

Birtle Transmission Project  
**Environmental Effects Monitoring Report**



Prepared by:  
Manitoba Hydro  
Winnipeg, Manitoba  
March 2022



Birtle Transmission Project  
Environmental Effects Monitoring Report 2021

Prepared by Manitoba Hydro

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Transmission & Distribution Environment and Engagement  
Department

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Prepared for:

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## Acronyms

AC	Alternating Current
BFJV	Birdtail Sioux Dakota Nation Forbes Bros Joint Venture
EMP	Environmental Monitoring Plan
CEnvPP	Construction Environmental Protection Plan
EA	Environmental Assessment
EEMP	Environmental Effects Monitoring Program
EPIMS	Environmental Protection Information Management System
EPP	Environmental Protection Program
ESS	Environmentally Sensitive Site
HCR	Heritage and Culture Review Team
kV	Kilovolt
MCC	Manitoba Conservation and Climate
ROW	Right-of-way
VC	Valued Component



## 1 INTRODUCTION

This report presents the results of the environmental effects monitoring plan for Birtle Transmission Project, hereby known as “the Project”. This report is produced in compliance with clause 26 of *The Environment Act* licence No. 3314. Manitoba Hydro presents this information to inform interested parties, communities, stakeholders and the general public on progress made on construction and implementation of mitigation measures that minimize environmental effects.

This is the Project’s second annual monitoring report and describes monitoring from January 1, 2021 through December 31, 2021. Map 1 outlines the Birtle Transmission Project area. Anyone interested in further information about this report or the Project is invited to visit <https://www.hydro.mb.ca/projects/expansion/birtle/> or contact Manitoba Hydro at:

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## 2 PROJECT OVERVIEW

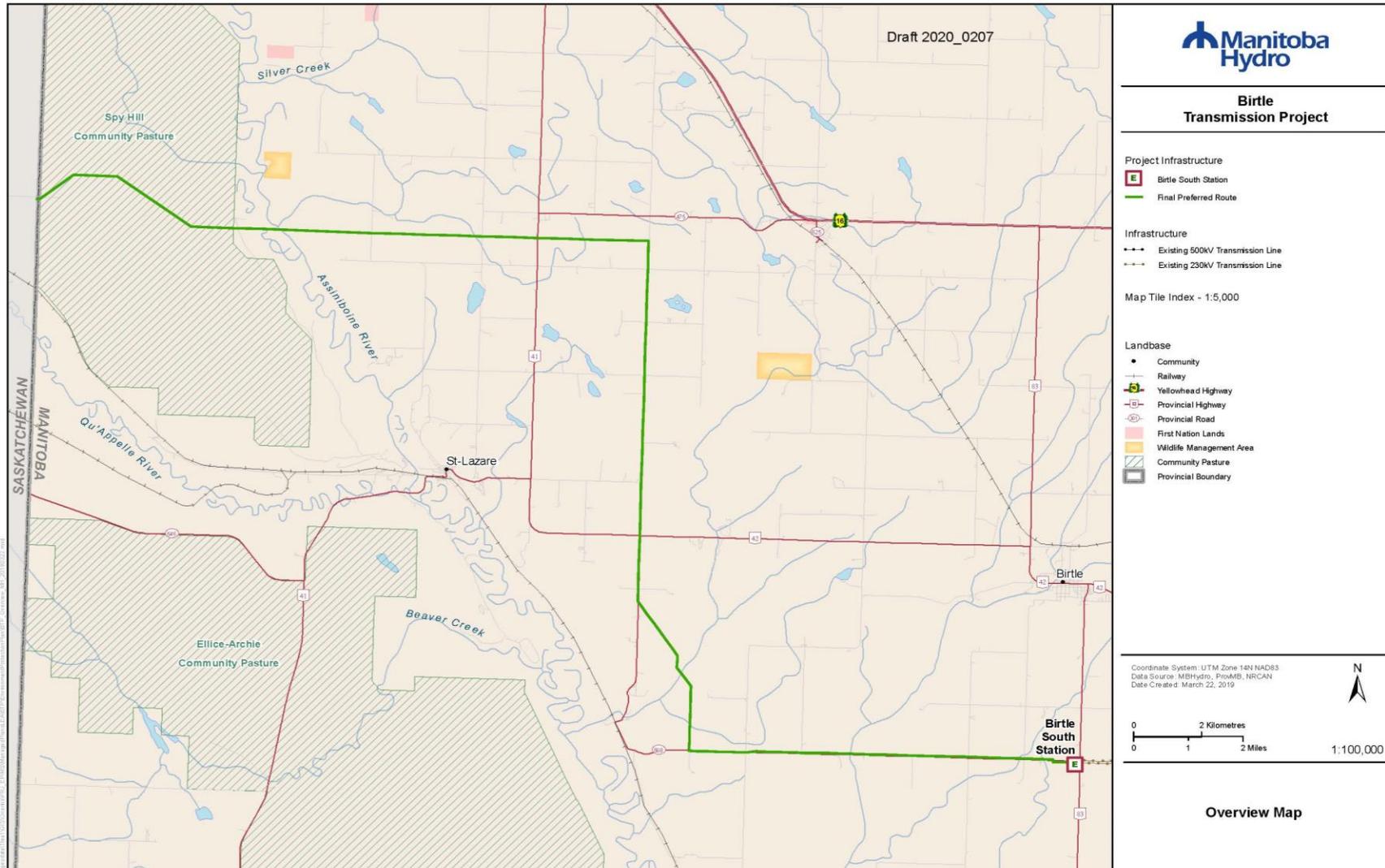
The Birtle Transmission Project involves the construction and operation of a new 230 kV transmission line from the Birtle Station, located south of the community of Birtle, Manitoba to the Manitoba-Saskatchewan border (Map 1). SaskPower was responsible for building the transmission line in Saskatchewan that connects from the Manitoba-Saskatchewan border to a station in Tantallon, Saskatchewan.

