Swift Fox Presence/Absence Remote Camera Surveys

Rail Tie Wind Project
Albany County, Wyoming

November 2020

Prepared for:

ConnectGen Albany County LLC

TETRA TECH

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1 INTRODUCTION

At the request of ConnectGen Albany County LLC (ConnectGen), Tetra Tech, Inc. (Tetra Tech) conducted presence/absence remote camera surveys for swift fox (*Vulpes velox*) for the Rail Tie Wind Project (Project), a proposed wind energy facility that would encompass approximately 26,000 acres in southeastern Albany County, Wyoming. These surveys were conducted as a result of review and discussion of potential Species of Greatest Conservation Need (SGCN) surveys recommended for the Project during the follow-up Project meeting with Wyoming Game and Fish Department (WGFD) on April 1, 2020, as well as the scoping response letter provided by WGFD in May 2020 (WGFD 2020). This report summarizes the methodology and results of swift fox presence/absence remote camera surveys conducted for the Project in September 2020.

1.1 Species Background

Swift fox are listed as a Tier II SGCN by WGFD (WGFD 2017). Swift fox habitat typically consists of short-grass and mid-grass prairies with flat or gently sloping topography (WGFD 2017). However, swift fox also utilize a mixture of non-native and atypical habitat throughout portions of their range, including agricultural croplands. Habitat in Wyoming includes grasslands with a higher shrub component, including sagebrush (*Artemisia* spp.), greasewood (*Sarcobatus vermiculatus*), and saltbush (*Atriplex gardneri*). Within these sagebrush shrub communities, areas of lower-growing shrubs (≤ 30 cm) are used more often than those with taller shrubs. Swift fox depend greatly on burrows (dens), which are used year-round for pup-rearing as well as refuge. Swift fox may excavate their own dens or enlarge old burrows from ground squirrels or American badgers (*Taxidea taxus*). Den sites are typically characterized by well-drained, loamy soils and flat terrain, sloping plains, and hill tops. Prairie dog colonies may also provide important habitat for swift fox, although this may vary throughout the range of the species. Wyoming is located on the western edge of swift fox continental range. The species is widely distributed across suitable habitat in the state (WGFD 2017).

Swift fox have been observed twice within or near (i.e., within approximately one mile of) the Project Area and the Wyoming Natural Diversity Database (WYNDD) modeling predicts the species may be present within or near the Project Area (WYNDD 2019). Potential habitat for swift fox within the Project Area is present primarily within Wyoming Basins Dwarf Sagebrush Shrubland and Steppe, although they may be associated with portions of Inter-mountain Basins Montane Sagebrush Steppe and Inter-mountain Basins Mountain Mahogany Woodland and Shrubland. An observation of a potential swift fox active den site (i.e., littered with bones and scat) was made within the northwest portion of the Project Area during the September 2019 field-based habitat assessment conducted by Tetra Tech for the Project; however, no individual was observed (Tetra Tech 2020).

2 METHODOLOGY

Tetra Tech conducted the September 2020 surveys in accordance with the survey techniques outlined in Chapter 20 of the 2007 WGFD Handbook of Biological Techniques (revised 2013) for

determining swift fox presence/absence by remote camera (WGFD 2007). Surveys were conducted within the Project Siting Corridor (i.e., the development footprint encompassing all potential Project features and associated ground disturbance buffers).

Tetra Tech established 24 remote camera stations spaced approximately 0.5 mile (0.8 kilometers) apart along the Project Siting Corridor in areas of suitable swift fox habitat (Figure 1). Suitable habitat within the Project Siting Corridor consisted of grassland and shrub-steppe habitats, which make up approximately 98% of the Project Siting Corridor (Tetra Tech 2020). Camera stations were micro-sited in the field to provide an optimal location for the camera. Camera station locations were recorded using a GPS-enabled tablet installed with the ArcGIS Collector application.

Surveys were conducted in September when swift fox were expected to be most active (i.e. during juvenile dispersal) by qualified Tetra Tech biologists. Cameras were installed on the Project on September 1, 2020 and retrieved on September 14th and 15th, 2020. Although the cameras were intended for deployment of five consecutive nights, deployment was extended due to inclement weather restrictions during the original retrieval date. Bushnell CORE Trail infrared game cameras were secured to 3-foot tall U-posts (Photo 1 below). A wooden surveyor's stake (2.5 x 5 x 457 cm) was positioned approximately 2.5 meters south of each camera location sprayed with a lure consisting of a combination of skunk scent and fish oil. The camera was focused on the lure sprayed on the wooden stake. The cameras were set to take 3 photos every 10 seconds each time the camera was triggered by movement at the lure. Cameras were set to take pictures between 1800 and 0600 hours to take advantage of peak swift fox activity and minimize extraneous non-target photos (WGFD 2007). At the end of the survey, the cameras were collected, and the photos saved to the data cards were downloaded and reviewed.

