Flickertail Solar Project	Certificate of Site Compatibility
APPENDIX M – LEK SURVEY	

## 2024 Lek Survey Report

## Flickertail Solar Project Richland County, North Dakota



June 17, 2024

**PRESENTED TO** 

Flickertail Solar Project, LLC 422 Admiral Blvd Kansas City, Missouri 64106 **PRESENTED BY** 

**Tetra Tech, Inc.** 2001 Killebrew Drive, Suite 141 Bloomington, Minnesota 55425 (612) 643-2200

## **TABLE OF CONTENTS**

1.0 - INTRODUCTION	1
1.1 Project Area Description	1
2.0 - METHODS	2
3.0 - RESULTS	3
4.0 – REFERENCES CITED	4
LIST OF TABLES	
Table 1. Ground-based Lek Listening Survey Results.	3

### **APPENDICES**

APPENDIX A: FIGURES
APPENDIX B: PROTOCOL
APPENDIX C: DATA FORMS

## 1.0 - INTRODUCTION

Flickertail Solar Project, LLC proposes to develop the Flickertail Solar Project in Richland County, North Dakota (the Project). The Project Area is approximately 2 miles northwest of the town of Galchutt in Richland County, North Dakota (Appendix A: Figure 1). The Project Area includes approximately 3,479 acres in Sections 3, 5, 8 through 12, 14 through, 16, and 22 in Abercrombie Township (Township 134 North, Range 29 West). The Project is seeking a Certificate of Site Compatibility, in accordance with North Dakota Century Code (NDCC) Section 49-22-07, which includes consultation with state and federal agencies. Consultation with the North Dakota Department of Game and Fish (NDGF) was initiated through an introduction letter sent on October 19, 2023, an initial NDGF response on December 14, 2024, a virtual meeting on January 30, 2024, and emails and calls in late March/early April 2024. During this consultation, the NDGF raised concerns about potential impacts to sharp-tailed grouse (*Tympanuchus phasianellus*; STGR) and greater prairie-chicken (*Tympanuchus cupido*; GRPC) nesting habitat that may be present within grassland areas of the Project. The NDGF requested lek surveys be completed following the protocols outlined in Appendix D - Recommended Wildlife Survey Methods of the *Key Wind Energy Development in North Dakota*, *Best Management Practices* (NDGF 2021).

The NDGF requested that all portions of the Project Area that were not cultivated (i.e., pastures, hay/alfalfa fields, grassy ditches, and planted grassy fields) be buffered by 1 mile to establish a listening survey area. Listening stations were to be established within the listening survey area at 0.5-mile intervals along public roadways, with the exception of U.S. Interstate 29. On April 2, 2024, Tetra Tech provided a map of the proposed listening stations and schedule of anticipated dates of the lek surveys to the NDGF.

#### 1.1 PROJECT AREA DESCRIPTION

Richland County lies in the Interior Plains physiographic division of North Dakota within the Central Lowland Province (Fenneman and Johnson 1946). The Project Area is located within the Lake Agassiz plain and is nearly flat with slight slope to the east-northeast (Appendix A: Figure 1) (U.S. Department of Agriculture [USDA] 1975). Drainage within the Project Area is relatively poor but is facilitated by ditches which generally flow towards Pitcairn Creek located in the central portion of the Project Area. Pitcairn Creek flows to the east-northeast into the Wild Rice River, which is located approximately 0.5 mile east of the Project Area and flows to the north. Land use in the Project Area is primarily agricultural cropland with tree lines. Some grassland areas are also present, mainly in low-lying areas and along drainageways.

The western half of the Project Area falls within the GRPC primary range, and the entire Project Area lies within the secondary range of the STGR (NDGF 2021). During a call with NDGF on March 27, 2024, the agency indicated that the intent of the 80-acre PLOTS (Public Land Open to Sportsman) parcel in the Project Area was to connect population of GRPC in eastern North Dakota with populations in western Minnesota (Appendix A: Figure 1).

### 2.0 - METHODS

Based on the guidance provided by the NDGF, Tetra Tech reviewed land use data collected from the Class III Cultural Resource Inventory in October 2023 to identify areas in the Project Area that were not cultivated (i.e., pastures, hay/alfalfa fields, grassy ditches, and planted grassy fields). These areas were buffered by 1 mile to create the listening survey area (Appendix A: Figure 1). Within the listening survey area, 51 listening stations were established in 0.5-mile intervals along public road rights-of-way (Appendix: Figure 2). Listening stations were not placed along U.S. Interstate 29.