## 3 PROJECT STATUS

The project began with public and Indigenous engagement in fall 2016 to spring 2017. Manitoba Conservation and Climate (MCC) granted a licence for the Project on January 14, 2020. Construction activities began in July 2020. The construction contract was awarded to a joint venture between Birdtail Sioux Dakota Nation and Forbes Bros (BFJV). The project was completed in March 2021 (Photo 1).



**Photo 1. The Birtle Transmission Project was completed in March 2021.**



Map 1. Birtle Transmission Project Area.

## 4 ENVIRONMENTAL EFFECTS MONITORING PLAN OVERVIEW

Manitoba Hydro's commitment to environmental protection includes the development of a comprehensive Environmental Protection Program (EPP) for the Project. This includes monitoring and follow-up of biophysical environmental components identified in the environmental assessment. The Environmental Effects Monitoring Plan (EEMP) was approved by MCC on June 11, 2020 and outlines the various monitoring activities that will occur during the different phases of the Project.

The scope of this plan includes physical and biological components of the environment. The purpose of the EEMP is to identify the key activities that will be conducted as part of the monitoring and follow-up component of the EPP that will verify potential effects and effectiveness of mitigation.

The objectives of the EEMP are to:

- Confirm the nature and magnitude of predicted environmental effects as stated in the environmental assessment (EA);
- Assess the effectiveness of mitigation measures implemented;
- Identify unexpected environmental effects of the Project, if they occur;
- Identify mitigation measures to address unanticipated environmental effects, if required;
- Confirm compliance with regulatory requirements; and
- Provide baseline information to evaluate long-term changes or trends.

Environmental components requiring follow-up monitoring are discussed further in this annual EEMP, including:

- Aquatic Habitat
  - Stream Crossings
- Grassland Habitat
  - Bird Species of Conservation Concern

- Plant Species of Conservation Concern
- Invasive Plant Species
- Traditional Use Plant Species
- Forest Habitat
  - Ungulates
  - Plant Species of Conservation Concern
  - Invasive Plant Species
  - Traditional Use Plant Species
  - Predator and Resource User Access

### Adaptive Management

Manitoba Hydro has accumulated a wealth of knowledge and lessons learned from previous monitoring programs. The successes of those programs have been useful in developing the EEMP for the Project. This previous experience has been used to improve upon the EEMP's approach, methods and key environmental monitoring activities.

