

APPENDIX M

Biological Resources: *Humboldt Wind Energy Project Wildlife Assessment,
Humboldt County, California*



Humboldt Wind Energy Project
Wildlife Assessment

December 3, 2018

Prepared for:

Humboldt Wind, LLC
11455 El Camino Real, Suite 160
San Diego, CA 92130

Prepared by:

Stantec Consulting Services Inc.
1383 North McDowell Boulevard, Suite 250
Petaluma, CA 94954-7118

Table of Contents

ACRONYMS AND ABBREVIATIONS	I
EXECUTIVE SUMMARY	V
1.0 INTRODUCTION	1
2.0 METHODS	2
2.1 DATABASE AND LITERATURE REVIEW	2
2.2 FIELD SURVEYS	3
3.0 ENVIRONMENTAL SETTING	3
3.1 TOPOGRAPHY, HYDROLOGY, AND SOILS	4
3.2 AQUATIC RESOURCES	4
3.3 VEGETATION COMMUNITIES AND LAND COVER TYPES	4
3.3.1 Forests and Woodlands	6
3.3.2 Shrub/Scrub Habitat	6
3.3.3 Grassland	7
3.3.4 Riparian	7
3.3.5 Wetland Areas	7
3.3.6 Drainages	8
3.3.7 Open Water	8
3.3.8 Barren/Urban	8
4.0 RESULTS	8
4.1 FISH	18
4.1.1 Green Sturgeon, Northern Distinct Population Segment (DPS)	18
4.1.2 Pacific Lamprey	18
4.1.3 Coast Cutthroat Trout	18
4.1.4 Southern Oregon/Northern California Coho Salmon Evolutionarily Significant Unit (ESU)	19
4.1.5 Steelhead	20
4.1.6 California Coastal Chinook Salmon ESU	21
4.1.7 Longfin Smelt	21
4.2 AMPHIBIANS	22
4.2.1 Amphibians Documented in the Project Area	22
4.2.2 Amphibians with the Potential to Occur	22
4.3 REPTILES	25
4.3.1 Western Pond Turtle	25
4.4 BIRDS	26
4.4.1 Birds Documented in the Project Area	26
4.4.2 Birds with the Potential to Occur Onsite	27
4.5 MAMMALS	31
4.5.1 Mammals Documented in the Project Area	31
4.5.2 Mammals with the Potential to Occur Onsite	31
5.0 CONCLUSIONS	33

6.0 REFERENCES.....	34
----------------------------	-----------

LIST OF TABLES

Table 1. Summary of Land Cover Types in the Project Area	5
Table 2. Special-Status Wildlife Species Evaluated.....	10

LIST OF FIGURES

Figure 1 General Overview
Figure 2 Project Area
Figure 3 Land Cover Types

LIST OF APPENDICES

APPENDIX A WILDLIFE SPECIES OBSERVED IN THE HUMBOLDT WIND
ENERGY PROJECT AREA

Acronyms and Abbreviations

BUC	Bird Use Count
CC	California Coastal
CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Database
DPS	Distinct Population Segment
EUC	Eagle Use Count
ESU	Evolutionarily Significant Unit
FP	Fully Protected (Species)
ft	foot/feet
gen-tie	generation transmission line
HCP	Habitat Conservation Plan
HRC	Humboldt Redwood Company
km	Kilometer
m	Meter
MCV	Manual of California Vegetation, 2 nd edition
mi	mile
NC	Northern California
O&M	operations and maintenance
SBUC	Small Bird Use Count
SSC	Species of Special Concern
SU	sustainability unit
USFWS	U.S. Fish and Wildlife Service

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Note:

Often, agency suggestions and guidelines are provided in US units of measure (e.g., acres [ac] feet [ft], or miles [mi]), and in other instances, agency guidance is provided in metric (aka SI, or System International) units (e.g., meters [m] or kilometers [km]). To convert an otherwise readily recognized agency standard (e.g., 10 mi or 1 km) to the other system may result in confusion. Accordingly, we provide measures in either system, using the original agency suggestion unchanged, and provide conversion to the other standard only when it makes sense to do so.

Executive Summary

Humboldt Wind, LLC, plans to permit, build, and operate a wind energy project in Humboldt County, California. As one part of the studies to support review of the project pursuant to state and federal regulations, Stantec Consulting Services Inc. conducted a comprehensive assessment of the potential for the project site to support special-status wildlife species. This evaluation will support the Humboldt County administered California Environmental Quality Act process.

This wildlife assessment is based on a desktop-level analysis and results of field surveys conducted for the project. We provide a review of land cover types within the project area and the distribution and habitat requirements of special-status wildlife species known from the area. Also included is an evaluation of the likelihood of occurrence of each species within the project area.

Based on the results of the literature and database review and field surveys, we generated a list of 65 wildlife species of special-status (i.e., those listed by state and federal resource agencies and other sources as having some elevated concern for their conservation status) with potential to occur in the project area. Eight wildlife species were eliminated from analysis due to lack of habitat or because the project area is not within their known range; 57 wildlife species were evaluated for the potential to occur in the project area. Of these 57, 32 species have been documented in the project area and 25 species have the potential to occur in the project area.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

1.0 INTRODUCTION

Humboldt Wind, LLC (Humboldt Wind) is planning to construct and operate the Humboldt Wind Energy Project (project) in south-central Humboldt County, California (Figure 1). The project would consist of up to 60 wind turbines and associated facilities including meteorological towers, electrical collection system, access roads, construction staging areas, a substation, an operations and maintenance (O&M) facility, up to a 25-mile (mi) generation transmission line (gen-tie) and its point of interconnection at the existing Pacific Gas & Electric Bridgeville Substation. The project would have a nameplate generating capacity of up to 155 megawatts (MW). Proposed turbine locations are situated on two prominent ridgelines, Bear River Ridge and Monument Ridge, 4.7 mi south and southwest of Scotia, in Humboldt County, California (Figure 1).

The project area encompasses areas of potential activity and includes a 1,000-foot-(ft-) wide corridor centered on proposed turbine locations; a 200-ft-wide corridor centered on project roads, the electrical collection line, and the gen-tie; and a 500-ft-wide buffer around proposed staging and temporary impact areas and project substations, encompassing 2,241 acres (Figure 2). The project area is divided into the following segments for description purposes:

- Bear River Ridge
- Western Monument Ridge
- Eastern Monument Ridge
- Monument Ridge – Highway 101
- Highway 101 – Shively Ridge
- Shively Ridge
- Bridgeville

Project components would be transported overland to the project site on Highway 101 before reaching the temporary staging area(s) located near the Jordan Creek offramp (Figure 1 and 2). Several locations along Highway 101 would require temporary improvements to accommodate transportation of project components to the project site. These transportation route improvement areas are located along Highway 101 from Depot Road in the north, south to the 12th Street Overpass in the City of Fortuna. Transportation improvements would occur in five locations along this corridor. The five locations are referred to as:

- Depot Road
- Hookton Overpass
- Loleta Ramp
- Finch Creek Bridge and Bypass
- 12th Street Overpass Bypass

Stantec Consulting Services Inc. (Stantec) prepared a Draft Biological Resources Work Plan (Draft Work Plan) detailing biological resource surveys designed to support project planning (Stantec 2018). This Wildlife Assessment incorporates data from these surveys and desktop-level research to assess the potential for special-status wildlife species to occur in the project area.

2.0 METHODS

2.1 DATABASE AND LITERATURE REVIEW

We conducted a database and literature review that included a combination of data queries and a review of publicly available data, annual monitoring reports, local guides, scientific literature, and technical reports and environmental documents for other relevant projects. The California Natural Diversity Database (CNDDB) was queried for wildlife occurrences within the 7.5-minute U.S. Geological Survey topographic quadrangles where the project occurs and for all surrounding quadrangles (CDFW 2018a). This resulted in searching 23 quadrangles, including Arcata South, Blocksburg, Bridgeville, Buckeye Mountain, Bull Creek, Cannibal Island, Capetown, Eureka, Ferndale, Fields Landing, Fortuna, Hydesville, Larabee Valley, McWhinney Creek, Myers Flat, Owl Creek, Petrolia, Redcrest, Scotia, Showers Mountain, Taylor Peak, Weott, and Yager Junction.

