



NORTHERN PULP NOVA SCOTIA

Bird Baseline Survey

Focus Report – Replacement Effluent Treatment Facility

Appendix Focus Report Item 8.3 Bird Baseline Survey - Select Species

As required by item 8.3 of the Terms of Reference (ToR) for the Focus Report (Nova Scotia Environment (NSE) 2019), a baseline bird survey was conducted for Common Nighthawk (*Chordeiles minor*), Double-crested Cormorants (*Phalacrocorax auratus*), owls and raptors, and raptor nests along the re-aligned pipeline route and at the Effluent Treatment Facility (ETF) site as described in the Focus Report Overview, and the results of the survey are presented in this section.

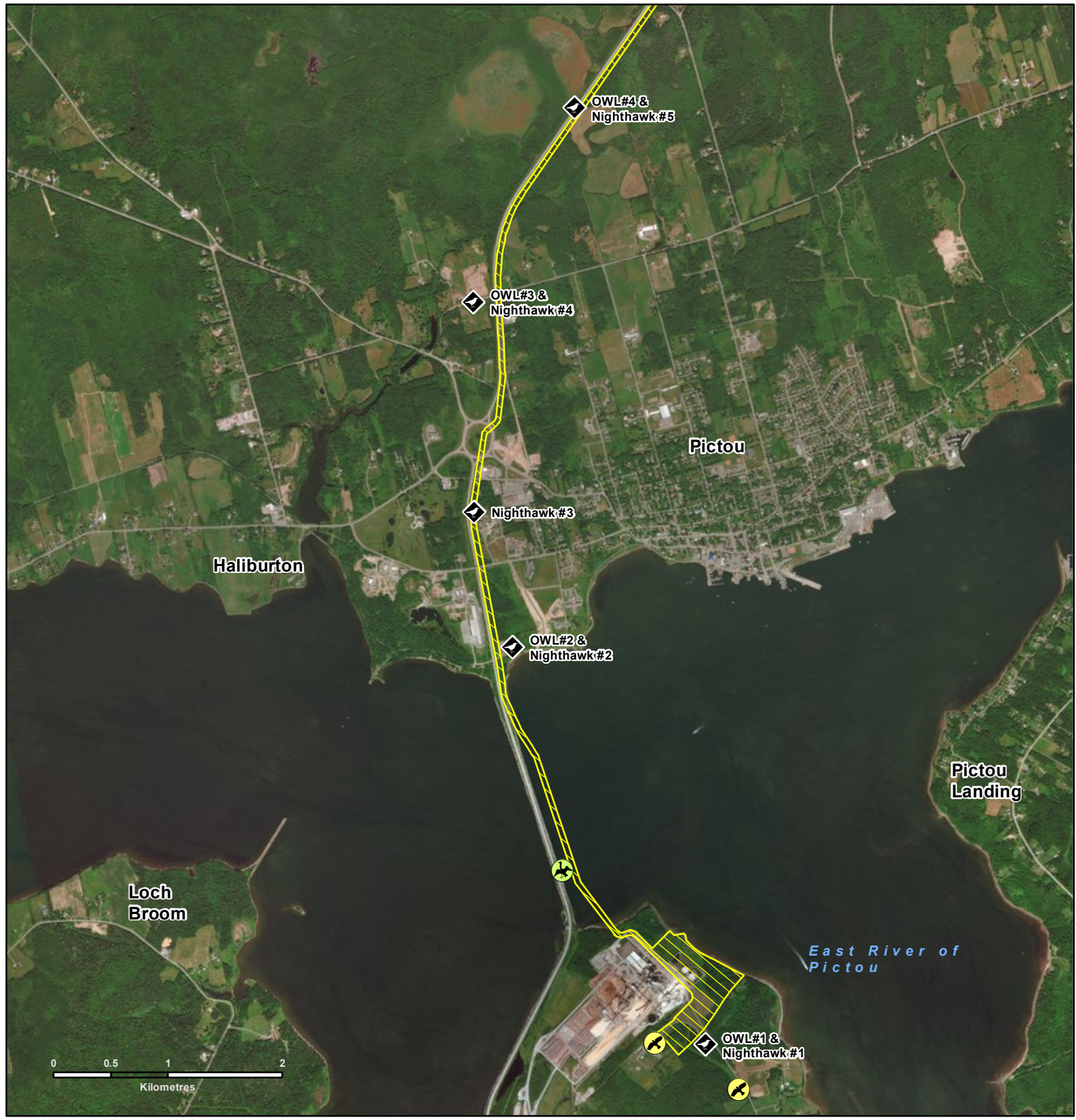
8.3.1 Select Species - Bird Survey Methodology