Photo 1: Remote camera and lure scent post set-up for swift fox detection for the Rail Tie Wind Project.

Photos were reviewed for detections of wildlife species. Detections were defined as a photo or photo sequence containing an identifiable wildlife species. When consecutive photo sequences contained the same species, a detection was considered unique if a period of time ≥ 5 minutes occurred between photo sequences. Detections were separated into two categories: Swift Fox Detections and Other Wildlife Detections.

3 RESULTS

A total of 24 camera stations were deployed within the Project Area. Of these camera stations, four of the cameras malfunctioned and were not operational, resulting in 20 operational camera stations during the survey (Table 1; Figure 1). Of the 20 operational camera stations employed during the survey, swift fox were documented at seven of the stations (35%) for a total of 16 unique swift fox detections (Table 1; Figure 1). Swift fox detections were observed within the western and southern portions of the Project Area (Figure 1).

Thirteen other incidental wildlife species were documented at 15 of the 20 operational camera stations (Table 1). Species documented included: black-billed magpie (*Pica hudsonia*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), horned lark (*Eremophila alpestris*), mountain bluebird (*Sialia currucoides*), cottontail sp. (*Sylvilagus* sp.), mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), red-tailed hawk (*Buteo jamaicensis*), striped skunk (*Mephitis mephitis*), thirteen-lined ground squirrel (*Ictidomys tridecemlineatus*), white-tailed jackrabbit (*Lepus townsendii*), and Wyoming ground squirrel (*Urocitellus elegans*). No federally threatened or endangered species or other SGCN were detected during the survey effort.

Table 1 outlines the details of each camera station, including number of unique swift fox detections and other wildlife detections. Table 2 outlines the date, time, and photo associated with each unique swift fox detection. Five of the 9 operational camera stations located within the western portion of the Project Area (i.e. west of Highway 287) documented swift fox and were responsible for 12 of the 16 swift fox detections (Tables 1 and 2; Figure 1). Two of the 11 operational camera stations located within the eastern portion of the Project Area (i.e. east of Highway 287) documented swift fox for a total of four detections (Tables 1 and 2; Figure 1). The seven camera stations that detected swift fox were located in areas dominated by contiguous Wyoming Basins Dwarf Sagebrush Shrubland and Steppe habitat (Figure 1).

Not all operational camera stations recorded data during the entire survey period. Three camera stations were knocked down by cattle shortly after setup, rendering the cameras inoperable after the first detection night. In addition, the memory cards of several camera stations were filled prior to end of the survey period due to high photo capture of blowing vegetation due to high winds in the Project Area. Despite the lack of data at these camera stations, the results of the aggregate data that was captured across all the camera stations is sufficient to confirm the presence of swift fox within the Project Siting Corridor.

Table 1. Swift Fox Survey Results for Rail Tie Wind Project

Camera Station #	Mobilization Date	Demobilization Date	Swift Fox Detected?	# of Swift Fox Detections	Other Wildlife Detected?	Other Wildlife Detected
RT_001[1]	09/01/2020	09/15/2020	Yes	2	No	—
RT_002	09/01/2020	09/15/2020	No	0	No	—
RT_003	09/01/2020	09/15/2020	Yes	2	Yes	white-tailed jackrabbit
RT_004	09/01/2020	09/15/2020	No	0	Yes	mule deer; pronghorn; striped skunk
RT_005	09/01/2020	09/15/2020	Yes	1	Yes	thirteen-lined ground squirrel
RT_006[2]	09/01/2020	09/15/2020	No	0	No	—
RT_007	09/01/2020	09/14/2020	No	0	Yes	mountain bluebird
RT_008	09/01/2020	09/15/2020	Yes	5	No	—
RT_009[2]	09/01/2020	09/15/2020	No	0	No	—
RT_010	09/01/2020	09/15/2020	Yes	3	Yes	black-billed magpie
RT_011	09/01/2020	09/15/2020	Yes	2	Yes	horned lark
RT_012	09/01/2020	09/15/2020	No	0	Yes	coyote; mountain bluebird; cottontail sp.; pronghorn
RT_013	09/01/2020	09/15/2020	Yes	1	Yes	pronghorn; white-tailed jackrabbit
RT_014[2]	09/01/2020	09/14/2020	No	0	No	—
RT_015	09/01/2020	09/15/2020	No	0	Yes	mountain bluebird; red-tailed hawk
RT_016	09/01/2020	09/15/2020	No	0	No	—
RT_017[2]	09/01/2020	09/14/2020	No	0	No	—
RT_018[1]	09/01/2020	09/14/2020	No	0	No	—
RT_019	09/01/2020	09/15/2020	No	0	Yes	mountain bluebird; pronghorn
RT_020	09/01/2020	09/15/2020	No	0	Yes	pronghorn
RT_021	09/01/2020	09/15/2020	No	0	Yes	coyote; cottontail sp.; mule deer; pronghorn
RT_022[1]	09/01/2020	09/15/2020	No	0	Yes	coyote
RT_023	09/01/2020	09/14/2020	No	0	Yes	bobcat; coyote; mountain bluebird; Wyoming ground squirrel
RT_024	09/01/2020	09/15/2020	No	0	Yes	cottontail sp.; pronghorn