We also reviewed the following information:

- Trust Resources Reports and Species Lists generated from the USFWS IPac (Information, Planning, and Conservation System) database summarizing federally listed species, critical habitat, and other biological resources potentially occurring in the project area (USFWS 2018);
- National Marine Fisheries Service fish species data for locally occurring species;
- Humboldt Redwood Company (HRC) spatial data and Annual Monitoring Reports prepared per the HRC Habitat Conservation Plan (HCP);
- A technical report associated with the previously proposed Bear River Wind Project (A Survey of Birds and Bats at a Proposed Wind Energy Site, Bear River Ridge, Humboldt County, California; McAllister and Fix 2008);
- U.S. Geological Survey Breeding Bird Atlas Explorer (USGS 2014);
- Northwestern California Birds (Harris 2006); and
- Online eBird records available at www.ebird.org¹.

We considered special-status wildlife species to include:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act;
- Species that are listed or designated as candidates for listing as rare, threatened or endangered under California Endangered Species Act;
- Species designated as Fully Protected (FP) or Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW); or
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act guidelines (species for which there may be elevated concern about their conservation status locally, or because of particular concern in the context of the project, etc.).

¹ eBird records for special-status bird species were reviewed but because they are citizen-science based, commonly highlight rarities, and do not reflect data from repeatable scientific sampling, they were used to guide the inclusion of a species, or not, in this report. Specifically, they were used to determine if a species might occur routinely enough in the project area that it warranted mention or if it was such a rarity that its presence would be a rare and unpredictable occurrence.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

2.2 FIELD SURVEYS

We conducted the field surveys described in the Draft Work Plan (Stantec 2018), and results of these surveys are included in the following technical reports listed below.

- Aquatic Resources Report – Delineations for the project area and the transportation route improvement areas were completed from July to October 2018.
- Botanical Resources Report – Surveys were completed from March to September 2018 to survey for rare plants and map vegetation communities in the project area and the transportation route improvement areas.
- Eagle and Raptor Aerial Nest Survey Report – Aerial surveys were completed in March and May of 2018.
- Northern Spotted Owl Habitat Assessment and Auditory and Visual Disturbance Analysis– A habitat assessment for northern spotted owl was completed in August of 2018. In addition, an auditory and visual disturbance analyses was performed using the Northern Spotted Owl Sound and Visual Harassment Decision Support Tools as provided in Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California (USFWS 2006).
- Acoustic Bat Monitoring Report – Acoustic bat monitoring detectors were deployed in the project area in spring 2018.
- Bird Use Count (BUC) Survey Report – BUCs and Small Bird Use Counts (SBUCs) have been conducted in the project area since October 2017.
- Eagle Use Count (EUC) Surveys – EUCs have been conducted in the project area since October 2017..
- Marbled Murrelet Habitat Assessment and Auditory and Visual Disturbance Analysis– A habitat assessment for marbled murrelet was completed in August 2018. In addition, an auditory and visual disturbance analyses was performed using the Northern Spotted Owl Sound and Visual Harassment Decision Support Tools as provided in Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California (USFWS 2006).
- Marbled Murrelet Radar Survey Report – Marbled murrelet radar surveys have been conducted in the project area since April 2018.
- Marbled Murrelet Risk Assessment Report – Radar survey data from 2018 will be put into a risk assessment model to determine risk to marbled murrelet.

3.0 ENVIRONMENTAL SETTING

Humboldt County is within the Klamath/North Coast bioregion and features a rocky coastline, montane forests, and small and sparsely populated settlements. Cool, moist climate is typical on the coast but becomes progressively drier, warmer, and more variable but remaining mild inland. Humboldt County features several biological communities; the most abundant is coniferous forest comprising Douglas-fir, redwood, and pine forests, followed by oak woodlands, and grasslands. Less abundant habitats include coastal beach dune vegetation, northern coastal scrub, chaparral, salt marsh, riparian, and freshwater marsh. Humboldt Bay, located about 16 mi north of the project, is the second largest estuary in California. As such, the Bay and coast of Humboldt County coast have high biodiversity and support many species of resident and migratory wildlife with high seasonal and year-round abundance. Six rivers run through the county, providing habitats for fish and wildlife as well as important water resources.

The project is on privately owned and managed lands in rural, unincorporated south-central Humboldt County, 10 mi southeast of Ferndale, 20 mi south of Eureka, and 22 mi north of Garberville, California. Most of the project would be located on two prominent ridgelines that are located south and east of the town of Scotia. Monument Ridge is located

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

south and west of Highway 101 and the Eel River, and Shively Ridge is located north and east of Highway 101 and the Eel River. Further details regarding the environmental setting of the project are provided below.

3.1 TOPOGRAPHY, HYDROLOGY, AND SOILS

Topography within the project area varies widely and ranges from nearly sea level in river bottoms to just over 3,000 ft in elevation with some areas of steep slopes. The western portion of the project area (Bear River Ridge, Western Monument Ridge, Monument Ridge – Highway 101, Eastern Monument Ridge) predominantly follows ridgelines (Figure 2). These ridgelines support several springs that form headwaters to intermittent and ephemeral drainages that empty into both the Eel River and Bear River. The eastern portion of the project area (Highway 101 – Shively Ridge, Shively Ridge, Bridgeville) traverses varying topography including ridgelines, canyons, valleys, and drainages. Flows in this section drain into intermittent and ephemeral drainages that empty into the Van Duzen River, which is a tributary to the Eel River.

3.2 AQUATIC RESOURCES

During the aquatic resources delineation, biologists documented wetlands, open water, and multiple ephemeral, intermittent, or perennial drainages including several named drainages (Greenlow Creek, Eel River, Van Duzen River, and Stitz Creek). Based on topography, all drainages mapped are assumed to eventually drain into one of three perennial drainages: Eel River, Bear River, or Van Duzen River. The Van Duzen River drains into the Eel River, and the Eel River and Bear River both drain directly to the Pacific Ocean.

3.3 VEGETATION COMMUNITIES AND LAND COVER TYPES

Eighty-three vegetation communities were mapped in the project area to the alliance or association level. Ten alliances were described according to A Manual of California Vegetation, 2nd edition (MCV) (Sawyer et al. 2009); however, 14 of the communities mapped are not described in the MCV. In general, vegetation communities are listed by stratum (i.e., tree, shrub, herb). Alliance descriptions are based on plant community characteristics observed in the project area and do not represent an exhaustive description of these alliances.

We translated the vegetation alliances mapped in the project area from MCV vegetation alliances to broad land cover types for ease of discussion (Table 1). Some of the MCV alliances occur under multiple land cover types based on the difference between occurrence along a water feature or upland (e.g., red alder forest). Riparian habitat was defined under the jurisdiction of CDFW under Section 1600 of the California Fish and Game Code, and includes hydrophytic vegetation growing in association with waterways (e.g., perennial, ephemeral, and intermittent drainages). Sections 3.31–3.3.8 describe each land cover type and how they may be used by wildlife (Figure 3).

