

APPENDIX 1

MANITOBA–MINNESOTA TRANSMISSION PROJECT

ENVIRONMENTAL MONITORING PLAN

SHARP-TAILED GROUSE MONITORING FIELD REPORT

Prepared for

Manitoba Hydro

By

Wildlife Resource Consulting Services MB Inc.

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STUDY TEAM

Biologists and technicians who designed, participated in, and drafted the survey results included:

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INTRODUCTION

The sharp-tailed grouse (*Tympanuchus phasianellus*), which typically inhabits grasslands and aspen parkland (Taylor 2003), can be found in the Project regional assessment area (RAA). Like most grassland birds, they have experienced widespread habitat loss through most of the prairies, as indicated in the Manitoba–Minnesota Transmission Project Environmental Impact Statement (EIS). In spring, sharp-tailed grouse assemble at grassy areas called leks to mate (Taylor 2003). Nearby forest or shrubs are important for cover (Taylor 2003). Males dance, coo, and rattle to attract females, which begin to congregate in mid-April, and the mating season ends in June (Taylor 2003).

As outlined in the EIS, anticipated Project effects on sharp-tailed grouse include the temporary loss of some habitat at tower sites and the compaction of vegetation cover along the final preferred route ROW. Additionally, grouse are vulnerable to increased rates of predation if birds of prey (raptors) use transmission towers as perches when hunting or nesting near leks. As described in the draft Environmental Monitoring Plan (Manitoba Hydro 2017), the two primary objectives of sharp-tailed grouse pre-construction monitoring are to identify the presence of leks along the transmission line, and to compare reaction behaviours of birds on leks near the transmission line with those in reference areas.

METHODS

Surveys for sharp-tailed grouse were conducted from April 6 to May 15, 2017 during the peak of the breeding period. Reconnaissance surveys were carried out from April 6 to May 1, at 398 sites (Map 1). Grassy sharp-tailed grouse habitat (Photo 1) near the preferred route was identified with Google Earth and potential high quality habitat sites spaced at least 500 m apart were selected with road access. High quality potential habitats included pastures, grasslands, and shrublands, or a mosaic for grass, shrub and forested areas. Additional sites were surveyed opportunistically where suitable habitat was identified in the field, and at leks previously identified by Manitoba Sustainable Development (Baldwin 2015). Surveys were done from the road between 5:00 a.m. and 8:30 a.m. At each site surveyors scanned for sharp-tailed grouse with binoculars, and listened for sharp-tailed grouse rattling, cooing, and hooting, which are indicative of mating behaviour, or for clucking, which is only a sign of the species' presence. Each site was surveyed for five minutes and the presence or absence of sharp-tailed grouse, the number observed, their behaviour, and a brief description of the habitat in the area were recorded. Sites where dancing was observed or sounds of mating behaviour were heard were identified as leks, and sites with other indications of sharp-tailed grouse (clucking, observations) were identified as potential leks (Map 2; Appendix A).

From May 2 to 8, 2017, surveyors returned to 22 sites, after permission from the landowners was received, if necessary. Beginning a half-hour before sunrise, at approximately 5:00 a.m., surveyors listened for sharp-tailed grouse to identify their general location. Surveyors walked to

the lek, marked its location with a Global Positioning System (GPS) unit, and conducted an active count, where all birds in the area were flushed out and counted. The number of birds passively observed during each count (*i.e.*, not intentionally flushed) was recorded separately. Data were collected in a manner similar to sharp-tailed grouse lek survey protocols previously established by Manitoba Sustainable Development (Kiss 2017, pers. comm.). Two or three other sites were surveyed, and then surveyors returned to six leks (see Map 2), where two Reconyx™ PM35C31 trail cameras, one facing north and the other west, were set up to photograph sharp-tailed grouse activity (Photo 2). Short metal stakes were driven into the ground, to which trail cameras were fastened with zip ties. Cameras were programmed to take a series of rapid-fire photos every five minutes from 4:00 a.m. until 8:00 a.m. The perimeter of the lek, which consisted of grouse sign such as droppings, or flattened patches of grass, was marked with a GPS unit. No cameras were placed at other leks because permission to access the area could not be obtained from landowners at the time, or because no grouse were observed upon returning to the site.

