



BALANCED ROCK
POWER

Appendix 14. Draft Wildlife Plan

**Taelor Solar Projects
Morgan County and Weld County**

Biological Survey Plan

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Prepared For:

Balanced Rock Power

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1.0 Introduction

This survey plan outlines the methods that Heritage Environmental Consultants (Heritage) will use to implement pre-project surveys for biological resources for the proposed Taelor Solar Projects (Projects). Primary tasks in this survey plan include a pre-field review, swift fox surveys, greater prairie chicken and plains sharp-tailed grouse surveys, black-tailed prairie dog surveys, raptor and nesting bird surveys, and reporting.

The two Projects would be located about 3 miles southwest of Wiggins, Colorado. One project is in Weld County and the other is in Morgan County (**Appendix A; Figure 1**). The Projects would be located on private lands.

2.0 Task 1: Pre-field Review

This task consists of reviewing applicable survey protocols, delineating the survey area, and identifying the target species that will be the subject of the field surveys.

2.1 Survey Protocols

Heritage has had two conversations with Colorado Parks and Wildlife (CPW) biologists regarding the Projects (CPW 2023a, CPW 2023b). CPW biologists helped inform the surveys that should be performed for the Projects. As part of developing this survey plan, the following documents were reviewed:

- Colorado Parks and Wildlife Best Management Practices for Solar Energy Development (CPW 2021a).
- Greater Prairie Chicken and Plains Sharp-tailed Grouse Survey Protocol (**Appendix B**).

2.2 Survey Area

The survey area includes all of the areas proposed for development of the Projects; approximately 5,152 acres in Morgan County, and approximately 4,437 acres in Weld County for a total of approximately 9,589 acres.

2.3 Data Collection

Data for the survey area were collected from the following sources:

- Federally Listed Species and Critical Habitat (U. S. Fish and Wildlife Service [USFWS] 2021).
- Colorado Threatened and Endangered List (CPW 2023a).
- Colorado's Conservation Data Explorer (CODEX) Project Review Report (CPW 2021b).
- Conversations with CPW biologists (CPW 2023a, 2023b).

2.4 Target Species

The following species were identified as species of concern associated with the Projects based on data review of the above sources.

Species Common Name	Species Scientific Name	Potential to Occur
Swift Fox	<i>Vulpes velox</i>	Moderate potential to occur – Suitable prairie habitat is present.
Plains Sharp-tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	Moderate potential to occur – Suitable prairie habitat is present.
Greater Prairie Chicken	<i>Tympanuchus cupido</i>	Moderate potential to occur – Suitable prairie habitat is present.
Golden Eagle	<i>Aquila chrysaetos</i>	Moderate potential to occur for foraging purposes – Suitable open habitats for foraging are present, but no nesting habitat is present.
Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>	Moderate potential to occur for nesting and foraging purposes – Suitable open habitats for foraging are present, burrows may be present for nesting.
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Moderate potential to occur – Suitable prairie habitat is present.
Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	Low potential to occur – Suitable riparian habitat is not present.
Pronghorn	<i>Antilocapra americana</i>	Moderate potential to occur – Suitable open habitat is present.
Mule Deer	<i>Odocoileus hemionus</i>	Moderate potential to occur – Suitable open habitat is present.
Raptors	<i>n/a</i>	High potential to occur - suitable habitat is present for several raptor species.
Bat Species	<i>n/a</i>	Low potential to occur – Lack of suitable roosting habitat.

2.5 Habitat Types

The Project lies in the High Plains ecoregion (Chapman et al. 2006). Two habitat types dominate the Weld County portion; rolling sand plains and agriculture. An open water habitat (3.5-acre irrigation pond) is also present near the eastern boundary. The sand hills are dominated by low grasses and shrubs interspersed

with patches of bare sand. Center pivot and dryland agriculture is active along Kiowa Creek primarily in the eastern and southern portions of the Weld County site. There is no flow in the creek, nor any remnant riparian areas.