Per NDGF (2021) guidelines, three separate rounds of lek surveys were conducted between March 15 and May 15. As peak lek activity typically occurs between April 15 – 25, one survey was conducted during this time period. During the surveys, observers stopped at listening stations for 5 minutes during peak activity (45 minutes before to 45 minutes after sunrise), and 5 minutes for decreased activity time (45 minutes after sunrise to 2 hours after sunrise). While at each listening station, the observer visually scanned and listened for displaying prairie chickens and sharp-tailed grouse. Observed leks were mapped and numbers of males and females were counted, if possible. The lek surveys were not conducted when winds exceeded 10 mph or if there was any precipitation. The protocols for the surveys are include as Appendix B.

An Arrow 100 GPS receiver with sub-meter accuracy paired with a tablet running ESRI's Survey123 for ArcGIS application was used in the field to collect data at each listening station.

At the start of the surveys for the day, Tetra Tech biologists collected the following.

- Date
- Survey start time
- Survey start temperature
- Survey start wind (Beaufort scale)
- Survey start precipitation

Upon arriving at each individual lek survey location, a Tetra Tech biologist recorded the following.

- The survey location ID number
- The survey location
- The listening survey start time
- The listening survey end time
- Whether or not birds were observed (visually or audibly)
  - Should birds be observed, the following additional information will be recorded:
  - Species name
  - Observation method
  - o Number of males, females, unknown, and total observed
  - Reliability of survey effort
  - Habitat type
  - Location of lek



At the conclusion of the morning of the survey, a Tetra Tech biologist recorded the following information.

- Survey end time
- Survey end temperature
- Survey end wind (Beaufort scale)
- Survey end precipitation

### 3.0 - RESULTS

The listening surveys were conducted on April 9-10, April 23-24, and May 7-9, 2024. The weather on April 9 and 10 was clear with low winds (4 to 7 miles per hour [mph]). The weather on April 23 was clear with low winds that increased throughout the survey period (4 to 7 mph increasing to 13 to 15 mph) causing surveys to end early due to wind, while the weather on April 24 was clear with little to no wind (1 to 3 mph). The weather on May 7 was highly windy (25+ mph gusts) and raining, causing a weather stand down. May 8 and 9 were clear with low winds (1-7 mph) (Appendix C).

During listening surveys, no active leks were observed during any observation period. On April 24, a lone female sharp-tailed grouse was observed visually during the listening survey in a hayfield near LS17, outside of the Project Area, but within the listening survey area, before flying towards the observer and banking away flying out of view (Appendix A: Figure 2, Table 1).

