Endangered Species Act – Listed Species and Critical Habitat Review

Rail Tie Wind Project
Albany County, Wyoming

March 2021
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1 INTRODUCTION
The Rail Tie Wind Project (Project) is a proposed utility-scale wind energy facility under development by ConnectGen Albany County LLC (ConnectGen or Proponent). The proposed Project is located in southeastern Albany County, Wyoming, and the Project Area encompasses approximately 26,000 acres (Project Area) of ranchland on private and Wyoming State Lands located near Tie Siding (Attachment 1). No federally managed lands are located within the Project Area. This document discusses the potential interaction of the proposed Project with threatened and endangered species, as well as critical habitat, designated pursuant to the Endangered Species Act (ESA) of 1973, as amended. This document reviews the potential for the Project to interact with Preble’s meadow jumping mouse (Zapus hudsonius preblei; PMJM), a federally listed threatened species, and presents conservation measures that would be implemented to avoid the potential for direct or indirect effects to this ESA-protected species.

The Project proposes to interconnect to the existing transmission system of the Western Area Power Administration (WAPA) via the Ault-Craig 345-kilovolt (kV) transmission line, which runs through the Project Area. The Proponent has applied to interconnect under the WAPA Large Generator Interconnection Process (LGIP). The Ault-Craig 345 kV transmission line is jointly owned by WAPA, Tri-State Generation and Transmission Association, and Platte River Power Authority. In accordance with its Open Access Transmission Service Tariff (Tariff), WAPA’s consideration to grant an interconnection request is a federal action subject to environmental review pursuant to the National Environmental Policy Act of 1969 (NEPA) and the Department of Energy (DOE), and Council on Environmental Quality NEPA implementing regulations. Under these regulations, the Project is considered a connected action to WAPA’s federal decision of granting an interconnection to its transmission system.

2 PROJECT DESCRIPTION
The Project would have a generating capacity of up to 504 megawatts (MW) of renewable wind energy. The Project would include between 84 and 149 wind turbine generators, each ranging between 3.0 to 6.0 MW in size. The Project description is summarized below.

2.1 Project Design
The wind turbines would be arranged in collinear strings located within 1,000-foot-wide wind turbine siting corridors (Attachment 2). This corridor design approach provides flexibility in turbine placement during the design stage to avoid and minimize impacts to wetlands, waterbodies, cultural sites, and other environmentally sensitive areas, to the extent practicable. Access roads and electrical collection lines would also be located within these corridors where feasible to minimize the Project’s overall footprint. For the portions of the Project where it is not feasible to locate access roads and electrical collection lines within the turbine siting corridors, 100-foot-wide and 50-foot-wide siting corridors, respectively, have been identified in these areas (Attachment 2). The precise locations of each turbine within the corridor would be based on the wind turbine
model selected; various siting criteria such as optimal wind speed, geotechnical conditions, and environmental considerations.

In addition to the wind turbine generators, Project components include construction of the following:

- Electrical collection system
- Two 345 kV electrical substations
- Approximately 4 miles of new, single circuit, 345 kV overhead generation (gen-tie) line
- Operations and Maintenance (O&M) building
- Supervisory Control and Data Acquisition System (SCADA)
- Three 344.5-foot-tall meteorological (met) towers
- Access roads
- Temporary crane paths
- Two temporary laydown yards approximately 15 acres each

### 2.2 Project Construction

For construction planning and site optimization, the Project consists of two separate stages, each approximately 252 MW. These stages are defined as the East stage and the West stage as differentiated by U.S. Highway 287 (U.S. 287). Construction of the Project is expected to begin in 2022 and will require 2 years to fully construct. It is anticipated that the first 252 MW West stage would be completed and fully operational by the end of 2022, and the second East stage operational in 2023.

Before construction begins, each area of proposed ground disturbance would be inspected to evaluate existing conditions. To the extent practicable, upon completion of construction activities, revegetation and reclamation would be conducted within disturbed areas to return the site to near preconstruction conditions in coordination with landowners. This effort would include activities such as conservation and reapplication of topsoil, seeding areas of bare soil, applying weed control measures, and returning land contours and drainage to preconstruction conditions.

A portion of the Project Area is located on state-owned land that is currently used for public recreation activities. The Proponent would coordinate with the Wyoming State Land Office to limit public access to these areas when active construction is ongoing to ensure public and worker safety. Public access would be limited during activities such as wind turbine erection, foundation excavation, electrical collection system trenching, and substation construction and interconnection. The Proponent would intend to keep public road closures to a minimum to the extent feasible. Disruptions to public road use in and adjacent to the Project Area could be associated with narrowing down the road to one lane of public traffic with flaggers used to direct the flow of traffic or suspending traffic for safe movement of large equipment. At any given location within the Project Area, construction would consist of a series of activities of relatively short duration separated by periods of no activity as workers move to other locations.
Heavy vehicle traffic would be expected on the Project site during construction. Dump trucks, for example, would be needed to move soil and aggregate. Concrete trucks would be needed for wind turbine foundations and other facilities. Water tankers would be needed to wet down roadways for dust control. The crane needed for wind turbine installation would be assembled at the first wind turbine site and then would be “walked” to subsequent wind turbine sites along the Project access roads. Where the road cannot be built within the tolerances required for walking the crane, the crane would be disassembled, moved to the next wind turbine site, and reassembled.

For construction crews and equipment to reach each wind turbine location, all-weather access roads would be constructed, extended, and/or improved throughout the Project Area. Existing public roads would be used and/or improved to the extent possible. In addition, new Project access roads would need to be constructed, and existing private roads would need to be improved to provide access to turbine sites, the O&M building, and the Project’s substations. Access roads would be sited to reduce ground disturbance, minimize adverse impacts to sensitive resources (e.g., wetlands, cultural resources sites, sensitive habitat, etc.) and optimize transportation safety and efficiency during construction and maintenance activities. Depending on the turbines selected, a maximum of approximately 60 miles of new access roads would be required.

Water would be required to batch the concrete required for turbine foundations and for building and equipment foundations at the substations, interconnection switchyard, meteorological sites, and the O&M building. In addition, water would be used for dust suppression on access roads and other disturbed areas. It is conservatively anticipated that the volume of water required for construction of the Project would not exceed 200 acre-feet over the course of a 24-month construction period. Water could be acquired from temporary-use groundwater wells or hauled in from available water sources located nearby. Water use would comply with State and county permitting requirements.

2.3 Operations and Maintenance
Wind turbines generally operate automatically without the need for centralized plant operators. Wind turbine performance would be monitored 24 hours a day, 7 days a week at the Remote Operations Center, which is located off site, and manual control would only be initiated as necessary for maintenance and troubleshooting.

Regularly scheduled preventive maintenance would help to ensure the safe and efficient long-term operation of the wind turbines. The Proponent would develop the Project’s Operations and Maintenance Plan, which would describe the scheduled minor and major maintenance activities and inspection requirements anticipated during the calendar year. Staff periodically would analyze meteorological data and performance trends for the wind turbines and associated facilities to determine the overall efficiency of the operation. It is possible some scheduled maintenance activities would be added or adjusted to improve the performance of the operation. Staff would
have specific training regarding safe work on wind turbines and the specific tasks necessary to provide both scheduled and unscheduled wind turbine maintenance.

Staff would drive the Project site frequently to conduct a visual inspection of the operations, including wind turbines, road conditions, fencing, other infrastructure, and any incidences of waste disposal or vandalism. The purpose of the inspections would be to identify obvious problems requiring maintenance or attention. Visual inspections would be a redundant check on the wind turbines. Each wind turbine would have internal sensors as part of the SCADA system to monitor its operating condition. Wind turbines requiring maintenance would be stopped remotely to allow the condition to be fixed.

Unscheduled repair work could be either minor or major. Replacing faulty internal components on the wind turbines, for example, would be considered a minor repair done with small tools and the wind turbine’s integrated winch system. Only a pickup or small truck would be needed to access the wind turbine using the existing Project access roads. Major repairs would be far less common and could require a crane and heavy trucks. Typically, the crane pads used during construction would not be regraded, but only revegetated; in this case, the vegetation would be cleared as necessary for crane operation. If the crane pad had been regraded to its original contours, grading could be necessary as well. The repair activity would be planned to minimize the crane’s time on-site and the overall effects of the repair.

Road maintenance would be performed on an as-needed basis. Regular snow removal would occur during the winter months to maintain access to the wind turbines, substations, and O&M building. Care would be taken in siting the O&M building to avoid contributing to snow drifting on Boulder Ridge Road. Grading and blading would be performed as required in the spring to remove vehicle ruts. Similar surface work could be needed after heavy rainfall or unusually heavy maintenance traffic. Culverts, drains, and other water management features would be kept clear to allow for natural water flows.

