



United States Department of the Interior



FISH AND WILDLIFE SERVICE Colorado Ecological Services

IN REPLY REFER TO:
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TAILS: 06E24000-2018-TA-1090

October 31, 2018

Mr. Stuart Coles
Project Planner
juwi Inc.
1710 29th Street, Suite 1068
Boulder, Colorado 80301

Dear Mr. Coles:

Thank you for your letter of May 29, 2018 requesting review from the U.S. Fish and Wildlife Service (Service) on behalf of Palmer Solar LLC, a whole owned subsidiary of juwi Inc. The letter requests review of the proposed 505-acre, 60-megawatt photovoltaic site (aka Palmar Solar project) and associated infrastructure including fencing, access, substations, arrays, operations/maintenance buildings, inverters, transformers and distribution line. The proposed project is located east of Interstate 25 and Fountain Creek in El Paso County, Colorado. These comments have been prepared under the provisions of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 et seq.), the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. § 703 et seq.), the Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended (16 U.S.C. § 668 et seq.), and the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327). Wetlands receive protection under Executive Orders 11990 and 11988, and section 404 of the Clean Water Act of 1972 (33 U.S.C. § 1251 et seq.). Other fish and wildlife resources are considered 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.).

We appreciate your inclusion of the April 2018, Memorandum of Findings which includes the Wildlife, Wetland and Cultural Resources Surveys for the proposed project, and we interpret your letter to be a request for technical assistance regarding the likelihood of the described project resulting in impacts to threatened or endangered species (“listed species”). Section 9 of the ESA prohibits any action that would likely result in “take” of a listed species (take is defined by the Act as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct of listed species). Based on the information presented in your assessment, and the Service’s understanding of the nature of the project, local conditions, and current information of listed species and their habitat, it seems unlikely that the project will result

in take of listed species; however, the project may have minor adverse impacts to listed species or other sensitive species/resources that may occur in or near the project area. Information about listed species within proposed project areas can be found online at IPaC (Information for Planning and Conservation) <https://ecos.fws.gov/ipac/>. For information on any State species of special designation in Colorado that are not federally listed and may occur within your project area, please contact the Colorado Parks and Wildlife's (CPW) Southeast Region Energy Liaison and Land Use Specialist, Karen Voltura, by telephone at (719) 227-5232 or visit the CPW website at <http://www.cpw.state.co.us>.

According to a U.S. Geological Survey 2016 publication, “Solar power represents an important and rapidly expanding component of the renewable energy portfolio of the United States (Lovich and Ennen, 2011; Hernandez and others, 2014). Understanding the impacts of renewable energy development on wildlife is a priority for the Service in compliance with Department of Interior Order No. 3285 (U.S. Department of the Interior, 2009) to ‘develop best management practices for renewable energy and transmission projects on the public lands to ensure the most environmentally responsible development and delivery of renewable energy.’ Recent studies examining effects of renewable energy development on mortality of migratory birds have primarily focused on wind energy (California Energy Commission and California Department of Fish and Game, 2007), and in 2012 the Service published guidance for addressing wildlife conservation concerns at all stages of land-based wind energy development (U.S. Fish and Wildlife Service, 2012). As yet, no similar guidelines exist for solar development, and no published studies have directly addressed the methodology needed to accurately estimate mortality of birds and bats at solar facilities. In the absence of such guidelines, ad hoc methodologies applied to solar energy projects may lead to estimates of wildlife mortality rates that are insufficiently accurate enough to meaningfully inform conversations regarding mitigation of negative impacts. Although significant advances in monitoring protocols for wind facilities have been made in recent years, there remains a need to provide consistent guidance and study design to quantify mortality of bats, and resident and migrating birds at solar power facilities (Walston and others, 2015)”.¹

The Service appreciates your request and, to assist you at the earliest planning stages, we have provided recommendations for your consideration below. In the absence of guidelines for solar development, the following measures for other industries are provided as a starting point for projects to avoid impacts to bird and bat species.