The ToR required bird surveys to be conducted as an update to the existing environment (as described in the Environmental Assessment Registration Document (EARD) (NPNS 2019)) based on the revised project description. Common Nighthawk are a priority bird species listed as protected pursuant to the Nova Scotia Endangered Species Act (NSES - Threatened) and the federal Species at Risk Act (SARA – Threatened, Schedule 1). Active cormorant, owl, and raptor nests are protected under the Nova Scotia Wildlife Act (NSWA). Nighthawks and cormorants are also listed under the Migratory Birds Convention Act (MBCA). The key cormorant nesting location is within the Abercrombie Wildlife Management Area. The regulations for management of this area prohibit “kill, take, hunt, trap or chase, pursue, worry, follow after or on the trail of or search for any wild mammals or birds”.

The desktop assessment that was undertaken in support of the EARD is relevant to the proposed re-aligned pipeline route and was used to plan field surveys described in this Annex. Bird field surveys were conducted the summer of 2019 for the re-aligned pipeline route and for the ETF site. Figure A8.3-1 illustrates the locations of the survey locations for these select bird species.

8.3.1.1 Common Nighthawk Survey Methodology

A dedicated Common Nighthawk survey based on the methodology described in the Canadian Nightjar Survey Protocol (Knight et al. 2018) was conducted during the evening of June 17, 2019. In general, the methodology dictates that surveys must take place during the nightjar breeding season (defined as between June 15 and July 15 of any given year) and prescribes a start time of 30 minutes before local sunset, as this is when nightjars are most active and most readily detected. If there is potential for Eastern Whip-poor-wills (*Antrostomus vociferus*) to be present in the area of the surveys, surveys should take place within one week (before or after) of the full moon in June. Ten survey locations were established along the proposed re-aligned pipeline route. At each location, observers conducted a six-minute silent listening period recorded in 1-minute intervals. If a nightjar was detected, the distance (i.e., < 100 m or > 100 m), cardinal direction, and detection type (i.e., wing-boom, call, and visual) were recorded. The local weather conditions including wind speed, temperature, percent cloud cover, and any precipitation were recorded at the beginning and the end of the survey. Other notable information including noise level (noted qualitatively) and the presence of any other nocturnal species (e.g., American Woodcock (*Scolopax minor*), Wilson’s Snipe (*Gallinago delicata*), Ruffed Grouse (*Bonasa umbellus*)) was also recorded.



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 Replacement Effluent Treatment Facility
 Environmental Assessment - Focus Report

**Nighthawk, Owl, Double-crested Cormorant
 and Raptor Survey Locations**
 Figure A8.3-1



- Nocturnal Bird Point Count Locations
- Focus Report Pipeline PFA*
- Active Osprey Nests
- Double-crested Cormorant Colony



MAP DRAWING INFORMATION:
 DATA PROVIDED BY Northern Pulp Nova Scotia, ESRI

MAP CREATED BY: SCM
 MAP CHECKED BY: SLD
 MAP PROJECTION: NAD 1983 UTM Zone 20N



*Precise Project Footprint to be determined following
 completion of detailed design