2.4 Decommissioning

The Proponent estimates that the Project would have a 35-year lifespan based on the useful life of the wind turbines. After that time, The Proponent would evaluate the continued operations of the Project and either upgrade and repower the facility with renegotiated leases or decommission it.

The Wyoming Industrial Development Information and Siting Act requires that a site and facility reclamation and decommissioning plan be included in the state’s application to obtain an Industrial Siting Permit. This plan must indicate the planned life of the facility and the means by which the facility and its site will be decommissioned and reclaimed at the end of the facility’s life. This plan must also comply with all requirements adopted by the Industrial Siting Council (ISC) and, if the permit is granted, the plan shall be updated every 5 years until reclamation and decommissioning is complete.
The goal of decommissioning would be to remove the power generation equipment and return the site to a condition as close to its preconstruction state as possible. Major activities required for decommissioning would typically occur in reverse order to construction.

2.5 Action Area

The Action Area includes all areas where any direct and indirect effects to the environment may occur (50 Code of Federal Regulations [CFR] §402.02). The Project’s Action Area is defined as the 26,000-acre Project Area provided in Attachment 1.

The Action Area is located within the Laramie Basin and Crystalline Mid-Elevation Forests Level IV U.S. Environmental Protection Agency (EPA) Ecoregions (Chapman et al. 2004). The Laramie Basin Ecoregion, which encompasses most of the western portion of the Action Area, is an intermontane valley containing primarily mixed-grass prairie. The topography of this ecoregion is nearly flat with elevations ranging from 7,100 to 7,900 feet above sea level. Average annual precipitation ranges from 10 to 16 inches and the mean high temperature ranges from 32°F in January to 80°F in July. Vegetation includes mixed-grass prairie species such as blue grama (Bouteloua gracilis), Indian ricegrass (Oryzopsis hymenoides), western wheatgrass (Pascopyrum smithii), rabbitbrush (Ericameria and Chrysothamnus spp.), and fringed sage (Artemisia frigida).

The Crystalline Mid-Elevation Forests Ecoregion, which encompasses the central and eastern portions of the Action Area, consists of low mountain slopes and outwash fans between 7,500 and 9,000 feet above sea level. Average annual precipitation ranges from 18 to 26 inches, and the mean high temperature ranges from 32°F in January to 80°F in July. Dominant vegetation includes lodgepole pine (Pinus contorta) and Douglas fir (Pseudotsuga menziesii) forests with areas that contain limber pine (Pinus flexilis) and quaking aspen (Populus tremuloides).

The results of a field-based habitat assessment conducted for the Action Area indicates that land cover is primarily scrub/shrub vegetation. Other land cover types present within the Action Area include wetlands, primarily mapped along the major stream features associated with the Action Area; forested areas, primarily located within the southernmost portion of the Action Area; and barren land comprised of rocky outcrops, primarily located within the northern portions of the Action Area.

Land use within the Laramie Basin Ecoregion generally consists of seasonal grazing of livestock. Land use within the Crystalline Mid-Elevation Forests Ecoregion is comprised of livestock grazing, logging, recreation, and mineral extraction (Chapman et al. 2004). Within the Action Area, land use is primarily ranchland, with scattered residential properties that are generally associated with ranching activities. The Action Area is moderately to heavily grazed by livestock throughout.
LISTED SPECIES AND CRITICAL HABITAT REVIEWED

Official species lists from USFWS identified five ESA-listed species and no designated critical habitat that should be considered for the Action Area (USFWS 2020a; Table 1). A species list was originally requested on September 10, 2019, and an update was requested on November 25, 2020 (Consultation Code: 06E13000-2019-SLI-0409; Appendix A). The species on both lists were the same. After a thorough desktop search, field-based habitat assessments, and conversations with the USFWS and Wyoming State Engineer’s Office (SEO), only one listed species, PMJM, was identified as potentially occurring in portions of the Action Area. The Proposed Action was determined to have no effect on all potential species due to one or more conditions, including lack of habitat, conservation measures, and lack of downstream impacts to the Platte River System (Table 1).
### Table 1: ESA-Listed Species Considered and Evaluated for Presence within the Action Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Listing Status</th>
<th>Species-Habitat Association</th>
<th>Justification/Potential Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preble’s meadow jumping mouse</td>
<td><em>Zapus hudsonius preblei</em></td>
<td>T</td>
<td>Prairie and foothill riparian habitats in areas with dense shrub, grass, and woody debris cover, with relatively undisturbed adjacent upland grasslands and nearby water source.</td>
<td>The Action Area is located within Cache la Poudre recovery population hydrologic unit but is at the geographic and elevational edge of the species’ range. Presence has not been previously recorded. Two marginal areas of possibly suitable riparian habitat bordered by grassland heavily grazed by cattle were identified. For these areas, additional conservation measures were adopted to avoid possible effects.</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piping plover</td>
<td><em>Charadrius melodus</em></td>
<td>T</td>
<td>Shorelines around small lakes, reservoir beaches, river islands, alkali flats, sand pits, and beaches on large lakes for breeding. Summer breeding resident, migrant.</td>
<td>No alkali flats, reservoirs, or rivers capable of supporting breeding identified within Action Area during field-based habitat assessment. No new water depletions avoids downstream effects to Platte River System.</td>
</tr>
<tr>
<td>Whooping crane</td>
<td><em>Grus americana</em></td>
<td>E</td>
<td>Wetland habitat including marshes, lakes, ponds, meadows, rivers, and agricultural fields.</td>
<td>Action Area is outside of the migration corridor in which 95 percent of observations occur and the species is uncommon in Wyoming. No new water depletions avoids downstream effects to Platte River System.</td>
</tr>
<tr>
<td><strong>Fishes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pallid sturgeon</td>
<td><em>Scaphirhynchus albus</em></td>
<td>E</td>
<td>Large silty rivers in the Platte River System downstream in Nebraska. Not known to occur in Wyoming or Colorado.</td>
<td>No new water depletions avoids downstream effects to Platte River System.</td>
</tr>
<tr>
<td><strong>Flowering Plants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western prairie fringed orchid</td>
<td><em>Platanthera praecllara</em></td>
<td>T</td>
<td>Mesic to wet unplowed tallgrass prairies and meadows but has also been found in old fields and roadside ditches. Not known to occur in Wyoming.</td>
<td>No new water depletions avoids downstream effects to Platte River System.</td>
</tr>
</tbody>
</table>

1. E= Federally Endangered, T= Federally Threatened
2. Sources: USFWS (2020a); Elliott-Smith and Haig (2020); Thompson *et al.* (2020); Urbanek and Lewis (2020)
3.1  **Platte River System Downstream Species**

The piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid occur downstream of the Action Area within the Platte River System and thus have the potential to be affected by water withdrawals. However, the Proponent of the Proposed Action has committed to obtaining water from temporary water use agreements with landowners with existing water sources within or near the Project and/or drilling new wells within the portion of the Project that is not hydrologically connected to the Platte River System.

Based on a determination by the Wyoming SEO, this Project is an existing water-related activity that will not result in new water depletions to the Platte River System and is covered by the Platte River Recovery Implementation Program’s Wyoming Depletions Plan. A copy of the determination received from the SEO is attached (Appendix B). Therefore, the Project would have no effect to Platte River species including piping plover, whooping crane, pallid sturgeon, and western prairie-fringed orchid.

3.2  **Preble’s Meadow Jumping Mouse (Zapus hudsonius preblei)**

PMJM, a subspecies of the meadow jumping mouse, was federally listed as a threatened species in 1998 and is also listed as a Species of Greatest Conservation Need for Wyoming (WGFD 2017). A draft recovery plan was prepared in 2003 by the USFWS and a final recovery plan (Recovery Plan) was prepared in August 2018 (USFWS 2018). In 2008, the species was removed from protection under the ESA in Wyoming but was reinstated in 2011 (USFWS 2011). The global status of the PMJM is Imperiled (NatureServe 2020).

3.2.1  **Distribution and Population Status**

The historic range of PMJM is limited to southeastern Wyoming and the Colorado Front Range. The Recovery Plan (USFWS 2018) designates hydrologic units of known or potential populations of PMJM targeted for PMJM recovery (USFWS 2018). One of these hydrologic units overlaps the southern and eastern portions of the Action Area and Siting Corridor, i.e., the Cache la Poudre Hydrologic Unit Code (HUC; Attachment 1). The southern and eastern portions of the Action Area also overlap the USFWS Area of Influence for PMJM (AOI; Attachment 1).