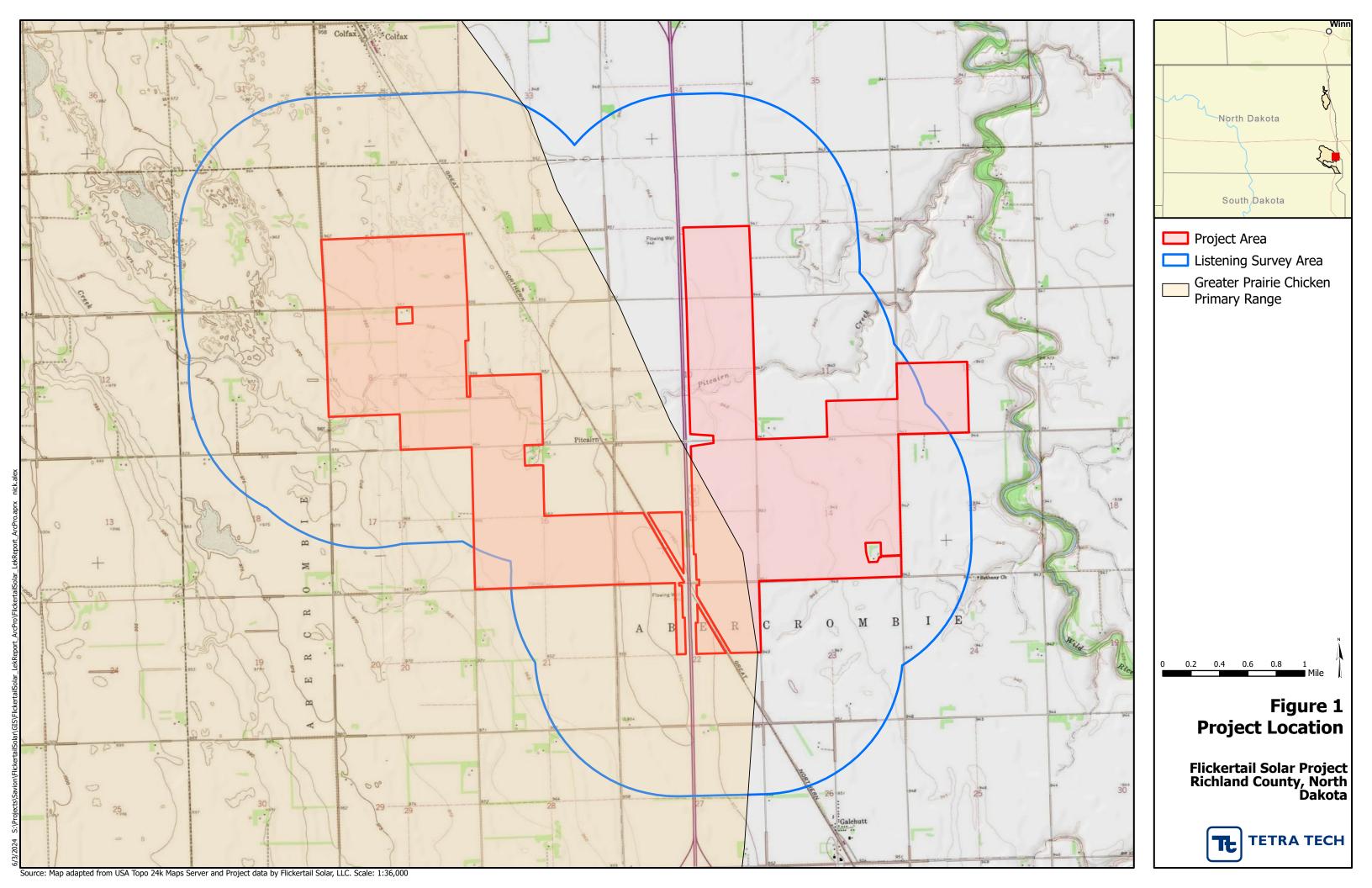
Table 1. Ground-based Lek Listening Survey Results.

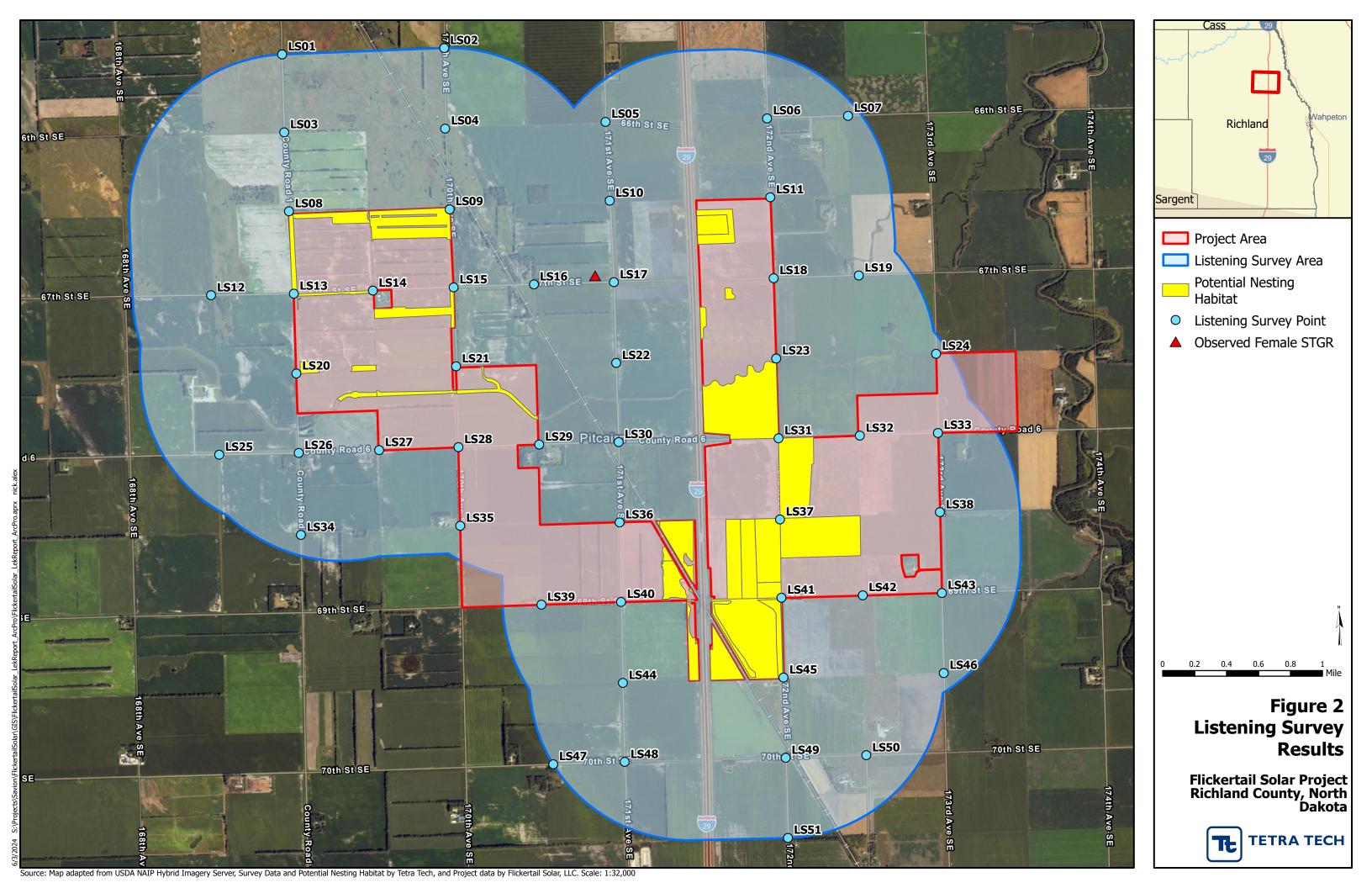
		Carretine   Casaia			Number o	f Birds	;	Reliability		
Listening Point	Time	Counting Method	Species Observed	Male	Female	Unk	Total	of Count & Sex Ratio	Habitat	Comments
LS17	7:08	Visual	STGR	0	1	0	1	Good	Hayfield	No lek behavior

