APPENDIX M

The following documents are included in this Appendix:

M.1 Wetlands, Waterbodies, and TES Report

M.2 Colorado Parks and Wildlife Letter

M.3 Applicant Response Letter to CPW

M.4 USFWS IPaC list updated November 2020

APPENDIX M.1

Final

Front Range Midway Solar Project
Wetlands, Waterbodies, and
Threatened, Endangered, and Species of Special Concern Survey Report

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August 7, 2015

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INTRODUCTION

Western EcoSystems Technology Inc. (WEST) conducted a survey at Front Range Midway Solar, LLC's[1] proposed project site to document any wetlands or other waterbodies that would be protected by the Clean Water Act and any potential occurrences or habitat for threatened or endangered species protected under the Endangered Species Act (ESA) or Colorado State law. The project site is located in El Paso County, Colorado, just west of Interstate 25 (I-25) and about 20 miles south of downtown Colorado Springs (Figure 1). The site will accommodate up to 100 megawatts (MW) of photovoltaic solar generating capacity and encompass approximately 1,085 acres of land. This survey was conducted to provide supporting information for compliance project environmental review, as well as compliance with the Clean Water Act and Endangered Species Act.

PROJECT AREA DESCRIPTION

The project area is located on the west side of I-25; a landfill is located to the south, a housing development consisting of 2.5-acre lots to the northwest, rangeland to the north, and a gravel pit adjacent to the site on the east. Other facilities nearby the project area include Pikes Peak International Raceway about 1.5 miles to the north and Fort Carson Military Reservation about one mile to the west. An electrical substation and the natural gas-fired Southwest Generation Power Plant are located within the project area (but are not included as part of the project area) at the west-central part of the site and several transmission lines connect to these facilities. Two fenced telecommunications compounds are also located within the project area.

The site is within Land Resource Region G, Western Great Plains (NRCS 2006). The project area is flat to gently rolling, at elevations ranging from approximately 5,360 to 5,520 feet. Surface runoff is generally to the east and flows to Fountain Creek, which flows to the south along the east side of I-25 to Pueblo where it joins the Arkansas River. The National Hydrology Dataset (NHD) portrays the surface water drainage network on maps; these are the blue lines seen on U.S. Geological Survey (USGS) topographic maps. No "blue lines" occur in the project area. The nearest named creek on a USGS topographic map is Sand Creek, over one-half mile south of the project area. The National Wetland Inventory (NWI) maps wetlands and deep water habitats of the U.S. According to the NWI, no wetlands occur at the project site.

Four soil map units are found in the project area; none are hydric soils. Table 1 summaries soils found in the project area.

[1] The project proponent, Front Range Midway Solar, LLC, is a wholly owned subsidiary of Tradewind Energy, LLC.

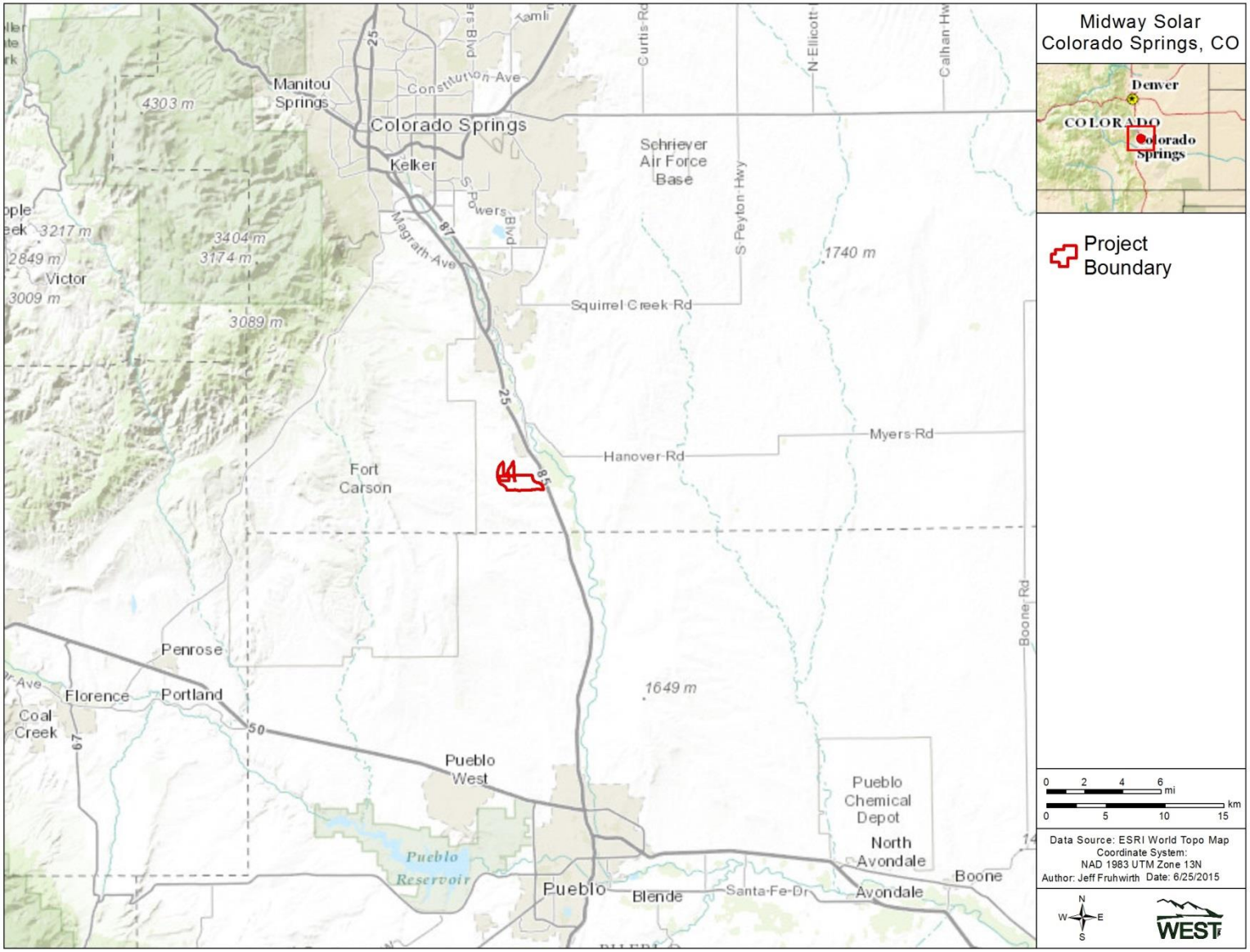

Figure 1. Vicinity Map

Table 1. Soils in the Project Area

Soil Map Unit	Soil Description
Kim loam, 1 to 8 percent slopes	Deep, well drained soils formed in calcareous loamy sediment on fans and uplands. Permeability is moderate.
Schamber-Razor complex, 8 to 50 percent slopes	Deep to moderately deep, well drained, gently rolling to steep soils on eroded breaks and remnants of granite outwash over shale. Permeability is slow to rapid.
Wilid silt loam, 0 to 3 percent slopes	Deep, well-drained soil formed in calcareous, silty eolian material. Permeability is moderate.
Fort loam, 1 to 5 percent slopes, cool	Deep, well drained soils formed from loamy eolian deposits on plains. Permeability is moderately high.

Source: Web Soil Survey, USDA Natural Resources Conservation Service

The natural vegetation of the project area is short-grass prairie. According to USGS National Land Cover Database, the primary cover type in the project area is grassland/herbaceous with a small area of scrub/shrub. The scrub/shrub classification includes areas dominated by shrubs less than five meters tall with a shrub canopy cover typically greater than 20 percent of total vegetation. This class includes true shrubs, young trees in an early successional stage, or trees stunted from environmental conditions. During a June 10, 2015 site visit, cane cholla (*Cylindropuntia imbricata*) was observed to be common throughout most of the grassland in the project area. Juniper (*Juniperus scopulorum*) trees were observed scattered in some of the drainage ways and at the northwest part of the project area.

METHODS

Wetlands and Waterbodies

Prior to conducting the field survey, a WEST biologist reviewed USGS topographic maps, Natural Resource Conservation Service (NRCS) web soil survey data, Google Earth aerial photography, and NWI data. Based on this review, all areas that could potentially be classified as a water of the U.S., including wetlands, were investigated in the field.

Two WEST biologists conducted the field survey on June 10, 2015. Wetland delineations followed the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2010). These manuals outline a three parameter approach for an area to be considered a wetland, in which all three parameters must be met. Hydrophytic vegetation must be the dominant vegetative cover, hydric soils must be present, and wetland hydrology must be present. The 2014 National Wetland Plant List (Lichvar et al. 2014) was used to determine the indicator status of plant species. Soil map units were determined from the NRCS Web Soil Survey website. The WEST biologists were to complete

wetland determination data forms for each sample point, and wetland boundaries were to be recorded on a Trimble 7X GPS unit with sub-foot accuracy.

Waterbodies were investigated in accordance with the Clean Water Rule. As such, the definition of "Waters of the United States" was taken from 40 CFR 230.3 (note: this is a prepublication version of the rule; the final rule was signed on 5/27/2015 and will become effective 60 days after publication in the Federal Register). Under this rule, tributaries must show physical features of flowing water (i.e., a bed, bank, and ordinary high water mark) to warrant protection under the Clean Water Act. All potential waterways were visited in the field to document the presence or absence of physical features of flowing water. The WEST biologists took photographs of to provide supporting documentation of the investigation.

Threatened, Endangered, and Species of Special Concern and Habitat

The project proponent previously completed an in-house Critical Issues Analysis, which included a list of federal and state threatened and endangered species in El Paso County (Table 2). The project proponent also sent letters to the U.S. Fish and Wildlife Service (Service) and Colorado Parks and Wildlife (CPW) requesting technical assistance review of the project. In their responses (Appendix A), the Service suggested an onsite habitat assessment for federally listed species and the CPW provided a list of state species of special concern in addition to threatened and endangered species. The species of special concern have been included in the evaluation (Table 2).

During the site visit on June 10, 2015, WEST biologists surveyed the project area to determine the habitat types present, and if any habitats might support listed threatened, endangered, and species of special concern. The survey was conducted by driving all roads in and around the project area and making observations. The substation properties in the middle of the project area were included in the visual evaluation. In addition, the Colorado Natural Heritage Program (CNHP) website was consulted to determine if any records of federal or state listed threatened or endangered species occur in the 7.5-minute quadrangle map (quad) in which the project is located (Buttes Quad).