No reliable abundance estimates for PMJM exist and population trends and density are not well known, especially in Wyoming (73 Federal Register 39790). Nevertheless, knowledge concerning distribution of this species has increased dramatically since the time of original listing due to increased trapping and survey efforts. These efforts have resulted in an expansion of the known range of these mice, including in Wyoming (73 Federal Register 39790). Occurrence of the species is not known from the Action Area based on all documented trapping records as further discussed in Section 3.2.4.1.
3.2.2 Habitat Requirements and Species Biology

The PMJM generally inhabits well-developed riparian areas adjacent to undisturbed grasslands at elevations between 6,650 and 8,100 feet (USFWS 2018). Riparian vegetation typically includes a dense combination of grasses, forbs, shrubs, and trees in open wet meadows and riparian corridors. PMJM is also known to move outward from wetlands and riparian habitats into adjacent uplands.

The PMJM is closely associated with riparian ecosystems that are linear in nature and represent a small percentage of the landscape (USFWS 2005). Hydrologic regimes that support this species range from large perennial rivers to small ephemeral drainages. This species primarily inhabits well-developed riparian areas with adjacent, relatively undisturbed grassland communities. Riparian vegetation typically includes a dense combination of grasses, forbs, and shrubs in open wet meadows and riparian corridors or where shrubs and low trees provide adequate cover. When present, the shrub canopy is often willow, although other shrub species may also occur. Proximity to water is an important factor influencing habitat selection and utilization. Individuals use upland habitat at night for foraging, and rest in shrubs or bunch grasses during the day in the riparian zone. Upland habitats are extremely variable, ranging from open grasslands to forested woodlands. Where this species has been found in forested woodlands, the dominant tree species are ponderosa pine, Douglas-fir, spruce, and occasionally quaking aspen along with a lush and diverse understory of shrubs and forbs.

This species is a true hibernator, usually entering hibernation in September or October and emerging the following May, after a period of 7 or 8 months (Meaney et al. 2003). They hibernate near riparian zones. Hibernacula (i.e., hibernation nests) have been located both within and outside the 100-year floodplain of streams. These nests are typically found under debris at the base of shrubs and trees or in open grasslands. Hibernacula are not often found within areas with hydric soils, which may indicate that hibernacula are often outside wetland areas (Michael 2017). During the active season, this species constructs day nests composed of grasses, forbs, sedges, rushes, and other available plant materials. These nests are typically found under debris at the base of shrubs and trees, or in open grasslands.

The PMJM has rarely been trapped in uplands adjacent to riparian areas (Corn et al. 1995; Bakeman 1997; Dharman 2001). However, this species regularly uses upland areas for feeding and resting (Schorr 2001). Use of upland areas extends at least as far as 328 feet beyond the stream edge (Shenk and Sivert 1999; Ryon 1999; Schorr 2001). They have been documented to move considerable distances along streams—as far as 1 mile in a single evening.

The conversion of native riparian ecosystems to either commercial croplands or to grazed rangelands has been identified as a primary threat to PMJM persistence in Wyoming (Clark and Stromberg 1987; Compton and Hugie 1993). Properly managed haying and grazing operations can maintain adequate to good quality PMJM habitat. However, intensive grazing and haying operations may negatively impact PMJM by limiting or removing food sources and shelter options (USFWS 2005). Habitat alteration, degradation, loss, and fragmentation resulting from urban
development, flood control, water development and management, intensive agricultural practices, and other human land uses have affected PMJM populations. Permanent removal of occupied habitat could destroy nest sites, food resources, and hibernation sites, disrupt behavior, or form a barrier to movement.

3.2.3 Designated Critical Habitat
The Project’s Action Area does not overlap designated Critical Habitat (USFWS 2020b). No designated critical habitat for the PMJM exists in Wyoming, although there are 11 units of designated critical habitat in Colorado.

3.2.4 Environmental Baseline

3.2.4.1 Potential Occurrence
Potentially suitable PMJM habitat within the Project Area is limited to portions of perennial stream features and their associated floodplains (Willow Creek, Fish Creek and associated tributaries, Keys Creek, Dale Creek and associated tributaries, Johnson Creek, and Pump Creek). These flowing stream systems typically have well-developed wetland fringes, with shrub and/or tree canopy, and there are adjacent grasslands present. The presence of moderate to heavy grazing within much of the Action Area has likely diminished the density of forb species and the diversity of native grasses and sedges, and has resulted in a patchy, or spatially discontinuous riparian shrub/tree canopy. Many of the uplands adjacent to riparian areas are dominated by introduced species such as smooth brome (Bromus inermis) and Timothy grass (Phleum pratense) and are mown seasonally for hay production.

The upper elevational limit for PMJM in Wyoming is considered to be approximately 8,100 feet, and it is important to document that all 25 locations for the Rail Tie Habitat Suitability Study (see Section 3.2.4.2, below) are at relatively high altitudes for the subspecies (ranging from 7,744 to 8,010 feet above mean sea level). Portions of the Action Area fall within the USFWS PMJM AOI (USFWS 2020c). The Action Area is also located within portions of the U.S. Geological Survey (USGS) Cache la Poudre HUC 8 recovery unit for this species (USFWS 2020d).

There are no capture records of PMJM within the Action Area based on trapping efforts conducted between 1989 to 2014. Two trapping locations were noted within the Action Area, one of which is along Johnson Creek, and a second along Willow Creek. There are three trapping locations noted just north of the northeastern Project Area along a tributary of Dale Creek. No PMJM were found at any of these locations (USFWS 2020d). The closest PMJM capture record is from 1998 and is located approximately 1.2 miles southeast of the Action Area along a tributary to Fish Creek (USFWS 2020d) in Larimer County, Colorado.

In 2009, the Wyoming Game and Fish Department (WGFD) contracted with Western EcoSystems Technology, Inc. to conduct trapping for PMJM throughout southeastern Wyoming. Twelve sites were sampled, one of which was along Dale Creek just north of the Action Area. Thirty individual jumping mice (Zapus spp.) were captured during the 2009 study, and another 10 jumping mice
individuals were captured in 2010. Blood and tissue samples were collected from the 40 total jumping mice captures. Genetic differentiation was accomplished and determined that 3 of the total 40 jumping mice were PMJM subspecies. The remaining 37 individuals were western jumping mice (Z. princeps). Two of the three PMJM captures came from the Laramie River and Tunnel Road sampling site (approximately 55 miles north of the Action Area). One PMJM capture came from the Rabbit Creek site in Platte County (approximately 60 miles northeast of the Action Area). No PMJM were captured at Dale Creek, but a western jumping mouse was captured at this site. The WGFD study concluded that PMJM is likely less abundant than originally predicted in Wyoming (Cudworth and Greiner 2011).

In 2013, the Wyoming Natural Diversity Database conducted a trapping study for jumping mice in southeastern Wyoming (Abernethy and Beavais 2013). The work included live trapping from five sites, including F.E. Warren Air Force Base, Laramie River at Tunnel Road, Harney Creek, the Laramie River at the University of Wyoming Agricultural Experiment Station, and along Johnson Creek. The Johnson Creek site was located within the AOI and within the Action Area of this current Project. Results from the trapping on Johnson Creek detected four jumping mice (Zapus sp.). Genetic testing was undertaken for three of these mice and results confirmed that each mouse was a western jumping mouse. These data were confirmed via email with Ian Abernethy of the Wyoming Natural Diversity Database (WYNDD 2021).

The Recovery Plan also features trapping data from lands in Colorado within the Cache la Poudre HUC 8 recovery unit. These data show a positive trapping event in Colorado in 1998 on a tributary stream reach to Fish Creek (USFWS 2020d), approximately 1.2 miles southeast of the Action Area. Communication was made with George San Miguel of USFWS Region 6 (Lakewood Office) on July 31, 2020. He confirmed this capture was made in September 10, 1998. Additionally, he mentioned that a second positive trapping event for PMJM occurred near the confluence of Fish Creek and Dale Creek (near Virginia Dale, Colorado, approximately 7 miles southeast of the Action Area) on July 25, 2000. No further positive captures for PMJM have been made in this state line area since 2000. A negative trapping event from the state line area (Fish Creek watershed) was documented in 2003. No other trapping evidence is documented from that area following 2003. Mr. San Miguel was not able to confirm whether genetic confirmation analysis was conducted on the positive samples from either 1998 or 2000.

