BIRTLE TRANSMISSION PROJECT

Sharp-tailed Grouse Lek Survey Report 2020

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Prepared for

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Transmission Planning & Design

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1.0 INTRODUCTION

The Birtle Transmission Project (the Project) is a proposed 230 kV AC transmission line that will span 46.2 km from the Birtle South Station, through the Spy Hill-Ellice Community Pasture, into Saskatchewan. Project construction is scheduled to begin in the fall of 2020.

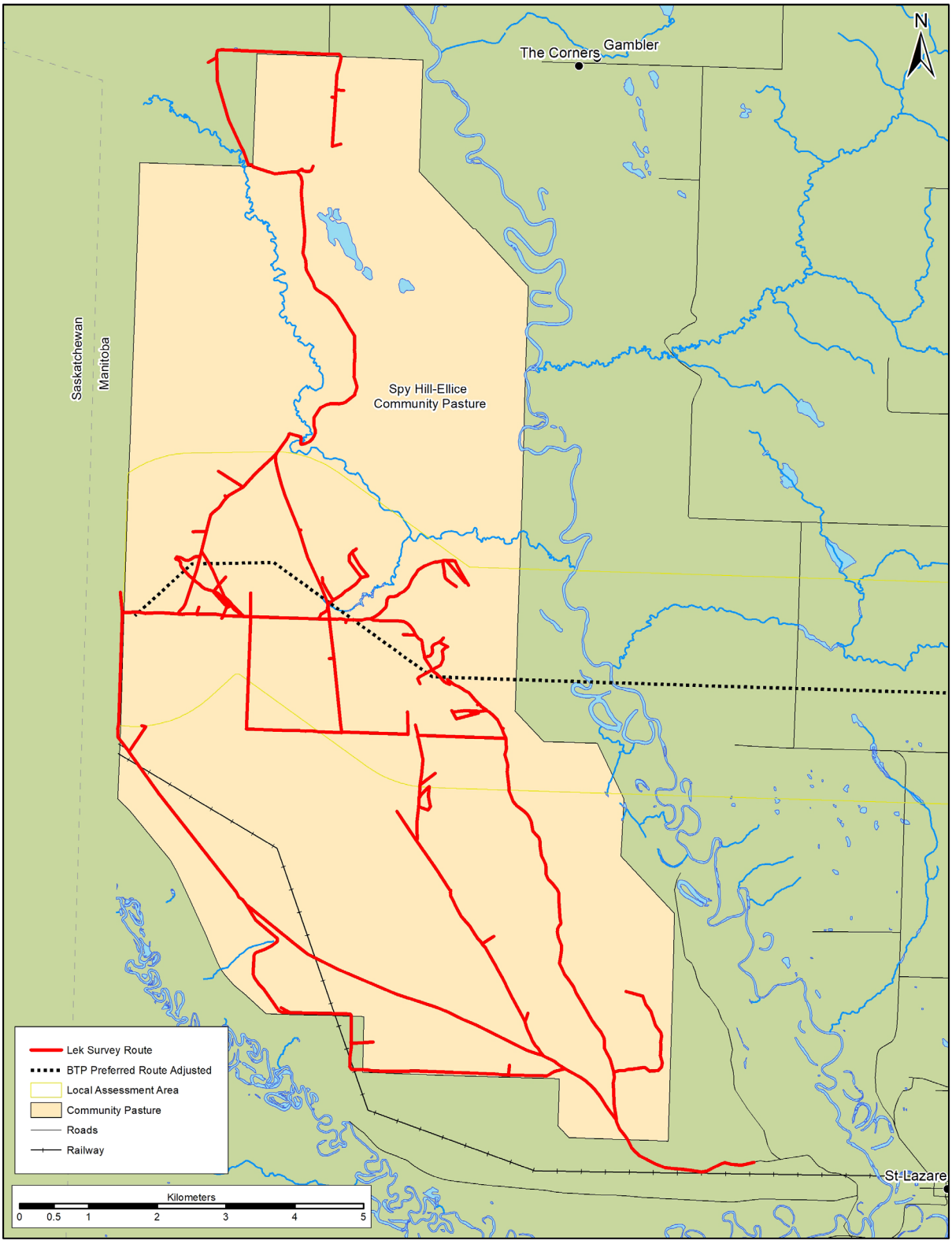
The *Birtle Transmission Project Environmental Assessment Report* (MB Hydro 2018) completed in 2018 details the predicted effects and planned mitigation for the Project. As part of continued environmental monitoring, a sharp-tailed grouse (*Tympanuchus phasianellus*) lek survey was conducted in 2020 as part of baseline monitoring. A previous sharp-tailed grouse lek survey was also conducted as part of baseline Project monitoring in 2017 (MB Hydro 2018).