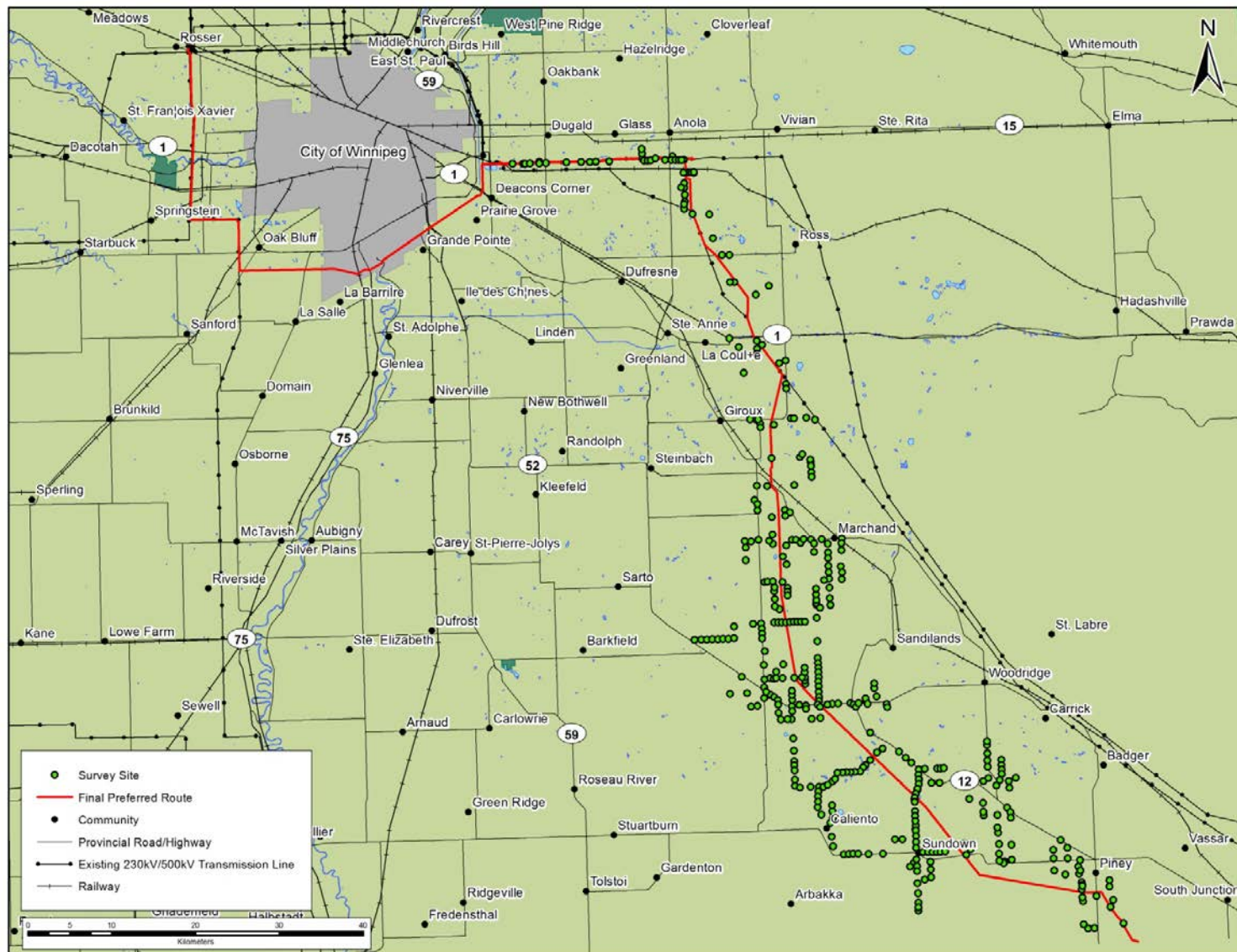
Each lek was revisited one to three days after trail cameras were deployed to ensure the cameras were functional and were capturing sharp-tailed grouse activity. Cameras were moved if necessary, and batteries were checked and replaced as needed. The cameras were removed May 15, 2017. The total number of camera operating days ranged from eight to 14 mornings.



Photo 1: Sharp-tailed grouse lek habitat



Photo 2: Trail camera at site 290L May 2, 2017



Map 1: Locations surveyed for sharp-tailed grouse, spring 2017

Map 2: Sharp-tailed grouse leks and potential leks identified in the study area, spring 2017

INITIAL RESULTS

A total of 25 leks and 28 potential leks were found during the survey. Passive and/or active flush counts of sharp-tailed grouse were conducted at 17 leks and at 14 potential leks over the survey period (Photo 3). Grouse were heard at the remaining eight leks and 14 potential leks, but none were observed. The number of birds at each site ranged from one to 13 (Table 1). Most leks (n = 13) and potential leks (n = 12) were within 3,000 m of the preferred route centreline. Sharp-tailed grouse were photographed at all six of the leks where trail cameras were deployed. No grouse were found at any of the leks identified in previous survey years.

Trail camera photos will be analyzed and the number of males and their behaviour will be recorded. In the future, leks will be revisited and these data will be compared with sharp-tailed grouse numbers and behaviour during construction and operation of the transmission line.

As described in the draft Environmental Protection Plan, the outcomes of this monitoring program will inform the implementation of appropriate buffers around lek sites.