Going forward, an adaptive management framework will continue to be used through the end of the monitoring program to respond to unexpected outcomes or events based on information gathered. Data will be reviewed as collected to determine if any of the environmental thresholds specified in the EEMP have been exceeded due to shortfalls in impact prediction, ineffective mitigation measures or inadequate monitoring approaches. Actions will be developed in response to these contingencies.

## 5 IMPLEMENTATION OF MONITORING AND FOLLOW-UP ACTIVITIES

Environmental monitoring helps validate the accuracy of the EA and effectiveness of mitigation measures. Manitoba Hydro utilized internal staff for the implementation of the EEMP, funded participation for Indigenous community representatives, and retained highly qualified specialists in appropriate disciplines. Manitoba Hydro's Environmental Protection Information Management System (EPIMS) will also play a major role in the management of the EEMP implementation, the coordination of field work, and the data collection and communications amongst the monitoring team.

### 2021 Environmental Effects Monitoring Highlights

Key monitoring highlights during this reporting period include:

- No unexpected environmental effects were observed for any environmental components.
- All stream crossing sites were appropriately buffered during construction.
- No vegetation species listed by the federal *Species at Risk Act*, the Manitoba *Endangered Species and Ecosystems Act* or listed by the Committee on the Status of Endangered Wildlife in Canada were observed prior or post construction.
- Invasive weeds were identified near a stream in Spy Hill Community Pasture. This site will receive future monitoring and management.
- Sharp-tailed grouse populations appeared to be lower with fewer lek (breeding) sites than was recorded during baseline surveys in 2017 and 2019.
- Chestnut collared longspurs did not show any change in abundance in the post-construction phase.
- Sprague’s pipit abundance did decline across the broad study area, but this is unlikely due to the Project.
- The new vehicle access point into the Spy Hill Community Pasture was successfully decommissioned.
- No environmental regulatory warnings or citations were issued.

**Table 1: 2021 Monitoring Activities**

Valued Component	Environmental Indicator	2021 Monitoring Status
Aquatic Habitat	Stream Crossings	Completed
Grassland Habitat	Plant Species of Conservation Concern	Completed
	Traditional Use Plant Species	Completed
	Bird Species of Conservation Concern	Completed
	Invasive Plant Species	Completed
Forest Habitat	Ungulates	Planned for 2022
	Plant Species of Conservation Concern	Completed
	Traditional Use Plant Species	Completed
	Invasive Plant Species	Completed
	Predator and Resource User Access	Updated

## 6 ENVIRONMENTAL COMPONENT MONITORING

Multiple environmental components were identified for follow-up in the environmental assessment and technical reports. For each environmental component, one or more environmental indicators were selected to focus monitoring and follow-up efforts as indicated in the EEMP (Table 1). Map 2 shows an overview of monitoring site locations.

A stream crossing survey was conducted on July 7, 2021, with a technical report included in Appendix A. Vegetation surveys were conducted from July 5 to 10, 2021 and August 9 to 12, 2021 with a technical report included in Appendix B. Bird surveys were conducted for sharp-tailed grouse from April 20 to 23, 2021 and bird species of

conservation concern from June 20 to 24, 2021 with technical reports included in Appendices C and D, respectively.

All surveys were conducted by qualified biologists in accordance with land access requirements for the Spy Hill Community Pasture. All public health and safety protocols were followed.

## 7 AQUATIC HABITAT

### 7.1 Stream Crossings

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

As predicted in the EA, project effects on stream crossings were minor. All five sites observed were constructed and cleaned up in accordance with the mitigation measures

outlined in the EPP. The site conditions met the EPP and *Environment Act* licence requirements (Photo 2).