The Morgan County portion is dominated by flat to rolling hills that are used for open range and agriculture. Vegetation is low with patches of kochia (*Bassia scoparia*) and rabbitbrush (*Chrysothamnus nauseosus*). Bare soil is common. Center pivot and dryland agriculture is active along Rock Creek primarily in the northern and western portions of the Morgan County site. There is no flow in the creek, nor any remnant riparian areas. Habitat types are described below:

- *Flat to Rolling Plains* - The Flat to Rolling Plains ecoregion is more level and less dissected than the adjacent Moderate Relief Plains. Soils are generally silty with a veneer of loess. Dryland farming is extensive, with areas of irrigated cropland scattered throughout the ecoregion. Winter wheat is the main cash crop, with a smaller acreage in forage crops.
- *Rolling Sand Plains* - The grass-stabilized sand plains, sand dunes and sand sheets of the Rolling Sand Plains ecoregion are a divergence from the mostly loess-covered plains of adjacent ecoregions. Sandy soils, formed from eolian deposits, supported a sandsage prairie natural vegetation type, different from the shortgrass and midgrass prairie of other neighboring level IV ecoregions in the High Plains. Sand sagebrush, rabbitbrush, sand bluestem, prairie sandreed, and Indian ricegrass were typical plants. Land use is primarily rangeland, although a few scattered areas have been developed for irrigated cropland using deep wells.
- *Agriculture* – Includes center pivot and dryland agriculture and associated roads and infrastructure.

3.0 Task 2: Field Surveys

This section describes the various surveys proposed to be conducted for the proposed Projects. To the extent it is biologically appropriate, these surveys will be conducted concurrently for increased efficiency. It was determined through conversations with CPW that surveys for bats did not need to be performed within the Projects. Additionally, the Projects should be designed to accommodate big game movement, but no surveys need to be conducted for pronghorn or mule deer. All incidental observations of these (and other) species will be recorded during other field survey efforts.

3.1 Greater Prairie Chicken and Plains Sharp-tailed Grouse

A listening route survey for greater prairie chickens and plains sharp-tailed grouse shall be conducted between mid-March and April 30 which corresponds with the peak of male and hen attendance on lek sites. Surveys shall be conducted from 30 minutes before to 1–2 hours after sunrise, which is the period when birds are most active on leks. Surveys should be conducted only on calm, clear mornings, as the booming sound produced by males can be audible for nearly 3 km. If wind speeds exceed 7 km/hr, surveys should be discontinued and rerun on the next available day. Surveys will be conducted from an all-terrain vehicle (ATV). There will be two survey routes established within suitable habitat, one within the Weld County site and one within the Morgan County site. For each survey route, an observer will determine the presence of active lek sites by listening at 1.6 km intervals along the route and recording compass directions for all audible leks. In order to compensate for potential “quiet” periods and the influences of time-of-day upon booming, routes should be run in two directions. This procedure entails beginning at mile 0, listening for booming for 3 minutes, and proceeding along the selected route, stopping for 3 minutes at each 3.2 km interval until the end of the route. The observer should then retrace the route 1.6 km, stop, listen, and

continue again at 3.2 km intervals to the 1.6 km stop on the route. All routes will be 16 km in length, thus consisting of 11 listening stations. Once all routes have been initially surveyed for leks, the leks will be surveyed for the number of males, females, and total birds on each lek on subsequent days. Leks will be counted if three or more birds are identified on a site.

3.2 Swift Fox, Prairie Dogs, and Burrowing Owl

A survey will be conducted for swift fox, prairie dog colonies, and burrowing owls simultaneously. Transects will be established approximately 30 meters apart (depending on vegetation and visibility) to ensure 100 percent coverage. They will be travelled slowly by qualified biologists on ATVs or on foot. Surveyors will scan the transects for swift fox, prairie dog, and burrowing owl individuals, burrows, and potential prairie dog colonies. If burrows are discovered, they will be inspected for sign of swift fox, prairie dog, and burrowing owl habitation (tracks, scat, whitewash, digging, feathers). Locations, dimensions, number of entrances, and aspect of the burrows and notes regarding observed sign shall be recorded for each burrow or complex.

