of gravel and sand substrate, in particular at WC08 (generally downstream of the re-aligned pipeline) and WC09 (Haliburton Brook). The potential for snapping turtle and painted turtle overwintering, basking and foraging habitat was observed at WL-10, WL-11-2019, and WL-13; and those areas that exhibited potential areas for wood turtle foraging habitat was observed at WC08 and WC09.

Table A8.4-2: Summary of Potential Turtle Habitat within the Vicinity of the Re-aligned Pipeline Route

Location	Potential Habitat	Eastern Painted Turtle			Wood Turtle			Snapping Turtle		
		N	F	W	N	F	W	N	F	W
WL-5 (A, D & E)/WC07	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams. -Central pond within the roundabout with dense vegetation.	L	L	-	L	-	-	L	L	-
WL-5 (B & C northern)/WC08	-Sand/gravel road fill banks near Highway 106. -Clear flowing stream/brook with gravel/sand substrate.	M	-	-	L-M	L-M	-	M	-	-
WL-6	-Sand/gravel road fill banks near Highway 106.	L	-	-	L	-	-	L	-	-
WL-7/WC09 (Haliburton Brook)	-Sand/gravel road fill banks near Highway 106. -Clear flowing stream/brook with gravel/sand substrate.	M	-	-	M	M	-	M	-	-
WL-8-2019/WC10	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams.	L	-	-	L	-	-	L	-	-
WL-9/A-2019	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams.	L	-	-	L	-	-	L	-	-
WL-10/WC11	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams. -Deep water with high plant cover.	L	M	M	L	-	-	L	M	M
WL-11-2019/WC12 (Mill Brook)	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams. -Deep water with high plant cover.	L	M	M	L	-	-	L	M	M
WL-13/ WC13	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams. -Deep water with high plant cover.	L	M	M	L	-	-	L	M	M
WC17	-Sand/gravel road fill banks near Highway 106. -Clear flowing stream/brook with gravel/sand substrate.	L	-	-	L	L	-	L	-	-
WL-16/WC14	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams.	L	-	-	L	-	-	L	-	-
WC15	-Sand/gravel road fill banks near Highway 106. -Soft muddy substrates in wetland and streams.	L	-	-	L	-	-	L	-	-

N – Nesting  
F – Foraging  
W – Over Wintering

H – High Potential of Occurrence  
M – Moderate Potential of Occurrence  
L – Low Potential of Occurrence

- No applicable Habitat Identified in 2019 Survey

### 8.4.3 Potential Priority Herptiles

Potential priority herptiles were reviewed in the EARD. In general, the potential priority herptile species remain the same for the re-aligned pipeline route as they were for the original pipeline route assessed in the EARD. The 2019 herptile surveys did not identify any additional potential habitat for priority herptiles (beyond those listed in the EARD). Correspondingly, due to the highly disturbed nature of the proposed re-aligned pipeline route (i.e., close proximity to roadways, commercial areas and agricultural fields), there is an overall low potential for significant habitat for priority herptile species.

References:

Northern Pulp Nova Scotia (NPNS). 2019. Northern Pulp Nova Scotia Replacement Effluent Treatment Facility Project Environmental Assessment Registration Document.

[https://www.novascotia.ca/nse/ea/Replacement\\_Effluent\\_Treatment\\_Facility\\_Project/](https://www.novascotia.ca/nse/ea/Replacement_Effluent_Treatment_Facility_Project/)

Nova Scotia Environment (NSE). 2019. Focus Report Terms of Reference for the Preparation of a Focus Report Regarding the Replacement Effluent Treatment Facility Project.

[https://www.novascotia.ca/nse/ea/Replacement\\_Effluent\\_Treatment\\_Facility\\_Project/Focus-Report-Terms-of-Reference.pdf](https://www.novascotia.ca/nse/ea/Replacement_Effluent_Treatment_Facility_Project/Focus-Report-Terms-of-Reference.pdf)