*Assess the effectiveness of mitigation measures implemented:*

The implementation of mitigation requirements outlined in the Construction Environmental Protection Plan (CEnvPP) was effective.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

None required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in stream crossings due to transmission line construction. No unanticipated effects have been found to-date.



**Photo 2.** Birdtail Creek showing the west shoreline in full compliance with prescribed mitigation.

## 8 GRASSLAND HABITAT

### 8.1 Plant Species of Conservation Concern

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The predicted effects on species of conservation concern in grassland habitat were minimal or did not occur as a result of the Project. The grassland sites in the community pasture appear to be in excellent condition after recent clearing and construction activities in 2020/2021 (Photo 3). The presence of bare ground along the right-of-way (ROW)

in the vicinity of monitoring sites continues to be infrequent and is generally due to livestock activity. Twenty-nine plant species of conservation concern were observed in grassland sites along the ROW in 2021. No species listed by the federal *Species at Risk Act*, the Manitoba *Endangered Species and Ecosystems Act* or listed by the Committee on the Status of Endangered Wildlife in Canada were observed during fieldwork prior to or post construction.

*Assess the effectiveness of mitigation measures implemented:*

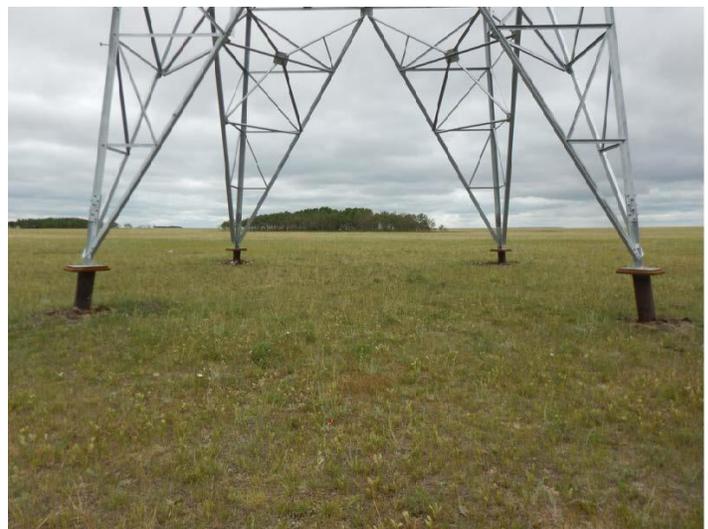
The implemented mitigation was effective for grassland habitat, according to the minimal disturbance observed from construction activities. In particular, the mitigation techniques used to address soil and vegetation disturbance through surface damage, rutting and erosion, and the mitigation around tower erection and foundations were all successful in reducing or eliminating instances of grassland habitat disturbance.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

None required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in vegetation composition along transmission lines in grassland habitats.



**Photo 3.** A tower installed in the Spy Hill Community Pasture with minimal soil disturbance.

## 8.2 Traditional Use Plant Species

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The EA predicted a decline in traditional use plant species. This result was not identified in the 2021 monitoring program. The composition and abundance of traditional plants did not decline. In 2021, a total of 23 traditional use plant species were observed, comparable to preconstruction surveys (21 species) in 2017 and 2019 (Photo 4).

*Assess the effectiveness of mitigation measures implemented:*

The implemented mitigation was effective for grassland habitat, according to the minimal disturbance observed from construction activities.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

None required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in vegetation composition along transmission lines in grassland habitats.



**Photo 4.** Grassland site with higher cover of traditional use plants, adjacent to an existing trail.

## 8.3 Invasive and Non-Native Plants

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The EA predicted an increase in invasive and non-native plants in grassland habitats. This result was identified in the 2021 monitoring program. Two non-native species were recorded within the grassland survey plots within the Spy Hill Community pasture. However, no Tier 1 or 2 noxious species were observed. The most frequently observed noxious species were common dandelion followed by common lamb's-quarters (Photo 5).