Table 2. Federal and State Threatened, Endangered and Species of Special Concern – El Paso County, Colorado

Common Name	Scientific Name	State Status	Federal Status
Mexican Spotted Owl	*Strix occidentalis lucida*	Endangered	Threatened
Arkansas Darter	*Etheostoma cragini*	Threatened	Candidate Threatened
Greenback Cutthroat Trout	*Oncorhynchus clarki stomias*	Threatened	Threatened
Ute Ladies'-Tresses	*Spiranthes diluvialis*	None	Threatened
Pawnee Montane Skipper	*Hesperia leonardus montana*	None	Threatened
Black-Footed Ferret	*Mustela nigripes*	Endangered	EXP*

Common Name	Scientific Name	State Status	Federal Status
North American Wolverine	*Gulo gulo luscus*	Endangered	Proposed Threatened
Preble's Meadow Jumping Mouse	*Zapus hudsonius preblei*	Threatened	Threatened
Least Tern	*Sterna antillarum*	Endangered	Endangered
Piping Plover	*Charadrius melodus*	Threatened	Threatened
Whooping Crane	*Grus americana*	Endangered	Endangered
Pallid Sturgeon	*Scaphirhynchus albus*	None	Endangered
Plains Sharp-Tailed Grouse	*Tympanuchus phasianellus jamesii*	Endangered	None
Burrowing Owl	*Athene cunicularia*	Threatened	None
Lesser Prairie-Chicken	*Tympanuchus pallidicinctus*	Threatened	Proposed Threatened
River Otter	*Lontra canadensis*	Threatened	None
Prairie Dog	*Cynomys* spp.	Species of Special Concern	None (black-tailed prairie dog)
Swift Fox	*Vulpes velox*	Species of Special Concern	None
Mountain Plover	*Charadrius montanus*	Species of Special Concern	None
Townsend's Big-eared Bat	*Corynorhinus townsendii*	Species of Special Concern	None
Northern Leopard Frog	*Lithobates pipiens*	Species of Special Concern	None

Source: Critical Issues Analysis; Tradewind Energy,Inc., CPW letter to Tradewind Energy

RESULTS

Wetlands and Waterbodies

No wetlands occur in the project area. The WEST biologists investigated all areas that could potentially support wetlands and confirmed that no wetlands were found in the project area (Figure 2).

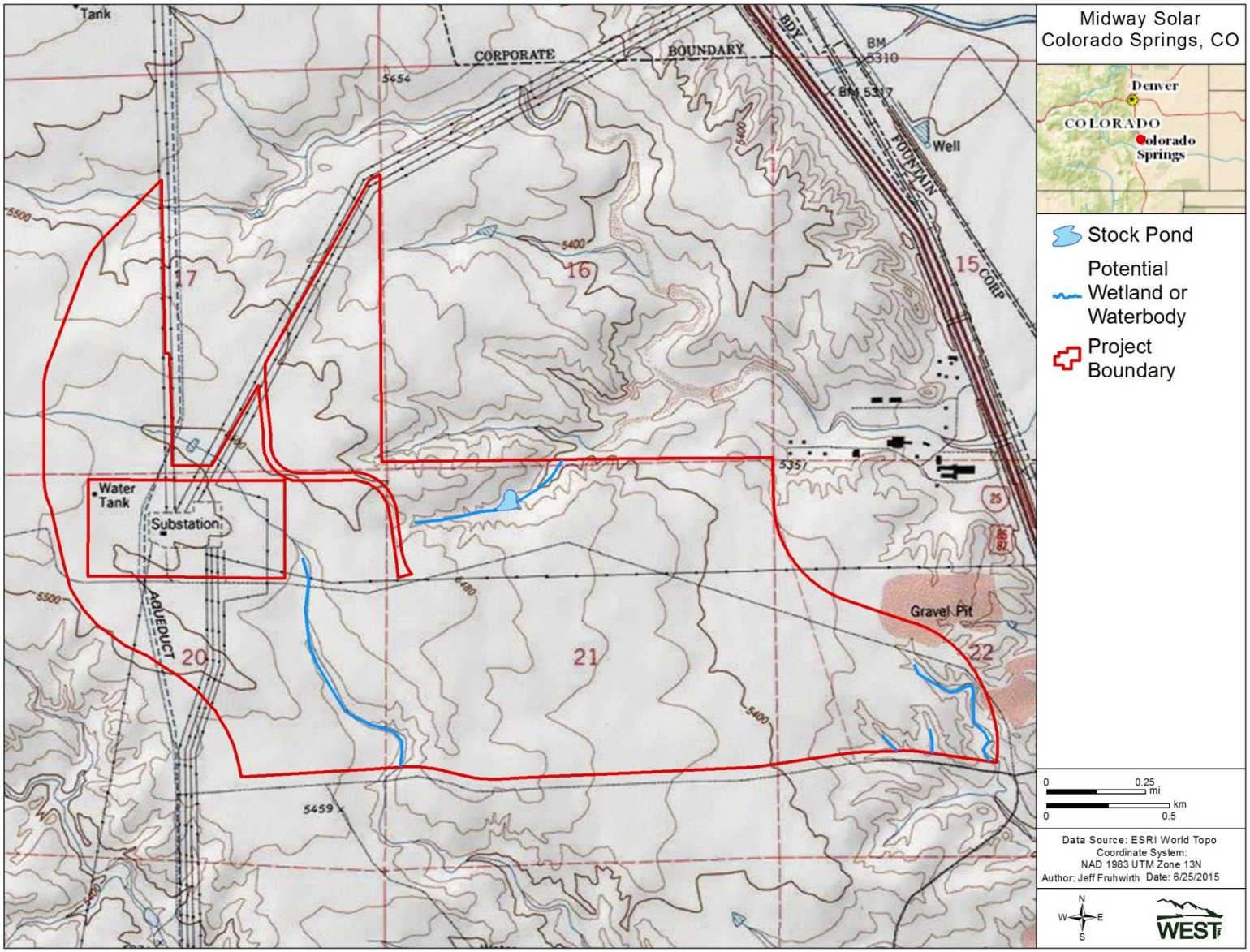

Figure 2. Potential Wetland and Waterbody Features Investigated in the Field

Other potential waterbodies that might be waters of the U.S. were also investigated in the field based on the pre-field data review. The investigation included areas that, topographically, could drain water (Figure 2). None of the drainage ways had physical features of flowing water, such as a bed, bank, or ordinary high water mark; therefore, they do not meet the definition of tributary and did not include characteristics of jurisdictional waters of the U.S. under the Clean Water Rule (see photographs, Appendix B). A dam occurs on one of the drainage ways, creating a stock pond (Photo 1, Appendix B). This stock pond had water at the time of the field investigation, probably due to timing of the survey in early June in a year with higher than average precipitation recorded for the month of May (NOAA 2015). The water appeared to be receding and likely dries up in late summer and in dry years in general. The banks were muddy and no hydrophytes were found along the bank, indicating water does not persist long enough or frequent enough to support hydrophytic vegetation. The stock pond did not include characteristics of a jurisdictional water of the U.S. (i.e., the Clean Water Rule specifically describes that artificial, constructed lakes and ponds constructed in dry land such as farm and stock watering ponds are not jurisdictional waters of the U.S.; Clean Water Rule Text § 230.3(s)(2)(iv)(B)).

Threatened, Endangered, and Species of Special Concern and Habitat

Threatened and Endangered Species

The list of federal and state threatened and endangered species in El Paso County prepared for a Critical Issues Analysis for the project included three fish (the state threatened Arkansas darter, the federal and state threatened greenback cutthroat trout, and the federal endangered pallid sturgeon). The field visit confirmed there are no waterbodies present at the project site that could support these fish species; therefore, these species could not occur there and the project would not affect these species. Similarly, no aquatic habitat is present at the project site for the state threatened river otter, so this species could not occur there and the project would not affect river otter.

Three other mammals were on the list of federal and state threatened and endangered species in El Paso County according to the Critical Issues Analysis prepared for the project: the federal and state endangered black-footed ferret, the state endangered North American wolverine, and the federal and state threatened Preble's meadow jumping mouse. The Service, in coordination with CPW (formerly the Colorado Division of Wildlife), has block-cleared all black-tailed prairie dog habitat in eastern Colorado, including El Paso County (USFWS 2009). This means the county has been determined to no longer contain any wild, free-ranging black-footed ferrets. Block clearance also means that the removal of black-tailed prairie dogs or their habitat (which provide habitat for black-footed ferrets) will no longer be required to meet the Service's survey guidelines for black-footed ferrets, or undergo consultation under Section 7 of the ESA (USFWS 2009). Based on the block clearance of El Paso County, the project would not affect the black-footed ferret. The North American wolverine occurs primarily in forested habitat and tundra. Because the project area does not contain habitat for this species, the project would not affect North American wolverine. The Preble's meadow jumping mouse inhabits well developed

riparian habitat with adjacent, relatively undisturbed grassland communities and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs, and shrubs. No riparian habitat occurs in the project area and the only water source on the site is a seasonal stock pond with no shrubs in the riparian zone. Because habitat is not present at the project site for Preble's meadow jumping mouse, the project would not affect this species.

The list of federal and state threatened and endangered species in El Paso County included one butterfly, the federal threatened Pawnee montane skipper. This species has restricted range in portions of neighboring and nearby counties including Jefferson, Douglas, Teller and Park counties. This butterfly only occurs along the South Platte Canyon River drainage system in Ponderosa pine woodlands on moderately steep, granitic slopes. Because habitat does not occur for the Pawnee montane skipper in the project area and the project would not affect its habitat in nearby counties, the project would have no effect on this species.

Seven birds were on the list of federal and state threatened and endangered species in El Paso County: the state endangered and federal threatened Mexican spotted owl, the federal and state endangered least tern, the federal and state threatened piping plover, the federal and state endangered whooping crane, the state endangered plains sharp-tailed grouse, the state threatened burrowing owl, and the state and federal threatened lesser prairie chicken. Of these, the Mexican spotted owl would not be affected by the project because its habitat (forested mountains and canyons) is not present in the project area and this species would not occur there. Nesting habitat is not present in the project area for the least tern, piping plover, or whooping crane; however, because these species are migratory it is possible individuals could fly over the project area during migration. Even if this were to occur, the project is unlikely to affect these species because there is little to attract a migrating bird to the site (e.g., water), nor would solar panels (up to 10 feet in height) present a substantial collision hazard to migrating birds. Both the plains sharp-tailed grouse and the lesser prairie chicken are known from eastern Colorado; the plains sharp-tailed grouse to the northeast of the project area and the lesser prairie chicken to the southeast. While both are grassland species, both species' preferred habitat typically includes more shrubs than occur in the project area such as scrub oak and sand sage. The project is unlikely to affect these species because preferred shrub species are not present.