[1] Camera knocked down by cattle.
[2] Camera malfunctioned.

Table 2. Swift Fox Detections for Rail Tie Wind Project

Detection #	Camera Station #	Date	Time of Detection	Photo
1	RT_001	09/01/2020	22:42:11 - 22:42:13	
2	RT_001	09/01/2020	22:50:36 - 22:50:51	
3	RT_003	09/01/2020	21:08:59 - 21:09:24	
4	RT_003	09/02/2020	21:01:35 - 21:02:01	
5	RT_005	09/02/2020	1:52:55 - 1:53:09	
6	RT_008	09/02/2020	0:49:46 - 0:50:26	
7	RT_008	09/02/2020	2:07:26 - 2:07:39	

Detection #	Camera Station #	Date	Time of Detection	Photo
8	RT_008	09/02/2020	2:44:09 - 2:44:37	
9	RT_008	09/02/2020	3:14:57 - 3:15:57	
10	RT_008	09/02/2020	3:40:55 - 3:41:25	
11	RT_010	09/06/2020	3:07:01 - 3:07:20	
12	RT_010	09/11/2020	0:10:13 - 0:10:13	
13	RT_010	09/11/2020	22:34:06 - 22:34:07	
14	RT_011	09/01/2020	22:40:43 - 22:41:14	

Detection #	Camera Station #	Date	Time of Detection	Photo
15	RT_011	09/01/2020	23:39:06 - 23:40:44	
16	RT_013	09/04/2020	2:05:31 - 2:06:12	

4 DISCUSSION

Swift fox were detected in suitable habitat within the Project Siting Corridor, primarily in the areas of large contiguous Wyoming Basins Dwarf Sagebrush Shrubland and Steppe habitat found within the western half of the Project west of Highway 287 and in the western portion of the eastern half of the Project east of Highway 287 (Figure 1). Swift fox prey base such as cottontails, thirteen-lined ground squirrels, Wyoming ground squirrels, and white-tailed jackrabbit were documented during the survey and one swift fox was photographed carrying the hindquarters of a white-tailed jackrabbit.

Although remote camera surveys are not designed to determine abundance or density of swift fox or the potential presence of den sites within an area, due to the number and spatial distribution of swift fox detections, the presence of large amounts of suitable habitat, the presence of suitable swift fox prey base, and the previous observation of a potential active swift fox den, the likelihood that swift fox occupy and breed within the Project Siting Corridor is high.

Remote camera surveys are the first step recommended by WGFD in determining the presence of swift fox within the Project Area. If presence is confirmed, WGFD recommends that spotlight surveys be conducted for the Project during the timeframe when swift foxes typically den and raise pups (i.e. May) in areas where cameras detected swift fox in order to determine the location of dens that should be protected during construction activities (WGFD 2007).

Due to the documented presence of swift fox within the Project Siting Corridor, Tetra Tech recommends further consultation with WGFD to discuss the additional spotlight survey recommendations above in order to determine the location of potential swift fox den sites prior to construction.

5 LITERATURE CITED

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WGFD. 2020. Letter from Amanda Withroder, Habitat Protection Supervisor, to Tetra Tech, Inc. RE: Proposed Rail Tie Wind Project. WER 14216.02. May 5, 2020.

WYNDD (Wyoming Natural Diversity Database). 2019. WYNDD species observation and overlay data for the Rail Tie Wind Project. Requested by Tetra Tech, Inc., received September 11, 2019. Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.