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Table 1. Summary of Land Cover Types in the Project Area

Land Cover Type	MCV Alliance(s)
Forests and Woodland	<ul style="list-style-type: none"> • Bigleaf maple forest • Red alder forest • Tanoak forest • Oregon white oak woodland • Madrone forest • California bay forest • Douglas-fir forest • Douglas-fir–tanoak forest • Douglas fir–California bay forest • Redwood forest • Grand fir forest • Monterey pine plantation • Fremont cottonwood forest
Shrub/Scrub Habitat	<ul style="list-style-type: none"> • Ocean spray brush • Coyote brush scrub • Broom patches • Blue blossom chaparral • Coastal brambles • Poison oak scrub • Sand dune sedge swaths <i>Carex praegracilis</i> • Redwood manzanita stands <i>Arctostaphylos columbiana</i> • Coast buckwheat <i>Eriogonum latifolium</i> • Wallace's spike moss mats <i>Selaginella wallacei</i> • Shining willow groves • Himalayan blackberry–rattlebox–edible fig riparian • Arroyo willow thickets
Grassland	<ul style="list-style-type: none"> • Upland mustards <i>Brassica nigra</i> • Annual brome grasslands • Pampas grass patches <i>Cortaderia jubata, selloana</i> • Annual dogtail grassland • California oat grass prairie <i>Danthonia californica</i> • Tufted hair grass meadows <i>Deschampsia cespitosa</i> • California brome-blue wildrye prairie <i>Elymus glaucus</i> • Common velvet grass–sweet vernal grass meadows <i>Holcus lanatus–Anthoxanthum odoratum</i> • Perennial rye grass fields <i>Festuca perennis</i> • Harding grass–Reed canary grass swards <i>Phalaris aquatica</i> • Spike bentgrass prairie <i>Agrostis exarata</i> • Purple awned wallaby grass prairie <i>Rytidosperma penicillatum</i> • Yellow hairgrass grasslands <i>Aira praecox</i> • Spanish lotus • Sweet vernal grass meadows • Foothill sedge <i>Carex tumulicola</i> • Pennyroyal <i>Mentha pulegium</i>

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Land Cover Type	MCV Alliance(s)
Riparian	<ul style="list-style-type: none"> • Black cottonwood forest • Red alder forest • Arroyo willow thickets
Wetland Areas	<ul style="list-style-type: none"> • Arroyo willow thickets • Soft rush marshes <i>Juncus effusus</i> • Western rush marshes <i>Juncus patens</i> • Pennyroyal marshes
Drainages	<ul style="list-style-type: none"> • N/A
Open Water	<ul style="list-style-type: none"> • N/A
Barren/Urban	<ul style="list-style-type: none"> • N/A

3.3.1 Forests and Woodlands

Forest habitats range from areas with dense canopy cover to areas of sparse trees, and most forests in the project area are of the Douglas-fir and redwood forest alliances (Figure 3). Common canopy species include redwood, Douglas-fir, and tanoak (*Notholithocarpus densiflorus*), though considerable variation exists depending on altitude, aspect, and land management. Depending on the density of the canopy, the understory can range from sparse to dense and diverse plant communities. Forest habitats provide important nesting and perching habitat for raptors and other birds and cover for small and large mammals. Leaf litter deposited below the trees can create microhabitats for small vertebrates including salamanders, lizards, and rodents. Common wildlife species associated with general forests and woodlands habitats includes black bear (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus columbianus*), deer mouse (*Peromyscus maniculatus*), California quail (*Callipepla californica*), band-tailed pigeon (*Patagioenas fasciata*), western wood-pewee (*Contopus sordidulus*), Hutton's vireo (*Vireo huttoni*), Stellar's jay (*Cyanocitta stellari*), varied thrush (*Ixoreus naevius*), yellow-rumped warbler (*Setophaga coronate*), Wilson's warbler (*Cardellina pusilla*), and dark-eyed junco (*Junco hyemalis*),

3.3.2 Shrub/Scrub Habitat

Shrub/scrub habitats are dominated by bush-shaped plants that are smaller than typical trees. Plant and wildlife species composition in this habitat is highly variable and is dependent upon topography, soils, and slope aspect. Predominant species include redwood manzanita (*Arctostaphylos columbiana*), coyote brush (*Baccharis pilularis*), blueblossum (*Caenothus thyrsiflorus*), willows (*Salix* spp.) and raspberries (*Rubus* spp.). The understory in shrub/scrub habitats is generally sparse but can include forbs and various annual grasses. Common wildlife species associated with general shrub/scrub habitats include: western fence lizard (*Sceloporus occidentalis*), California quail,

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

California ground squirrel (*Otospermophilus beecheyi*), brush rabbit (*Sylvilagus bachmani*), opossum (*Didelphis virginianus*), raccoon (*Procyon lotor*), black-tailed deer, striped skunk (*Mephitis mephitis*), and deer mouse.

3.3.3 Grassland

In California, many grasslands include introduced annual grasses, usually less than 3 ft tall, but they can also contain remnant native perennial grasses and native annual forbs (broad-leaved plants). In years of favorable rainfall, grassland habitats can support numerous species of native annual spring wildflowers. Some of the grasslands within the project area are used as pastureland for cattle grazing. Species composition within grassland habitats can vary significantly based on altitude, soil and land use but, within the project area, the most abundant grassland habitats are dominated by common velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), and purple awned wallaby grass (*Rytidosperma penicillatum*). Grassland habitats can support a variety of small mammals and provide foraging or nesting habitat for raptors and other birds. Birds commonly found foraging in annual grasslands include red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*). Common seed eaters, including California quail and western meadowlark (*Sturnella neglecta*), will nest on the ground in grasslands. Other common wildlife species, such as barn swallow (*Hirundo rustica*), will disperse through and forage within grassland habitats. Common mammals of grasslands include California ground squirrel, Botta's pocket gopher (*Thomomys bottae*), broad-footed mole (*Scapanus latimanus*), western harvest mouse (*Reithrodontomys megalotis*), and black-tailed jackrabbit (*Lepus californicus*). These small mammals utilize open grassland for both foraging and breeding. Larger mammals such as black-tailed deer will browse on grassland plants. Burrows of California ground squirrels can also provide important refuge sites for other wildlife species, including special-status amphibians.

3.3.4 Riparian

Riparian habitats include areas where hydrophytic, shrub/scrub, and/or trees of varying densities are growing along waterways. Common plant species in riparian habitats include red alder (*Alnus rubra*), willows (*Salix* sp.), elderberries (*Sambucus* sp.), rushes (*Juncus* sp.), poison hemlock (*Conium maculatum*), and stinging nettle (*Urtica dioica*). Riparian habitat often provides important habitat for many wildlife species as it offers diverse microhabitats created by the layering of trees, shrubs, herbs, and aquatic vegetation, as well as access to streams for drinking and foraging. Riparian habitat provides valuable nesting habitat for birds; offers cover and refuge sites for amphibians, reptiles, and small mammals; and serves as important movement corridors for wildlife. This habitat also enhances the value of adjacent upland habitats by providing water, foraging resources, and thermal refuges. Bird species found in riparian scrub and woodland habitats include Cooper's hawk (*Accipiter cooperi*), black phoebe (*Sayornis nigricans*), Hutton's vireo, warbling vireo (*Vireo gilvus*), and many other songbirds. Riparian vegetation can also provide beneficial shading and instream cover for fishes and other aquatic wildlife species.

3.3.5 Wetland Areas

Wetlands include locations dominated by wetlands species such as pennyroyal or *Juncus* spp. Some of the alliances included in this habitat category (such as the arroyo willow thickets) also contain riparian characteristics. In winter and spring, seasonal wetlands can provide foraging habitat for resident and migratory birds. Because seasonal wetlands are often hydrologically isolated from rivers and streams and subject to seasonal drying, fish are generally absent from these features.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

3.3.6 Drainages

We mapped 83 drainages and drainage segments in the project area. No drainages were present within the transportation route improvement areas. Drainage types present in the project area include 16 perennial waterways, 29 intermittent waterways, 38 ephemeral waterways, and a few culverted waterways.

Many of these water features could provide habitat for special-status wildlife, depending on period of inundation (or hydroperiod), amount and type of surrounding vegetation, elevation, and amount of human disturbance. When water is present, the waterways may support aquatic invertebrates and fish and provide breeding sites for amphibians. Water features and the areas surrounding them can also be used by nesting birds.

In addition to the features described above, there are multiple unvegetated man-made ditches associated with some of the access routes that may provide some wildlife habitat.