Burrowing owl nesting habitat consists of open areas with mammal burrows, such as the black-tailed prairie dog burrows that occur at the project site. Black-tailed prairie dogs were observed during the site visit and are active. Burrowing owls could occur and nest at the project site and be affected by the project. The CPW (formerly Colorado Division of Wildlife) has recommended survey protocols and actions to protect nesting burrowing owls (Appendix C). The protocol advises surveys for any activities occurring between March 15th and October 31 (burrowing owls are migratory and not expected to be present from November 1st to March 14th). Surveys are conducted in early mornings and evenings when the birds are most active and are conducted from a point with an unobstructed view of the prairie dog town. Multiple visits should be conducted to maximize the likelihood of detecting owls, if present. If owls are detected, CDOW recommends waiting to initiate activities until after November 1st or until it can be confirmed that

owls have left the prairie dog town, or carefully monitor the owls, noting and marking which burrows they are using. When all active burrows have been located and marked, activity can proceed in areas greater than 150 feet from the burrows with little danger to owls.

The list of federal and state threatened and endangered species in El Paso County included one plant species, the Ute ladies'-tresses orchid (*Spiranthes diluvialis*). This species occurs in moist meadows with perennial stream terraces, floodplains, oxbows, seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, lakeshores, and human-modified wetlands. The on-site wetland and waterbody survey confirmed that habitat is not present in the project area for Ute ladies'-tresses orchid; therefore, the project would not affect this species.

State Species of Special Concern

The WEST biologists observed black-tailed prairie dogs in the north-central portion of the project area, east of the existing substation. Since prairie dogs are known to occur in the project area, the project will affect this species. The CPW recommends that prairie dogs be either moved alive to another location or humanely killed before any earth-moving occurs (Appendix A). CPW also recommends that since burrowing owls use prairie dog holes, the following should be observed:

- If construction is to occur between March 1 and October 31, the area should be surveyed for the presence of burrowing owls prior to any earth-moving taking place. The owls are susceptible to being buried and killed in their holes by construction activity. They are protected by law and killing one is illegal.
- If construction is to occur between November 1 and February 28, it is very unlikely that burrowing owls would be present since they migrate out of the state during winter (Appendix A).

Swift fox occurs on the shortgrass prairies of eastern Colorado and other central plains states (NatureServe 2015). Home range size ranges from a few hundred to a few thousand hectares (NatureServe 2015). They den in burrows, including prairie dog burrows. Most litters are born in March or early April and pups usually emerge by June 1 (NatureServe 2015). Because the project area includes habitat suitable for swift fox, including potential denning habitat, the project has potential to affect swift fox if they occur in the project area at the time of construction. If prairie dogs are removed prior to project-related earth-moving and outside of burrowing owl nesting season (March 1 through October 31), denning habitat for swift fox would also be eliminated outside of denning season when pups would be present, minimizing impacts to swift fox pups. The project would eliminate up to 1,085 acres of swift fox general habitat if the entire site is developed.

Mountain plover nest on high plains/shortgrass prairie habitat, including prairie dog towns in some areas (NatureServe 2015). In Colorado, nesting often occurs in shortgrass prairie with a history of heavy grazing or in low shrub semideserts. Nesting areas are characterized by very short vegetation, significant areas of bare ground (generally at least 30 percent bare ground),

and flat or gentle slopes (NatureServe 2015). Nesting begins in late April, incubation lasts for 29 days, and nestlings fledge in about 33 to 34 days. The project area includes some potential habitat suitable for mountain plover, including nesting habitat, particularly around the prairie dog burrows; however, vegetative cover appeared to be greater than 70 percent over most of the site based on observations during the site visit and vegetative appeared relatively tall for shortgrass prairie due to presence of cane cholla (up to several feet in height), which is common throughout the project site, as well as scattered trees in parts of the project area. The project would eliminate up to 1,085 acres of potential mountain plover habitat if the entire site is developed; however, most of the project area is not high quality habitat due to vegetative cover and structure.

Roosting habitat for Townsend's big-eared bat consists of spacious cavern-like structures such as caves and mines (Gruver and Keinath 2003). They forage along edge habitats (e.g., forested edges and intermittent streams), in forested habitat and along heavily vegetated stream corridors, and in open areas near wooded habitat though they appear to avoid open, grazed pasture land (Pierson et al. 1999). Water sources for drinking are open and accessible. Although roosting habitat is not present for Townsend's big-eared bat in the project area, the CPW report that a colony of Townsend's big-eared bat is located within a five-mile radius of the project area and bats might use the stock pond in the project area to drink and hunt insects (Appendix A). The stock pond would remain with development of the project and Townsend's big-eared bat could use it for foraging and water. The project would have little impact on the colony of Townsend's big-eared bat located within a five-mile radius because roosting habitat is not present in the project area and would not be affected, and the stock pond would continue to provide potential foraging opportunities and a water source for drinking.

Northern leopard frog live in the vicinity of springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes (NatureServe 2015). They are usually in or near permanent water with rooted aquatic vegetation. In summer, they commonly inhabit wet meadows and fields, wintering sites are usually underwater (NatureServe 2015). Potential northern leopard frog habitat in the project area is limited to the stock pond. The WEST biologists observed water in the stock pond at the time of the field visit, probably due to timing in early June in a year with higher than average precipitation recorded for the month of May (NOAA 2015). The water appeared to be receding and likely dries up in late summer and in dry years in general. The banks were muddy and no hydrophytes were found along the bank, indicating water does not persist long enough or frequent enough to support hydrophytic or aquatic vegetation. No wet meadows or fields occur near the stock pond. The project area stock pond does not have preferred habitat features for the northern leopard frog, such as permanent water and rooted aquatic vegetation; the northern leopard frog is unlikely to occur there and project is unlikely to affect this species.

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APPENDIX A
Agency Letters
U.S. Fish and Wildlife Service
Colorado Parks and Wildlife

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Colorado Field Office
P.O. Box 25486, DFC (65412)
Denver, Colorado 80225-0486

IN REPLY REFER TO:
ES/CO: Solar Energy / El Paso County / Front Range-Midway Solar Project
TAILS: 06E24000-2014-TA-0805

JUL 2 9 2014

Ida Kitchen-Greenwell
Trade Wind Energy Inc.
16150 West 113th Street suite 105
Lenexa, KS 66219

Dear Ms. Kitchen-Greenwell:

Thank you for your email and letter to the U.S. Fish and Wildlife Service (Service) received July 16, 2014, regarding Trade Wind Energy's proposed Front Range-Midway solar photovoltaic (PV) project (project) located west of I-25 about 20 miles south of downtown Colorado Springs in El Paso County, Colorado.

Trade Wind Energy proposes to install and operate a solar array with capable of generating up to 100 MW of solar capacity on approximately 800 acres of vacant land, which is currently surrounded by infrastructure, including a regional landfill and a large electrical substation near the town of Fountain.

The PV panels will be affixed to a ground-mounted racking system supported by steel pylons driven into the ground. Light duty gravel service roads will be constructed within the solar array to provide access for ongoing maintenance. The solar array will be approximately 3 feet off ground surface and 1- feet in height, and will cover approximately 80% of the project area.

In preparation for a NEPA process and development of an Environmental Assessment you evaluated potential for threatened and endangered species to occur within the project area. Your report recommends that a habitat assessment be conducted to determine with greater certainty whether any T or E species habitats may be present in the area.

In response to your letter, we provide the following comments regarding:

1. Federally listed species;
2. Migratory birds;
3. Electrical transmission and distribution lines; and
4. State species of special concern, specifically the Gunnison's prairie dog.

The Service provides recommendations for threatened and endangered species under the authority of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

Protective measures for migratory birds are provided under the authority of the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*), and the Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended (16 U.S.C. 668 *et seq.*). We consider other fish and wildlife resources under the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*) and the Fish and Wildlife Act (16 U.S.C. 742 *et seq.*).

1. Federally Listed Species

The proposed project is located within a developed area near the town of Fountain, Colorado. The primary vegetation type is grassland/herbaceous, which correlates to short-grass prairie with some scrub/shrub land cover. Given the land cover types, we would agree that an on-site habitat assessment should be conducted.

2. Migratory Birds and Bald and Golden Eagles

Activities associated with solar energy projects often include the removal of vegetation, underground burrows, or other structures used by migratory birds and eagles for nesting, roosting, perching, or foraging. During operation, solar energy facilities and their transmission lines may impact migratory birds by interrupting movements or by killing birds during collisions. Disturbed agricultural areas often provide foraging or ground nesting habitats for several migratory birds, such as the mountain plover (*Charadrius montanus*), and their conversion to solar farms may reduce or fragment available habitats. Therefore, we highlight the relevance of the MBTA and BGEPA to your project and provide recommendations intended to limit your project's impacts on migratory birds and eagles.

The Migratory Bird Treaty Act (MBTA):

The MBTA protects migratory birds, nests, and eggs from possession, sale, purchase, barter, transport, import, export, and take. Under the MBTA, it is unlawful unless permitted by regulations to pursue, hunt, take, capture, kill, or attempt to pursue, hunt, take, capture, or kill any migratory birds by any means or in any manner. The MBTA applies to 1,007 species of migratory birds identified in 50 CFR. § 10.13 and "take" is defined in 50 CFR § 10.12. The MBTA does not require intent to be proven, there is no incidental take statement, and the ESA does not absolve individuals or companies from liability under the MBTA. Unless permitted by the Service, the MBTA prohibits any intentional or unintentional activity that results in the take of migratory birds. Although the MBTA does not protect the habitats of migratory birds, activities that affect habitats and result in take of migratory birds do violate the MBTA.