*Assess the effectiveness of mitigation measures implemented:*

Through environmental monitoring, it was determined that the recommended mitigation was implemented and effective for grassland habitat, according to the minimal disturbance observed from construction activities. In particular, the mitigation techniques used to address soil and vegetation disturbance through surface damage, rutting and erosion, and the mitigation around tower erection and foundations were all successful in reducing or eliminating instances of grassland habitat disturbance.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

Additional monitoring will be conducted in 2022 to determine if weed control management activities are required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in invasive and non-native plant spread due to the construction of the project.



**Photo 5. An invasive plant (common lambs quarter) in the Spy Hill Community Pasture.**

#### 8.4 Bird Species of Conservation Concern

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The EA predicted a decline in sharp-tailed grouse and bird species of conservation concern as a result of the project. In the first year of post-construction monitoring, the chestnut-collared longspur and Sprague's pipit were relatively widely distributed in the Spy Hill Community Pasture and were the most frequently detected species of conservation concern. No adverse Project effects on chestnut-collared longspur were detected during the first year of operation monitoring, but a decline in the abundance of Sprague's pipits was observed throughout the greater study area.

Fewer sharp-tailed grouse leks (breeding sites) were observed in 2021 (9), compared to the number observed in 2017 (28) or 2020 (16) (Photo 6). However, the average number of grouse attending the leks was greater in 2021 (13), compared to 2017 (6) or 2020 (9), which may account for some of the difference in the number of leks observed. The total number of grouse observed in 2021 was lower than the number observed in 2017 and slightly lower than the number observed in 2020. The apparent decrease in the total number of grouse may be due to variability in the observability of grouse during the survey or natural population fluctuations.

*Assess the effectiveness of mitigation measures implemented:*

Mitigation measures included project routing to avoid open grasslands and the installation of bird flight diverters and avian perch deterrents (Photo 7). Project routing and bird diverters appeared to be effective at lowering effects on grassland bird species. Although some breeding bird species declines were observed, they were unlikely directly attributable to the Project.

Perching avian predators were observed at sites with and without perch deterrents. Perch deterrents did not seem to affect the abundance of perching avian predators during the first-year post-construction.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

None required at this time.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in sharp-tailed grouse population changes and lek characteristics in western Manitoba.



**Photo 6. Sharp-tailed grouse on a lek (breeding site) near the Birtle Transmission Project.**



**Photo 7.** Grassland sites in the Spy Hill Community Pasture were outfitted with bird diverters on conductors and avian perch deterrents on the towers.

## 9 FOREST HABITAT

### 9.1 Ungulates

Ungulate monitoring is scheduled for 2022.

### 9.2 Plant Species of Conservation Concern

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The predicted effects on species of conservation concern in forest habitat were either minimal or did not occur as a result of the Project. Nine plant species of conservation concern were observed in forest habitat after clearing and construction activities. Forested and previously forested sites now consist primarily of young open aspen canopy (Photo 8). Tree removal techniques were successful in reducing or eliminating instances of ground surface damage in previously forested habitat.

*Assess the effectiveness of mitigation measures implemented:*

The implemented mitigation was effective for forested habitat, according to the minimal disturbance observed from construction activities. In particular, the mitigation techniques used to address soil and vegetation disturbance through surface damage, rutting and erosion, and the mitigation around tower erection and foundations were all successful in reducing or eliminating instances of forest habitat disturbance.

*Identify mitigation measures to address unanticipated*

*environmental effects, if required:*

None required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in vegetation composition along transmission lines in forested habitats.



**Photo 8.** Young aspen regrowth in a forested site.

### 9.3 Traditional Use Plant Species

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The EA predicted a decline in traditional use plant species in forested habitat. In forest habitat, clearing and construction activities have temporarily reduced traditional vegetation cover due to the removal of multiple vegetation strata, including the tree layer, tall shrub, and much of the low shrub and ground vegetation. However, regeneration was beginning in the low shrub and herb layers.

*Assess the effectiveness of mitigation measures implemented:*

The implemented mitigation was effective for forested habitat, according to the minimal disturbance observed from construction activities.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

None required.

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in vegetation composition along transmission lines in forested habitats.