3.3.7 Open Water

We classified one stock pond on Bear River Ridge as open water, and one segment of the Eel and Van Duzen Rivers. At the time of the surveys, the stock pond feature was unvegetated, holding water, and functioning as a water supply for cattle. It is surrounded by a wetland feature (pennyroyal marsh) that was mapped separately. Stock ponds can provide habitat for breeding amphibians and may also support invertebrates and fish and do provide wildlife habitats.

3.3.8 Barren/Urban

Barren/urban areas include portions of the project area that are not vegetated or are landscaped. These areas include roads, road shoulders, structures and associated landscaping, and parking areas. Vegetation, where present, consists ornamental/landscaped plantings. The planting and maintenance of shrubs, trees, and other ornamental plants in developed and landscaped areas can provide habitat for certain wildlife species that are able to coexist with humans and anthropogenic landscapes. Buildings and structures such as bridges, overpasses, and transmission towers can provide shelter, roosting, or nesting sites for birds, mammals, and other wildlife.

4.0 RESULTS

Based on the results of the literature and database review and field surveys, we generated a list of forty-nine special-status wildlife species with the potential to occur in the project area (Table 2). A comprehensive list of wildlife species documented in the project area, both during surveys and incidentally, is included in Appendix A.

Of these 65 potentially-occurring special-status species, 57 were further evaluated for the potential to occur in the project area. Eight special-status wildlife species were not analyzed further due to lack of habitat, because the project area is not within their known range, or because work within their habitat will not occur; these species are listed below and in Table 2 but are not discussed further.

- shortnose sucker (*Chasmistes brevirostris*)
- Lost River sucker (*Deltistes luxatus*)

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- tidewater goby (*Eucyclogobius newberryi*)
- eulachon (*Thaleichthys pacificus*)
- green sea turtle (*Chelonia mydas*)
- short-tailed albatross (*Phoebastria albatrus*)
- pallid bat (*Antrozous pallidus*)
- Humboldt marten (*Martes caurina humboldtensis*)

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Table 2. Special-Status Wildlife Species Evaluated.

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Fish			
Green sturgeon, northern DPS (<i>Acipenser medirostris</i>)	FSC/NL	Includes coastal spawning populations from the Eel River north to Klamath River. Prefers deep, low gradient reaches or off-channel coves.	Potential
Shortnose sucker (<i>Chasmistes brevirostris</i>)	FE/SE, FP	Deep-water lakes and impoundments, and swift water and deep pools in rivers. Known from Upper Klamath Lake and its tributaries, Clear Lake Reservoir and its tributaries, and Klamath River downstream to Copco Reservoir.	The project area is located outside of the geographic range for this species. No Potential
Lost River sucker (<i>Deltistes luxatus</i>)	FE/SE, FP	Deep-water lakes and impoundments, and swift water and deep pools in rivers. Known from Upper Klamath Lake and its tributaries, Clear Lake Reservoir and its tributaries, and Klamath River downstream to Copco Reservoir.	The project area is located outside of the geographic range for this species. No Potential
Pacific lamprey (<i>Entosphenus tridentatus</i>)	NL/SSC	Usually anadromous, begin life cycle as ammocoetes in freshwater streams. Larval lamprey often stay in freshwater for 5–7 years then move downstream to saltwater environments where they usually stay for 2–3 years before returning to freshwater to spawn.	Potential
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE/SSC	Shallow lagoons and lower stream reaches where the water is brackish to fresh and slow-moving or fairly still but not stagnant.	The project area does not contain shallow lagoons and lower stream reaches suitable for this species. No Potential
Coast cutthroat trout (<i>Oncorhynchus clarkii clarkii</i>)	NL/SSC	Require cool, clean water with cover, such as rocks or fallen logs, and deep pools for holding. Spawn in small streams with gravel substrates.	Potential
Southern Oregon/northern California coho salmon ESU (<i>Oncorhynchus kisutch</i>)	FT/ST	Spawns in streams and rivers with cool water temperatures. Redds are constructed in riffle habitats with gravel and cobble substrates.	Potential
Northern California steelhead DPS (<i>Oncorhynchus mykiss irideus</i>)	FT/NL	Require cool, swift shallow water; clean loose gravel for spawning; and runs and suitable large pools in which to rear and over summer.	Potential

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Summer-run steelhead trout (<i>Oncorhynchus mykiss irideus</i>)	NL/SSC	Require cool, swift water, clean loose gravel for spawning; and runs and suitable large pools in which to rear and over summer.	Potential
California coastal chinook salmon ESU (<i>Oncorhynchus tshawytscha</i>)	FT/NL	Spawn and rear in coastal tributary streams and rivers. Requires cool water temperatures for spawning, egg-incubation, and juvenile rearing. Spawn in riffles with gravel and cobble substrates.	Potential
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC/ST, SSC	Found close to shore in bays and estuaries. Enters coastal streams to spawn.	Low Potential
Eulachon southern DPS (<i>Thaleichthys pacificus</i>)	FT/NL	Spend most of their life in salt water. Spawn in lower reaches of rivers and tributaries with small gravel or in semi-sandy areas with debris.	This species has not been documented south of the Humboldt Bay and Jacoby Creek and thus the Eel River is outside of its known range. No Potential
Amphibians			
Pacific tailed frog (<i>Ascaphus truei</i>)	NL/SSC	Inhabit cold, clear, perennial streams with rocky substrates. Adults can be found in adjacent uplands during wet weather.	Potential
Northern red-legged frog (<i>Rana aurora</i>)	NL/SSC	Found in humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover. Breeds in perennial aquatic habitats including lakes, ponds, reservoirs and streams.	Present
Foothill yellow-legged frog (<i>Rana boylei</i>)	NL/SCT, SSC	Inhabits streams with rocky substrates in coniferous forests, woodlands, and chaparral. Seldomly found far from water.	Potential
Southern torrent salamander (<i>Rhyacotriton variegatus</i>)	NL/SSC	Inhabits shallow, cold, clear, well-shaded streams and seeps often associated with rock or talus and mature to old growth forests. Occasionally found in riparian vegetation.	Potential
Reptiles			
Green sea turtle (<i>Chelonia mydas</i>)	FT/NL	Habitat includes tropical and subtropical saltwater environments. Open beaches with gradual slopes and minimal disturbance are used for nesting.	The project area does not include any saltwater features. No Potential

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Western pond turtle (<i>Emys marmorata</i>)	NL/SSC	Found in lakes, rivers, streams, and irrigation ditches. Requires basking habitat such as exposed banks, logs, rocks, or floating vegetation. Eggs are laid and buried in uplands with friable soils and good sun exposure.	Potential
Birds			
Cooper's hawk (<i>Accipiter cooperii</i>)	NL/NL	Breeds in mixed deciduous forest, riparian forest, open woodlands, and urban areas.	Present
Northern goshawk (<i>Accipiter gentilis</i>)	NL/SSC	Breeds in dense mature coniferous and deciduous forests interspersed with meadows, other openings, and riparian areas. Nesting habitat includes northerly aspect slopes near water.	Low Potential
Sharp-shinned hawk (<i>Accipiter striatus</i>)	NL/NL	Nests in woodland and forest habitats, hunts along forest edges.	Present
Tricolored blackbird (<i>Agelaius tricolor</i>)	NL/SCE, SSC	Breeds in large colonies in freshwater marshes and marshes within agricultural areas. Forages in open habitats, including agricultural fields.	Low Potential
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	NL/SSC	In the west, breeds in grasslands with scattered shrubs. Found in dense grasslands on rolling hills, lowland plains, valleys, and hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	Present
Golden eagle (<i>Aquila chrysaetos</i>)	NL/FP	Nests are built on cliffs, rocky outcrops, or in large trees. Hunt over open terrain such as grasslands, marches, and shrub habitats.	Present
Short-eared owl (<i>Asio flammeus</i>)	NL/SSC	Nests in open country including grasslands, pastures, and alfalfa or grain fields.	Present
Long-eared owl (<i>Asio otus</i>)	NL/SSC	Occur in dense vegetation near grasslands or shrublands and in open forests.	Low Potential
Western burrowing owl (<i>Athene cunicularia</i>)	NL/SSC	Inhabit open, treeless areas with low, sparse vegetation including grasslands, deserts, and steppe environments. Can also be found in golf courses, pastures, agricultural fields, and urban vacant lots. Burrowing owls are often associated with high densities of burrowing mammals such as ground squirrels.	Present