### 4.0 - REFERENCES CITED

- Cornell Lab 2024a. Sharp-tailed Grouse. Retrieved April 8, 2024 from <a href="https://www.allaboutbirds.org/guide/Sharp-tailed\_Grouse/overview">https://www.allaboutbirds.org/guide/Sharp-tailed\_Grouse/overview</a>.
- Cornell Lab 2024b. Greater prairie-chicken. Retrieved April 8, 2024 from https://www.allaboutbirds.org/guide/Greater Prairie-Chicken/overview.
- Fenneman, N.M. and Johnson, D.W., 1946. Physiographic divisions of the conterminous U. S: U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9B1S3K8">https://doi.org/10.5066/P9B1S3K8</a>. Vector Digital Data. Published September 15, 2023.
- NDGF 2019a. Sharp-tailed grouse. Retrieved April 8, 2024 from <a href="https://gf.nd.gov/wildlife/id/grassland-birds/sharp-tail-grouse">https://gf.nd.gov/wildlife/id/grassland-birds/sharp-tail-grouse</a>.
- NDGF 2019b. Greater prairie-chicken. Retrieved April 8, 2024 from <a href="https://gf.nd.gov/wildlife/id/grassland-birds/greater-prairie-chicken">https://gf.nd.gov/wildlife/id/grassland-birds/greater-prairie-chicken</a>,
- NDGF 2021. Key Wind Energy Development in North Dakota Best Management Practices. Retrieved June 3, 2024 from https://gf.nd.gov/sites/default/files/publications/wind-energy-development-bmp.pdf.
- USDA 1975. Soil Survey of Richland County, and Sheyenne National Grassland Area of Ransom County, North Dakota.

## APPENDIX A. FIGURES





## APPENDIX B. PROTOCOL

# Sharp Tailed Grouse and Prairie Chicken Survey Protocol Spring 2024 Mobilization

Prairie chickens and sharp-tailed grouse are a game species in North Dakota and of special interest to the North Dakota Game and Fish (NDGF). Tetra Tech will conduct lek surveys at the 51 listening stations shown on Figure 1 below.



Figure 1: Listening Stations within for Lek Surveys for Flickertail Solar Project.

Per NDGF guidelines, three separate rounds of lek surveys will be conducted between March 15 and May 15, 2024. Peak lek activity typically occurs April 15 - 25 so at least one survey will be conducted during this time period; however, unpredictable weather conditions can affect exact timing of the surveys. Surveys will be conducted from 45 minutes before sunrise to two hours after sunrise to coincide with peak lek activity. Each survey is expected to take 2 mornings with 2 biologists.