The Service encourages you to consider these recommendations during project planning and implementation. The intent of these recommendations is to increase compatibility between species' conservation and the proposed project.

¹ Huso, Manuela, Dietsch, Thomas, and Nicolai, Chris. 2016. Mortality monitoring design for utility-scale solar power facilities: U.S. Geological Survey Open-File Report 2016-1087, 44 p., <http://dx.doi.org/10.3133/ofr20161087>.

Standard Conservation Measures

The Service Migratory Bird program website provides nationwide standard conservation measures that should be considered for all projects. In addition, depending on specific project design, there may be additional guidance available for specific activities/industries or species relevant to individual projects. Please see links below:

<http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

A 1988 amendment to the Fish and Wildlife Conservation Act mandates the Service to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA.” In response to this mandate the Service developed a list of Birds of Conservation Concern (BCC). Bird species included on the Service BCC list are largely species protected under MBTA that are of conservation concern due to several factors including: population declines, natural or human-induced reductions in ranges or populations sizes, threats to habitat, or other factors. The latest Service list of BCC species was finalized in 2008 and is available at:

<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

Our intent for the BCC list is to encourage coordinated efforts to develop and implement comprehensive and integrated approaches for the study, management, and protection of non-ESA listed bird species deemed to be in the most need of additional conservation actions. Hence, the Service recommends that project proponents crosscheck their project locations with the Service BCC species list to determine if any of these species are present within development areas.

Project Design Conservation Measures

If nesting migratory birds are present within or near the project area, timing of activities is a beneficial consideration and can be addressed in the early phases of project planning. This modification can prevent migratory bird mortality (adults, young, and/ or eggs) and could especially benefit ground nesting birds within your 505-acre project area.

To minimize impacts to migratory birds, the Service recommends that construction occur outside of the typical breeding season for migratory birds. Most nesting activity occurs between April and August. If proposed activities must occur during the nesting season, or at any other time that may result in the mortality of migratory birds, the Service recommends contacting the U.S. Fish and Wildlife Colorado Field Office, at coloradoes@fws.gov for guidance.

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are protected from a variety of harmful actions via take prohibitions in both the Migratory Bird Treaty Act² (MBTA; 16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668–668d). The BGEPA, enacted in 1940 and amended several times, prohibits take of bald eagles and golden eagles, including their parts, nests, young or eggs, except where otherwise permitted pursuant to federal regulations. Incidental take of eagles from actions such as electrocutions from power lines or wind turbine strikes are prohibited unless specifically authorized via an eagle incidental take permit from US Fish and Wildlife Service (Service). BGEPA provides penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." BGEPA defines take to include the following actions: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Service expanded this definition by regulation to include the term "destroy" to ensure that "take" also encompasses destruction of eagle nests. Also the Service defined the term disturb which means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

The Service has developed guidance for the public regarding means to avoid take of bald and golden eagles:

- The 2007 *National Bald Eagle Management Guidelines* serve to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of BGEPA may apply. They provide conservation recommendations to help people avoid and/or minimize such impacts to bald eagles, particularly where they may constitute "disturbance," which is prohibited by the BGEPA.
<https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf>

The Service also has promulgated new permit regulations under BGEPA:

- New eagle permit regulations, as allowed under BGEPA, were promulgated by the Service in 2009 (74 FR 46836; Sept. 11, 2009) and revised in 2016 (81 FR 91494; Dec. 16, 2016). The regulations authorize the limited take of bald and golden eagles where the

² On December 22, 2017, the Department of the Interior's (DOI) Office of the Solicitor Memorandum M-37050 titled *The Migratory Bird Treaty Act Does Not Prohibit Incidental Take* (<https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf>) concludes that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. The MBTA list of protected species includes bald and golden eagles, and the law has been an effective tool to pursue incidental take cases involving eagles. However, the primary law protecting eagles is the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S. Code § 668), since the bald eagle was delisted under the Endangered Species Act in 2007. Memorandum-37050 does not affect the ability of the Service to refer entities for prosecution that have violated the take prohibitions for eagles established by the BGEPA.

take to be authorized is associated with otherwise lawful activities. These regulations also establish permit provisions for intentional take of eagle nests where necessary to ensure public health and safety, in addition to other limited circumstances. The revisions in 2016 included changes to permit issuance criteria and duration, definitions, compensatory mitigation standards, criteria for eagle nest removal permits, permit application requirements, and fees in order to clarify, improve implementation and increase compliance while still protecting eagles.