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT/SE	Nests in coastal old growth coniferous forests or coastal forests with old growth characteristics. Requires trees with nest platforms.	Present
Brant (<i>Branta bernicla</i>)	NL/SSC	Found in shallow marine waters along shorelines, lagoons in migration.	Potential
Ferruginous hawk (<i>Buteo regalis</i>)	NL/NL	Outside of the range. Found in open spaces and grasslands in the west.	Present
Vaux's swift (<i>Chaetura vauxi</i>)	NL/SSC	Prefers redwood and Douglas-fir habitats. Nests in hollow trees and snags or occasionally in chimneys. Aerial forager.	Present
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT/SSC	Nests above the high tide line on coastal beaches and sandspits. Also nests on sparsely-vegetated dunes, beaches at creek and river mouths, dredge material sites, and river bars.	Low Potential
Mountain plover (<i>Charadrius montanus</i>)	NL/SSC	Rare to uncommon winter visitor along the northern coastal area of California. Uses open grasslands, plowed fields with little vegetation, and open sagebrush habitats.	Low Potential
Northern harrier (<i>Circus cyaneus</i>)	NL/SSC	Nests on ground in shrubby or herbaceous vegetation often associated with emergent wetland, grasslands, or along rivers or lakes. Forage over open habitats including marshes, meadows, and grasslands.	Present
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT/SE	Nests in extensive and dense riparian forest. Nearest known population occurs in riparian forest at the mouth of the Eel River, Humboldt County.	Low Potential
olive-sided flycatcher (<i>Contopus cooperi</i>)	NL/SSC	Breeds primarily in late-successional conifer forests with open canopies. Associated with edges, openings, and clearings in otherwise relatively dense forests.	Present
yellow rail (<i>Coturnicops noveboracensis</i>)	NL/NL	Breeds in marsh habitat primarily of the Central Flyway.	Low Potential
black swift (<i>Cypseloides niger</i>)	NL/SSC	Forage over forested and open areas and feed on the wing. Nests sites are sheltered, inaccessible areas preferably near water and often behind or near waterfalls or in sea caves. Vertical cliffs and crevices in mountainous country also provide nesting habitat. Depending on the availability of nest sites, may nest in small colonies.	Present

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
White-tailed kite (<i>Elanus leucurus</i>)	NL/FP	Inhabits open grassland and savannah habitats. Characteristically hovers while hunting main prey, small mammals. Roosts communally during the nonbreeding season, in groups that can number over 100. Nests in trees or shrubs within low elevation grassland, agricultural, wetland, oak-woodland, and savannah habitats as well as riparian areas adjacent to open area. Most nests are documented on habitat edges.	Present
Little willow flycatcher (<i>Empidonax traillii brewsteri</i>)	NL/SE	Breeding habitat includes open wet meadows or montane riparian habitats dominated by willow thickets with adjacent open habitats.	Low Potential
California Horned lark (<i>Eremophila alpestris actia</i>)	NL/NL	Inhabit open ground, preferring areas without trees or shrubs including prairies, fields, airports, shores, tundra, short-grass prairies, extensive lawns (as on airports or golf courses), plowed fields, stubble fields, beaches, lake flats, dry tundra of far north or high mountains	Present
Prairie falcon (<i>Falco mexicanus</i>)	NL/NL	Forages in grasslands and open habitats, nests in cliff faces.	Present
American peregrine falcon (<i>Falco peregrinus anatum</i>)	FD/SD, FP	Nests on high cliffs, banks, dunes, or mounds near wetlands, lakes, rivers, or other water bodies.	Present
Common loon (<i>Gavia immer</i>)	NL/SSC	Common loons breed on remote freshwater lakes of the United States and Canada. In summer, occur mainly on lakes within coniferous forests and above the tree line onto open tundra. In winter and during migration, can be found on lakes, rivers, estuaries, and coastlines and are rarely found more than several miles offshore.	Present
Bald eagle (<i>Haliaeetus leucocephalus</i>)	FD/SE, FP	Requires large bodies of water, or free flowing rivers with abundant fish and adjacent snags and large trees for perching and nesting.	Present
Yellow-breasted chat (<i>Icteria virens</i>)	NL/FP	Nests in riparian vegetation, preferring early successional riparian habitats with a well-developed shrub layer and open canopy.	Low potential
Osprey (<i>Pandion haliaetus</i>)	NL/NL	Nests in treetops and on platforms adjacent to open water including lakes, rivers, and coastal areas. Feeds on fish.	Present

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Bryant's savannah sparrow (<i>Passerculus sandwichensis alaudinus</i>)	NL/SSC	Open coastal grasslands and marshes as well as damp pastures and other moist grasslands.	Present
Short-tailed albatross (<i>Phoebastria albatrus</i>)	FE/SSC	Nest on sloping grassy terraces on wind swept islands. Forage widely across the temperate and subarctic north Pacific Ocean.	The project is not located on an island suitable for this species. No Potential
Purple martin (<i>Progne subis</i>)	NL/SSC	Nests in cavities in snags or live trees in open forest and woodland areas. Also known to nest on man-made structures such as bridges and radio communications towers. Forages in riparian areas, forests, and woodlands.	Present
Bank swallow (<i>Riparia riparia</i>)	NL/ST	Nests in colonies on vertical banks or cliffs along rivers, streams, reservoirs, and coastal waters.	Low Potential
Yellow warbler (<i>Setophaga petechia</i>)	NL/SSC	Primarily nests in riparian vegetation in close proximity to water along streams and in wet meadows. Also, nests in xeric montane shrub fields and occasionally in shrubby understory of mixed conifer forest.	Present
Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT/ST, SSC	In northern California, resides in stands of old growth or mature coniferous forest with multi-layered canopy and complex forest understory.	Present
Nesting colonies of: -great egret -great blue heron -snowy egret -black-crowned night heron -Caspian tern -double-crested cormorant	NL/NL	Avian species that nest in large colonies or rookeries typically associated with water bodies, including rivers, marshes, lakes, coastal areas.	Low Potential
Mammals			
pallid bat (<i>Antrozous pallidus</i>)	NL/SSC	Roosts in buildings, large oaks or redwoods, rocky outcrops, and rocky crevices in mines and caves. Forages in a variety of different habitats.	The project area is located outside of the geographic range for this species. No Potential

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Sonoma tree vole (<i>Arborimus pomo</i>)	NL/SSC	Nests consisting of Douglas-fir needles are constructed in trees, preferably tall trees. Nests may be situated on whorl of limbs against tree trunk, on outer limits of branches, or in broken tops of trees. Prefers forest stands with a high Douglas-fir component.	Potential
Ring-tailed cat (<i>Bassariscus astutus</i>)	NL/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Dens are located in rock recesses, hollow trees, logs, snags, and abandoned burrows or woodrat nests. Usually not found more than 1 km away from a permanent water source	Potential
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	NL/SSC	Maternity roost sites include caves, tunnels, mines, and buildings. Hibernates in groups from October to April. Individuals may use bridges, flumes, and trees with big hollows for day or night roosting during their active period.	Present
Western red bat (<i>Lasiurus blossevillei</i>)	NL/SSC	Range includes northern California coastal belt. Uncommon to rare in the area, typically solitary, roosts primarily in foliage of trees and shrubs often in edge habitats adjacent to streams, fields, or urban areas. Often associated with riparian habitats.	Present
Hoary bat (<i>Lasiurus cinereus</i>)	NL/NL	Tree roosting species that occurs in forest areas, roosts occur along forest borders.	Present
silver-haired bat (<i>Lasionycteris noctivagans</i>)	NL/NL	Found in forested areas, mainly old growth coniferous or mixed coniferous and deciduous forest types.	Present
Humboldt marten (<i>Martes caurina humboldtensis</i>)	NL/SCE, SSC	Historically occurred throughout Humboldt County. Current geographic range includes Del Norte County and northern Humboldt County. Associated with closed-canopy, late-successional, mesic coniferous forest (redwood, Douglas-fir, and/or tanoak) with complex physical structure near the ground.	No Potential
long-eared myotis (<i>Myotis evotis</i>)	NL/NL	Occur predominantly in coniferous forests, roost in tree cavities and exfoliating bark.	Present
long-legged myotis (<i>Myotis volans</i>)	NL/NL	Occur in wooded habitats, including coniferous forests, usually between 4,000 and 9,000 feet in elevation.	Present
Yuma myotis (<i>Myotis yumanensis</i>)	NL/NL	Roost in caves, mines, buildings, or bridges. Typically forage over water in forested areas.	Present