Tetra Tech proposes the following schedule for the lek surveys:

- Week 1: between April 8 and April 13, 2024
- Week 2: between April 22 and April 27, 2024
- Week 3: between May 13 and May 15, 2024

#### Survey Methodology

During the surveys, observers will stop at listening stations for 5 minutes during peak activity (45 minutes before to 45 minutes after sunrise), and 5 minutes for decreased activity time (45 minutes after sunrise to 2 hours after sunrise). While at each listening station, the observer will visually scan and listen for displaying prairie chickens and sharp-tailed grouse. Observed leks will be mapped and numbers of males and females will be counted, if possible. The lek surveys will not be conducted when winds exceed 10 mph or if there is any precipitation.

#### **Data Collection**

Information regarding survey start time, individual lek survey locations, and survey end time will be collected throughout the day. At the start of the surveys for the day, Tetra Tech biologists will collect:

- Date
- Survey start time
- Survey start temperature
- Survey start wind (Beaufort scale)
- Survey start precipitation

Upon arriving at each individual lek survey location, a Tetra Tech biologist will record:

- The survey location ID number
- The survey location
- The listening survey start time
- The listening survey end time
- Whether or not birds were observed (visually or audibly)
- Should birds be observed, the following additional information will be recorded:
  - o Species name
  - o Observation method
  - o Number of males, females, unknown, and total observed
  - o Reliability of survey effort
  - Habitat type
  - Location of lek

At the conclusion of the day of surveys, a Tetra Tech biologist will record the following information:

- Survey end time
- Survey end temperature
- Survey end wind (Beaufort scale)
- Survey end precipitation

#### **Species Information**

#### Sharp-tailed Grouse (*Tympanuchus phasianellus*)

The sharp-tailed grouse can be found within northern prairies and boreal bogs, often occupying a large range (Cornell Lab 2024a). The Project is in the sharp-tailed grouse secondary range (NDGF 2019a). They typically nest in dense shrubland and grassland and can sometimes be found within crop stubble. During the springtime, communal displays (leks) require open and elevated areas (Cornell Lab 2024a). Female sharp-tailed grouses select the nest site in grassland with brushy cover, typically less than a mile from a lek location. Males gather in small areas called leks where they perform a dancing display to attract females. This consists of a cooing call, stamping feet, and extended wings, often followed by a period of frozen movement (Cornell Lab 2024a).



Round and chickenlike with long and pointed central tail feathers and a small, slightly crested head. Purple skin patches are visible on the male's neck during countries of displayers.



Round and chickenlike with long, pointed central tail feathers and a small, slightly crested head. Barred in brown, black, and buff.

#### Greater Prairie-Chicken (Tympanuchus cupido)

The greater prairie-chicken primarily occupies areas that combine small patches of woodland and extensive grassland prairie habitat (Cornell Lab 2024b). The Project is within the greater prairie-chicken primary range (NDGF 2019b). Areas of dense brush are critical as it provides nesting space and protection from predators. Males display on open elevated surfaces to attract females (Cornell Lab 2024b). Females select the nest site within grassland habitat with brushy cover. In early spring, males occupy small areas called leks to perform their "booming displays" for females. Similar to the sharp-tailed grouse, the greater prairie-chicken will stamp their feet, click their tails, and straighten and lower their wings towards the ground (Cornell Lab 2024b).



Adult male

Barred brown-and-white chickenlike grouse. During courtship displays, males raise the feathers on the side of their neck exposing the orange air sacs below, which they inflate to create a booming sound.



Barred brown-and-white chickenlike grouse with a small head. Females have a dark eyeline and a pale throat.

#### References

- Cornell Lab 2024a. Sharp-tailed Grouse. Retrieved April 8, 2024 from <a href="https://www.allaboutbirds.org/guide/Sharp-tailed Grouse/overview">https://www.allaboutbirds.org/guide/Sharp-tailed Grouse/overview</a>.
- Cornell Lab 2024b. Greater prairie-chicken. Retrieved April 8, 2024 from <a href="https://www.allaboutbirds.org/guide/Greater-Prairie-Chicken/overview">https://www.allaboutbirds.org/guide/Greater-Prairie-Chicken/overview</a>.
- NDGF 2019a. Sharp-tailed grouse. Retrieved April 8, 2024 from <a href="https://gf.nd.gov/wildlife/id/grassland-birds/sharp-tail-grouse">https://gf.nd.gov/wildlife/id/grassland-birds/sharp-tail-grouse</a>.
- NDGF 2019b. Greater prairie-chicken. Retrieved April 8, 2024 from <a href="https://gf.nd.gov/wildlife/id/grassland-birds/greater-prairie-chicken">https://gf.nd.gov/wildlife/id/grassland-birds/greater-prairie-chicken</a>,