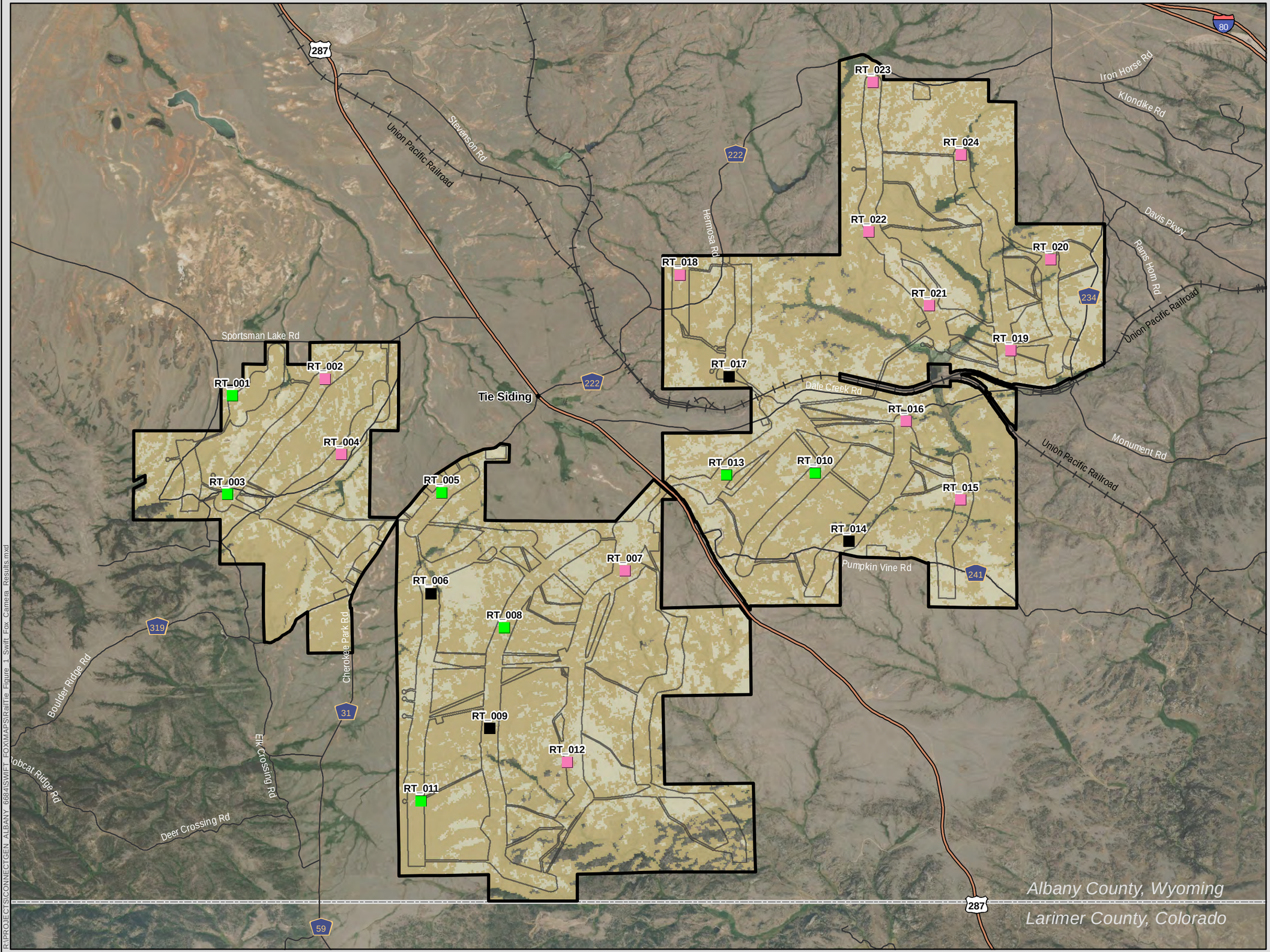
FIGURES

ConnectGEN

Rail Tie Wind Project

Figure 1
Swift Fox Presence/Absence
Remote Camera Trap
Survey Results

Albany County, WY



Camera Station #
- Swift Fox Present
- Swift Fox Absent
- No Data

Project Area

Siting Corridor

NLCD Suitable Habitat
- Shrub/Scrub
- Grassland/Herbaceous

State/County Boundary

Highways

County Roads

Railroads

N

0 0.5 1 2
Miles

NOT FOR CONSTRUCTION

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