3.3 Raptors and Nesting Birds

During the swift fox, prairie dog, and burrowing owl transect survey, biologists will scan suitable habitat (e.g. trees, transmission poles, buildings) for raptor nests. If nests are observed, information regarding nest size and location, activity status, and species will be recorded.

Additionally, a pre-construction nesting bird survey will be conducted prior to construction activities commencing if they will be starting during the breeding season (for most bird species in Colorado, breeding season occurs from April 1 – August 31).

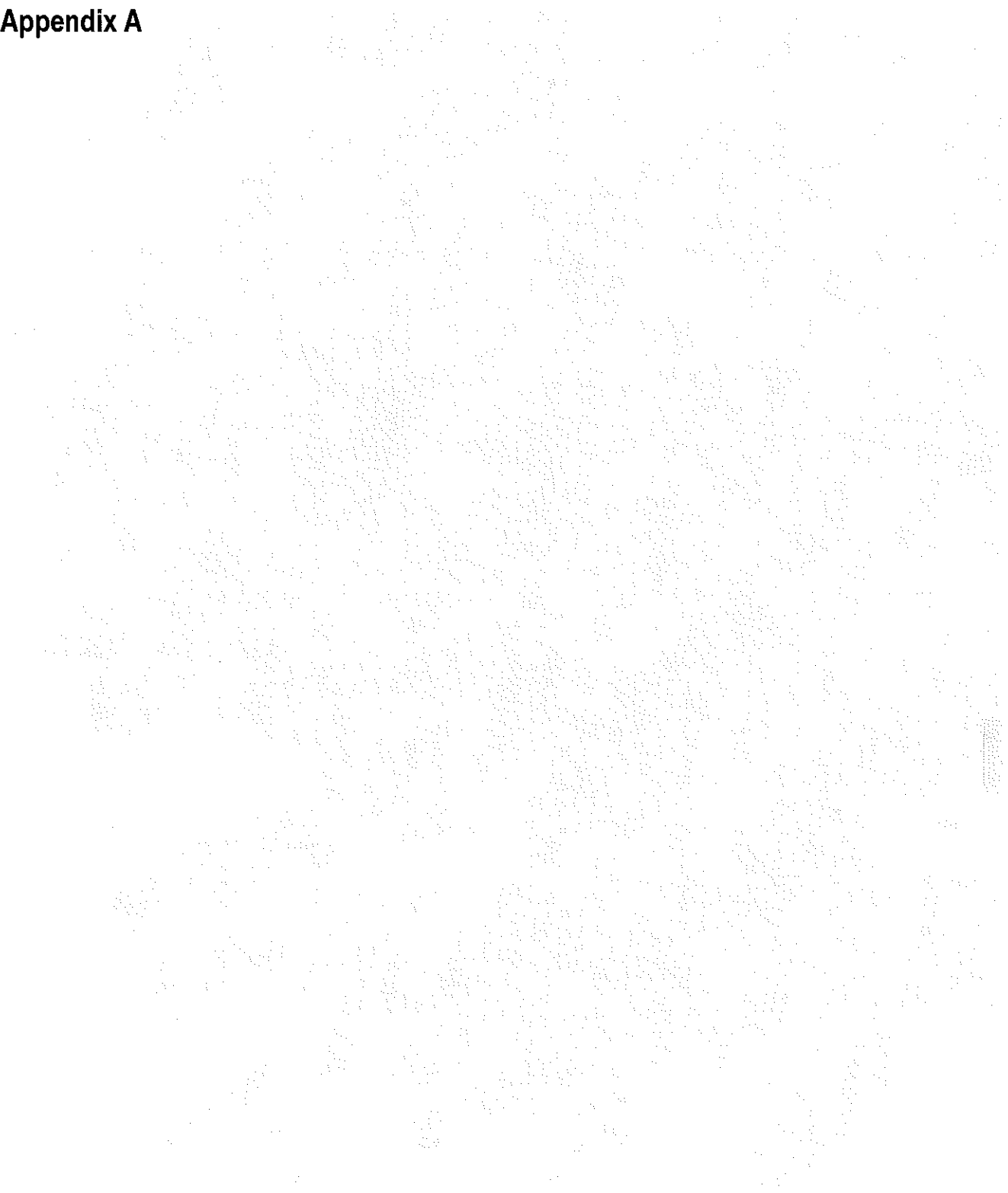
4.0 Task 3: Reporting

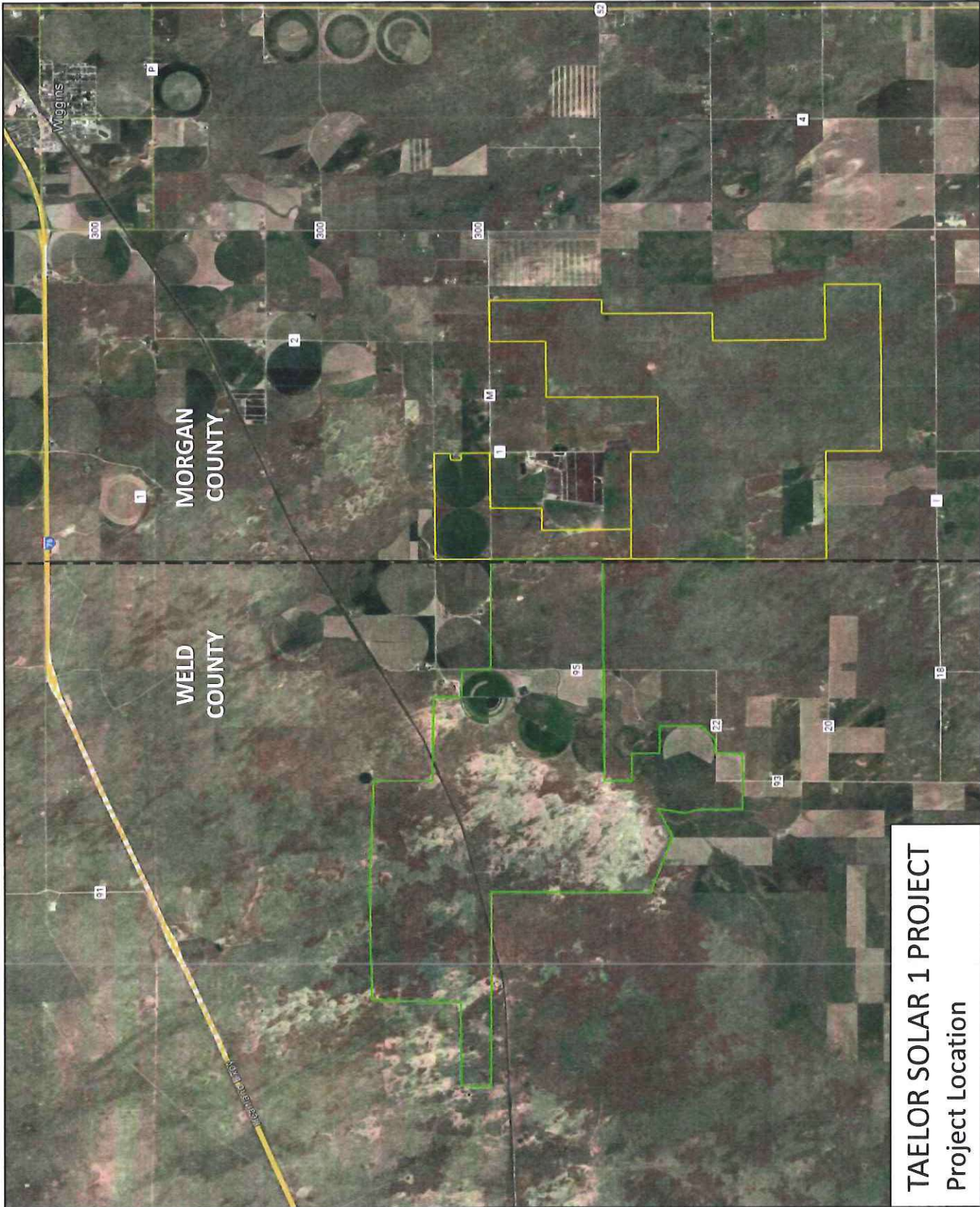
Once the surveys are complete, two survey reports will be prepared in the standard scientific format (introduction, methods, results, discussion/recommendations) supported by references, maps, and photographs, one report for each Project. It is expected that interim reports covering the results of swift fox, prairie dog, burrowing owl, and raptor surveys could be developed first with the results of lek surveys provided next spring.