3.2.4.2 Habitat Suitability Assessment

A habitat suitability assessment to determine potentially suitable PMJM habitat within the Project was performed by Tetra Tech in May 2020 (Attachment 3). A detailed technical memorandum outlining the methodology used for this assessment was provided to Ms. Patricia Sweanor, USFWS, on August 17, 2020 (Tetra Tech 2020). This field-based habitat assessment utilized survey methodology from the Colorado USFWS, where the PMJM has a higher rate of occurrence and is subsequently more frequently studied. Additional habitat assessment data were collected in September 2020 to further inform micrositing efforts.
As outlined in the technical memorandum, based on the results of a desktop analysis and a 2019 surface water resource field assessment of the Project, Tetra Tech identified 25 initial locations of potentially suitable habitat for PMJM (Habitat Assessment Locations) that intersected with planned Project infrastructure. Potentially suitable PMJM habitat was identified along portions of perennial and intermittent stream features (e.g., Willow Creek, Fish Creek, Dale Creek, Johnson Creek, Keys Creek, Pump Creek, and associated tributaries) within the Project Area where flowing streams systems were found. Habitat Assessment Locations were chosen for this focused assessment based on the following criteria:

- Presence of perennial streams or other relatively permanent water supply
- A combination of grasses, shrubs, forbs and trees (preferably with cover at or near 100 percent)
- Areas with moderate to high species richness (>10 species present)
- Habitat patches of 50 acres or more
- Areas with land use that was on a spectrum from lightly grazed to heavily grazed
- Located within the Project Disturbance Footprint.

In Colorado, where the PMJM is well known to occur in the Front Range, USFWS Region 6 recommends that projects within 300 feet of 100-year floodplains associated with rivers, creeks, and their tributaries be assessed as to their potential direct impacts and indirect impacts (sedimentation, increased run-off, increased light pollution, etc.) to PMJM and PMJM habitat (USFWS 2004). Therefore, the following buffers were added in the Habitat Assessment Locations:

- 100-year Federal Emergency Management Agency (FEMA) floodplain boundaries
- 300-foot buffer beyond the limits of the mapped 100-year FEMA floodplains
- For perennial streams without a mapped 100-year FEMA floodplain, the 300-foot buffer was applied to each side of the perennial stream centerlines

The field team completed the following habitat suitability assessment forms at each of the Habitat Assessment Locations:

- USFWS Preble’s Meadow Jumping Mouse 2004 Survey Field Data Compilation Form (USFWS 2004)
- Colorado Parks and Wildlife (CPW) Habitat Scorecard for Preble’s Meadow Jumping Mouse (CPW 2016)

Wyoming USFWS does not have a formalized scorecard for PMJM. However, the subspecies is more prevalent and subsequently well studied in Colorado. Although not specifically developed for Wyoming, the CPW Habitat Scorecard offers a means for quantitative measurement of habitat suitability for PMJM that can aid in assessment of potential impacts to the species from project development. The Habitat Scorecard rates the habitat suitability of a site for PMJM on a scale of 0–100 points based on key habitat variables and conditions. Although CPW does not define a habitat suitability rating based on the scorecard's cumulative final score, based on Tetra Tech’s
professional opinion performing PMJM investigations, the following category ranges were used for this assessment:

- 0–59 points  Unsuitable Habitat
- 60–69       Poor Habitat Suitability
- 70–79       Moderate Habitat Suitability
- 80–89       Moderately High Habitat Suitability
- 90–100      High Habitat Suitability

The field team made observations and collected field photography to document a combination of conditions and/or characteristics at each Habitat Assessment Location. Table 2 outlines the results of the habitat assessment at each of the 25 Habitat Assessment Locations identified in the May 2020 and September 2020 assessments. These locations are illustrated in Attachment 3. All 25 Habitat Assessment Locations exhibited at least moderate grazing pressure. As the upper elevational limit for PMJM in Wyoming is considered to be approximately 8,100 feet, all 25 locations for the Rail Tie Habitat Suitability Study are at relatively high altitudes for the species (ranging from 7,744 to 8,010 feet above mean sea level).

Table 2 also outlines the proposed Project infrastructure and associated temporary and/or permanent disturbance at each Habitat Assessment Location. Based on the results of the May and September 2020 assessments, Project infrastructure was sited to avoid areas of higher habitat suitability to the extent practicable. This resulted in a reduction of eight proposed Project infrastructure locations (from 25 to 17 locations) within potentially suitable PMJM habitat. Of these 17 locations, only seven have proposed permanent disturbance from infrastructure development, specifically installation of a turbine pad and access roads, as outlined in Table 2.

Of these 17 proposed infrastructure disturbance locations, 15 are located within Habitat Assessment Locations with Habitat Scorecard Values less than 70, indicating Unsuitable Habitat or Poor Habitat Suitability at these sites. The remaining two locations (Sites 13 and 25) have Habitat Scorecard Values between 82.2 to 83.5, indicating Moderately High Habitat Suitability. As outlined in Table 2, no permanent Project infrastructure or permanent disturbance is proposed at Sites 13 and 25. The total predicted temporary disturbance from these two locations is 1.862 acres, which is 0.09% of the potentially suitable habitat within the Action Area.
Table 2: Predicted Temporary and Permanent Disturbance to Potential Preble’s Meadow Jumping Mouse Habitat, Rail Tie Wind Project

<table>
<thead>
<tr>
<th>Habitat Assessment Location</th>
<th>Predicted Temporary Disturbance Within PMJM Habitat Buffer (Acres)</th>
<th>Predicted Permanent Disturbance Within PMJM Habitat Buffer (Acres)</th>
<th>Habitat Scorecard Rating</th>
<th>Stream Name</th>
<th>Proposed Project Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>1.747</td>
<td>0.319</td>
<td>56.1</td>
<td>Tributary to Pump Creek</td>
<td>Access road, electrical collection line</td>
</tr>
<tr>
<td>Site 2</td>
<td>0</td>
<td>0</td>
<td>74.4</td>
<td>Tributary to Pump Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 3</td>
<td>2.096</td>
<td>0.291</td>
<td>45.5</td>
<td>Tributary to Pump Creek</td>
<td>Access road, electrical collection line, turbine construction buffer</td>
</tr>
<tr>
<td>Site 4</td>
<td>5.450</td>
<td>0.907</td>
<td>63.9</td>
<td>Tributary to Pump Creek</td>
<td>Access road, electrical collection line</td>
</tr>
<tr>
<td>Site 5</td>
<td>0</td>
<td>0</td>
<td>74.4</td>
<td>Tributary to Pump Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 6</td>
<td>0</td>
<td>0</td>
<td>76.1</td>
<td>Tributary to Pump Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 7</td>
<td>2.392</td>
<td>0</td>
<td>66.1</td>
<td>Pump Creek</td>
<td>Crane path, electrical collection line</td>
</tr>
<tr>
<td>Site 8</td>
<td>3.951</td>
<td>0.087</td>
<td>60.9</td>
<td>Pump Creek</td>
<td>Turbine, turbine construction buffer, crane path, electrical collection line</td>
</tr>
<tr>
<td>Site 9</td>
<td>4.385</td>
<td>0</td>
<td>61.7</td>
<td>Dale Creek</td>
<td>Electrical collection lines</td>
</tr>
<tr>
<td>Site 10</td>
<td>1.428</td>
<td>0</td>
<td>68.1</td>
<td>Pump Creek</td>
<td>Electrical collection line</td>
</tr>
<tr>
<td>Site 11</td>
<td>1.711</td>
<td>0</td>
<td>71.9</td>
<td>Pump Creek</td>
<td>Temporary access road, crane path and electrical collection line.</td>
</tr>
<tr>
<td>Site 12</td>
<td>0</td>
<td>0</td>
<td>73.6</td>
<td>Pump Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 13</td>
<td>1.066</td>
<td>0</td>
<td><strong>82.2</strong></td>
<td>Johnson Creek</td>
<td>Electrical collection line</td>
</tr>
<tr>
<td>Site 14</td>
<td>2.871</td>
<td>0</td>
<td>55.6</td>
<td>Willow Creek</td>
<td>Electrical collection line. Site is located outside (north) of the AOI for PMJM</td>
</tr>
<tr>
<td>Site 15</td>
<td>1.982</td>
<td>0.385</td>
<td>63.1</td>
<td>Willow Creek</td>
<td>Electrical collection line, access road; north of the AOI for PMJM</td>
</tr>
<tr>
<td>Site 16</td>
<td>0</td>
<td>0</td>
<td>61.1</td>
<td>Willow Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 17</td>
<td>1.191</td>
<td>0</td>
<td>61.2</td>
<td>Willow Creek</td>
<td>Electrical collection line, turbine construction buffer. Site is located outside (north) of the AOI for PMJM</td>
</tr>
<tr>
<td>Site 18</td>
<td>0</td>
<td>0</td>
<td>78.3</td>
<td>Willow Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Habitat Assessment Location</td>
<td>Predicted Temporary Disturbance Within PMJM Habitat Buffer (Acres)</td>
<td>Predicted Permanent Disturbance Within PMJM Habitat Buffer (Acres)</td>
<td>Habitat Scorecard Rating</td>
<td>Stream Name</td>
<td>Proposed Project Infrastructure</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>-------------------------</td>
<td>----------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Site 19</td>
<td>2.889</td>
<td>0.570</td>
<td>61.2</td>
<td>Fish Creek</td>
<td>Permanent access road, electrical collection line</td>
</tr>
<tr>
<td>Site 20</td>
<td>0</td>
<td>0</td>
<td>65.6</td>
<td>Fish Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 21</td>
<td>0.810</td>
<td>0</td>
<td>57.3</td>
<td>Fish Creek</td>
<td>Electrical collection line</td>
</tr>
<tr>
<td>Site 22</td>
<td>3.760</td>
<td>0.527</td>
<td>57.7</td>
<td>Tributary to Fish Creek</td>
<td>Permanent access road, electrical collection line, Crane path</td>
</tr>
<tr>
<td>Site 23</td>
<td>0</td>
<td>0</td>
<td>77.8</td>
<td>Tributary to Fish Creek</td>
<td>Infrastructure moved eliminating all predicted disturbance</td>
</tr>
<tr>
<td>Site 24</td>
<td>1.416</td>
<td>0</td>
<td>61.2</td>
<td>Keys Creek</td>
<td>Crane path</td>
</tr>
<tr>
<td>Site 25</td>
<td>0.796</td>
<td>0</td>
<td>83.5</td>
<td>Fish Creek</td>
<td>Electrical collection line</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>39.941</strong></td>
<td><strong>3.086</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Habitat Assessment Locations in bold text represent locations with predicted disturbance supporting moderate to moderate/high habitat suitability for PMJM based on the Habitat Scorecard Value.
4 EFFECTS ANALYSIS