8.3.1.2 Double Crested Cormorant Survey Methodology

As was discussed in the EARD, there is a long established Double-crested Cormorant colony located within the Pictou Harbour adjacent the Pictou Causeway (Tufts 1986). These birds generally arrive in late-April to early-May and immediately begin building nests on the remaining derelict pilings of the previous causeway structure, as well as on the ground atop the rip-rap scour protection along the eastern side of the existing causeway itself. Egg-laying likely begins within the first few days of arrival, as soon as crude nests of sticks and seaweed are completed, or nearly so. Double-crested Cormorants usually begin to breed at the age of three years and a typical nest will hold three to four eggs. Incubation is completed by both the male and female lasting roughly 25 to 33 days (Kaufman 2001). Nestlings are fed by both parents who may travel as far as 40 km in search of fish and other aquatic prey to feed their young. Fledgling Double-crested Cormorants may begin to wander around the colony by three to four weeks after hatching and will usually begin to fly by five to six weeks of age (Kaufman 2001).

The colony is regulated under the Abercrombie Wildlife Management Area Designation and Regulations where the primary regulation is a prohibition on hunting and trapping. The colony has previously been estimated at around 1,000 birds.

This colony was surveyed on six occasions throughout the 2019 breeding season, on May 15, May 24, June 3, June 10, July 5, and July 30, 2019. During each survey, estimates regarding the number of birds, the number of nests, and other notable observations related to breeding or other colony activity were recorded. This was achieved by observing the colony from a vantage point along Abercrombie Point, from which the entire colony could be viewed. A high-resolution digital camera was used to capture still photographs of the colony during each visit in order to facilitate greater accuracy in estimating numbers of birds and active nests.

8.3.1.3 Owl and Raptor Survey Methodology

A dedicated nocturnal owl survey based on the methodology described in the Nova Scotia Nocturnal Owl Survey (BSC 2007) was conducted during the evening of May 8, 2019. In general, the methodology dictates that surveys must take place between April 15 and May 15 of any given year and prescribes a start time of 30 minutes after local sunset. Six survey locations were established along the proposed re-aligned pipeline route, and at each location, observers used a combination of passive listening and playback calling to detect nocturnal owls. As most owl species occurring in Nova Scotia are known to respond to the calls and vocalizations of their own species and to the sounds of other owl species during the breeding season, the use of playback calling is recognized as an effective method for the detection of nocturnal owls (Takats et al. 2001). At each designated owl survey location, observers would first listen passively for two minutes before initiating any playbacks to allow for unsolicited owl vocalizations. Following this first period of passive listening, digital recordings of Boreal Owls (*Aegolius funereus*) and Barred Owl (*Strix varia*) calls were played using an 18-Volt portable Bluetooth speaker system alternating with additional periods of passive listening. The standardized sequence conducted at each owl survey location took approximately 9.5 minutes and is as follows:

- Passive listening (2 min);
- Boreal Owl playback calling (20 seconds);
- Passive listening (1 min);
- Boreal Owl playback calling (20 seconds);
- Passive listening (1 min);
- Barred Owl playback calling (20 seconds);
- Passive listening (2 min)
- Barred Owl playback calling (20 seconds); and
- Passive listening (2 min).

If any owls were detected the distance (i.e. <200 m, 200-500 m, 500-1,000 m, > 1,000 m), the cardinal direction and at which point during the playback series the owl(s) was detected was recorded. The local weather conditions including wind speed, temperature, percent cloud cover, and any precipitation were recorded at the beginning and the end of the survey. Other notable information including noise level (noted qualitatively) and the presence of any other nocturnal species (e.g., American Woodcock, Wilson's Snipe, Ruffed Grouse) was also recorded.