#### **9.4 Invasive and Non-Native Plants**

*Confirm the nature and magnitude of predicted environmental effects as stated in the EA:*

The EA predicted an increase in invasive and non-native plants in forested habitats. This result was identified in the 2021 monitoring program. Two non-native species were recorded within the forested survey plots within the Spy Hill Community pasture. However, no Tier 1 or 2 noxious species were observed. Most non-native species on the ROW were recorded in the vicinity of the wetland spring near tower 122. The most frequently observed noxious species was common dandelion followed by common lamb's-quarters.

*Assess the effectiveness of mitigation measures implemented:*

Through environmental monitoring, it was determined that the recommended mitigation was implemented and effective for forested habitat, according to the minimal disturbance observed from construction activities. In particular, the mitigation techniques used to address soil and vegetation disturbance through surface damage, rutting and erosion, and the mitigation around tower erection and foundations were all successful in reducing or eliminating instances of forested habitat disturbance.

*Identify mitigation measures to address unanticipated environmental effects, if required:*

Additional monitoring will be conducted at the wetland spring near tower 122 in 2022 to determine if weed control management activities are required (Photo 9).

*Provide baseline information to evaluate long-term changes or trends:*

Survey information will contribute to evaluating any long-term changes or trends in invasive and non-native plant spread due to the construction of the Project.



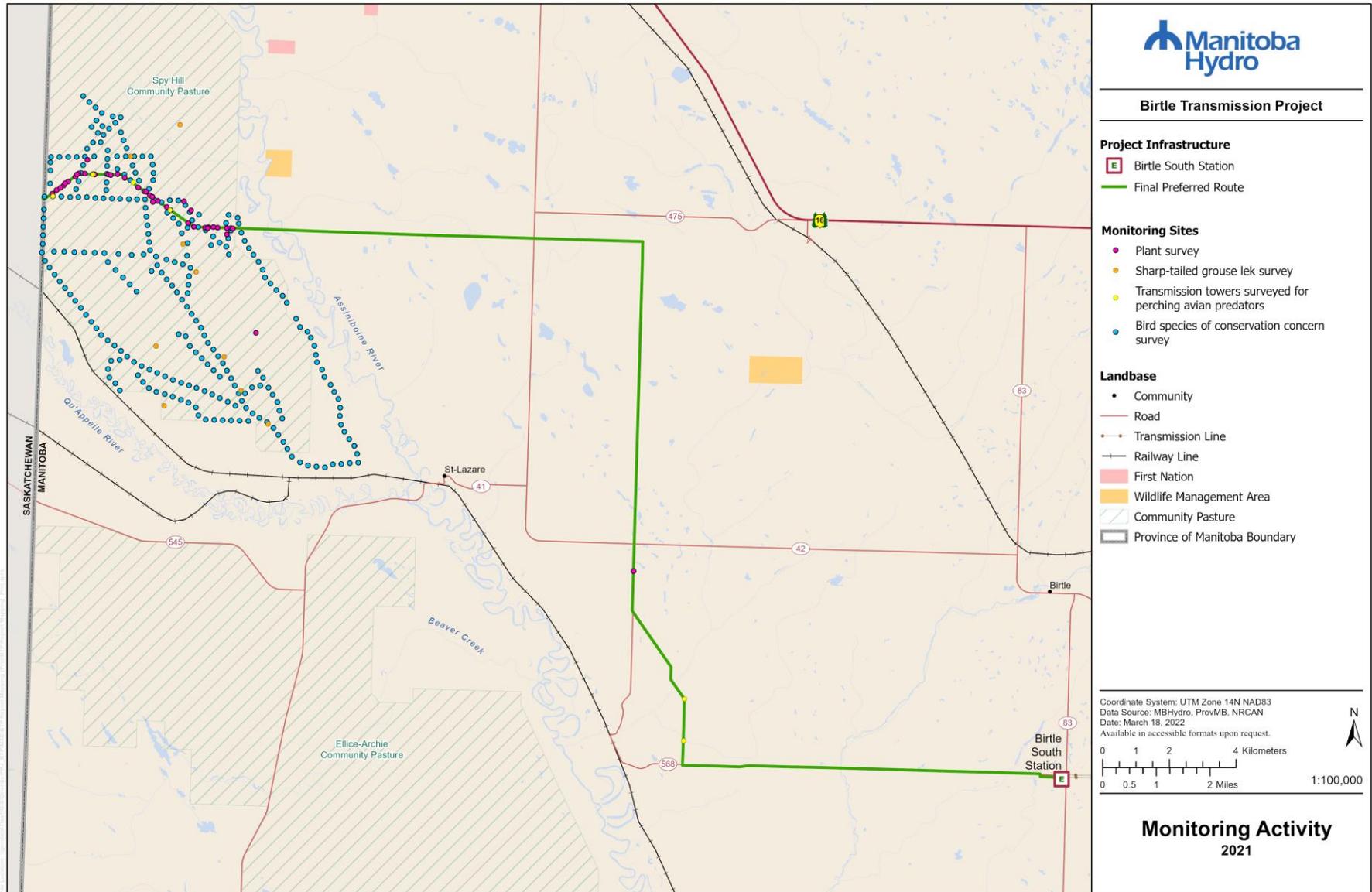
**Photo 9. Grassland, shrub and forested habitat along the right of way with a view of the stream near tower 122.**