4.1 Preble’s Meadow Jumping Mouse

4.1.1 Direct Effects
Potential direct effects of the Project on PMJM include direct mortality and injury during construction; disruption of behavior; and habitat loss, alteration, and fragmentation. Most direct effects would have the highest probability of occurring during construction and PMJM individuals that may exist in suitable habitat in the Action Area would likely be able to relocate to nearby/adjacent unaffected habitat. Direct effects can be permanent or temporary. Although disturbance to habitat that occurs only in temporary construction areas is a direct effect, these areas will be revegetated and will not result in a permanent loss of habitat. In addition, connectivity of stream systems will not be altered as a result of Project development.

The Proponent has performed micrositing for the Project to avoid disturbing suitable habitat for PMJM to the extent practicable, as evidenced in Table 2. Of the 17 proposed infrastructure disturbance locations, 15 are located within habitat assessment locations with habitat scorecard values less than 70, indicating poor to unsuitable habitat at these sites. The remaining two locations (Sites 13 and 25) have habitat scorecard values between 80-89, indicating moderately high habitat suitability. As outlined in Table 2, there are a total of 1.862 acres of predicted temporary disturbance at these two locations, and no predicted permanent disturbance. The acres of temporary and permanent predicted disturbance to potentially suitable PMJM habitat across the entire Action Area are as follows:

- Temporary Disturbance = 39.941 acres
- Permanent Disturbance = 3.086 acres

Based on a desktop evaluation of areas within the Action Area that fall within 300 feet of 100-year floodplains associated with rivers, creeks, and their tributaries, there are 1,999 acres of potentially suitable PMJM habitat within the Action Area (Attachment 2). The total predicted temporary and permanent disturbance (43.027 acres) for the Project represents just 2.22% of the overall potentially suitable PMJM habitat present within the Action Area. In addition to the limited nature of potentially suitable riparian habitat present in the disturbance areas, direct effects to PMJM are not anticipated because of the implementation of targeted conservation measures (Appendix C) and the Project’s more general environmental protection measures (EPMs; Section 5).

4.1.2 Indirect Effects
Indirect effects may include the potential for reduced PMJM abundance due to habitat loss, fragmentation, or alteration; increased predation as a result of habitat loss or behavioral changes; and decreased forage due to increased numbers of noxious weeds that occupy disturbed landscapes. Indirect effects can be temporary or long-term, although indirect effects are difficult to quantify.
Through the implementation of conservation measures (Section 5) and EPMs, no indirect effects to the PMJM are anticipated. The project would involve a small acreage of temporary (39.9 acres) and permanent disturbance (3.1 acres) to potentially suitable PMJM habitat versus the overall amount of potentially suitable PMJM habitat within the Action Area (1,999 acres). Temporarily disturbed areas would be reclaimed following the disturbance and riparian habitat connectivity will be maintained.
5 CONSERVATION MEASURES

In developing the Project design, the Proponent is committed to minimizing the potential for environmental impacts resulting from the Project and maintaining industry safety standards while managing cost and schedule. This approach would be realized by utilizing the set of established EPMs to avoid, minimize, and mitigate impacts during the construction, operations, and decommissioning stages of the Project (Table 4). The Proponent has adopted general construction best practices to reduce ground-disturbance, such as minimizing the cut and fill required for roads and foundations, and the reuse of as much excavated native soil and rock as possible. The Proponent would also apply the concept of adaptive planning and design, which would avoid and minimize impacts to the natural characteristics of the site. The EPMs that would eliminate or minimize disturbance to potentially suitable PMJM habitat are presented in Table 4.

In addition to the general EPMs, the Project will also implement conservation measures in areas where Project construction would occur in moderate or moderately high suitable habitats (i.e., habitats with a ≥70 point habitat score; Sites 13 and 25) to avoid any direct or indirect interaction with PMJM if the species were to occur. These measures are adapted from the USFWS's *Recommended Conservation Measures - Preble’s Meadow Jumping Mouse* (USFWS 2020e). The following conservation measures for PMJM will be implemented:

- Plan project construction activities in suitable habitat during the species’ hibernation season (November 1 – April 30).

- Prior to ground disturbance activities within suitable habitat, trim woody vegetation to ground level using hand tools during the active season to discourage PMJM from hibernating in construction areas for those sites. Cut vegetation will be removed and disposed of in an area outside of those suitable habitats and associated upland buffer zones.

- Any vegetation clearing within suitable habitat during the PMJM active season (May 1 through October 31) would be performed during daylight hours to avoid disrupting PMJM nocturnal activities.
### Table 4: Environmental Protection Measures Related to PMJM for the Rail Tie Wind Project

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Measure</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Preconstruction</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEN-1</td>
<td>The Project will be designed, constructed, and operated in compliance with Albany County Zoning Regulations (as amended) and Albany County Wind Energy Siting Regulations. Construction and operations activities will comply with all federal, state, and county environmental regulations, as applicable.</td>
<td>X</td>
</tr>
<tr>
<td>GEN-2</td>
<td>The Project will delineate environmentally sensitive areas (e.g., wetlands, waters, habitats) located within or adjacent to the Project Area and will identify those locations in construction planning documents. Construction and operations personnel will be informed of the appropriate practices that may be applicable to avoid or minimize impacts to these areas.</td>
<td>X</td>
</tr>
<tr>
<td>GEN-3</td>
<td>Construction travel will be restricted to existing roads and permanent or temporary access roads identified in the final Project Site Plan.</td>
<td></td>
</tr>
<tr>
<td>GEN-8</td>
<td>Temporary sanitary facilities will be located in convenient locations throughout the site. Facilities will be located greater than 100 feet from any waterbody or wetland and will be regularly serviced and maintained.</td>
<td></td>
</tr>
<tr>
<td><strong>Geology and Soils</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEO-1</td>
<td>Temporary ground disturbance activities will be limited to the minimum amount necessary in order to safely construct Project facilities.</td>
<td></td>
</tr>
<tr>
<td>GEO-2</td>
<td>Ground disturbance activities in areas of highly erodible soils and steep slopes will be avoided to the extent practicable.</td>
<td></td>
</tr>
<tr>
<td>GEO-3</td>
<td>Roads will be designed to follow existing contours and to avoid steep slopes that would require extensive cut-and-fill construction.</td>
<td></td>
</tr>
<tr>
<td>GEO-5</td>
<td>An Erosion Control Plan (ECP) will be developed to identify areas of potentially higher erodibility due to excavation, grading, or ground disturbance. The ECP will define appropriate erosion control measures that may be implemented during and after construction.</td>
<td></td>
</tr>
</tbody>
</table>
## Resource Category

<table>
<thead>
<tr>
<th>Measure</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GEO-6</strong> Erosion control measures will be periodically inspected, and as required after precipitation events. Erosion control measures will be repaired or replaced as necessary.</td>
<td>X</td>
</tr>
<tr>
<td><strong>GEO-7</strong> As soon as practicable following completion of ground disturbance activities, areas of temporary ground disturbance will be regraded and recontoured to blend with the natural terrain while maintaining existing drainage patterns.</td>
<td>X X X X</td>
</tr>
<tr>
<td><strong>GEO-8</strong> All private landowner’s existing drainage and erosion control structures such as diversions, irrigation ditches and tile lines shall be avoided by the Project, or in the alternative, appropriate measures are to be taken to maintain the design and effectiveness of the existing structures. Any structures disturbed during construction shall be repaired to as close to original condition as possible, as soon as possible.</td>
<td>X</td>
</tr>
</tbody>
</table>

