

**Baseline Wildlife Studies
Aurora Wind Energy Project
Williams and Mountrail counties, North Dakota**

**2018 Sharp-Tailed Grouse Lek Surveys
Final Report**

Prepared for:

Aurora Wind Project, LLC

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INTRODUCTION

Aurora Wind Project, LLC (Aurora Wind) is proposing to construct the Aurora Wind Energy Project (Project) located in Williams and Mountrail counties, North Dakota. Aurora Wind contracted Western EcoSystems Technology, Inc. (WEST) to conduct sharp-tailed grouse (*Tympanuchus phasianellus*) lek surveys at larger grasslands areas within the Project area and along the proposed transmission line corridor. This report presents results of the ground-based lek surveys conducted during April and May of 2018.

STUDY AREA

The Project is located in Williams and Mountrail counties, approximately 1.0 mi north of the town of Tioga, in northwestern North Dakota (Figure 1). The Project encompasses an area of approximately 48,029.1 acres (ac; 19,436.6 hectares [ha]); however, when the sharp-tailed grouse lek surveys were initiated, the Project was approximately 55,949.8 ac (22,642.1 ha; Figure 2). The Project is within the Northwestern Glaciated Plains Level III Ecoregion, an area historically dominated by grasslands but extensively converted to agricultural use (e.g., row crops and livestock grazing; US Environmental Protection Agency 2017). The landscape within the Project is gently rolling to flat, with elevations ranging from 2,150.6 – 2483.6 feet (655.5 – 757.0 meters) above sea level (US Geological Survey 2017).