The Bald and Golden Eagle Protection Act (BGEPA):

The BGEPA prohibits individuals and companies from knowingly, or with wanton disregard for the consequences of the Act, taking any bald or golden eagles or their body parts, nests, chicks, or eggs, which includes collection, molestation, disturbance, or killing. The BGEPA affords eagles additional protections beyond those provided by the MBTA by making it unlawful to "disturb" eagles. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, injury to an eagle or decreases its productivity or results in nest abandonment due to interference with breeding, feeding, or sheltering behaviors. A permitting

process provides limited exceptions to the BGEPA's prohibitions and the Service has issued regulations concerning the permit procedures in 50 CFR Part 22.

Removing nests, destroying nests, or causing nest abandonment may constitute a violation of the MBTA and BGEPA. Removal of any active migratory bird nest or nest tree is prohibited. For golden eagles, permits for inactive nests are restricted to activities involving resource extraction for human health and safety. No permits will be issued for any active nest of any migratory bird species, unless removal of the active nest is necessary for reasons of human health and safety. Therefore, if nesting migratory birds are present within or near the project area, timing of activities is a significant consideration and should be addressed in the early phases of project planning. Nest manipulation is not allowed without a permit. If a permit cannot be issued, your project may need to be modified to ensure that take of any migratory bird, eagle, young, eggs, or nests will not occur.

Recommendations for migratory birds and eagles:

To minimize impacts to migratory birds, the Service recommends that construction occur outside the typical breeding season for migratory birds. Although the provisions of the MBTA apply year-round, most nesting activity occurs between April 1 and July 15. However, some migratory birds nest outside of this loosely defined period. If proposed activities must occur during the nesting season, or at any other time that may result in the take of migratory birds or eagles, the Service recommends that qualified biologists conduct pre-work field surveys of the affected habitats or structures, during the nesting season, to verify the presence or absence of migratory birds and eagles. Contact the Service's Colorado Field Office for guidance if surveys identify birds or nests that may be affected by project activities.

Enclosed, please find a copy of Colorado Parks and Wildlife's "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors" (2008). We recommend reviewing these guidelines and incorporating the seasonal and buffer restrictions into your project design to avoid and minimize impacts to raptors and other migratory birds protected by the MBTA.

While adoption of these recommendations is voluntary, we remind Trade Wind Energy that the MBTA and BGEPA prohibit the take of migratory birds and eagles unless permitted by regulations. As mandated by our trust responsibilities, we immediately notify the Service's Office of Law Enforcement of any incidents of take at energy facilities.

It is not possible to absolve individuals, companies, or agencies from liability under the MBTA or BGEPA, even if they implement the guidelines or similar protective measures at their facilities. However, the Service's Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable prudent and effective measures to avoid that take. It remains the applicant's responsibility to minimize the effects of their projects on migratory birds and other resources. For more information on MBTA and BGEPA regulations and their relevance to your project, please contact Craig Hansen of the Colorado Field Office at (303) 236–4749.

3. Electrical Transmission and Distribution Lines:

Solar energy facilities often require the development of new transmission and distribution lines. Overhead electrical lines concern the Service because published studies indicate that power lines can negatively affect wildlife. Collisions with power lines, power poles, and associated infrastructure often electrocute and kill birds, bats, and other wildlife. Projects may also permanently displace wildlife when activities alter or remove key components of important habitats. Early planning, coordination, and the strategic placement of power lines and associated facilities can avoid or reduce these impacts.

The Avian Power Line Interaction Committee (APLIC) developed guidelines and resources intended to address and mitigate electrocutions and collisions between wildlife and power lines. We recommend that you review and consider implementing these guidelines during the construction and operation of your electrical facilities. APLIC resources are available online at the following address:

http://www.aplic.org/mission

In Colorado, electrocutions at power lines are a serious threat to the ferruginous hawk (*Buteo regalis*), the golden eagle (*Aquila chrysaetos*), and other large raptors. In open prairies or agricultural fields, electrical poles often provide suitable perches or nest sites for birds of prey. As birds perch or build nests on power poles, their long wingspans easily touch electrical lines and complete circuits, effectively disrupting electrical service and often fatally electrocuting the bird. Undergrounding electrical lines eliminates the threat of electrocution and avian-caused power outages. Therefore, the Service recommends undergrounding electrical facilities whenever possible.

However, if undergrounding any overhead electrical line is not possible, we recommend that the proponents build overhead electrical lines with at least 10-foot cross arms on 3 phase lines, or at least 5 feet of spacing between electrical phases. Larger distances better accommodate long wingspans and may reduce electrocutions and power outages caused by birds at your power lines. APLIC provides additional recommendations to prevent electrocutions and power outages by discouraging perching and nesting.

4. State Species of Concern:

Our comments address federally listed species, federally designated critical habitats, and migratory birds. Please contact Colorado Parks and Wildlife (CPW) at (303) 297–1192 regarding any State species of special designation in Colorado that are not federally listed and that may occur within your project area. For example, the open areas within your project area may support colonies of the black-tailed prairie dog (*Cynomys ludovicianus*), a State species of special concern in Colorado.

The black-tailed prairie dog is a ground dwelling squirrel that lives in grasslands, including those in urban areas, disturbed right-of-ways, agricultural fields, and road or utility easements. Many grassland species, such as the burrowing owl (*Athene cunicularia*) depend on the underground burrows and colonies built by black-tailed prairie dogs. Due to their important value to the

prairie ecosystem and the many species that rely on them, we strongly encourage the conservation of prairie dogs.

To avoid and minimize impacts to prairie dogs or their dependent species, we recommend conducting preconstruction surveys for prairie dogs and their associated species. Design the project to avoid disturbing active colonies. If the project cannot avoid active colonies, relocate prairie dogs or consider donating them to a black-footed ferret or raptor recovery program. Contact CPW for more information on the regulations and guidelines that address the capture, transportation, and relocation of prairie dogs in Colorado.

The Service appreciates the opportunity to work with Trade Wind Energy on the proposed solar PV project. If we can be of any additional assistance, please contact the Colorado Field Office at 303-236-4773. Thank you for your concern endangered species and other natural resources.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

Enclosure: CPW's recommended buffer zones and guidelines for raptors (2008)
Available online: http://bit.ly/WXJYEh

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, Ferruginous Hawks and Golden Eagles respond to human activities at greater distances than do Ospreys and America Kestrels. Some individuals within a species also habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. The tolerance of a particular pair may change when a mate is replaced with a less tolerant individual and this may cause the pair to react to activities that were previously ignored. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch.

The term "disturbance" is ambiguous and experts disagree on what actually constitutes a disturbance Reactions may be as subtle as elevated pulse rate or as obvious as vigorous defense or abandonment. Impacts of disturbance may not be immediately evident. A pair of raptors may respond to human intrusion by defending the nest, but well after the disturbance has passed, the male may remain in the vicinity for protection rather than forage to feed the nestlings. Golden eagles rarely defend their nests, but merely fly a half mile or more away and perch and watch. Chilling and over heating of eggs or chicks and starvation of nestlings can result from human activities that appeared not to have caused an immediate response.

A 'holistic' approach is recommended when protecting raptor habitats. While it is important for land managers to focus on protecting nest sites, equal attention should focus on defining important foraging areas that support the pair's nesting effort. Hunting habitats of many raptor species are extensive and may necessitate interagency cooperation to assure the continued nest occupancy. Unfortunately, basic knowledge of habitat use is lacking and may require documentation through telemetry investigations or intensive observation. Telemetry is expensive and may be disruptive so a more practical approach is to assume that current open space is important and should be protected.

Although there are exceptions, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. Additional factors, such as intervening terrain, vegetation screens, and the cumulative impacts of activities should be considered.

These guidelines were originally developed by CDOW raptor biologist Gerald R. Craig (retired) in December 2002. To provide additional clarity in guidance, incorporate new information, and update the conservation status of some species, the guidelines were revised in January 2008. Further revisions of this document may become necessary as additional information becomes available.

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS

BALD EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area; see 'Definitions' below) within ¼ mile radius of active nests (see 'Definitions' below). Seasonal restriction to human encroachment (see 'Definitions' below) within ½ mile radius of active nests from October 15 through July 31. This closure is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

Winter Night Roost:

No human encroachment from November 15 through March 15 within ¼ mile radius of an active winter night roost (see 'Definitions' below) if there is no direct line of sight between the roost and the encroachment activities. No human encroachment from November 15 through March 15 within ½ mile radius of an active winter night roost if there is a direct line of sight between the roost and the encroachment activities. If periodic visits (such as oil well maintenance work) are required within the buffer zone after development, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

Hunting Perch:

Diurnal hunting perches (see 'Definitions' below) associated with important foraging areas should also be protected from human encroachment. Preferred perches may be at varying distances from human encroachment and buffer areas will vary. Consult the Colorado Division of Wildlife for recommendations for specific hunting perches.

GOLDEN EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from December 15 through July 15.

OSPREY

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through August 31. Some osprey populations have habituated and are tolerant to human activity in the immediate vicinity of their nests.

FERRUGINOUS HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from February 1 through July 15. This species is especially prone to nest abandonment during incubation if disturbed.

RED-TAILED HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/3 mile radius of active nests. Seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 through July 15. Some members of this species have adapted to urbanization and may

tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

SWAINSON'S HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through July 15. Some members of this species have adapted to urbanization and may tolerate human habitation to within 100 yards of their nest.

PEREGRINE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile of the nest cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to ½ mile along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a ½ mile buffer around the cliff complex.

PRAIRIE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 15 through July 15.

NORTHERN GOSHAWK

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 1 through September 15.

BURROWING OWL

Nest Site:

No human encroachment within 150 feet of the nest site from March 15 through October 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied. More detailed recommendations are available in a document entitled "Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls" which is available from the Colorado Division of Wildlife

Recommended Buffer Zones and Seasonal Restrictions Around Raptor Use Sites

Species and Use	Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bald Eagle													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■			■	■	■
ACTIVE WINTER NIGHT ROOST without a direct line of sight- No Human Encroachment	¼ Mile	■	■	■								■	■
ACTIVE WINTER NIGHT ROOST with a direct line of sight - No Human Encroachment	½ Mile	■	■	■								■	■
HUNTING PERCH - No Human Encroachment	Contact CDOW												
Golden Eagle													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■					■
Osprey													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile				■	■	■	■	■				
Ferruginous Hawk													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile		■	■	■	■	■	■					
Red-tailed Hawk													
ACTIVE NEST - No Surface Occupancy	1/3 Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	1/3 Mile		■	■	■	■	■	■					
Swainson's Hawk													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile				■	■	■	■					
Peregrine Falcon													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile		■	■	■	■	■	■	■				
Prairie Falcon													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile			■	■	■	■	■					
Northern Goshawk													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile			■	■	■	■	■	■				
Burrowing Owl													
ACTIVE NEST - No Human Encroachment	150 feet			■	■	■	■	■	■	■	■		
	■	= time period for which seasonal restrictions are in place.											