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Species	Status (Federal/ State) ¹	Habitat Characteristics	Potential to Occur within Project Area
Pacific fisher – West Coast DPS (<i>Pekania pennanti</i>)	NL/ST, SSC	Dens and forages in intermediate to large stands of old-growth conifer/mixed hardwood conifer forests or mixed stands of old-growth and mature trees with greater than 50% canopy closure. May use riparian corridors for movement.	Present
American badger (<i>Taxidea taxusi</i>)	NL/SSC	Inhabits open stages of most shrub, forest, and herbaceous habitats with friable soils.	Low Potential

¹Status Designations

Federal Status Codes: Federally Endangered (FE); Federally Threatened (FT); Federally Proposed Threatened (FPT); Federal Candidate Species (FC); Federally Delisted (FD); National Marine Fisheries Service Species of Concern (FSC); Protected under the Marine Mammals Protection Act (MMPA); (NL) Not Listed as Special Status

California State Status Codes: State Endangered Species (SE); State Threatened Species (ST); State Candidate Endangered Species (SCE); State Candidate Threatened Species (SCT); State Delisted (SD) State Fully Protected Species (FP); State Species of Special Concern (SSC); (NL) Not Listed as Special Status

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

4.1 FISH

4.1.1 Green Sturgeon, Northern Distinct Population Segment (DPS)

Green sturgeon (*Acipenser medirostris*) is designated as a Species of Special Concern (SSC) by CDFW and the northern Distinct Population Segment (DPS) is listed as a Fish Species of Concern by the National Marine Fisheries Service. Like most sturgeon, they are anadromous but generally spend more of their life in the ocean compared to other species. Individuals that spawn in the Klamath River and Eel River in Northern California and the Rogue River in Oregon belong to the northern DPS, while those that spawn in the Sacramento, Feather, and Yuba rivers belong to the federally threatened southern DPS. Critical habitat is designated in the San Francisco Bay Estuary and the Humboldt Bay Estuary in California (NOAA 2018).

The database review included one green sturgeon occurrence (dated 2007) that documents both the southern DPS and the northern DPS in Humboldt Bay. However, the southern DPS is restricted to the Humboldt Bay in the region and does not have potential to occur within the project area (CDFW 2018b). Studies completed from 2014–2016 by Stillwater Sciences and the Wiyot Tribe Natural Resources Department (2017) indicate that a spawning run of green sturgeon (northern DPS) still occurs in the Eel River basin annually.

Green sturgeon does not occur along the ridgelines where turbines will occur, nor will it occur at the O&M facility or along the transportation route. However, there is potential for green sturgeon to occur in the Eel River at the location of the gen-tie crossing.

4.1.2 Pacific Lamprey

Pacific lamprey (*Entosphenus tridentatus*), a SSC, are anadromous fish that migrate from the ocean to rivers and streams where spawning occurs in gravelly habitats. The USFWS's data (Reid and Goodman 2017) includes the Van Duzen River and the Eel River as part of the species' current range including both upstream and downstream in the Eel River where the gen-tie would cross and upstream and downstream of the portion of the Van Duzen River near the Bridgeville Substation. CNDDDB records include an occurrence of the species in Salmon Creek, entering Hookton Slough, near Beatrice (CDFW 2018a). There is potential habitat for this species within other portions of the project area where streams with cool, clear water and a mix of silt and cobble substrates occur and water is present. Additionally, they may be occasionally found in less suitable waterways when water is present if the waterway is connected to a more suitable water feature.

Lamprey will not occur along the ridgelines where turbines will be constructed and will not occur at the O&M facility and laydown area, though they may occur in tributaries to the Eel River with suitable habitat. As noted above, they are anticipated to occur in the Eel River near where the gen-tie crosses it and in the Van Duzen River near the Bridgeville Substation. It will not occur any of the transportation route improvement areas.

4.1.3 Coast Cutthroat Trout

Coast cutthroat trout (*Oncorhynchus clarkii clarkii*), a SSC, occur from Northern California to Alaska (UC Davis 2018). Although they are anadromous, California populations are strongly tied to freshwater, where migratory and resident non-migratory populations exist. Migrant populations are restricted to movement between river systems and estuaries, and both populations can be found in a variety of habitat types, including lower and upper reaches of large

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

and small river systems, estuaries, sloughs, ponds, lakes, and nearshore ocean waters (USFWS 2011). During their freshwater stage, cutthroat trout occur in cool, small low-gradient streams. Fish enter streams to breed during the first high flows of the season, relying on gravel substrate in pool tails. Cutthroat trout that do enter the ocean rarely stray far from the mouth of their natal stream, and residence in saltwater is limited to summer months. Most of the cutthroat trout in California, including the non-spawning fish, return to freshwater during the winter or high flow months and hide in pools with complex forms of cover (UC Davis 2018).

Historically, coastal cutthroat trout distribution may have extended past the Eel River south to the Russian River (Sonoma County), but they have not been documented in that area recently (CDFW 2017a). The Native Fishery Society (2018) notes this species as being present in the Eel River. A permanent population has been documented to occur in Salt Creek (Yoshiyama and Moyle 2010). Additional sources indicate that the species may be present in the Van Duzen River, though there is potential that this record of cutthroat trout may be an error (Yoshiyama and Moyle 2010). Moyle et al. (2015) identifies a 1992 record of the species in Barber Creek, a tributary to the lower Van Duzen River. The CNDDDB review included occurrences from Salmon Creek, near Beatrice, and in the Eel River as far upstream as the confluence with the Van Duzen River (CDFW 2018a).

It is unlikely that coast cutthroat trout will occur along any portions of the project area. Should it occur anywhere near the project, it would be in tributaries to the Eel River, but even then, it would likely be downstream of where the gen-tie crosses the river and only, based on historic occurrences and known past range, in creeks crossed by the transportation route not included within any work areas for the transportation route.

4.1.4 Southern Oregon/Northern California Coho Salmon Evolutionarily Significant Unit (ESU)

The Southern Oregon/Northern California (SONCC) coho salmon (*Oncorhynchus kisutch*) Evolutionarily Significant Unit (ESU) is a federally and state-threatened species and includes all populations of coho salmon in coastal streams from Oregon southward to, and including, the Mattole River (NMFS 2016a). SONCC coho salmon are anadromous, living as adults in ocean habitats and migrating into rivers and streams to spawn. Prime spawning habitat conditions generally occur near the head of a riffle, just below a pool, where suitable gravel substrate, water depths, temperatures, and velocities occur (Shapovalov and Taft 1954). During the summer, fry prefer shallow pools and riffles with cover such as large woody debris, undercut banks, boulders, and overhanging vegetation. During the winter, fry prefer to rear in large mainstem pools, backwater areas and secondary pools with woody debris, and undercut banks (NMFS 2014).