### Vegetation

<table>
<thead>
<tr>
<th>Measure</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VEG-1</strong> A Reclamation Plan will be prepared prior to the onset of construction that will guide the revegetation of disturbed areas during and following the construction process.</td>
<td>X X</td>
</tr>
<tr>
<td><strong>VEG-2</strong> Revegetation will be implemented for all areas temporarily disturbed by construction or decommissioning of the facility in conformance with landowner agreements and in compliance with state and/or federal permitting requirements. Temporarily disturbed areas will be revegetated as soon as practicable, either through natural revegetation practices or through the use of reseeding. Plant species native to the affected ecosystems will be utilized whenever practicable.</td>
<td>X X X</td>
</tr>
<tr>
<td><strong>VEG-3</strong> The Reclamation Plan will identify locally approved, weed free, seed mixtures that prioritize plant species native to the ecosystems affected by site construction.</td>
<td>X X</td>
</tr>
<tr>
<td><strong>VEG-8</strong> Any herbicide use as part of vegetation management activities will follow label instructions and relevant federal, state, and local laws.</td>
<td>X X X X</td>
</tr>
</tbody>
</table>

### Water Quality

<table>
<thead>
<tr>
<th>Measure</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WQ-1</strong> The Project will identify, avoid, and/or minimize adverse effects to wetlands and waterbodies.</td>
<td>X X X</td>
</tr>
<tr>
<td><strong>WQ-2</strong> Woody vegetation in potentially disturbed wetlands will be cut at ground level to leave the root systems intact and encourage sprouting of the existing species following construction.</td>
<td>X</td>
</tr>
<tr>
<td>Resource Category</td>
<td>Measure</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Equipment operation in wetlands will be kept to the minimum necessary to safely perform the work. Prefabricated equipment matting will be used to avoid rutting, soil compaction, and other ground disturbance where temporary work areas occur in wetlands.</td>
</tr>
<tr>
<td></td>
<td>Wetland and aquatic resource boundaries will be clearly identified on all construction plans and will be posted with signs and flagging in the field.</td>
</tr>
<tr>
<td></td>
<td>Appropriate permits will be secured prior to any fill or dredge activities in wetlands or other waters of the United States.</td>
</tr>
<tr>
<td></td>
<td>No parking or servicing of construction-related vehicles will occur within any wetland boundary.</td>
</tr>
<tr>
<td></td>
<td>Erosion control barriers and other measures, such as silt fencing, fiber logs, and/or hay bales will be placed immediately upgradient of wetlands and waterbodies to minimize sediment transport and deposition.</td>
</tr>
<tr>
<td></td>
<td>Access roads will be designed and constructed to minimize disruption of natural drainage patterns including perennial, intermittent, and ephemeral streams.</td>
</tr>
<tr>
<td></td>
<td>A Stormwater Pollution Prevention Plan (SWPPP) outlining specific erosion control measures will be prepared, and its requirements will be implemented on site for the proposed Project. The SWPPP will be based on EPA and Wyoming Department of Environmental Quality requirements.</td>
</tr>
<tr>
<td></td>
<td>Construction activities shall be performed using methods that prevent entrance or accidental spillage of solid matter, contaminant debris, and other objectionable pollutants and wastes into flowing streams or dry watercourses, lakes, and underground water sources.</td>
</tr>
<tr>
<td></td>
<td>Borrow pits, if required, shall be excavated so that the water will not collect and stand therein. Upon completion of construction, the sides of borrow pits will be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance.</td>
</tr>
<tr>
<td>Resource Category</td>
<td>Measure</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>WQ-11</td>
<td>Waterbody crossings would incorporate WGFD design specifications and professional engineering standards, as applicable. Open-bottom culverts will be used where appropriate to avoid changing stream morphology or removing suitable fish habitat. In addition, such waterbody crossings and culverts would be constructed in a manner that prevents sediment erosion, deposition of sediment, and minimizes impacts to any environmentally sensitive areas.</td>
</tr>
<tr>
<td>WQ-12</td>
<td>Excavated material or other construction materials will not be stockpiled or deposited on or near stream banks, pond shorelines, or other watercourse perimeters where they can be washed away by storm runoff or can, in any way, encroach upon the actual water body itself.</td>
</tr>
<tr>
<td>WQ-13</td>
<td>Water quality BMPs would be implemented at waterbody crossings to minimize any unforeseen impacts to the Platte River System’s watershed and associated vegetation communities.</td>
</tr>
<tr>
<td>WQ-14</td>
<td>If new groundwater wells are required for construction or operation, the Project will coordinate with the Wyoming State Engineer to ensure withdrawal volumes will not adversely affect supplies for other uses.</td>
</tr>
</tbody>
</table>

*WQM - Water Quality Measure*
6 CONCLUSIONS

This ESA Listed Species and Critical Habitat Review identified a single species, the PMJM, that could be affected. Subsequent analysis of possible impacts from construction, operation, and maintenance of the Project determined no effect to the species. This biological determination is based on the following factors:

1. No PMJM occurrence has been documented from the site. Given that the Project is at the edge of the species’ geographic and elevational ranges, it is unlikely the species occurs in the Action Area at this time.

2. The Action Area contains 1,999 acres of potentially suitable habitat along riparian stream corridors and adjacent upland areas (i.e., acreage within 300 feet of 100-year floodplains associated with rivers, creeks, and their tributaries) and predicted permanent and temporary disturbance to potentially suitable habitat (43.017 acres of riparian and upland) is only 2.23% of this acreage (1,999 acres).

3. There are only two Habitat Suitability Locations with ratings of moderate to moderately high suitable habitat (>70 points) that are expected to be temporarily disturbed and with no anticipated permanent disturbance (i.e., sites 13 and 25). The total predicted temporary disturbance from these two locations is 1.862 acres, which is 0.09% of the potentially suitable habitat within the Action Area.

4. Connectivity of riparian ecosystems within the Action Area will not be permanently altered.

5. Consistent with Recommended Conservation Measures – Preble’s Meadow Jumping Mouse (USFWS 2020e), the Proponent has committed to perform initial vegetation clearing, grading, and ground disturbance activities during the hibernation season for PMJM (November through April) in those areas of moderate to moderately high suitable habitat (>70 points) to be disturbed by the Project. If PMJM were to occur in these areas, the potential for direct interaction would be avoided. See Section 5 for a discussion of conservation measures.

6. Any future changes to the Project’s infrastructure layout would be evaluated for PMJM habitat suitability using the methods outlined in the Habitat Suitability Assessment (Section 3.2.4.2) and conservation measures outlined would be implemented, if applicable.
7 LITERATURE CITED


Abernethy, Ian. 2021. E-mail communication between and Ian Abernethy, zoologist with Wyoming Natural Diversity Database (WYNDDB), University of Wyoming and Steve Yarbrough, biologist at Tetra Tech. Communication involved verifying western jumping mice captured and genetically verified for the Johnson Creek site. Communication on 01/22/2021.


Cudworth, N., and M. Greiner. 2011. Genetic Differentiation and Distribution of Preble’s Meadow Jumping Mouse (Zapus hudsonius preblei) and Western Jumping Mouse (Z. princeps) in Southeastern Wyoming. Wyoming Game and Fish Department Nongame Program, Lander, USA.