DEFINITIONS

Active nest – Any nest that is frequented or occupied by a raptor during the breeding season, or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest may be active even if it is not occupied in a given year.

Active winter night roost – Areas where Bald Eagles gather and perch overnight, and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Human encroachment – Any activity that brings humans in the area. Examples include driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Hunting perch – Any structure on which a raptor perches for the purpose of hunting for prey. Hunting perches provide a view of suitable foraging habitat. Trees are often used as hunting perches, but other structures may also be used (utility poles, buildings, etc.).

Surface occupancy – Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, roads, tracks, etc.

CONTACT

For further information contact:

David Klute
Bird Conservation Coordinator
Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216
Phone: 303-291-7320
Email: david.klute@state.co.us

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COLORADO
Parks and Wildlife
Department of Natural Resources

Southeast Region
4255 Sinton Road
Colorado Springs, CO 80907
P 719.227.5200 | F 719.227.5223

August 25, 2014

TradeWind Energy, Inc.
Jennifer A Dean
16150 West 113th Street Suite 105
Lenexa, KS 66219
jdean@tradewindenergy.com

Re: The Front Range-Midway Solar Project

Dear Ms. Dean,

Thank you for the opportunity to assist in the review of the desktop analysis which was done for The Front Range-Midway Solar Project (Project). The Project is expected to encompass approximately 800 acres in El Paso County, which will accommodate up to 100 MW of solar capacity.

The mission of Colorado Parks and Wildlife (CPW) is to perpetuate the wildlife resources of the state, to provide a quality state parks system, and to provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado's natural resources. One of the ways we achieve our mission is to comment on land use proposals such as the request we received from you. Our goal is to provide complete, consistent and timely information to all entities who request comment on matters within out statutory authority and our mission.

CPW is generally very supportive of renewable energy products, provided that impacts to wildlife resources are considered and mitigated to the extent possible during the design, construction, and operation of the renewable energy facilities. District Wildlife Manager Cody Wigner has recently reviewed the documents associated with the Project and has visited the Project site. CPW believes the following species could be present on the Project site and has the following comments:

Threatened and Endangered Species:

Burrowing Owl - (State Threatened) Burrowing Owls may be present on the Project Site. Burrowing owls live and nest in prairie dog holes. Since prairie dogs were seen on the property, burrowing owls might use it during the summer.

Prairie Dogs - (Species of special concern) Are a high interest species, serve important ecological functions, and have been drastically reduced in numbers.

- CPW recommends that prairie dogs be either moved alive to another location or humanely killed before any earth-moving occurs; If killed, a properly licensed commercial applicator must be used and if relocated, a permit through the Division of Wildlife must be obtained; and

-Since burrowing owls use prairie dogs holes, the following should be observed:

- If construction is to occur between March 1 and October 31, the area should be surveyed for the presence of burrowing owls prior to any earth-moving taking place. The owls are susceptible to being buried and killed in their holes by construction activity. They are protected by law and killing one is illegal.

- If construction is to occur between November 1 and February 28, it is very unlikely that burrowing owls would be present since they migrate out of the state during the winter.

Swift Fox -(Species of special concern) The proposed development site is in the range of the Swift fox. It is a special concern species, because it was warranted as a federally threatened species, but precluded by other higher priority species, thus placing the species on the candidate list.

Mountain Plover- (Species of special concern) A grassland bird, are likely to be nesting in the Project area.

Townsend's Big Eared Bat - (Species of special concern) A colony of is located within a 5 mile radius of the Project area. The bats may frequent the small water hole in the Project area to drink and hunt insects.

Northern Leopard Frog - (Species of special concern) Possible habitat is located in the small wetland in the Project area.

For information on surveying for burrowing owls, please contact District Wildlife Manager Cody Wigner.

Habitat Loss:

CPW would also like TradeWind Energy to be conscious that long term habitat loss on the Project area will be a main impact on wildlife. Other wildlife species that can potentially be found on the Project site are: black tailed prairie dog, bobcat, cottontail rabbit, coyote, mule deer, white-tailed deer, elk, pronghorn, red fox, jack rabbit, mountain lion, skunks, variety of small burrowing rodents, a variety of reptiles which include snakes and lizards, and a variety of grassland birds, Golden eagle, Ferruginous hawk, Red-tailed hawk, Prairie falcon, and Swainson's hawk likely hunt nearby and within the prairie dog colony. These raptors may nest in the area. An annually active known Golden eagle nest is located within a 5-mile

radius of the project. CPW recommends that the wetland in the Project area remains undisturbed and contiguous with undeveloped land around it. The wetland provides possible habitat for the northern leopard frog, as well as a water source for all wildlife and possibly used by Townsend's big eared bats as hunting grounds.

For protected migratory bird species, CPW recommends maintaining buffer zones and seasonal restrictions (see attachment: Raptor Buffer Guidelines 2008).

CPW would also like to make sure TradeWind Energy is aware of the Colorado PUC Environmental Renewable Energy Standards for Electric Utilities. For a copy of these regulations, please contact District Wildlife Manager Cody Wigner.

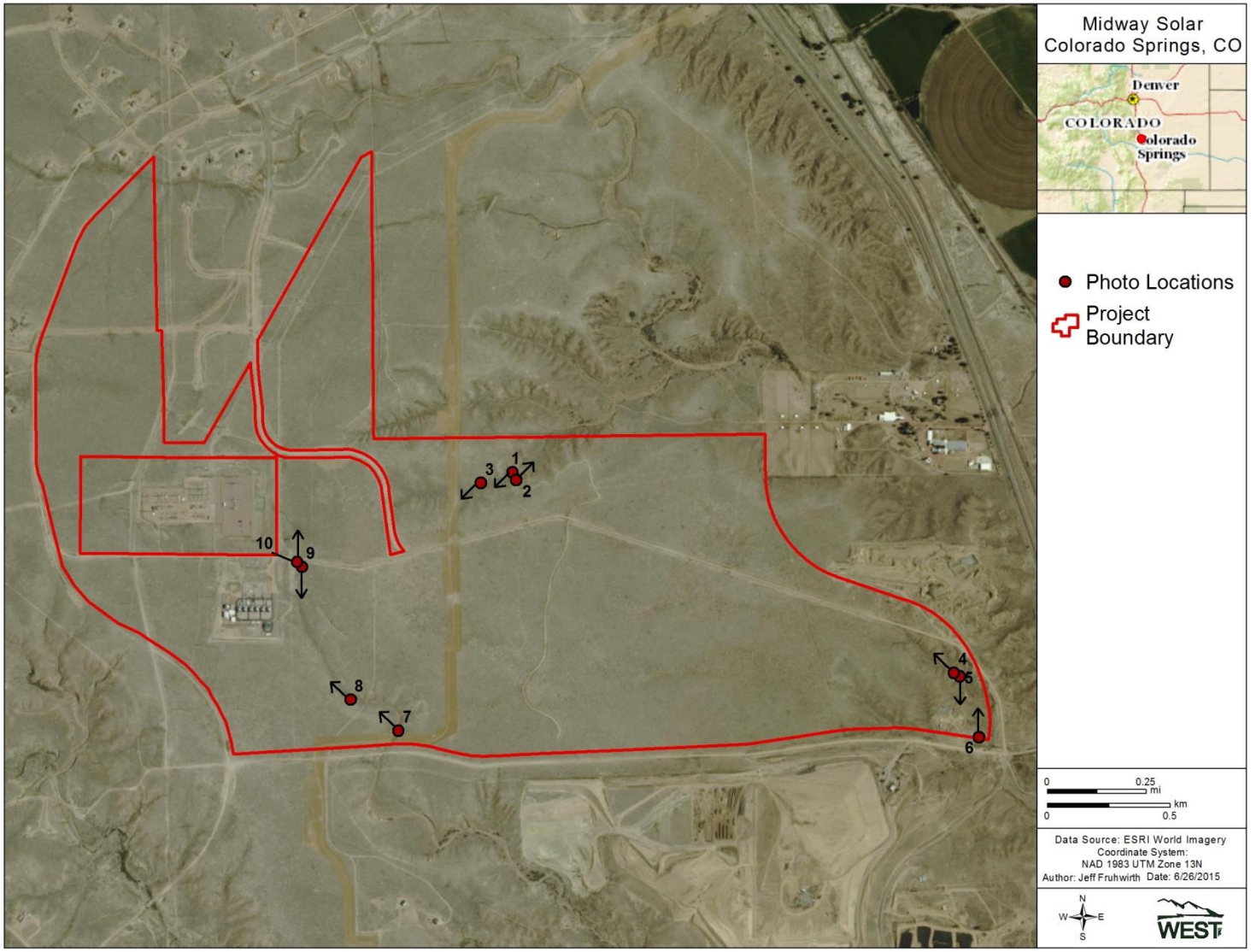
Thank you again for the opportunity to assist in the review of the desktop analysis which was done for The Front Range-Midway Solar Project. Please do not hesitate to contact CPW about ways to continue to maximize wildlife value while minimizing potential conflicts on the Project. CPW appreciates having the opportunity to get involved early in the process of the Project. If you have further questions please contact District Wildlife Manager Cody Wigner at (719) 227-5287 or via email at cody.wigner@state.co.us.