The nearest CNDDDB occurrence (dated 2005) is located in Salmon Creek running into Humboldt Bay, approximately 11 mi northwest of the project area (CDFW 2018a). The USFWS Recovery Plan (NOAA 2014) for this species lists that its current distribution near the project area includes the Eel and the lower Van Duzen rivers (but not adjacent to the Bridgeville Substation) as well as Howe Creek and identified that 2011 spawning surveys documented 8 spawning individuals in Fish Creek, a tributary to Lawrence Creek and the Van Duzen River, downstream of the Bridgeville Substation. The recovery plan also describes the following waterways near the project area that were modeled to have some intrinsic potential to support this species: Van Duzen River adjacent to the Bridgeville Substation; lower reaches of Little Larabee Creek; Root Creek; Eel River including where the gen-tie would cross; Atwell Creek, and lower reaches of Monument Creek, Jordan Creek, and Greenlow Creek.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

SONCC coho salmon could occur in the Eel River and tributaries near the gen-tie crossing and in the laydown area though occurrence in the main stem of the Eel River is likely to be transitory. It may also occur in the Van Duzen River near the Bridgeville Substation, though that is based on modeling so the potential for that is likely low. Finally, it will not occur at any of the potential transportation route improvement areas.

4.1.5 Steelhead

Both Northern California (NC) Steelhead DPS (*Oncorhynchus mykiss irideus*) (a federally threatened species) and Summer Run Steelhead Trout runs (*Oncorhynchus mykiss irideus*) (SSC) can be found in similar habitats near the project area. The NC DPS steelhead range includes all naturally spawned anadromous populations below natural and manmade waterway barriers in California coastal river basins from Redwood Creek southward to, but not including, the Russian River (NMFS 2016a). Steelhead spawn in gravel and small cobble substrates usually associated with riffle and run habitat in cold water streams. NC DPS steelhead may exhibit two life history strategies, termed the summer and winter steelhead. Winter NC DPS steelhead spawn in rivers and streams between December and mid-April (Busby et al. 1996). Spawning timing of the summer steelhead may occur just prior to or congruently with the winter steelhead (Moyle et al. 2008). Due to their multiple life history strategies, NC DPS steelhead may be found year-round at various life stages within their occupied range.

The summer steelhead ESU is a SSC that inhabits river basins from Redwood Creek in Humboldt County south to the Gualala River, and includes winter and summer steelhead. This ESU also includes what is currently considered the southernmost population of summer steelhead, in the Middle Fork Eel River (Busby et al 1996). Summer steelhead seek refuge in deep pools with cool seeps and springs (California Trout, Inc 2018a). Preferred habitat includes pools with boulders, large woody debris, and undercut banks that provide refuge from predators and other fishes (California Trout, Inc 2018a). Spawning occurs in gravel substrate of the streambed, where the streambed is composed of gravelly substrate, usually in riffles or pool tails (California Trout, Inc 2018a).

Steelhead remain widely distributed throughout the Eel River Watershed (Yoshiyama and Moyle 2010). Based on the amount of historic habitat available in the watershed, Yoshiyama and Moyle (2010) estimate the historic run size ranged between 100,000 and 150,000 adults per year for both the winter and summer populations; however, steelhead runs in the Eel River watershed have declined substantially since the 1950s (NOAA 2015). Populations within the vicinity of the project area remain in the Van Duzen and Eel rivers as well as suitable tributaries (NOAA 2015).

Steelhead are known from one CNDDB occurrence from 1992 within 5 mi of the project area that documents summer run steelhead (CDFW 2018a). This occurrence was located in the Van Duzen River upstream of its junction with Little Larabee Creek. Critical habitat for this species (including both the NC DPS steelhead and the summer run steelhead trout) has been designated in the following locations near the project area (Figure 4):

- Van Duzen River from its junction with Eel River to past the Bridgeville Substation
- Little Larabee Creek for approximately 2.5 mi upstream of its junction with Van Duzen River
- Fish Creek for approximately 0.5 mi upstream from its junction with Van Duzen River
- Root Creek for approximately 3.5 mi upstream from its junction with Van Duzen River
- Eel River including upstream, downstream, and at the gen-tie crossing
- An approximately 2.6 mi segment of Monument Creek upstream of Eel River
- An approximately 0.5 mi segment of Killer Creek upstream of Eel River
- Atwell and Howe creeks upstream of their joined Eel River junction

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- An approximately 2.2 mi segment of Jordan Creek near the O&M facility
- An approximately 1.2 mi segment of Greenlow Creek near the O&M facility

Steelhead will not occur along or near ridgelines where turbines will be located or near any of the transportation route improvement areas. However, steelhead are likely to occur in both the Eel and Van Duzen rivers, near the gen-tie crossing and the Bridgeville station, along with tributaries to both rivers that have suitable habitat for different life stages of the species.

4.1.6 California Coastal Chinook Salmon ESU

The California Coastal (CC) Chinook salmon (*Oncorhynchus tshawytscha*) ESU is a federally threatened species and includes all Chinook salmon that spawn in coastal watersheds from Redwood Creek (Humboldt County) in the north to the Russian River in the south, inclusive (Moyle et al. 2008). In the North Coastal Region, Redwood Creek and the Mad, Lower Eel, South Fork Eel, Bear, and Mattole rivers all contain sufficient habitat for independent populations (Mad River Watershed Assessment 2010). Due to their anadromous life history, CC Chinook salmon may be found year-round at various life stages within their occupied range (NMFS 2016b). Chinook salmon typically occupy and spawn in streams and rivers that are deeper and larger than those used by other salmon species, and spawn in larger gravels and small cobble (Moyle 2002). Smolts require tidal or flooded habitats with overhanging cover or undercut banks to forage before migrating to the ocean (California Trout, Inc. 2018b).

CC Chinook salmon in the Eel River consist of two independent populations (NOAA 2016). The Lower Eel River population includes fish that spawn in the South Fork Eel River as well as all mainstem and tributaries downstream of the South Fork confluence (e.g., Van Duzen River and Larabee Creek). The Upper Eel River population includes all fish spawning upstream of the South Fork Eel River confluence (excluded), including major tributaries such as the Middle Fork and North Fork Eel River. Spring-run populations in the Eel River watershed are considered extirpated.

There is one CNDDDB occurrence of this species documented in 2000 at a Hely Creek monitoring stations north of its connection to the Van Duzen River (CDFW 2018a). Critical habitat for this species has been designated along the Eel River in the location of the gen-tie crossing (Figure 4).

There is no potential for this species to occur in the proposed turbine and transportation route improvement area locations based on a lack of suitable water features. CC Chinook salmon may occur near the O&M facility in Greenlow Creek and along the gen-tie, both in the Eel River at the gen-tie crossing and in waterways with a mix of gravel and cobble substrates.

4.1.7 Longfin Smelt

Longfin smelt (*Spirinchus thaleichthys*) is a state-listed threatened species and a SSC. In addition, the San Francisco Bay Delta DPS is a candidate species for federal listing. Longfin smelt is a pelagic species occurring in California's bay, estuary, and coast habitats ranging from the San Francisco Bay northward near to the Oregon border (USFWS 2012). The San Francisco Estuary and the Sacramento-San Joaquin Delta support the largest population of longfin smelt in California, while Humboldt Bay supports the second largest population. In Humboldt Bay, their habitat includes the Eel River estuary and local coastal areas. Longfin smelt spend their adult life in bays, estuaries, and nearshore coastal areas and migrate into freshwater rivers to spawn. Spawning occurs primarily in low salinity or freshwater areas of coastal rivers and tributaries from January through March, after which most adults die (CDFW 2018c).

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Longfin smelt have been observed throughout the Eel River estuary and the mainstem portions of the coastal plain (CDFW 2017c). There is one CNDDDB occurrence for the species at the mouth of the Van Duzen River, where 7 individuals were collected in 1956. The current suspected extant range of the species, locally, includes the Eel River as far upstream as the confluence with the Van Duzen River (Santos et al. 2014).

There is no potential for this species to occur in the proposed turbine, O&M facility, or transportation route improvement area locations as there are no suitable water features in that portion of the project area. This species is not expected to occur in the Eel River where the gen-tie would cross near Scotia, as it has not been documented upstream of the junction of the Eel and the Van Duzen rivers.