<https://www.gpo.gov/fdsys/pkg/FR-2016-12-16/pdf/2016-29908.pdf>

The Service's Office of Law Enforcement carries out its mission to protect eagles through investigations and enforcement, as well as by fostering relationships with individuals, companies, industries and agencies that have taken effective steps to avoid take, including incidental take of these species, and encouraging others to implement measures to avoid take. The Office of Law Enforcement focuses its resources on investigating individuals and entities that take eagles without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Those individuals and entities are encouraged to work closely with Service biologists to identify available protective measures, and to implement those measures during all activities or situations where their action or inaction may result in the take of an eagle(s).

According to your May 29, 2018 letter, the proposed project includes a distribution line. Published studies indicate that power lines can negatively affect wildlife. Direct mortality may occur when birds or bats collide with power lines and associated infrastructure, or when power lines electrocute birds. Projects may also displace wildlife when activities alter or remove key components of important habitat. Early planning, coordination, Best Management Practices (BMPs), and the strategic placement of power lines and associated facilities, can avoid or reduce these impacts. The Avian Power Line Interaction Committee (APLIC) developed suggestions and resources intended to address and mitigate electrocutions and collisions with power lines. To reduce avian electrocutions and power outages caused by birds at your power lines, we recommend the project proponent follow recommendations provided in both *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*. We recommend that you review and consider implementing all applicable parts of these documents during the construction and operation of any electrical facilities. APLIC resources are available at the following web address: <http://www.aplic.org/mission>.

From the maps and photos included with your May 29, 2018 letter and report and the additional documentation supplied by juwi, it appears the proposed project is in the vicinity of Calhan Reservoir and associated unnamed drainages and waterbodies. Therefore, your project may affect wetlands or riparian areas. Wetlands not only provide habitats for many aquatic and terrestrial species, but also disperse floods, improve water quality, and recharge aquifers. Wetlands also provide aesthetic and recreational values. Riparian vegetation reduces erosion and sedimentation, improves water quality, maintains the water table, controls flooding, and provides shade and cover. Many listed species rely on riparian habitats.

Considering their importance and relative scarcity, impacts to wetlands and riparian areas should be strictly avoided at all times. Minimize all unavoidable encroachments into these areas. In order to minimize impacts to wetlands, riparian areas, and any associated species, the Service recommends that construction and new overhead lines strictly avoid wetlands and riparian areas; even if the intermittent streambeds or water bodies appear dry. During dry periods, intermittent and cyclical wetlands continue to support dormant wetland vegetation and their seeds. Ground disturbance in these areas at any time may upset native seed banks and promote colonization by invasive species, effectively altering the wetland ecosystem.

The Service also recommends enforcing BMPs within the project area to limit impacts to waterways, wetlands, and riparian areas. BMPs may include: limiting activities to previously disturbed ground; minimizing new disturbance footprints; preventing the spread of invasive species; installing limits of work fencing around sensitive areas; installing sediment and erosion control devices; locating equipment staging areas outside of wetlands, riparian areas, and floodplains; and reseeding or replanting disturbed ground with native seed mixtures or vegetation.

The Service appreciates your request for technical assistance and encourages you to contact us again if the scope of the project changes or new information indicates that the project may result in take of listed species. If you or the project proponent would like to discuss the proposed project, please contact Elizabeth Duran in this office at (303) 236-4779.