Sincerely,

Frank McGee
Area Wildlife Manager

Cc: SE Region Files
Area 14 Files
C. Wigner, DWM

APPENDIX B
Photo Documentation of Potential Wetland and Waterbody Features Investigated at the Front Range Midway Solar Project Site



Location and Direction of Photographs taken in Project Area

Photo 1. Stock pond (view from dam looking southwest)

Photo 2.
Drainage way at northcentral part of the project area, looking northeast from dam

Photo 3.
Drainage way at northcentral part of the project area, looking southwest (view from upper end of stock pond)

Photo 4.
Drainage way at southeast part of the project area, looking northwest

Photo 5.
Drainage way at southeast part of the project area, looking south

Photo 6.
Drainage way at southeast part of the project area, looking north from road along southern border of project area

Photo 7.
Drainage way at southwest part of the project area, looking northwest from road along southern border of project area

Photo 8.
Drainage way at southwest part of the project area, looking northwest (upstream from Photo 7 location)

Photo 9.
Drainage way at southwest part of the project area, looking south from road through center of project area

Photo 10.
Drainage way at southwest part of the project area, looking north from road through center of project area (no discernable drainage pattern on landscape)

APPENDIX C
CDOW Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls

RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

Western Burrowing Owls (*Athene cunicularia hypugaea*) are commonly found in prairie dog towns throughout Colorado. Burrowing owls require prairie dog or other suitable burrows (e.g. badger) for nesting and roosting. Burrowing owls are migratory, breeding throughout the western United States, southern Canada, and northern Mexico and wintering in the southern United States and throughout Mexico.

Federal and state laws prohibit the harming or killing of burrowing owls and the destruction of active nests. It is quite possible to inadvertently kill burrowing owls during prairie dog poisoning projects, removal of prairie dogs, destruction of burrows and prairie dogs using a concussive device, or during earth moving for construction. Because burrowing owls often hide in burrows when alarmed, it is not practical to haze the birds away from prairie dog towns prior to prairie dog poisoning/removal, burrow destruction, or construction activity. Because of this, the Colorado Division of Wildlife recommends surveying prairie dog towns for burrowing owl presence before potentially harmful activities are initiated.

The following guidelines are intended as advice on how to determine if burrowing owls are present in a prairie dog town, and what to do if burrowing owls are detected. These guidelines do not guarantee that burrowing owls will be detected if they are present. However, adherence to these guidelines will greatly increase the likelihood of detection.

Seasonal Timing

Burrowing owls typically arrive on breeding grounds in Colorado in late March or early April, with nesting beginning a few weeks later. Active nesting and fledging has been recorded and may be expected from late March through early August. Adults and young may remain at prairie dog towns until migrating to wintering grounds in late summer or early autumn.

Surveys should be conducted during times when burrowing owls may be present on prairie dog towns. Surveys should be conducted for any activities occurring between March 15th and October 31st. No burrowing owls are expected to be present between November 1st and March 14th.

Daily Timing

Burrowing owls are active throughout the day; however, peaks in activity in the morning and evening make these the best times for conducting surveys (Conway and Simon 2003). Surveys should be conducted in the early morning (1/2 hour before sunrise until 2 hours after sunrise) and early evening (2 hours before sunset until 1/2 hour after sunset).

Number and locations of survey points

Burrowing owls are most frequently located visually, thus, obtaining a clear view of the entire prairie dog town is necessary. For small prairie dog towns that can be adequately viewed in their entirety from a single location, only one survey point is necessary. The survey point should be selected to provide unobstructed views (with binoculars if necessary) of the entire prairie dog town

(burrow mounds and open areas between) and all nearby structures that may provide perches (e.g., fences, utility poles, etc.)

For prairie dog towns that can not be entirely viewed from a single location because of terrain or size, enough survey points should be established to provide unobstructed views of the entire prairie dog town and nearby structures that may provide perches. Survey locations should be separated by approximately 800 meters (1/2 mile), or as necessary to provide adequate visual coverage of the entire prairie dog town.

Number of surveys to conduct

Detection of burrowing owls can be highly variable and multiple visits to each site should be conducted to maximize the likelihood of detecting owls if they are present. At least three surveys should be conducted at each survey point. Surveys should be separated by approximately one week.

Conducting the survey

- Weather Considerations Because poor weather conditions may impact the ability to detect burrowing owls, surveys should only be conducted on days with little or no wind and no precipitation.

- Passive surveys Most burrowing owls are detected visually. At each survey location, the observer should *visually* scan the area to detect any owls that are present. Some burrowing owls may be detected by their call, so observers should also *listen* for burrowing owls while conducting the survey.

  Burrowing owls are frequently detected soon after initiating a survey (Conway and Simon 2003). However, some burrowing owls may not be detected immediately because they are inconspicuous, are inside of burrows, or are not present on the site when the survey is initiated. We recommend that surveys be conducted for 10 minutes at each survey location.

- Call-broadcast surveys To increase the likelihood of detecting burrowing owls, if present, we recommend incorporating call-broadcast methods into burrowing owl surveys. Conway and Simon (2003) detected 22% more burrowing owls at point-count locations by broadcasting the primary male (*coo-coo*) and alarm (*quick-quick-quick*) calls during surveys. Although call-broadcast may increase the probability of detecting burrowing owls, most owls will still be detected visually.
-

  We recommend the following 10-minute timeline for incorporating call-broadcast methods (Conway and Simon 2003, C. Conway pers. commun.). The observer should scan the area for burrowing owls during the entire survey period.

  - 3 minutes of silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of alarm call (*quick-quick-quick*)
  - 30 seconds silence
  - 4 minutes of silence

Calls can be broadcast from a "boom box", a portable CD or cassette player, or an mp3 player attached to amplified speakers. Calls should be broadcast loudly but without distortion.

Recordings of this survey sequence (compact disc or mp3 sent via email) are available free of charge by contacting:

David Klute
Bird Conservation Coordinator
Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216
Phone: 303-291-7320
Email: David.Klute@state.co.us

Identification

Adult burrowing owls are small, approximately 9-11 inches. They are brown with white spotting and white barring on the chest. They have long legs in comparison to other owls and are frequently seen perching on prairie dog mounds or other suitable perches (e.g., fence posts, utility poles) near prairie dog towns. Juvenile burrowing owls are similar to adults but smaller, with a white/buff colored chest that lacks barring.

General information about burrowing owls is available from the Colorado Division of Wildlife website:
http://wildlife.state.co.us/WildlifeSpecies/Profiles/Birds/BurrowingOwl.htm

Additional identification tips and information are available from the U.S. Geological Survey Patuxent Wildlife Research Center website:
http://www.mbr-pwrc.usgs.gov/id/framlst/i3780id.html

What To Do If Burrowing Owls Are Present

If burrowing owls are confirmed to be present in a prairie dog town, there are two options before proceeding with planned activities:

1. Wait to initiate activities until after November 1st or until it can be confirmed that the owls have left the prairie dog town.
2. Carefully monitor the activities of the owls, noting and marking which burrows they are using. This is not easy to accomplish and will require considerable time, as the owls may use several burrows in a prairie dog town. When all active burrowing owl burrows have been located and marked, activity can proceed in areas greater than 150 feet from the burrows with little danger to the owls. Activity closer than 150 feet may endanger the owls.

Reference

Conway, C. J. and J. C. Simon. 2003. Comparison of detection probability associated with Burrowing Owl survey methods. Journal of Wildlife Management 67:501-511.

revised 02/2008
See also:" Controlling Prairie Dogs: Suggestions For Minimizing Risk To Non-Target Wildlife Species" Colorado Division of Wildlife 03/2007

APPENDIX M.2

COLORADO
Parks and Wildlife
Department of Natural Resources

Southeast Region, Area 14
4255 Sinton Road
Colorado Springs, CO 80907 P
719.227.5200 | F 719.227.5223

November 15, 2017

El Paso County Planning and Community Development Department
ATTN: Kari Parsons, Project Manager
2880 International Circle,
Colorado Springs, CO 80132

Re: Environmental Review for Proposed Front Range-Midway Solar Project for El Paso County, CO, File WSEO-17-001

To: Kari Parsons

Colorado Parks and Wildlife (CPW) has received and appreciates the request for comments on the proposed WSEO - Wind and/or Solar Energy Generation Plan Overlay for the Front Range-Midway Solar Project in El Paso County, Colorado. CPW has a statutory responsibility to manage all wildlife species in Colorado; as such we encourage protection for Colorado's wildlife species and habitats through responsible energy development and land use planning. Protection of core wildlife areas, quality fisheries and habitat, big game winter range and seasonal migration corridors, and raptor nesting locations are of extreme importance. CPW recommends that all proposed projects be assessed to avoid, minimize, or mitigate impacts to sensitive wildlife habitats and species. That includes species of concern as well as Federal and/or State listed species, big game wildlife (migration corridors, winter range, parturition areas), breeding and nesting habitats for sensitive ground-nesting birds, and nests of raptors sensitive to development in order to prevent loss of habitat or fragmentation of habitat.

CPW staff is familiar with the proposed location of the project as well as the area surrounding the site. In 2014 CPW visited the proposed location and prepared a list of potential impacts to local wildlife and provided the developer with recommendations to avoid, minimize, and mitigate those impacts. That 2014 letter from CPW was submitted with this application, along with a Critical Issues Analysis report from Tradewinds Energy based on a desktop review, and the Wetlands, Waterbodies, and Threatened, Endangered, and Species of Special Concern Survey Report report based on a one day site visit by a consultant. Many of those findings were consistent with

CPW's observations of the site. Unfortunately there are no additional details or planning documents submitted that provide information on how the site will be developed or the proposed construction practices. CPW would also like information on how the developer plans to address the concerns raised previously by CPW or the findings in reports submitted by the consultants included in this current project application. For a project of this scope with impacts to both habitat and wildlife CPW would recommend the developer commit to pre-construction surveys and best management practices that would minimize the impacts of this project as well as a noxious weed management program and a reclamation plan.

For eligible energy resources, new renewable energy projects should follow Colorado PUC Rule 3668 on Environmental Impacts in conducting wildlife surveys, in using these surveys to avoid, minimize and mitigate potential impacts to wildlife and their habitats, and work closely with CPW in the design of their project. In selecting sites for construction, CPW recommends that developers focus on options that avoid critical wildlife habitats over the use of mitigation strategies. Areas that exhibit high levels of wildlife use within this project area or are unique or critical habitat to wildlife would benefit greatly by not placing facility infrastructure, including transmission lines, adjacent to or over such areas. If all options for avoiding impacts are taken and prove insufficient, then minimization and mitigation strategies should be identified and implemented.