Attachments
Rail Tie Wind Project
Attachment 3
PMJM Habitat Suitability Assessment
Albany County, WY

Temporary Impact:
1.711 acres

Perennial Stream
Intermittent Stream
Ephemeral Stream

FEMA Flood Hazard Area
1% Annual Chance Flood
300-foot Buffer

Project Action Area
Representative Disturbance Footprint
Habitat Assessment Location
NHD Stream Type
Habitat Suitability Assessment Area
Potential Temporary Project Impact to Habitat
Potential Permanent Project Impact to Habitat

0 500 1,000 2,000
Feet
Albany County, WY
Attachment 3
PMJM Habitat Suitability Assessment

R:\PROJECTS\CONNECTGEN_ALBANY_6684\PMJM\MAPS\Rail_Tie_Attachment_3_PMJM_Habitat_Suitability_20210301.mxd

Permanent Impact: 0.087 acres
Permanent Impact: 0.319 acres
Permanent Impact: 0.907 acres
Permanent Impact: 0.291 acres
Temporary Impact: 3.951 acres
Temporary Impact: 1.428 acres
Temporary Impact: 5.450 acres
Temporary Impact: 1.747 acres
Temporary Impact: 1.728 acres
Temporary Impact: 0.368 acres
Temporary Impact: 2.392 acres
Temporary Impact: 4.385 acres

Pump Creek
Dale Creek

NHD Stream Type
Perennial Stream
Intermittent Stream
Ephemeral Stream

FEMA Flood Hazard Area
1% Annual Chance Flood
300-foot Buffer

Habitat Suitability Assessment Area
Potential Temporary Project Impact to Habitat
Potential Permanent Project Impact to Habitat

Project Action Area
Representative Disturbance Footprint
Habitat Assessment Location

Habitat Assessment Location

Scale: 0 500 1,000 2,000 Feet
0 500 1,000 2,000 Feet

Rail Tie Wind Project
Attachment 3
PMJM Habitat Suitability Assessment
Albany County, WY
Temporary Impact: 1.191 acres

Permanent Impact: 0.385 acres

Temporary Impact: 1.186 acres

Temporary Impact: 1.285 acres

Temporary Impact: 1.982 acres

Willow Creek
Boulder Creek
Forest Creek

1% Annual Chance Flood
300-foot Buffer

Habitat Suitability Assessment Area

Representative Disturbance Footprint

Project Action Area

Habitat Assessment Location

FEMA Flood Hazard Area

Habitat Suitability Assessment Location

Potential Temporary Project Impact to Habitat

Potential Permanent Project Impact to Habitat
Rail Tie Wind Project
Attachment 3
PMJM Habitat Suitability Assessment
Albany County, WY

Permanent Impact: 0.570 acres
Permanent Impact: 0.527 acres
Temporary Impact: 3.760 acres
Temporary Impact: 0.796 acres
Temporary Impact: 2.889 acres
Temporary Impact: 0.810 acres

NHD Stream Type
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream

FEMA Flood Hazard Area
- 1% Annual Chance Flood 300-foot Buffer

Habitat Suitability Assessment Area

Representative Disturbance Footprint
Habitat Assessment Location
Project Action Area

Temporary Impact to Habitat
Potential Temporary Project Impact to Habitat
Potential Permanent Project Impact to Habitat

Scale: 0 500 1,000 2,000 Feet

ConnectGEN
APPENDIX A:
Official USFWS Species List for the Rail Tie Wind Project, February 22, 2021
In Reply Refer To:  
Consultation Code: 06E13000-2019-SLI-0409  
Event Code: 06E13000-2021-E-00389  
Project Name: Rail Tie Wind Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location 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 (ES) 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 note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, 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.

Please feel free to contact us if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. We also encourage you to visit the Wyoming Ecological Services website at https://www.fws.gov/wyominges/species_endangered.php.

The purpose of the ESA 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 ESA 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.

We also recommend you consider the following information when assessing impacts to federally listed species, as well as migratory birds, and other trust resources:

**Colorado River and Platte River Systems:** Federal agencies must consult with the Service under section 7 of the ESA for projects in Wyoming that may lead to water depletions or have the potential to impact water quality in the Colorado River system or the Platte River system, because these actions may affect threatened and endangered species inhabiting the downstream reaches of these river systems. In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions minus return flows. Project elements that could be associated with depletions include, but are not limited to: ponds, lakes, and reservoirs (e.g., for detention, recreating, irrigation, storage, stock watering, municipal storage, and power generation); hydrostatic testing of pipelines; wells; dust abatement; diversion structures; and water treatment facilities. For more information on consultation requirements for the Platte River species, please visit https://www.fws.gov/platteriver/.

**Migratory Birds:** The Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA) prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations. Except for introduced species and some upland game birds, almost all birds occurring in the wild in the United States are protected (50 CFR 10.13). On December 22, 2017, the Department of the Interior Solicitor’s Office issued an opinion 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.

While the opinion (M-37050) states that the MBTA prohibition on the taking or killing of migratory birds applies only to deliberate acts, project activities should avoid, to the extent possible, sensitive periods and habitats to conserve healthy populations of migratory birds. See our website for more information and example conservation measures at https://www.fws.gov/
The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; Eagle Act) prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, destruction, or killing. Eagle nests are protected whether they are active or inactive. Removal or destruction of nests, or causing abandonment of a nest could constitute a violation of the Eagle Act. Projects affecting eagles may require development of an eagle conservation plan (https://www.fws.gov/ecological-service/es-library/pdfs/Eagle_Conservation_Guidance-Module%201.pdf). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/ecological-service/energy-development/wind.html) for minimizing impacts to migratory birds and bats.

In addition to MBTA and the Eagle Act, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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 ESA. Please include the Consultation Code 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:

**Wyoming Ecological Services Field Office**

334 Parsley Boulevard
Cheyenne, WY 82007-4178
(307) 772-2374
Project Summary
Consultation Code: 06E13000-2019-SLI-0409
Event Code: 06E13000-2021-E-00389
Project Name: Rail Tie Wind Project
Project Type: POWER GENERATION
Project Description: The proposed Project is a commercial wind energy facility encompassing approximately 26,000 acres of ranchland on private and state lands located in southeastern Albany County, Wyoming, approximately 15 miles south of the town of Laramie. The development and ultimate construction of the Project may occur in multiple phases, with the collective Project including up to 500 megawatts in generation capacity. The Project proposes to interconnect to the existing transmission system of the Western Area Power Administration (WAPA) via the Craig-to-Ault 345-kilovolt (kV) transmission line, which runs through the Project Area. The Project is currently studying multiple wind turbine generator types and Project design options. Therefore, layout and location of wind turbines and associated Project facilities such as access roads, electric collector lines, substation, operations and maintenance facility, and laydown areas, have not been identified at this time. ConnectGen intends to begin construction in 2021, and complete construction of the first phase by the end of 2022. ConnectGen expects to complete construction on the second phase in 2023.

Project Location:
Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.06695826686005,-105.44248452869424,14z

Counties: Albany County, Wyoming
**Endangered Species Act Species**
There is a total of 5 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries\(^1\), 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.

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<tr>
<td>1. <strong>NOAA Fisheries</strong>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.</td>
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<tr>
<th>Mammals</th>
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<tbody>
<tr>
<td>NAME</td>
</tr>
<tr>
<td>Preble's Meadow Jumping Mouse <em>Zapus hudsonius preblei</em></td>
</tr>
<tr>
<td>There is final critical habitat for this species. The location of the critical habitat is not available.</td>
</tr>
<tr>
<td>Species profile: <a href="https://ecos.fws.gov/ecp/species/4090">https://ecos.fws.gov/ecp/species/4090</a></td>
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<tr>
<th>Birds</th>
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<tr>
<td>NAME</td>
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<tr>
<td>Piping Plover <em>Charadrius melodus</em></td>
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<tr>
<td>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</td>
</tr>
<tr>
<td>There is final critical habitat for this species. The location of the critical habitat is not available.</td>
</tr>
<tr>
<td>Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a></td>
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</table>

| Whooping Crane *Grus americana* | Endangered |
| Population: Wherever found, except where listed as an experimental population |
| There is final critical habitat for this species. The location of the critical habitat is not available. |
| Species profile: [https://ecos.fws.gov/ecp/species/758](https://ecos.fws.gov/ecp/species/758) |

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<tr>
<th>Fishes</th>
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<tbody>
<tr>
<td>NAME</td>
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<tr>
<td>Pallid Sturgeon <em>Scaphirhynchus albus</em></td>
</tr>
<tr>
<td>No critical habitat has been designated for this species.</td>
</tr>
<tr>
<td>Species profile: <a href="https://ecos.fws.gov/ecp/species/7162">https://ecos.fws.gov/ecp/species/7162</a></td>
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</table>
**Flowering Plants**

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<tr>
<th>NAME</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Western Prairie Fringed Orchid <em>Platanthera praeclasta</em></td>
<td>Threatened</td>
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</tbody>
</table>

No critical habitat has been designated for this species.
Species profile: [https://ecos.fws.gov/ecp/species/1669](https://ecos.fws.gov/ecp/species/1669)

**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.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.
Migratory Birds

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

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.

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.