5.0 References

- Chapman, S.S., Griffith, G.E., Omernik, J.M., Price, A.B., Freeouf, J., and Schrupp, D.L., 2006, Ecoregions of Colorado (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000).
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- CPW. 2021a. Colorado Parks and Wildlife Best Management Practices for Solar Energy Development. May 2021. 6 pages.
- CPW. 2021b. Colorado's Conservation Data Explorer Project Review Report for the Wiggins Solar Project (Taelor).
- CPW. 2023a. Personal Communication [*June 6* telephone conversation with Marty Stratman, CPW Acting Regional Biologist. *RE: Wildlife review and survey needs for the Taelor Solar Projects*].
- CPW. 2023b. Personal Communication [*June 30* telephone conversation with CPW biologists; Brandon Murette, Marty Stratman, Wendy Figueroa, Chris Mettenbrink. *RE: Wildlife review and survey needs for the Taelor Solar Projects*].
- U. S. Fish and Wildlife Service. 2021. Information for Planning and Consultation (IPaC) query for the Wiggins Project (Taelor). Available online at: <https://ecos.fws.gov/ipac/>. Accessed November 2021.

Appendix A





TAELOAR SOLAR 1 PROJECT
Project Location

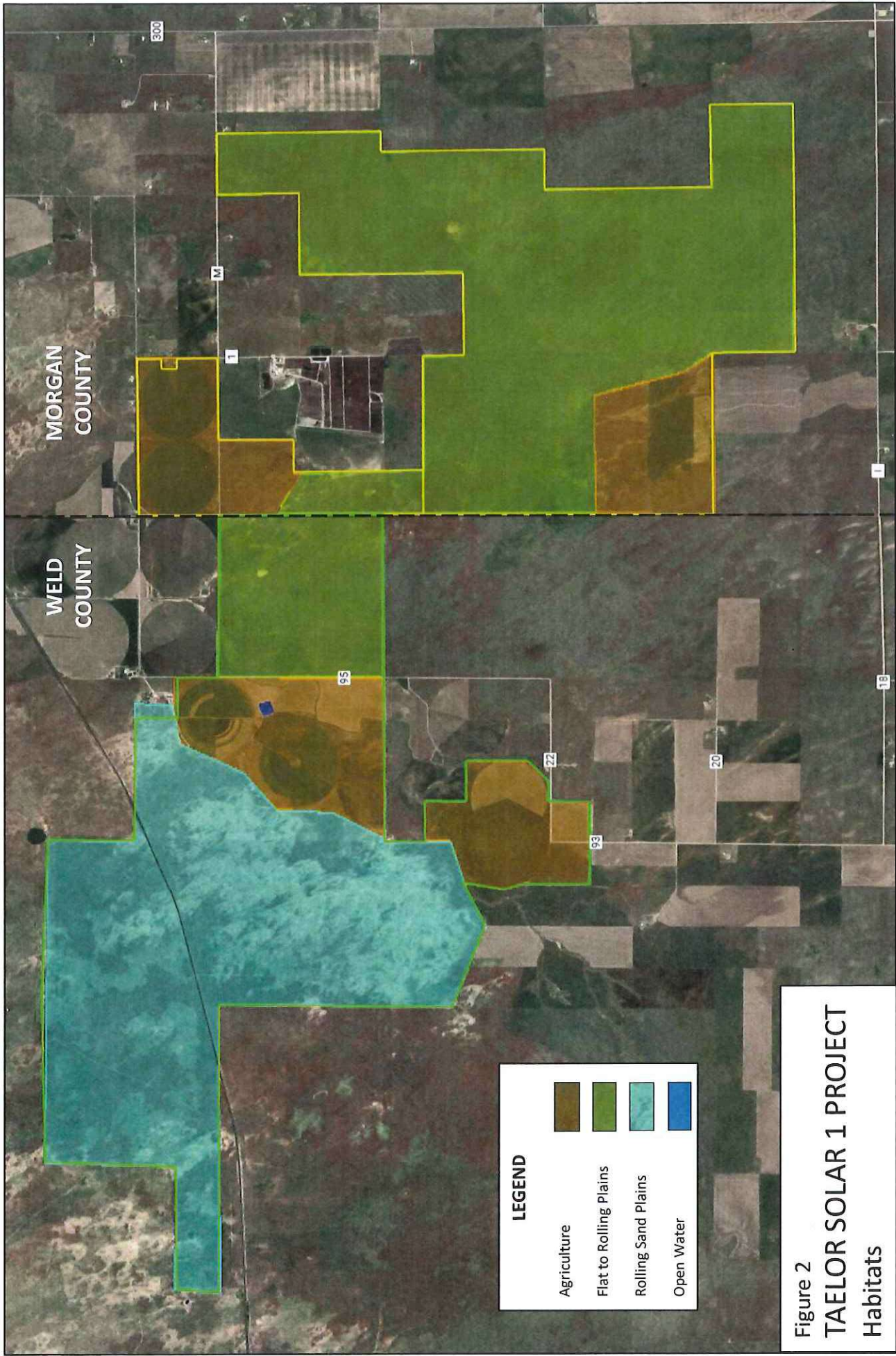


Figure 2
TAELOS SOLAR 1 PROJECT
 Habitats

Appendix B - Greater Prairie Chicken and Plains Sharp-tailed Grouse Survey Protocol

Greater Prairie Chicken and Plains Sharp-tailed Grouse Survey Protocol

Listening route surveys should continue to be conducted during the early spring when greater prairie-chickens are congregated on lek sites. However, surveys should be conducted between April 1 and April 20, which corresponds with the peak of male and hen attendance (Miller 1984, Schroeder and Braun 1992). Data collected after April 20 may be biased low due to the decline in male attendance following the time of peak hen attendance (Schroeder and Braun 1992). Surveys should continue to be conducted from 