Sincerely,

Drue L. DeBerry
Colorado and Nebraska Field Offices Supervisor

cc: CPW, Karen Voltura
FWS/R6/LE, Tom Tidwell
FWS/R6/ES, Maria Boroja

US Fish and Wildlife Service Coordination

On October 31, 2018, United States Fish and Wildlife Service (USFWS) completed its development review of the proposed Palmer Solar Project (included here within). This voluntary review was initiated in May of 2018 following recommendations from Colorado Parks and Wildlife (CPW) that USFWS also review the Project for potential impacts to threatened and endangered species. Engaging wildlife agencies early in the process aligns with the Applicant's development approach and its commitment to low-impact projects.

The Applicant provided USFWS's Colorado Ecological Services Office with project materials and layouts, including the "Memorandum of Findings for Wildlife, Wetland, and Cultural Resource Surveys at the Proposed Palmer Solar Project in El Paso County, Colorado." Additionally, the USFWS lead for reviewing the Project, Elizabeth Duran, was provided the link to the County's online development review portal (EDARP) for the complete Wind and Solar Energy Overlay (WSEO) application.

USFWS reviewed the Project for a potential intersection with applicable federal regulations, including provisions under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 et seq.), the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. § 703 et seq.), the Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended (16 U.S.C. § 668 et seq.), and the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327). Based upon the field surveys, geospatial datasets, and information provided by the Applicant to USFWS, along with datasets and information held internally by the agency, the following conclusion was reached:

"Section 9 of the ESA prohibits any action that would likely result in "take" of a listed species (take is defined by the Act as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct of listed species). Based on the information presented in your assessment, and the Service's understanding of the nature of the project, local conditions, and current information of listed species and their habitat, it *seems unlikely that the project will result in take of listed species*; however, the project may have minor adverse impacts to listed species or other sensitive species/resources that may occur in or near the project area"(Emphasis added). USFWS Letter TAILS: 06E24000-2018-TA-1090.

This conclusion aligns with findings made by the Project's professional environmental consultants and findings made in CPW's development review. Since the "take" of a federally-listed species is unlikely, an incidental take permit or additional engagement with USFWS is not required at this time. Since the Project does not constitute an action that is funded or carried out by a federal agency, a formal Section 7 consultation process is not required and likewise, a clearance letter would not be appropriate for the Project. The Section 7 consultation process is not triggered for private actions on private lands where there is no identifiable intersection with the Endangered Species Act or Migratory Bird Treaty Act.

While federal law does not require additional steps with USFWS for the Palmer Solar Project and Williams Creek Substation at this time, the Applicant is committed to minimizing impacts to wildlife. Accordingly, recommendations made by USFWS are addressed sequentially below:

- 1. The project may have minor adverse impacts to listed species or other sensitive species/resources that may occur in or near the project area. Information about listed species within proposed project areas can be found online at IPaC (Information for Planning and Conservation) <https://ecos.fws.gov/ipac/>.**

IPaC was consulted during wildlife surveys and addressed in the Memorandum of Findings. See page X of Appendix J.

- 2. The Service Migratory Bird program website provides nationwide standard conservation measures that should be considered for all projects**

Applicant appreciates the Conservation Measures provided by USFWS and will incorporate recommendations for all three categories (General, Habitat Protection, and Stressor Management) into construction. The Project adequately moves toward USFWS conservation goals, including avoiding direct take, preventing the introduction of invasive plants, preventing increase in lighting of native habitats during the bird breeding season, minimizing collision risk, preventing birds from becoming trapped, preventing increases in noise ambient levels, preventing the introduction of chemicals, and minimizing fire potential. Existing plans submitted for the WSEO incorporate these wildlife strategies.¹

- 3. Service recommends that project proponents crosscheck their project locations with the Service BCC species list to determine if any of these species are present within development areas.**

The Project is in BCR 18 (Shortgrass Prairie). Field surveys did not identify any of the species in the table on site. Additionally, pre-construction surveys will be completed to confirm presence/absence of these bird species. Special attention will be given to Burrowing Owl and Mountain Plover, as recommended by CPW and the Project's environmental consultants.