Habitat loss and fragmentation: In general, CPW recommends that the developer consolidate facilities and roads to the extent possible, to minimize the amount of land that is disturbed and fragmented. Habitat loss and fragmentation are significant concerns regarding solar development and minimizing the project footprint can help reduce the impacts to wildlife. Riparian and wetland areas are important habitats for a variety of wildlife and need to be connected as much as possible so a layout that maintains access for wildlife to those areas in particular is preferred. Wildlife species that can potentially be found on the Project site are: black tailed prairie dog, bobcat, cottontail rabbit, coyote, mule deer, white-tailed deer, elk, pronghorn, red fox, jack rabbit, mountain lion, skunks, variety of small burrowing rodents, a variety of reptiles which include snakes and lizards, and a variety of grassland birds, Golden eagle, Ferruginous hawk, Red-tailed hawk, Prairie falcon, and Swainson's hawk likely hunt nearby and within the prairie dog colony and nest in the surrounding area. An annually active known Golden eagle nest is located within a 5-mile radius of the project. CPW recommends that the habitat with water on the Project area remain undisturbed and contiguous with undeveloped land around it. This provides possible habitat for the northern leopard frog, as well as a water source for all wildlife and possibly used by Townsend's big eared bats as foraging grounds. CPW would be happy

to work with Front Range-Midway Solar LLC and their consultants to help identify potential layouts within the proposed footprint that would avoid or minimize potential impacts to these species.

Noxious weed management: Also of importance are revegetation of disturbed soils and the control of noxious weed species through the development of a noxious weed management plan prior to initiating construction activities. The revegetation of disturbed areas and control of invasive weed species are important components of the project and it is critically important that the site be restored back to the native plant community that currently exists on site. It would be very important that any disturbed soil in this area be replanted in native grasses as soon as possible to minimize loss of top soil and the introduction of invasive noxious weeds. CPW prefers that native vegetation be retained on site during the operational lifespan of the project, both as habitat for wildlife and to ensure successful reclamation of the project area. Proper reclamation, from a wildlife perspective, involves not only stabilizing the soil and establishing ground cover, but fostering plant communities with a diversity of species and plant types -grasses, woody plants, and broadleaf forbs- which will fully serve the nutritional needs of wildlife. Strict adherence to the Natural Resources Conservation Service's recommendations is advised. CPW would appreciate the opportunity to review the project's Noxious Weed Management Plan prior to the start of construction.

Fencing: CPW is aware that the solar project area will likely include security fencing. We have attached our recommendation for "Fencing with Wildlife in Mind" for your consideration and review. We will be happy to discuss any questions you have about fencing of the project when plans are available. For any installed fencing CPW recommend a smooth top to the fence (e.g., no top barbed wire or exposed metal rods) to prevent wildlife from impaling themselves. If wildlife exclusion fencing is installed CPW would request that the solar facility is checked regularly or structures are installed to allow animals to escape, in the unlikely event that a deer or other wildlife become trapped in the facility.

Transmission lines: Given the project site's proximity to a substation, and the statements of the developer that minimal new lines will be built, it is unlikely that new transmission lines would be significant contributor to the wildlife and habitat impacts of this project. If new transmission lines do become part of the development plan CPW preference is for new transmission lines to follow existing transmission line or infrastructure corridors whenever possible to minimize additional impacts on wildlife and habitat fragmentation.

Of high concern regarding electrical transmission lines is the potential for raptor electrocution. Through the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, the U.S. Fish and Wildlife Service, in cooperation with the Edison Electric Institute, has developed Best Management Practices to minimize impacts to avian species. CPW recommends that both the "Suggested Practices for Avian Protection on Power Lines, the State of the Art in 2006" and the "Reducing Avian Collisions with Power Lines: The State of the Art in 2012" documents be consulted for proper design considerations to minimize raptor electrocution. These documents can be ordered at the Edison Electric Institute website (www.eei.org) or can be downloaded at the Avian Power Line Interaction Committee website (www.aplic.org). This recommendation is applicable to all segments included in the project.

Migratory birds: Consultation with USFWS is recommended to ensure compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Act. The best way to avoid impacts on the nesting efforts of migratory birds is to focus construction activities outside of the breeding season (March 15th -October 31st). If construction must occur during the breeding season, surveys for active nests should be conducted prior to groundbreaking. All migratory birds are protected under the Migratory Bird Treaty Act and removal or disturbance of any migratory bird nest would require consultation with CPW and USFWS prior to disturbance.

Raptors: There is suitable habitat on the site for nesting raptors. CPW recommends the use of preconstruction surveys, as well as continuation of those surveys during construction, to identify all raptor nests within the project area and implement appropriate restrictions. CPW recommends adherence to the recommended buffer distances and timing stipulations identified in the attached document "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors". Removal or relocation of any active raptor nest will require consultation with CPW and US Fish and Wildlife Service prior to disturbance. Both active and potential raptor nest sites, as well as winter night roosts should be considered when evaluating disturbance during construction. These recommendations apply to both the solar field and transmission line construction areas.

State Threatened Species and State Species of Concern

Burrowing owl, black tailed prairie dogs, swift fox, mountain plover, Townsend's Big Eared bat and the Northern Leopard Frog are likely to be present on site. While none of these species are federally listed, the burrowing owl is State Threatened and the swift fox, mountain plover, and the Townsend's big eared bat are State Species of Concern. Due to the status of these species, it is recommended that special precautions be taken to avoid adverse impacts to individuals in the project area.

Burrowing Owls: If any prairie dog colonies are located within the project area CPW recommends surveys to determine the presence/absence of *burrowing owls (Athene cunicularia)*, a state threatened bird. If development or construction in prairie dog towns occurs from February 1 to October 31, the presence of burrowing owls and whether they are actively nesting should be determined. If nesting burrowing owls are present, no human encroachment should occur within 150 ft of nesting burrows from March 15 to October 31. If burrowing owls merely occupy the site, it is recommended that earthmoving and other disturbance activities be delayed until late fall after they have migrated. Attached is CPW's protocol for surveys (Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls).

Mountain Plover: Portions of the proposed project area are in range of the Mountain Plover (Charadrius montanus), a state species of special concern. The Best Management Practices for mountain plover recommend surveys to identify habitat and plover nests within the project area, and plan construction activity outside of critical nesting periods, April 1st through August 15 where these species are found. Mountain plovers can nest in short-grass prairie, dryland cultivated farms, and prairie dog towns and are likely to be nesting on the project area.

Swift fox: CPW recommends pre-construction surveys to identify and avoid all maternal swift fox den sites. Swift fox live here year-round, breed during December, and raise their young into the next fall. It is recommended that swift fox surveys include daylight searches for den areas and nighttime spotlight searches during August and September. Swift fox is a species of state and federal concern that lives in and around the proposed area.

Townsend's Big Eared Bat: A colony of is located within a 5 mile radius of the Project area. The bats may frequent the small water hole in the Project area to drink and hunt insects. The survey report from 2015 states the stock pond would remain with development of the project and would continue to provide potential foraging opportunities and a water source for drinking but that is not confirmed in any of the other project documents.

CPW may have additional recommendations when the final layout and development plans are available for the proposed solar facility. In addition to the habitat specific impacts there are technology-specific factors associated with avian fatality risk at solar facilities and the final site plans could influence the potential risk for birds at the location. Any surface water or evaporation ponds associated with the project could increase the risk to wildlife on the installation either due to toxicity issues or by

acting as an attractant to higher risk areas. In locations with a potential risk to avian species CPW recommends development of a post-construction monitoring program in accordance with the USGS 2016 report Mortality Monitoring Design for Utility-Scale Solar Power Facilities.

CPW appreciates this opportunity to review the proposed Front Range-Midway Solar Project and we look forward to reviewing any other plans (i.e. reclamation plans, building and site plans) or biological surveys or assessments that are developed as the project nears implementation. If you have further questions please contact District Wildlife Manager Cody Wigner at (719) 227-5287 or via email at cody.wigner@state.co.us.

Sincerely,

Frank McGee
Area Wildlife Manager
4255 Sinton Rd.
Colorado Springs, CO 80907

Cc: Cody Wigner, District Wildlife Manager
Karen Voltura, SE Regional Energy Liaison

APPENDIX M.3

FRONT RANGE-MIDWAY SOLAR PROJECT, LLC,
16105 West 113th Street, Suite 105
Lenexa, Kansas 66219

1/2/2018

Frank McGee
Area Wildlife Manager
Colorado Parks and Wildlife
425 Sinton Road
Colorado Springs, CO 80907

Dear Mr. McGee,

Thank you for taking time to review the Front Range-Midway Solar Project (Project) Wind Solar Energy Overlay (WSE-O) application submitted to El Paso County on October 24, 2017. The proposed Project is a 102 mega-watt solar energy facility developed by the Front Range Midway Solar Project, LLC, a wholly owned subsidiary of Tradewind Energy, Inc. (TWE). TWE takes a conservative approach to environmental due diligence through voluntarily conducting multiple environmental studies and initiating early coordination with the U.S. Fish & Wildlife Service and state wildlife agencies so that projects can be designed to avoid and minimize significant impact to natural resources. The Project initiated coordination with the USFWS and the Colorado Parks and Wildlife (CPW) in 2014; and responses from both agencies were received and have been incorporated into Project development and design.

The November 15, 2017 letter from the CPW to the El Paso County Planning and Community Development Department identified several concerns and made recommendations regarding the Project's potential impact to natural resources. The concerns and recommendations were consistent with those identified in the August 25, 2014 letter from CPW to TWE, which have been carefully considered and implemented into Project development and design. CPW recommendations and the Project's responses are listed below.

CPW Recommendation
CPW recommends the habitat with water on the Project area remain undisturbed and contiguous with undeveloped land around it. CPW would be happy to work with FRMW and consultants to help identify potential layouts within the proposed footprint that would avoid or minimize potential impacts to these species.

Project Response
A wetlands survey was completed for the Project site in 2015. The study identified a single water feature: a stock pond created by damming a dry drainage way on site. The stock pond did not include characteristics of jurisdictional waters, but Project infrastructure will avoid the water feature and surrounding area nonetheless. Project design is still preliminary, but it is anticipated that the Project fence line will be setback, at minimum, approximately 150 feet.

CPW Recommendation
CPW prefers that native vegetation be retained on-site during the operational lifespan of the Project. Proper reclamation, from a wildlife perspective, involves not only stabilizing the soil and establishing ground cover, but fostering plant communities with a diversity of species and plant types which will fully serve the nutritional needs of wildlife. Strict adherence to the NRCS's recommendations is advised. CPW would appreciate the opportunity to review the Project's Noxious Weed Management Plan prior to construction.