30 minutes before to 1–2 hours after sunrise, which is the period when birds are most active on leks (Schroeder and Braun 1992). Surveys should be conducted only on calm, clear mornings, as the booming sound produced by males can be audible for nearly 3 km (Hamerstrom and Hamerstrom 1973, Miller 1984, Schroeder and Braun 1992). If wind speeds exceed 7 km/hr, surveys should be discontinued and rerun on the next available day.

For each survey route, an observer will determine the presence of active lek sites by listening at 1.6 km intervals along the route and recording compass directions for all audible leks. In order to compensate for potential “quiet” periods and the influences of time-of-day upon booming, routes should be run in two directions. This procedure was abandoned in the mid-1990’s and should be reinstated. This procedure entails beginning at mile 0, listening for booming for 3 minutes, and proceeding along the selected route, stopping for 3 minutes at each 3.2 km interval until the end of the route. The observer should then retrace the route 1.6 km, stop, listen, and continue again at 3.2 km intervals to the 1.6 km stop on the route. All routes will be 16 km in length, thus consisting of 11 listening stations. A 16-km route would require approximately 80 minutes to complete, driving at 25 miles-per-hour, stopping at the 11 stations, and listening for 3 minutes at each stop. This is within the 90 minute time of peak activity (Miller 1984, Van Sant and Braun 1990). This procedure will further minimize bias from behavioral changes associated with time-of-day (Robb and Schroeder 2005).

Once all routes have been initially surveyed for leks, the leks will be surveyed for the number of males, females, and total birds on each lek on subsequent days. Leks will be counted if three or more birds are identified on a site. This is similar to the criteria used by Schroeder and Braun (1992).