- 4. If nesting migratory birds are present within or near the project area, timing of activities is a beneficial consideration and can be addressed in the early phases of project planning**

Applicant has committed to timing stipulations recommended by CPW in its development review if identified species are found in pre-construction wildlife surveys.

- 5. If proposed activities must occur during the nesting season, or at any other time that may result in the mortality of migratory birds, the Service recommends contacting the U.S. Fish and Wildlife Colorado Field Office, at coloradoes@fws.gov for guidance**

Applicant will coordinate with USFWS on construction that may result in mortality of migratory birds. Applicant will provide a copy of field survey results to USFWS prior to construction.

¹ Nationwide Standard Conservation Measures can be found here:
<https://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

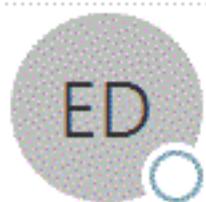


6. To reduce avian electrocutions and power outages caused by birds at your power lines, we recommend the project proponent follow recommendations provided in both *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*.

These documents have become standard protocol for utility-scale generation and transmission projects. All recommendations applicable to the Project have been incorporated.

7. Considering their importance and relative scarcity, impacts to wetlands and riparian areas should be strictly avoided at all times.

Project avoids wetlands that meet the criteria and/or are protected under the Clean Water Act.



Fri 12/21/2018 11:19 AM

Duran, Elizabeth <elizabeth_duran@fws.gov>

Re: [EXTERNAL] RE: Palmer Solar Project Response Letter (TAILS: 2018-TA-1090)

To  Stuart Coles

 You replied to this message on 12/21/2018 12:24 PM.

Stuart,

Thank you for your patience while I went back and looked at the documents you previously submitted for the Palmer Solar Project (TAILS 2018-TA-1090).

Like we discussed yesterday, I am familiar with the stamps that we are able to send out for projects and it makes sense that the attorney for the county would be interested in having that type documentation.

However, our response letter to the project, and states, "Based on the information presented in your assessment, and the Service's understanding of the nature of the project, local conditions, and current information of listed species and their habitat, it seems unlikely that the project will result in take of listed species; however, the project may have minor adverse impacts to listed species or other sensitive species/resources that may occur in or near the project area."

Since we already sent this letter outlining potential concerns and our comments/recommendations, the stamp that you see and that we have used for other projects would not make sense in this case. It would not make sense in our administrative record, in the project file, nor did we have 'No concerns', 'No comment' nor could we 'Concur with a Not Likely to Adversely Affect' determination.

I believe that our response letter should be sufficient for your request for a development review and recommendations.

Thanks Stuart,



United States Department of the Interior



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In Reply Refer To:

October 10, 2018

Consultation Code: 06E24000-2019-SLI-0032

Event Code: 06E24000-2019-E-00095

Project Name: Palmer Solar and Williams Creek Substation -IPAC

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Colorado Ecological Services Field Office

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

(303) 236-4773

Project Summary

Consultation Code: 06E24000-2019-SLI-0032

Event Code: 06E24000-2019-E-00095

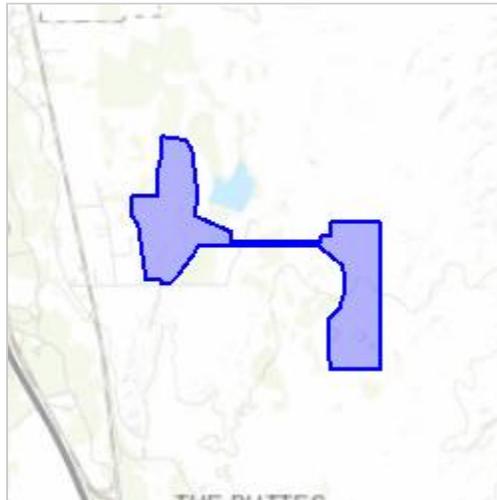
Project Name: Palmer Solar and Williams Creek Substation -IPAC