Table 1: Distance of sharp-tailed grouse leks and potential leks surveyed in spring 2017 to the preferred route

| Nearest Distance to Preferred Route (m) Category | Lek | | | Potential Lek | | |
|--|------|--|---|---------------|--|---|
| | Site | Maximum Number of Birds - Active Count | Maximum Number of Birds - Passive Count | Site | Maximum Number of Birds - Active Count | Maximum Number of Birds - Passive Count |
| <1,000 | 002L | na | 2 | 204PL | na | 1 |
| | 279L | na | 9 | 274PL | na | 1 |
| | 318L | na | 2 | 353PL | na | 1 |
| | 367L | 13 | 7 | 354PL | na | 1 |
| | – | – | – | 359PL | na | 1 |
| 1,000–1,999 | 003L | na | 1 | 366PL | na | 2 |
| | 007L | na | 1 | – | – | – |
| | 114L | na | 1 | – | – | – |
| 2,000–2,999 | 005L | na | 1 | 006PL | na | 2 |
| | 008L | na | 1 | 051PL | na | 2 |
| | 010L | 12 | 7 | 113PL | na | 2 |
| | 013L | na | 1 | 168PL | na | 2 |
| | 112L | 8 | 6 | – | – | – |
| | 290L | 5 | 3 | – | – | – |
| 3,000–3,999 | 012L | na | 1 | 118PL | na | 1 |
| 4,000–4,999 | – | – | – | 355PL | na | 8 |
| 5,000–5,999 | 179L | 8 | 7 | 330PL | na | 10 |
| 6,000–6,999 | 178L | na | 6 | – | – | – |
| >7,000 | 252L | 5 | 5 | 356PL | na | 1 |



Photo 3: Sharp-tailed grouse dancing at site 179L May 12, 2017

LITERATURE CITED

- Baldwin, Frank. 2015. Game Bird Manager, Manitoba Sustainable Development *in* Stantec. 2015. Manitoba-Minnesota transmission project wildlife and wildlife habitat - Technical data report. Prepared for Manitoba Hydro, Winnipeg by Stantec Consulting Ltd., Winnipeg.
- Kiss, Brian. 2017. Habitat Mitigation Biologist, Manitoba Sustainable Development. Telephone conversation and email correspondence with Robert Berger. Wildlife Resource Consulting Services MB Inc., Winnipeg. February 13, 2017.
- Manitoba Hydro. 2017. Manitoba-Minnesota Transmission Project Environmental Monitoring Plan. Draft 4/12/2017. Manitoba Hydro, Winnipeg. 95pp.
- Taylor, P. 2003. Sharp-tailed grouse. In *The Birds of Manitoba*. Edited by P. Taylor. Manitoba Naturalists Society, Winnipeg, MB. pp. 153–154.

APPENDIX A

Locations of leks and potential leks surveyed in spring 2017

| Site Type | Site | Location |
|---------------|-------------------------|----------------------------|
| Lek | 002L | 14 U 719123 5436830 |
| | 003L | 15 U 284281 5436705 |
| | 005L | 15 U 284046 5439086 |
| | 007L | 14 U 717015 5440033 |
| | 008L | 14 U 715691 5440493 |
| | 010L¹ | 14 U 709785 5441584 |
| | 012L | 14 U 699236 5443213 |
| | 013L | 14 U 699153 5445423 |
| | 112L | 14 U 718577 5440960 |
| | 114L | 14 U 718968 5439104 |
| | 115L | 14 U 718967 5438239 |
| | 178L | 14 U 699397 5438974 |
| | 179L | 14 U 698950 5441388 |
| | 202L | 14 U 683712 5479242 |
| | 203L | 14 U 683339 5477940 |
| | 227L | 14 U 689208 5460364 |
| | 251L | 14 U 687490 5448037 |
| | 252L | 14 U 687907 5447156 |
| | 255L | 14 U 689267 5446740 |
| | 275L | 14 U 672135 5523755 |
| | 279L | 14 U 671547 5521941 |
| | 290L | 14 U 678062 5502936 |
| | 318L | 14 U 682937 5471654 |
| | 367L | 14 U 670168 5525678 |
| | 375L | 14 U 719049 5438768 |
| Potential lek | 006PL | 14 U 718671 5440114 |
| | 051PL | 14 U 701074 5450965 |
| | 090PL | 14 U 681796 5461421 |
| | 113PL | 14 U 718835 5440519 |
| | 118PL | 15 U 281816 5433524 |
| | 121PL | 14 U 709407 5453058 |
| | 168PL | 14 U 699170 5445857 |
| | 204PL | 14 U 683764 5477021 |
| | 228PL | 14 U 689901 5460401 |
| | 269PL | 14 U 709691 5441366 |
| | 274PL | 14 U 671805 5523739 |
| | 278PL | 14 U 671566 5522480 |
| | 299PL | 14 U 686642 5489186 |
| | 304PL | 14 U 681467 5486376 |

| Site Type | Site | Location |
|--|-------------|---------------------|
| Potential lek | 315PL | 14 U 682300 5473824 |
| | 330PL | 14 U 700249 5439408 |
| | 341PL | 14 U 660320 5525012 |
| | 353PL | 14 U 719047 5438665 |
| | 354PL | 14 U 670035 5525237 |
| | 355PL | 14 U 699274 5441816 |
| | 356PL | 14 U 699493 5435723 |
| | 358PL | 14 U 670519 5525244 |
| | 359PL | 14 U 670914 5525250 |
| | 366PL | 14 U 672711 5523669 |
| | 380PL | 14 U 680872 5503191 |
| | 383PL | 14 U 684302 5494422 |
| | 385PL | 14 U 687151 5494263 |
| | 400PL | 14 U 654258 5525045 |
| 1. Bold font indicates leks where trail cameras were deployed. | | |