## **APPENDIX C. DATA FORMS**

#### **DATA CODES**:

#### WIND SPEED (BEAUFORT SCALE):

1 = <4 mph. Calm or wind detectable by smoke.</li>
 2 = 5-7 mph. Wind felt on face.
 3 = 8-12 mph. Leaves, small twigs in motion.
 4 = 13-18 mph. Raises loose paper.
 5 = 19-24 mph. Small trees in leaf sway.
 6 = >25 mph. Large branches in motion.

LOCATION OF LEK: If GPS is available, record Lat/Long (in UTM coordinates) under Comments.

**COUNTING METHOD:** V = V is ual (birds not disturbed), F = F lush count, or H = H eard only.

**NUMBER OF PRAIRIE CHICKENS:** Best estimate/count. Do NOT include sharp-tailed grouse (list STGR observations in Comments).

#### **RELIABILITY OF COUNT AND SEX-RATIO ESTIMATES:**

**Good** = Good vantage point, excellent survey conditions, and birds active during count (i.e., relatively certain of count and sex ratio).

**OK** = Some uncertainty about sex ratio, total count, or lek attendance (e.g., due to disturbance or marginal survey conditions).

**Poor** = Highly questionable count and/or sex-ratio estimate; ideally the lek should be visited again.

#### **HABITAT:**

CU = Cultivated PA = Pasture (grazed) ST = Stubble HL = Hayland (mowed) UG = Undisturbed grass OT = Other (please describe)

**COMMENTS:** Any unusual event, observation, etc. that may have influenced the survey or interpretation of the data.

DATE: <u>04/09/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	POINTS SURVEYED: LS01, LS03, LS08, LS13, LS20, LS26, LS34, LS25, LS28, LS35, LS27, LS12, LS14, LS16, LS17, LS10, LS05, LS22, LS30												
<b>START:</b> TIME 06:06	TEMP (F)	35	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow			
<b>STOP:</b> TIME	TEMP (F)	41	WIND (Beaufort)	2	PRECIPITATION:	✓ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow			
COMMENTS:													

	Listening Point	Counting method										
Time		(V, F, H)	Species Observed	Males	Females	Unk	Total	of count & sex ratio	Habitat	Comments		
06:07	LS01									No birds observed.		
06:15	LS03									No birds observed.		
06:22	LS08									No birds observed.		
06:29	LS13									No birds observed.		
06:36	LS20									No birds observed.		
06:43	LS26									No birds observed.		

06:51	LS34					No birds observed.
07:00	LS25					No birds observed.
07:28	LS28					No birds observed.
07:43	LS35					No birds observed.
07:51	LS27					No birds observed.
08:00	LS12					No birds observed.
08:09	LS14					No birds observed.
08:17	LS16					No birds observed.
08:24	LS17					No birds observed.
08:31	LS10					No birds observed.
08:38	LS05					No birds observed.
08:47	LS22					No birds observed.
08:54	LS30					No birds observed.

DATE: <u>04/09/2024</u> OBSERVER(S): <u>Nick Alex</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS02, LS04,	LS09, L	S15, LS21							
START: TIME 06:06	TEMP (F)	36	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
<b>STOP:</b> TIME	TEMP (F)	39	WIND (Beaufort)	1	PRECIPITATION:	✓ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:										

	Listening Point	Counting method			Number	of Birds		Reliability of count &			
Time		(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments	
06:07	LS02									No birds observed.	
06:28	LS09									No birds observed.	
06:38	LS15									No birds observed.	
06:47	LS21									No birds observed.	

DATE: <u>04/10/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED: LS06, LS11, LS18, LS23, LS31, LS37, LS41, LS45, LS49, LS51, LS48, LS44, LS40, LS36, LS47, LS39											
START: TIME	06:02	TEMP (F)	37	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
STOP: TIME	08:39	TEMP (F)	45	WIND (Beaufort)	3	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:											

	Listening Point	Counting method			Number	of Birds		Reliability of count &			
Time	Number	(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments	
06:06	LS06									No birds observed.	
06:13	LS11									No birds observed.	
06:20	LS18									No birds observed.	
06:27	LS23									No birds observed.	
06:35	LS31									No birds observed.	