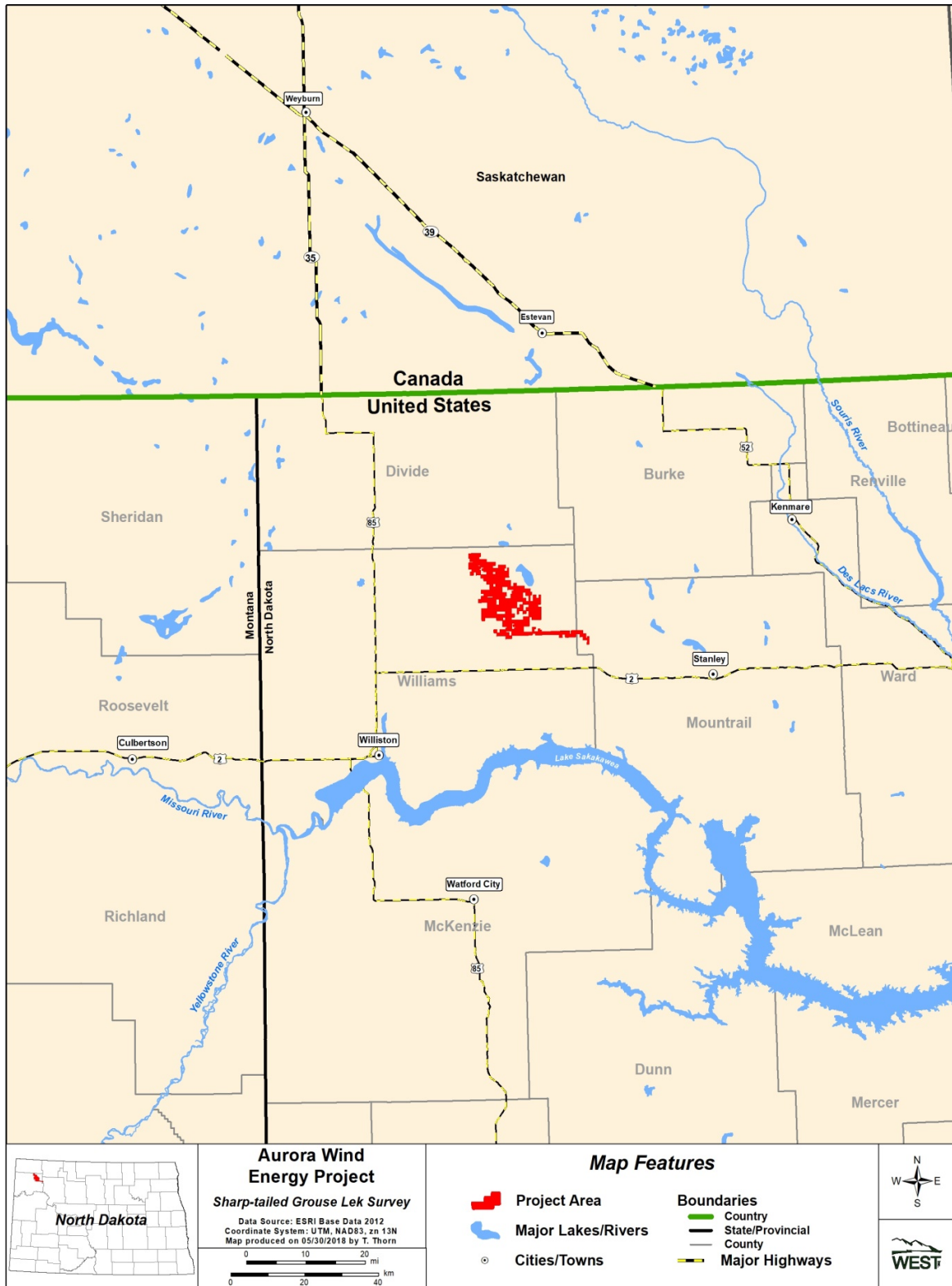


Figure 1. Location of the Aurora Wind Energy Project in Williams and Mountrail counties, North Dakota.

METHODS

Lek surveys were completed three times during the spring, from April 9 – May 11, 2018. Larger grassland tracts (e.g., 80.0 ac [32.4 ha] or larger) within the Project area (Figure 2), were selected for lek surveys as agreed upon in consultation with the North Dakota Game and Fish Department (NDGFD; Sandy Johnson pers. comm.). Fifty-two points, located along public roads and trails around those larger grasslands were selected for surveys. Survey methodology was modeled after the South Dakota Department of Game, Fish and Parks (SDGFP) Wildlife Survey Manual (SDGFP 2009), as a written methodology from North Dakota was not available.

Lek surveys were conducted from 30 minutes (min) prior to sunrise until approximately two hours after sunrise for approximately three to four days each survey period. During each survey period, observers visited each of the survey points from public roads or section lines for a minimum of five min to listen and look for displaying grouse. Leks were classified as “confirmed” if grouse males were engaged in lek attendance behavior (e.g., dancing, calling) at the same location during more than one survey. Leks were classified as “potential” when grouse males were observed in lek attendance behavior (e.g., dancing, calling) during only one survey. If a lek was located, the observer would then map the location from the road (to the best of their ability) and record the number of males, females, and birds of unknown sex attending the lek. Sharp-tailed grouse observed flying or engaging in other behavior (foraging) were also recorded at each point. Other information, such as weather conditions and vegetation/topography descriptions, was also recorded. When possible, surveys were completed on relatively calm mornings (winds less than 20.0 mi [32.2 km] per hour) with little to no rain.

RESULTS

Sharp-tailed grouse lek surveys were conducted within the Project during three survey periods: April 9 – 11, April 23 – 26, and May 8 – 11, 2018. Eighteen points were not visited during the first round of surveys (April 9 – 11) due to snow blocking roadways. No historical lek data was available from NDGFD prior to lek surveys.

Three leks were observed within grassland/hayland during the survey (Table 1; Figure 2). Two leks were confirmed lek locations, with grouse observed in courtship behavior on at least two visits, and one lek was identified as a potential lek as courtship behavior was only observed once during the three surveys. Sharp-tailed grouse were observed engaging in courtship behavior at AU01 during all three survey periods; however AU01 is not within the current Project boundary (Figure 2). Sharp-tailed grouse were observed engaging in courtship behavior at AU02 during the last two survey periods (April 23 – 26 and May 8 – 11, 2018). Grouse were only observed engaging in courtship behavior at AU03 during the second survey period (April 23 – 26, 2018). The average number of sharp-tailed grouse observed on a lek was 10.3 birds, and the maximum number of birds recorded on a lek was 17 birds (Lek AU01; Table 1).

Twenty-five other grouse individuals were also observed during surveys, but were flying, walking, or engaging in other behaviors (e.g., feeding). Six individuals were observed walking in an agricultural field at Point 20 during the first survey period. Eight individuals were observed during the second survey period at points 3, 7, 10, and 20. Eleven grouse were observed flying to and standing near survey point 52 during the last survey period (May 8 – 11, 2018); however no courtship behavior was observed.

Table 1. Summary of ground-based sharp-tailed grouse lek surveys conducted within the Aurora Wind Energy Project in Williams and Mountrail counties, North Dakota, from April 6 – May 11, 2018.