Sharp-tailed grouse are an indicator species for grassland habitat quality as they require grassland for parts of their life cycle. Sharp-tailed grouse may be impacted by habitat loss or sensory disturbance caused by Project construction activities and operation. Effective habitat may also be impacted by the Project by providing perching sites for avian predators, resulting in fewer leks near the transmission line or causing grouse to lek further away. The transmission line may also create a collision hazard for sharp-tailed grouse due to their relatively low manoeuvrability while in flight (Bevanger 1998). These potential effects are predicted to be adverse, small to moderate in magnitude, local, and long-term.

This report presents the findings of the 2020 sharp-tailed grouse lek survey. The objective of the study is to determine the number and proximity of sharp-tailed grouse along the Project route to provide baseline data that may be used to evaluate Project effects during construction and operation.

2.0 METHODS

Sharp-tailed grouse lek surveys were conducted by two observers from April 15 to 17, 2020. Surveys were conducted by vehicle and occurred a half an hour before sunrise to 0830 hours, when grouse are most likely to be actively attending leks. Observers visited 27 locations that were active leks in 2017 and travelled along roads and trails in the Spy Hill-Ellice Community Pasture looking and listening for sharp-tailed grouse activity (Map 1). When a potential lek was seen or heard, the observer georeferenced the location using handheld global positioning system (GPS) and used binoculars to count the number of birds visible (*i.e.*, passive count). Following the initial count, the observer approached the lek and flushed the birds (*i.e.,* flush count) to obtain a more accurate count (Drummer *et al.* 2011). Potential female sharp-tailed grouse that may have been on the lek at the time of the count were not differentiated from males.



Map 1: Roads and trails travelled while searching for sharp-tailed grouse leks in April 2020

Photo 1: Typical habitat surveyed for sharp-tailed leks in April 2020

3.0 RESULTS

A total of 15 active sharp-tailed grouse leks with 133 grouse were observed in the study area in 2020 (Table 1; Map 2). One additional lek was also observed incidentally by the community pasture manager near the study area in Saskatchewan on April 23, 2020 (Table 1; Map 2). The number of birds observed at each lek in the study area ranged from two to 19 (Table 1). Five of the observed leks were within 1,000 m (1 km) of the Project centreline and the remaining leks ranged in distance from 1,295 to 7,278 m away (Table 1). There were 34 birds observed during a flush count at the incidental lek in Saskatchewan (Table 1).

In 2020, the average number of grouse observed during flush counts (not including the incidental lek) was 9 with a standard deviation of 5.5, which was higher than the average number of grouse flushed in 2017, which was 6 with a standard deviation of 6.5.

Four of the leks observed in 2020 were in the same locations as they were in 2017 (Map 3). Several other leks were within 200 m of leks that were previously observed in 2017. Three of the four leks observed in consistent locations in 2017 and 2020 had higher numbers of grouse in 2020 compared to 2017 (Table 1).

Table 1: Locations, numbers of sharp-tailed grouse observed, and distance to the final preferred route (FPR) of leks observed in April 2020. Note: highlighted leks indicate previous presence in 2017.

Waypoint	UTM	Date Checked	Initial Count	Flush Count	Distance to FPR (m)	Flush Count 2017
32	REDACTED	17-Apr-20	0	4	380	NA
17		15-Apr-20	7	19	604	15
D2		15-Apr-20	12	12	613	NA
16		17-Apr-20	0	4	662	NA
26		17-Apr-20	0	3	711	NA
D4		16-Apr-20	6	9	1,295	NA
1		15-Apr-20	5	12	1,328	28
24		17-Apr-20	0	5	1,384	NA
4		15-Apr-20	0	2	1,844	NA
3		15-Apr-20	0	7	1,939	NA
D8		17-Apr-20	5	5	4,267	NA
247		15-Apr-20	8	16	5,412	4
D6		16-Apr-20	7	11	6,151	NA
D7		17-Apr-20	8	18	6,568	9
D5		16-Apr-20	2	6	7,278	NA
I1		23-Apr-20	NA	34	2,289	NA

REDACTED

Map 2: Locations of sharp-tailed grouse leks observed in April 2020

REDACTED

Map 3: Locations of sharp-tailed grouse leks observed in 2017, 2020, and both 2017 and 2020

4.0 DISCUSSION

Fewer sharp-tailed grouse leks were observed in 2020 (15), compared to the number observed in 2017 (29). However, the average number of grouse attending the leks was greater in 2020 (9), compared to 2017 (6), which may account for some of the difference in the number of leks observed.

Only four leks observed in 2020 were in identical locations as 2017, and several other leks were within 200 m of leks that were observed in 2017. It is possible that due to small changes in habitat or environmental conditions (*e.g.*, presence of snow on the ground) that these were not new leks, but leks that had shifted locations slightly. Additional factors including the predator community, large-scale habitat changes, and natural population cycles may have also attributed to the difference in the number of leks observed but were not explored in this study.

Additional surveys during the construction period are scheduled to occur to determine potential effects on breeding sharp-tailed grouse.

5.0 LITERATURE CITED

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Bevanger, K. 1998. Biological and conservation aspects of bird mortality caused by electricity power lines: a review. Biological Conservation 86(1): 67-76.

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