06:44	LS37					No birds observed.
06:52	LS41					No birds observed.
06:59	LS45					No birds observed.
07:08	LS49					No birds observed.
07:15	LS51					No birds observed.
07:26	LS48					No birds observed.
07:34	LS44					No birds observed.
07:41	LS40					No birds observed.
07:48	LS36					No birds observed.
08:03	LS47					No birds observed.
08:29	LS39					No birds observed.

DATE: <u>04/10/2024</u> OBSERVER(S): <u>Nick Alex</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED: LS46, LS43, LS38, LS33, LS24, LS07, LS19, LS32, LS42, LS50, LS29												
<b>START:</b> TIME 06:14	TEMP (F)	43	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow		
<b>STOP:</b> TIME	TEMP (F)	46	WIND (Beaufort)	2	PRECIPITATION:	✓ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow		
COMMENTS:												

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time	Number	(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
06:14	LS46									No birds observed.
06:22	LS43									No birds observed.
06:30	LS38									No birds observed.
06:37	LS33									No birds observed.
06:46	LS24									No birds observed.

06:55	LS07					No birds observed.
07:06	LS19					No birds observed.
07:17	LS32					No birds observed.
07:37	LS42					No birds observed.
07:57	LS50					No birds observed.
08:16	LS29					No birds observed.

DATE: <u>04/23/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS01, LS03,	LS08, L	S13, LS20, LS26, LS3	34, LS25,	LS12, LS14, LS02, LS	504, LS09, L	.S15, LS28,	LS21		
START: TIME 05:40	TEMP (F)	43	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
STOP: TIME $08:03$	TEMP (F)	46	WIND (Beaufort)	4	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:										

		Counting method			Number	of Birds		Reliability of count &		
Time		(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:40	LS01									Lots of snipe No birds observed.
05:47	LS03									No birds observed.
05:54	LS08									No birds observed.
06:01	LS13									No birds observed.
06:08	LS20									No birds observed.

06:15	LS26					No birds observed.
06:23	LS34					No birds observed.
06:31	LS25					No birds observed.
06:41	LS12					No birds observed.
06:50	LS14					No birds observed.
07:02	LS02					No birds observed.
07:10	LS04					No birds observed.
07:19	LS09					No birds observed.
07:28	LS15					No birds observed.
07:40	LS28					No birds observed.
07:55	LS21					No birds observed.

DATE: <u>04/23/2024</u> OBSERVER(S): <u>Nick Alex</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEY	ED:	LS24, LS33,	LS38, L	S43, LS46, LS50, LS4	9, LS51,	LS45, LS41, LS37, LS	31, LS23, L	S18, LS11, 1	LS06		
START: TIME	05:27	TEMP (F)	43	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
STOP: TIME	08:02	TEMP (F)	46	WIND (Beaufort)	4	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:											

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time		(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:41	LS24									No birds observed.
05:49	LS33									No birds observed.
05:58	LS38									No birds observed.
06:06	LS43									No birds observed.
06:14	LS46									No birds observed.

06:23	LS50					No birds observed.
06:32	LS49					No birds observed.
06:39	LS51					No birds observed.
06:51	LS45					No birds observed.
06:58	LS41					No birds observed.
07:07	LS37					No birds observed.
07:20	LS31					No birds observed.
07:28	LS23					No birds observed.
07:36	LS18					No birds observed.
07:46	LS11					No birds observed.
07:56	LS06					No birds observed.

DATE: <u>04/24/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEY	ED:	LS27, LS35,	LS47, LS	S48, LS44, LS40, LS3	66, LS30,	LS29, LS39, LS16					
START: TIME	05:29	TEMP (F)	25	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
STOP: TIME	07:23	TEMP (F)	30	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:											

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time	Number	(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:37	LS27									No birds observed.
05:47	LS35									No birds observed.
05:57	LS47									No birds observed.
06:04	LS48									No birds observed.
06:12	LS44									No birds observed.

06:37	LS40					No birds observed.
06:37	LS36					No birds observed.
06:37	LS30					No birds observed.
06:45	LS29					No birds observed.
07:00	LS39					No birds observed.
07:18	LS16					No birds observed.