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<tr>
<th>NAME</th>
<th>BREEDING SEASON</th>
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<tbody>
<tr>
<td>Brewer's Sparrow <em>Spizella breweri</em></td>
<td>Breeds May 15 to Aug 10</td>
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<tr>
<td>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA. <a href="https://ecos.fws.gov/ecp/species/9291">https://ecos.fws.gov/ecp/species/9291</a></td>
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<tr>
<td>Cassin's Finch <em>Carpodacus cassini</em></td>
<td>Breeds May 15 to Jul 15</td>
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<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9462">https://ecos.fws.gov/ecp/species/9462</a></td>
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<tr>
<td>Chestnut-collared Longspur <em>Calcarius ornatus</em></td>
<td>Breeds elsewhere</td>
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<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
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</table>
**NAME** | **BREEDING SEASON**
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**Golden Eagle Aquila chrysaetos**<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.<br>[https://ecos.fws.gov/ecp/species/1680](https://ecos.fws.gov/ecp/species/1680) | Breeds Jan 1 to Aug 31

**Olive-sided Flycatcher Contopus cooperi**<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>[https://ecos.fws.gov/ecp/species/3914](https://ecos.fws.gov/ecp/species/3914) | Breeds May 20 to Aug 31

**Rufous Hummingbird selasphorus rufus**<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>[https://ecos.fws.gov/ecp/species/8002](https://ecos.fws.gov/ecp/species/8002) | Breeds Apr 15 to Jul 15

**Veery Catharus fuscscens saliccola**<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds May 15 to Jul 15

**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 (Ⅰ)**
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.

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<th>SPECIES</th>
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Additional information can be found using the following links:


**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 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.
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
- PEM1A
- PEM1C
- PEM1Ah
- PEM1B
- PEM1Cb
- PEM1Ch
- PEM1F
- PEM1Fh

FRESHWATER FORESTED/SHRUB WETLAND
- PSSA
- PFOA
- PSS1A
- PSS1Ax
- PSS1B
- PSS1C
- PSS1Cb

RIVERINE
- R4SBC
- R5UBH
- R3UBF

FRESHWATER POND
- PABFh
- PABGb
- PUSCh
APPENDIX B:
Response Letter from Wyoming State Engineer's Office Re: Downstream Depletions
June 8, 2020

ConnectGen
Attn John Kuba,
Director Environmental Affairs
1001 McKinney St, Suite 700
Houston, TX 77002

RE: Rail Tie Wind Project

To Mr. Kuba,

To assist in the Platte River Recovery Implementation Program (PRRIP) compliance process involving the construction of the Rail Tie Wind Project, I reviewed the associated water-related activities.

The installation of approximately 149 wind turbines located within the North and South Platte River basins and the temporary water use of approximately 200 acre-feet during the 18 month construction is considered an existing water-related activity. Due to (1) the use of temporary water use agreements allowing for no new net depletions to occur within the North and South Platte River basins; and/or (2) the use of water from wells considered not hydrologically connected to the North Platte River or its tributaries; this water use is covered under Wyoming’s Depletions Plan. Once the source of water through the temporary water use agreements and/or non-hydrologically connected groundwater wells is identified, mitigation will be determined unnecessary as there will be no new depletions of water within the North and South Platte River basins associated with the Rail Tie Wind Project. In the event this obligation is not met, the water use associated with this project will be reevaluated to determine any necessary mitigation.

If any further questions or comments exist, please don’t hesitate to contact me.

Sincerely,

Jeffrey R. Cowley
North Platte River Coordinator
State Coordinator, Wyoming’s Depletion Plan
APPENDIX C:
Recommended Conservation Measures—Preble’s Meadow Jumping Mouse, USFWS March 2020
Recommended Conservation Measures
Preble’s Meadow Jumping Mouse
USFWS March 2020

PRE-CONSTRUCTION DESIGN:

1. Design the project to avoid and minimize the permanent and temporary impacts to riparian and adjacent upland habitats.
   a. Before construction, identify and prioritize riparian and adjacent upland habitats within the project area. Design the project so that it avoids these habitats.
   b. Avoid or minimize the amount of concrete, riprap, bridge footings, and other “hard,” impermeable engineering features intended to be constructed within the stream channel and riparian or adjacent upland habitats.
   d. If riprap is used, bury the riprap with soil, then plant with native riparian vegetation.
   e. Minimize the number and footprint of access routes, staging areas, and work areas.
   f. Locate access routes, staging areas, and work areas within previously disturbed or modified non-habitat areas.
   g. Maintain habitat connectivity under bridges or through culverts by installing ledges or dry culverts adjacent to the culverts with water flow. Design bridges that allow sunlight in to support vegetation cover, and allow shrubs to grow at either end of culverts.
   h. Avoid fragmenting linear riparian corridors.

2. Install limits of work fencing (e.g., orange barrier netting or silt fencing), signage, or other visible markers to delineate access routes and the project area from habitats. Use this fencing to enforce no-entry zones.

3. Hold a preconstruction briefing for onsite personnel to explain the limits of work and other conservation measures.

4. Follow regional stormwater management guidelines and design best management practices (BMPs) to control contamination, erosion, and sedimentation, such as silt fences, silt basins, gravel bags, biodegradable and wildlife friendly netting and blankets, and other controls needed to stabilize soils in denuded or graded areas, during and after construction.

5. Locate utilities along existing road corridors, and if possible, within the roadway or road shoulder.
   a. Bury overhead utilities whenever possible.
   b. Directionally bore utilities and pipes underneath habitats.

6. Develop and implement a habitat restoration plan that addresses site preparation, salvaging desirable shrubs and saplings, planting techniques, control of non-native weeds, native species seed mixtures, and post-construction monitoring.
PROJECT IMPLEMENTATION:

7. Contact the US Fish and Wildlife Service (Service) immediately by telephone at (303) 236–4773 if a Preble’s mouse is found alive, dead, injured, or hibernating within the project area. Please also contact the Service if any other listed species are found within the project area.

8. To the maximum extent practicable, limit disturbing (e.g., crushing, trampling) or removing (e.g., cutting, clearing) all native vegetation, such as willows, trees, shrubs, and grasses within riparian and adjacent upland habitats.
   a. Restrict the temporary or permanent removal of vegetation to the footprint of the project area.
   b. If habitat must be affected, clip to ground level vegetation that will be permanently or temporarily affected one to two weeks prior to initiation of construction to discourage use of areas where the project intersects Preble’s mouse habitat.
   c. Minimize the use of heavy machinery and use smaller equipment and hand tools when possible. Plan heavy equipment and vehicle access to the work site via previously disturbed areas, or use a route that avoids damaging live or dormant vegetation.
   d. Soil compaction: Temporarily line access routes with geotextiles or other materials, especially in wet, unstable soils to protect roots and the seed bank.

9. Locate, store, stage, operate, and refuel equipment outside of riparian or adjacent upland habitats.
   a. Operate equipment from previously disturbed or modified roadbeds or road shoulders above the riparian habitats.
   b. Limit the number of entrance and exit points leading into the project area.
   c. Stockpile topsoil, trash and debris outside the riparian corridor and protect from stream flows or runoff.

10. To minimize impacts to the Preble’s mouse, plan project construction during the species’ hibernation season (approximately November 1 – April 30). If construction needs to occur during the species’ active season, trim potential hibernation habitat to ground level one to two weeks prior to initiation of construction to discourage the area’s use by the species as described above.

11. If the project has to be implemented during the Preble’s mouse active season (May 1 through October 31), work only during daylight hours to avoid disrupting Preble’s mouse nocturnal activities.

12. Utilize wildlife-proof garbage containers on site and promptly remove waste to minimize site disturbance and avoid attracting predators.

13. Cover exposed holes or piles of loose dirt with boards, tarps, or other materials to prevent entrapment.
14. Weed Control
   a. Wash and inspect vehicles and equipment before entering or leaving the project area so that they are free of noxious weed seeds and plant parts.
   b. Use only weed free certified materials, including gravel, sand, top soil, seed, and mulch.
   c. Invasive aquatic invertebrates: Resource management work often facilitates the spread of invasive species to unique and critical habitats for already endangered species. Equipment and vehicles operating in streams should be cleaned in accordance with Hazard Analysis-Critical Control Point (HACCP) guidelines: https://nctc.fws.gov/courses/HACCP/

15. Complete construction before beginning restoration or enhancement activities.

16. Work site lighting would be restricted to the Preble’s mouse hibernation season (November 1 to April 30). Any temporary lighting installed will use downcast LED full-cutoff fixtures that comply with the International Dark-Sky Association’s recommendations for outdoor illumination. Shielding and directing of lighting will be used to minimize light spill off the site.

POST-CONSTRUCTION:

17. Upon project completion, revegetate all disturbed areas with native shrubs, trees, forbs, and grasses.
   a. Rip compacted access routes prior to replanting with native vegetation.
   b. Fill and reseed with weed free material and native seed mixtures.
   c. Consult the Service before finalizing a seed species and plant species list.

18. Bury riprap, then plant with native riparian vegetation.

19. Place educational signage along retained or newly established trails in Preble’s mouse habitat to inform users about the species and measures in place to protect it. Use fencing to discourage public access into sensitive habitat. Require pedestrians to stay on established trails and pets to be kept on leash.

20. Monitor revegetated areas for success. The Service can help establish success criteria during the consultation process, such as species composition and herbaceous vegetation height.