Project Type: DEVELOPMENT

Project Description: Solar Project and Substation.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.628395446208856N104.63262823455989W>



Counties: El Paso, CO

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

Mammals

NAME	STATUS
North American Wolverine <i>Gulo gulo luscus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Birds

NAME	STATUS
<p>Least Tern <i>Sterna antillarum</i></p> <p>Population: interior pop.</p> <p>No critical habitat has been designated for this species.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>Species profile: https://ecos.fws.gov/ecp/species/8505</p>	Endangered
<p>Mexican Spotted Owl <i>Strix occidentalis lucida</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/8196</p>	Threatened
<p>Piping Plover <i>Charadrius melodus</i></p> <p>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>Species profile: https://ecos.fws.gov/ecp/species/6039</p>	Threatened
<p>Whooping Crane <i>Grus americana</i></p> <p>Population: Wherever found, except where listed as an experimental population</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>Species profile: https://ecos.fws.gov/ecp/species/758</p>	Endangered

Fishes

NAME	STATUS
<p>Greenback Cutthroat Trout <i>Oncorhynchus clarkii stomias</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2775</p>	Threatened
<p>Pallid Sturgeon <i>Scaphirhynchus albus</i></p> <p>No critical habitat has been designated for this species.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>Species profile: https://ecos.fws.gov/ecp/species/7162</p>	Endangered

Flowering Plants

NAME	STATUS
<p>Ute Ladies'-tresses <i>Spiranthes diluvialis</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2159</p>	Threatened
<p>Western Prairie Fringed Orchid <i>Platanthera praeclara</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none">Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>Species profile: https://ecos.fws.gov/ecp/species/1669</p>	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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
<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1626</p>	Breeds Oct 15 to Jul 31
<p>Burrowing Owl <i>Athene cunicularia</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/9737</p>	Breeds Mar 15 to Aug 31

NAME	BREEDING SEASON
Cassin's Sparrow <i>Aimophila cassinii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9512	Breeds Aug 1 to Oct 10
Golden Eagle <i>Aquila chrysaetos</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lark Bunting <i>Calamospiza melanocorys</i> 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
Long-billed Curlew <i>Numenius americanus</i> 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
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31

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.

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 (|)

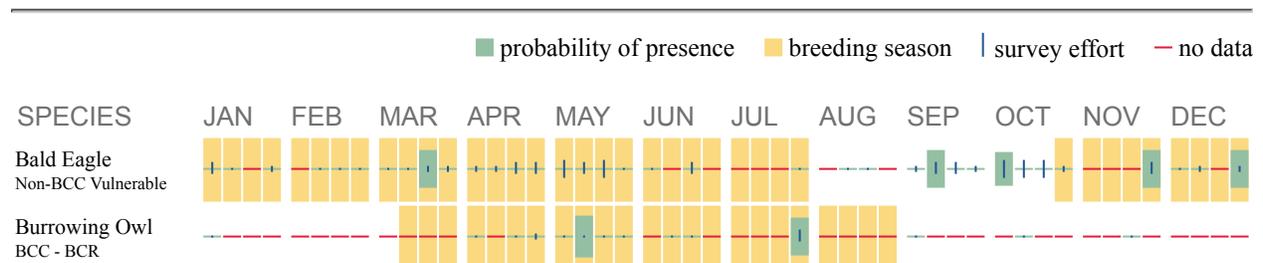
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.





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>

Migratory Birds FAQ

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 [E-bird Explore Data 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.

Wetlands

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.

FRESHWATER EMERGENT WETLAND

- [PEM1Ah](#)
- [PEM1C](#)

RIVERINE

- [R4SBC](#)
 - [R5UBH](#)
 - [R5UBFx](#)
-

Preble's Meadow Jumping Mouse Critical Habitat

Index Map