DATE: <u>04/24/2024</u> OBSERVER(S): <u>Nick Alex</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS07, LS19,	LS32, LS	S42, LS05, LS10, LS1	17, LS22						_
<b>START:</b> TIME 05:31	TEMP (F)	25	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
<b>STOP:</b> TIME $07:25$	TEMP (F)	30	WIND (Beaufort)	1	PRECIPITATION:	✓ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:										

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time		(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:37	LS07									No birds observed.
05:49	LS19									No birds observed.
06:00	LS32									No birds observed.
06:26	LS42									No birds observed.
06:53	LS05									No birds observed.

07:02	LS10									No birds observed.
07:08	LS17	V	STGR	0	1	0	1	Good	HL	

DATE: <u>05/08/2024</u> OBSERVER(S): <u>Nick Alex</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS51, LS49,	LS50, LS	S45, LS41, LS42, LS3	37, LS31,	LS32, LS23, LS18, LS	819, <b>LS</b> 11, L	S06, LS07,	LS24, LS33, LS38, LS43, LS46		
START: TIME 05:15	TEMP (F)	45	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries ☐ F	Rain	Snow
<b>STOP:</b> TIME 07:55	TEMP (F)	49	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries ☐ F	Rain 🗆	Snow
COMMENTS:										

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time	Number	(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:15	LS51									No birds observed.
05:23	LS49									No birds observed.
05:30	LS50									No birds observed.
05:39	LS45									No birds observed.
05:46	LS41									No birds observed.

06:01	LS42					No birds observed.
06:13	LS37					No birds observed.
06:20	LS31					No birds observed.
06:28	LS32					No birds observed.
06:37	LS23					No birds observed.
06:43	LS18					No birds observed.
06:50	LS19					No birds observed.
06:58	LS11					No birds observed.
07:05	LS06					No birds observed.
07:12	LS07					No birds observed.
07:21	LS24					No birds observed.
07:27	LS33					No birds observed.
07:34	LS38					No birds observed.

07:40	LS43					No birds observed.
07:47	LS46					No birds observed.

DATE: <u>05/08/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS01, LS03,	, LS08, L	S13, LS20, LS26, LS3	34, LS25,	LS12, LS14, LS15, LS	509, LS04, L	S02, LS27,	LS28, LS35, LS21		
START: TIME 05:09	TEMP (F)	45	WIND (Beaufort)	2	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
<b>STOP:</b> TIME 07:59	TEMP (F)	49	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:										

	Listening Point	Counting method			Number	of Birds		Reliability of count &		
Time	Number	(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05:15	LS01									No birds observed.
05:22	LS03									No birds observed.
05:29	LS08									No birds observed.
05:37	LS13									No birds observed.
05:44	LS20									No birds observed.

05:50	LS26					No birds observed.
05:58	LS34					No birds observed.
06:07	LS25					No birds observed.
06:17	LS12					No birds observed.
06:27	LS14					No birds observed.
06:35	LS15					No birds observed.
06:45	LS09					No birds observed.
06:55	LS04					No birds observed.
07:02	LS02					No birds observed.
07:24	LS27					No birds observed.
07:32	LS28					No birds observed.
07:39	LS35					No birds observed.
07:54	LS21					No birds observed.

DATE: <u>05/09/2024</u> OBSERVER(S): <u>Bob Bohland</u> PROJECT: <u>Flickertail Solar Project</u>

#### **LEK LISTENING SURVEY**

POINTS SURVEYED:	LS05, LS10,	LS17, LS	S22, LS30, LS36, LS4	10, LS44,	LS48, LS47, LS29, LS	516, LS39				_
START: TIME 05:07	TEMP (F)	45	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
<b>STOP:</b> TIME 07:23	TEMP (F)	47	WIND (Beaufort)	1	PRECIPITATION:	☑ None	□ Fog	☐ Drizzel/Snow Flurries	□ Rain	□ Snow
COMMENTS:										

		Listening Point	Counting method			Number	of Birds		Reliability of count &		
T	ime		(V, F, H)	Species Observed	Males	Females	Unk	Total	sex ratio	Habitat	Comments
05	5:15	LS05									No birds observed.
05	5:29	LS17									No birds observed.
05	5:37	LS22									No birds observed.
05	5:45	LS30									No birds observed.
05	5:53	LS36									No birds observed.

06:00	LS40					No birds observed.
06:07	LS44					No birds observed.
06:15	LS48					No birds observed.
06:22	LS47					No birds observed.
06:34	LS29					No birds observed.
06:44	LS16					No birds observed.
06:59	LS39					No birds observed.