Lek ID	Date First Observed	Other Dates Observed	Highest Total
AU01	04/11/2018	04/26/2018, 05/11/2018	17
AU02	04/23/2018	05/08/2018	4
AU03	04/25/2018	-	10

CONCLUSION

Sharp-tailed grouse is designated as a Level II Species of Conservation Priority according to the North Dakota Wildlife Action Plan (Dyke et al. 2015). While North Dakota contains approximately one-third of the entire sharp-tailed grouse population, a decrease has been observed in the population range wide (Dyke et al. 2015). Data gathered from the lek surveys conducted within the Project can be used in Project siting as well as assessing impacts on prairie grouse from development and operation of the proposed project.

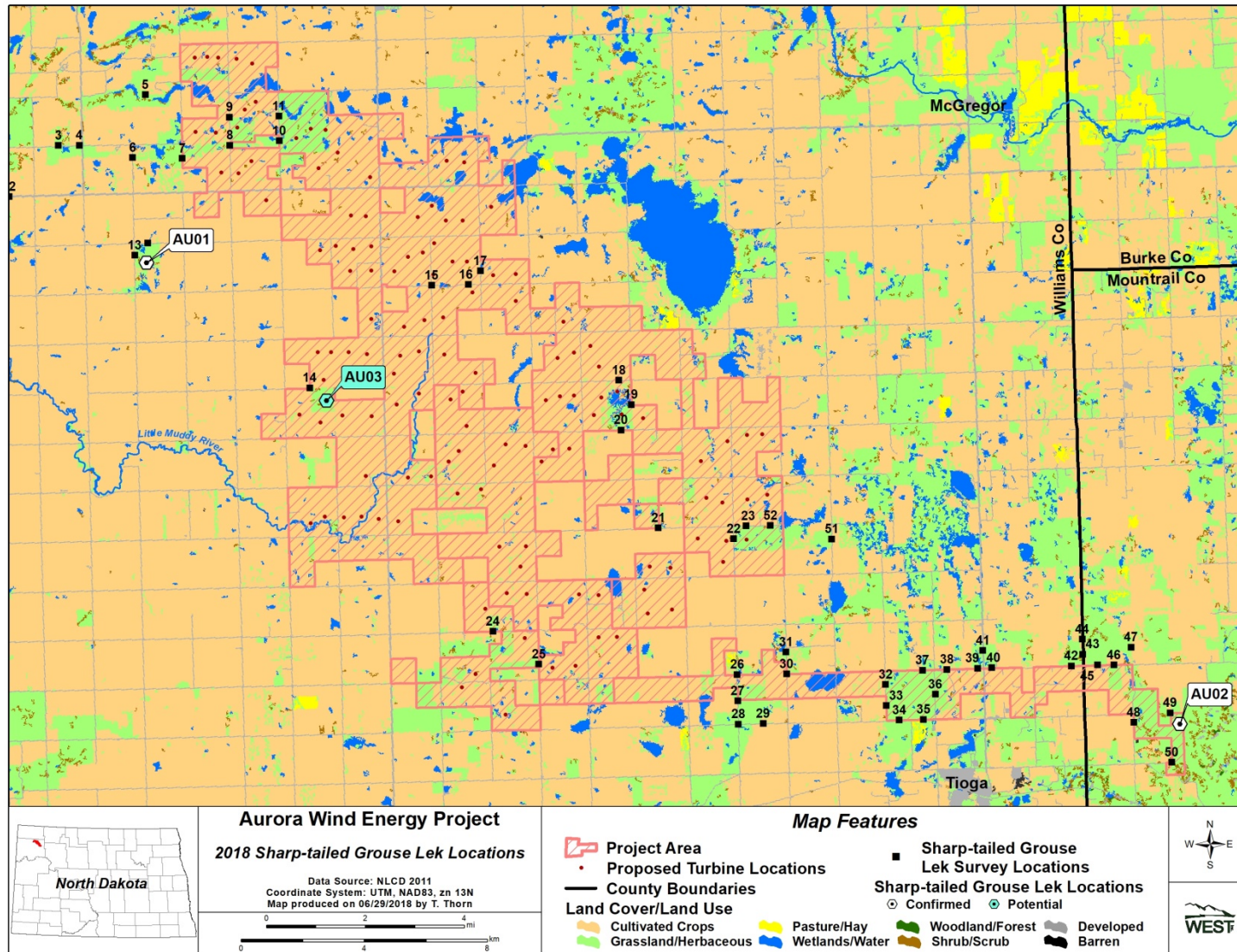


Figure 2. Location of survey points and sharp-tailed grouse leks observed during ground-based lek surveys conducted within the Aurora Wind Energy Project in Williams and Mountrail counties, North Dakota, from April 6 – May 11, 2018.

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