Project Response

The local Natural Resources Conservation Service - El Paso County office reviewed the Project's noxious weed management plan (NWMP) and commented that they were satisfied with the NWMP. The NWMP is available for review on the El Paso County Development Application Review website. Per the NWMP, the site will be re-vegetated with a native seed mix. Site stabilization will be monitored per the Storm Water Management Plan (SWMP) and the Grading and Erosion Control Plan (GEC), which requires vegetation coverage reach 70 % before ceasing site monitoring activities.

CPW Recommendation

CPW recommends a smooth top to the fence to prevent wildlife from impaling themselves. If wildlife exclusion fencing is installed CPW would request that the solar facility is checked regularly or structures are installed to allow animals to escape, in the unlikely event that a deer or other wildlife become trapped in the facility.

Project Response

The Project will utilize security fence with barbed-wire strands to prevent trespassing and minimize the risk of electrocution. The security fence will be a total of seven feet in height and include six feet of chain link fencing and one foot of barbed wire strand. The security fence will also act as exclusion fencing to keep wildlife out. Per the CPW *Fencing with Wildlife in Mind,* a 7 to 8 foot fence is an effective barrier to deer and elk. Operation and maintenance staff will routinely visit the site and will be trained to contact the CPW – District Wildlife Manager if trapped wildlife within the solar facility cannot be easily released.

CPW Recommendation

CPW recommends that new lines follow existing transmission line infrastructure corridors wherever possible. Also recommend that FRMW consult "Suggested Practices for Avian Protection on Power Lines, the State of the Art in 2006" and the "Reducing Avian Collisions with Power Lines: The State of the Art in 2012" for proper design considerations to minimize raptor electrocution.

Project Response

The Project substation will tie in to one of two existing substations within the Project boundary via a new Project transmission line. The Project transmission line will be located entirely within the Project; the length will be determined prior to construction, but will not exceed approximately 1,500 feet. The Project transmission line will be located immediately adjacent to existing transmission lines. See attached *Front Range Midway Solar Project Existing Transmission Lines Map*. The Project will consult the cited documents for proper design considerations to minimize raptor electrocution.

CPW Recommendation

Consultation with US Fish and Wildlife Service (USFWS) is recommended to ensure compliance with the MBTA and the BGEPA. Surveys for active nests should occur prior to construction should construction occur during the breeding and nesting season.

Project Response

The Project has been developed in coordination with the USFWS. A July 29, 2014 response letter from USFWS included several recommendations for the Project. The recommendations were reviewed and in 2015, a qualified third-party biologist was engaged to conduct a threatened and endangered species survey for the Project. The study is available for review on the El Paso County Development Application Review website. If Project construction occurs during the nesting season, between March 1 and October 31, additional surveys will be conducted so that appropriate avoidance and minimization measures can be implemented during construction.

CPW Recommendation

There is suitable habitat on the site for nesting raptors. CPW recommends the use of preconstruction surveys, as well as continuation of those surveys during construction, to identify all raptor nests within the Project area and implement appropriate restrictions. CPW recommends adherence to the "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors".

Project Response

The Project has noted in the WSE-O Letter of Intent (LOI) that if construction occurs between March 1 and October 31, pre-construction surveys will be conducted so that avoidance and minimization measures can be implemented during construction. The WSE-O LOI is available for review on the El Paso County Development Application Review website.

CPW Recommendation

CPW recommends taking special precautions regarding burrowing owl, black-tailed prairie dog, swift fox, mountain plover, Townsend's big eared bat, and northern leopard frog.

Project Response

Based on the threatened and endangered species study completed for the Project in 2015, black tailed prairie dog (State Species of Concern) was identified on the Project Site. Prairie dog colonies are potential habitat for burrowing owl (State Threatened). Per previous CPW recommendations, the prairie dogs will be relocated prior to commencing earth-moving activities. If a relocation site is not available, prairie dogs will be humanely treated prior to construction. Furthermore, the Project will follow CPW recommended measures to avoid impact to the burrowing owl. If construction occurs between March1st and October 31st, the site will be surveyed for the presence of burrowing owls prior to commencing earth-moving activities. If burrowing owls are identified, their habitat will be avoided until after the owls have migrated from the area. A qualified biologist will perform the pre-construction surveys and monitor any burrowing owls identified during construction. Swift fox have the potential to occur in the Project area; however, by relocating or humanely eradicating black tailed prairie dogs prior to commencing construction, the likelihood for swift fox occurrence within the Project area will be minimized. Roosting habitat for Townsend's big-eared bat was not identified within the Project area; however, the species could use the stock pond on site to forage. The stock pond on-site will not be impacted by Project infrastructure. Suitable habitat for the northern leopard frog was not identified on the Project site.

We hope the above responses adequately address CPW concerns and recommendations regarding the Front Range-Midway Solar Project. If you have questions or concerns, or require additional information please do not

hesitate to contact us using the information provided below. TWE would enjoy the opportunity to further discuss the Project with CPW.

Dave Iadarola
Project Manager
(720) 732-3154
diadarola@tradewindenergy.com

Or

Emily Truebner
Environmental Manager
(913) 953-5225
etruebner@tradewindenergy.com

Sincerely,

Dave Iadarola

Dave Iadarola
Project Manager

Attachment: Front Range Midway Solar Project Existing Transmission Lines Map

APPENDIX M.4

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Paso County, Colorado

Local office

Colorado Ecological Services Field Office

(303) 236-4773
(303) 236-4005

MAILING ADDRESS

Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486

PHYSICAL ADDRESS

134 Union Boulevard, Suite 670
Lakewood, CO 80228-1807

http://www.fws.gov/coloradoES
http://www.fws.gov/platteriver

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Least Tern Sterna antillarum — Endangered

This species only needs to be considered if the following condition applies:

- Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8505

Mexican Spotted Owl Strix occidentalis lucida — Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8196

Piping Plover Charadrius melodus — Threatened

This species only needs to be considered if the following condition applies:

- Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6039

Whooping Crane Grus americana — Endangered

This species only needs to be considered if the following condition applies:

- Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/758

Fishes

NAME	STATUS

Greenback Cutthroat Trout Oncorhynchus clarkii stomias — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2775

Pallid Sturgeon Scaphirhynchus albus — Endangered

This species only needs to be considered if the following condition applies:

- Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7162

Flowering Plants

NAME	STATUS
Ute Ladies'-tresses Spiranthes diluvialis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2159	Threatened
Western Prairie Fringed Orchid Platanthera praeclara This species only needs to be considered if the following condition applies: • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Lark Bunting Calamospiza melanocorys This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Aug 15
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds Apr 1 to Jul 31
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

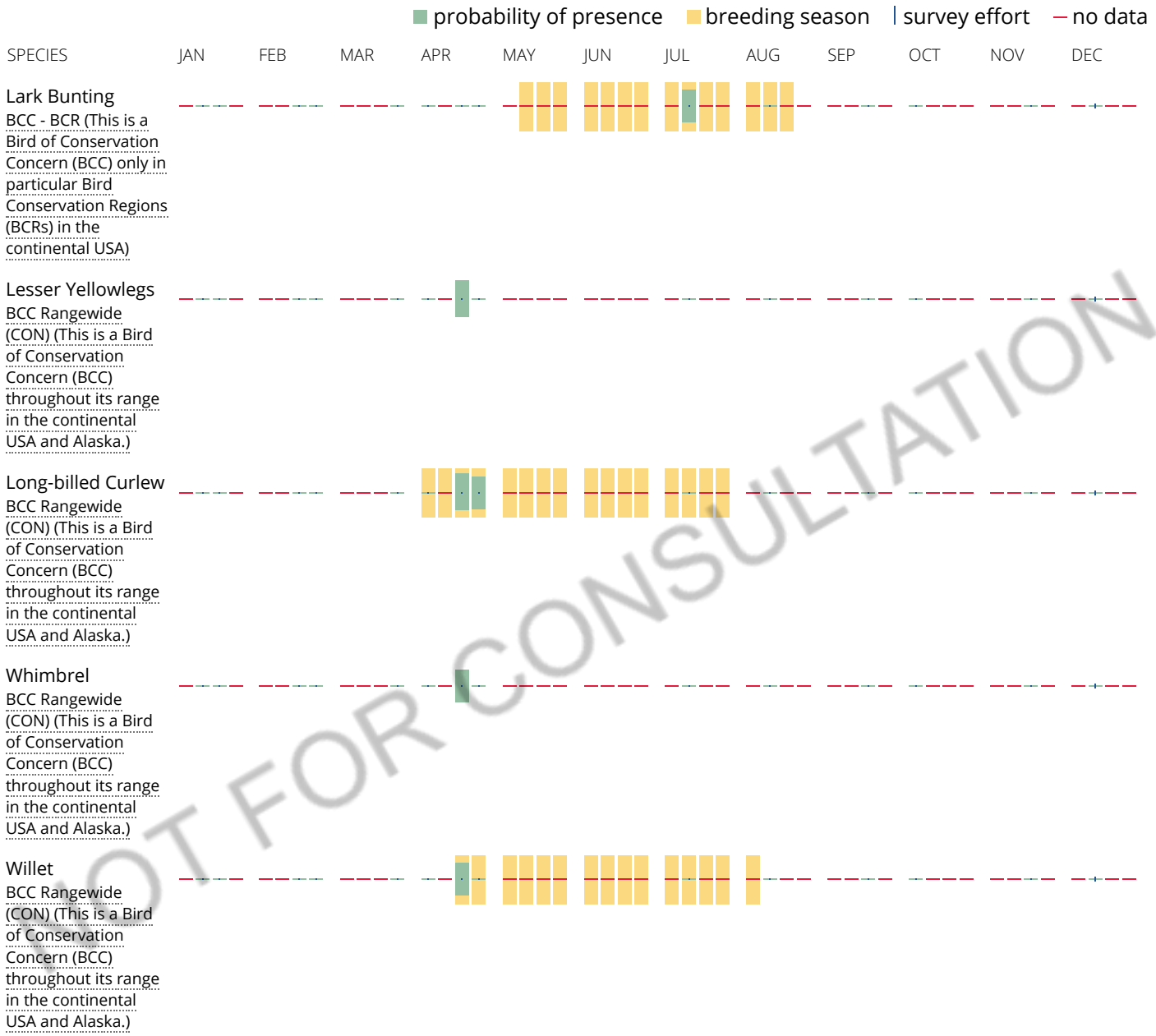
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1Ah
- PEM1B

RIVERINE

- R4SBA
- R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this

inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.