#### **9.5 Predator and Resource User Access**

Predator and resource user access monitoring was conducted in 2021. The new access trail into Spy Hill Community Pasture was recently fenced and gated by the private landowner after construction, precluding any use of this trail. A site visit in August 2021 showed no vehicle traffic had used the trail since its decommissioning (Photo 10).



**Photo 10. The decommissioned access trail into the Spy Hill Community Pasture was fenced and gated by the private landowner after construction.**



Map 2. Birtle Transmission Project Monitoring Site Locations.

## 10 COMPLIANCE MONITORING

Compliance monitoring involves reviewing Project activities for adherence to legislation, licence conditions, permits, and environmental protection plans. On-site project environment officers conducted daily site inspections throughout this reporting period. Monthly communication and reports were made with the Provincial Environment Officer assigned to the Project. No regulatory warnings or citations were issued.

## 11 CULTURE AND HERITAGE MONITORING

In September 2020, a Heritage and Culture Review (HCR) Team was formed with representatives from Indigenous communities, Manitoba Hydro and the project archaeologist. The purpose of the HCR Team was to:

- support Indigenous monitoring in the Spy-Hill Community Pasture;
- create a platform for understanding issues of concern to Indigenous participants; and
- share information in a cooperative and transparent manner relating to culture and heritage resources on the Project.

In December 2020, two Indigenous Culture and Heritage Monitors began daily monitoring of historic resources during construction in the Spy Hill Community Pasture and sharing biweekly updates with the HCR Team. No culture and heritage findings or concerns were reported by the

monitors within the community pasture, and the project archeologist did not need to be called to the site. Monitoring continued until construction in the Spy Hill Community Pasture was complete.

A final report was produced and published by the HCR team. This report can be found here: [https://www.hydro.mb.ca/projects/expansion/birtle/pdf/culture\\_and\\_heritage\\_monitoring\\_report\\_2021.pdf](https://www.hydro.mb.ca/projects/expansion/birtle/pdf/culture_and_heritage_monitoring_report_2021.pdf)

## 12 FUTURE MONITORING

The following monitoring activities are planned for 2022:

### Grassland Habitat

- Bird Species of Conservation Concern
- Invasive Plant Species
- Traditional Use Plant Species

### Forest Habitat

- Ungulates
- Invasive Plant Species
- Traditional Use Plant
- Predators and Resource User Access

The EEMP contains detailed descriptions of all monitoring activities.

## **13 APPENDICES**

Appendix A: Birtle Transmission Project - Stream Crossing Technical Report 2021

Appendix B: Birtle Transmission Project - Vegetation Technical Report 2021

Appendix C: Birtle Transmission Project - Sharp-tailed Grouse Lek Technical Report 2021

Appendix D: Birtle Transmission Project - Bird SOCC Technical Report 2021