8.3.2 Results

8.3.2.1 Common Nighthawk

The dedicated Common Nighthawk survey took place at ten locations on the evening of the full moon on June 17, 2019, in order to maximize the potential to detect another protected nightjar species, the Eastern Whip-poor-will. While no Eastern Whip-poor-wills were detected, several Common Nighthawks and two other bird species active at dusk, the American Woodcock and Wilson's Snipe, were detected. Table A8.3-1 summarizes the results of the Common Nighthawk survey program.

Table A8.3-1 Results of the Common Nighthawk Survey conducted on June 17, 2019 (20:40 – 22:35) Local Sunset: 21:02

Common Nighthawk (CONI) Survey Location	Time	Common Nighthawk Detected?	Number of Individuals Detected	Distance & Direction	Other Species?
#1	20:40	No	-	-	-
#2	21:04	No	-	-	-
#3	21:18	YES	1	>100 m North	-
#4	21:29	No	-	-	-
#5	21:41	YES	2	<100 m South-east	American Woodcock & Wilson's Snipe
				>100 m North-west	
#6	21:51	No	-	-	-
#7	22:01	No	-	-	-
#8	22:13	No	-	-	-
#9	22:21	No	-	-	-
#10	22:35	No	-	-	-

Common Nighthawks were detected calling and performing 'wing-boom' courtship displays from two of the ten of the survey stations along the proposed re-aligned pipeline route. While there is no critical habitat identified within the proposed pipeline route for the Common Nighthawk, their presence and courtship behaviour suggests that the species is locating suitable breeding habitat within the vicinity of the project.

8.3.2.2 Double-crested Cormorants

Surveys of the Double-crested Cormorant colony conducted on May 15, May 24, June 3, June 10, July 5, and July 30, 2019 revealed that there were approximately 300 active nests within an area measuring roughly 125 m x 15 m located along the eastern side of the Pictou Causeway. Figure A8.3-1 shows the location of the colony. The maximum number of cormorants counted at the colony was 1,245 birds on May 24, while the lowest number of cormorants counted at the colony was 814 on July 30. Table A8.3-2 summarizes the results of the Double-crested Cormorant colony survey program.

Table A8.3-2: Double-crested Cormorant Colony Survey Program Results

Date of Survey	Time of Day (24 H)	Approximate Number of Cormorants at the Colony
May 15, 2019	15:45	845
May 24, 2019	10:30	1,245
June 3, 2019	11:45	1,147
June 10, 2019	10:15	1,057
July 5, 2019	10:45	957
July 30, 2019	12:05	814

8.3.2.3 Owls and Raptors

Two species of nocturnal owl and another nocturnally active species were detected during the dedicated Nocturnal Owl Survey conducted during the evening of May 8, 2019. The results of the dedicated Nocturnal Owl Survey are summarized in Table A8.3-3. Two Barred Owls were detected from Owl Station #3 and seemed to be responding to each others' vocalizations, suggesting territorial behaviour or possibly courtship. A great horned owl was heard distantly from Owl Station #5 and two, possibly more, American Woodcock were heard performing courtship 'twittering' displays from Owl Station #6.

Table A8.3-3: Results of the Nocturnal Owl Survey conducted on May 8, 2019 (21:22 – 23:20) Local Sunset: 20:25

		Station #1	Station #2	Station #3	Station #4	Station #5	Station #6
Species	S-ranking	Number of Individuals Detected					
Barred Owl	S5	-	-	2	-	-	-
Great Horned Owl	S4	-	-	-	-	1	-
American Woodcock	S5B	-	-	-	-	-	2

Only two species of diurnal raptor were detected during the 2019 Migratory Bird Survey Program (see Focus Report Item 8.2): the Bald Eagle (*Haliaeetus leucocephalus*) and the Osprey (*Pandion haliaetus*). There were no Bald Eagle nests and only two Osprey nests detected in the near vicinity of the proposed re-aligned pipeline route and none were found within the route itself.

The two Osprey nests are located near the ETF site area and are illustrated on Figure A8.3-2.

8.3.3 References

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