4.2 AMPHIBIANS

4.2.1 Amphibians Documented in the Project Area

4.2.1.1 Northern Red-Legged Frog

We observed one adult northern red-legged frog in a roadside spring-seep during field surveys along the eastern portion of the gen-tie (K. Bainbridge, personal observation). In addition, HRC has documented the species within the following areas near the project (HRC 2018a):

- Bear River south of the Eastern Monument Ridge portion of the project
- Some unnamed tributaries to the Van Duzen River north of the Highway 101-Shively Ridge portions of the project area, including north and northeast of Stitz Creek
- Near Chris Creek south of the Shively Ridge portion of the project area
- Near an unnamed tributary to Carson Creek and in Carson Creek near the eastern most section of the Shively Ridge portion of the project area.

In addition, frogs and egg masses have been documented near Hookton Slough west of Highway 101 between Hookton Road and the Visitor's Center Access Road (Ranch Road; CNDDDB 2018a). Transportation route improvements within the Hookton Overpass area will occur in a narrow band between Highway 101 and the Visitor's Center Access Road. This area is approximately 20-ft to 40-ft wide and consists of managed roadside herbaceous habitat (perennial rye grassland), pennyroyal marshes (largely roadside ditches), and shrubs (arroyo willow thickets). As such, the habitat present in this location is marginal and the likelihood of the species to occur within the work area is low.

4.2.2 Amphibians with the Potential to Occur

4.2.2.1 Pacific Tailed Frog

The pacific tailed frog (*Ascaphus truei*), a SSC, is an endemic species of the pacific northwest. It inhabits perennial streams within Douglas-fir, redwood, late seral (forests with secondary successional growth but dominated by natural species), and mature conifer forests (Pacific Forest Trust 2018). Pacific tailed frogs are restricted to swift, perennial streams of low temperature in densely vegetated, steep-walled valleys (Nussbaum et al. 1983). Intermittent streams are unsuitable, and tailed frogs avoid marshes, wetlands, and slow sandy streams (Daugherty and Sheldon 1982). Although habitat for tailed frogs has primarily been found in mature and old-growth coniferous forests (Bury 1968; Bury and Corn 1988; Welsh 1990), they have also been found in young forests. During dry periods, frogs are

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

restricted to the stream bed; however, during moist periods, individuals have been collected up to 12 meters (m) (40 ft) from streams (CDFW 2018f).

There are six occurrences of this species within 5 mi of the project site although none documented within the last five years (CDFW 2018a). One CNDDDB occurrence was documented within Twin Creek in 1994, which flows adjacent to Western Monument Ridge, where an unknown number of frogs were found at two different sampling sites. HRC monitors for this species using an area-constrained search method of Class II waters from March through June (HRC 2015a). HRC has mapped the species in four locations near the project area (HRC 2018a):

- An unnamed tributary to Jordan Creek north of the Eastern Monument Ridge portion of the project
- Bear Creek south of the Eastern Monument Ridge portion of the project
- Near the Bear River Ridge portion of the project area in Atwell Creek and an unnamed tributary to Howe Creek
- Adjacent to the Monument Ridge – Highway 101 portion of the gen-tie in Monument Creek.

There is potential for this species to occur in perennial drainages in the areas surrounding the ridgelines where turbines would be constructed, in Greenlow Creek near the O&M facility, and along the gen-tie wherever there are perennial streams of low temperature in densely vegetated, steep-walled valleys. There is no potential for this species in the potential transportation route improvement areas as there are no suitable forest habitat and no suitable water features.

4.2.2.2 Foothill Yellow-Legged Frog

Foothill yellow-legged frog (*Rana boylei*), a state candidate threatened species and SSC, primarily inhabits partly shaded streams and rivers with shallow, flowing water and at least some cobble-sized substrate (Hayes and Jennings 1988). Instream riffles appear to be an important habitat component. Breeding and oviposition occur at the margins of relatively wide and shallow channel sections (Thomson et al. 2016). Adults and juveniles use riparian and upland areas immediately adjacent to aquatic habitats. Fall/winter refugia are generally characterized by small tributary streams with perennial water where frogs can forage and avoid mortality caused by flooding (CDFW 2018d). Springs, seeps, pools or other moist habitats such as woody debris, root wads, undercut banks, clumps of sedges, and large boulders occurring at high water-lines adjacent to pools may serve as refugia during periods of high stream flow in winter (CDFW 2018d). One study in Tehama County found frogs rarely go beyond 12 m from the channel during any time of the year (Bourque 2008).

This species has been documented to occur in Little Larabee Creek, the Van Duzen River, Carson Creek, and the Eel River within the project area and immediate vicinity (CDFW 2018a). There are 29 occurrences of this species within 5 mi of the project site including 7 occurrences recorded in the last 5 years. Within the project area, one CNDDDB occurrence documents four adult frogs observed in 2018 in areas of slow-moving water in Little Larabee Creek at Highway 36. Rocks in this area were cobble-boulder sized.

HRC performs occupancy level surveys, which are area-constrained searches, concentrating on surveying river and stream reaches for eggs, tadpoles, and adults (HRC 2015a). HRC has mapped the species within the following areas near the project (HRC 2018a):

- Bear Creek and some of its unnamed tributaries east of the access road between the O&M facility location and Eastern Monument Ridge as well as south of the Eastern Monument Ridge portion of the project area
- In Jordan Creek, including just west of the O&M facility

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- The Bear River in multiple locations southwest of the Eastern Monument Ridge and the Western Monument Ridge portions of the project area
- Howe Creek North of the Bear River Ridge portion of the project area (downstream of its junction with Atwell Creek)
- Monument Creek and some of its unnamed tributaries west of the Monument Ridge – Highway 101 portion of the gen-tie
- The Eel River north and south of the gen-tie crossing
- An unnamed creek that flows into the Van Duzen River north of the Shively Ridge portion of the gen-tie and east of Stitz Creek
- Root Creek north of the Shively Ridge portion of the project area and the Shively Ridge staging area;
- An unnamed creek that flows into the Van Duzen River north of the Shively Ridge portion of the gen-tie and east of Root Creek
- Chris, Carson, Smith, and Larabee Creek as well as unnamed tributaries to Larabee Creek south of the Shively Ridge portion of the gen-tie
- The Van Duzen River north of the gen-tie with the nearest occurrence to the Bridgeville Substation occurring approximately 9.9 mi downstream.

There is potential for this species in rocky drainages in the areas surrounding the ridgelines where turbines would be constructed, in Greenlow Creek near the O&M facility, and along the gen-tie. There is no potential for this species in the potential transportation route improvement areas as there is no suitable water features in any of the improvement areas.

4.2.2.3 Southern Torrent Salamander

Southern torrent salamander (*Rhyacotriton variegatus*), a SSC, occurs in coastal forests of northwestern California from the Oregon border south to Point Arena in Mendocino County (Jennings and Hayes 1994). Southern torrent salamanders are found primarily in cold, well-shaded permanent streams and spring seepages with coarse rocky substrates (Behler and King 1979; Thomson et al. 2016) in redwood, Douglas-fir, mixed conifer, montane riparian and montane hardwood-conifer habitats (Stebbins 1951; Anderson 1968). The elevational range for this species extends from near sea level to about 1,200 m (Jennings and Hayes 1994). Key habitat features include loose gravel and cobble substrates as species has been documented to be sensitive to fine sediment load (Thomson et al. 2016). Adults may use adjacent riparian and forest habitat in the wet season (Thomson et al. 2016), although this species is generally restricted to moist areas as it has highly reduced lungs and relies on its skin surface to take in oxygen (Stebbins 1951). Estimates of abundance have shown southern torrent salamander to be more abundant in late-seral forest (forests with secondary successional growth but dominated by natural species) compared to younger stands (forests with younger successional growth and fewer mature natural species) (Thomson et al. 2016).

There are 16 occurrences of this species within 5 mi of the project site, although none documented within the last 5 years (CDFW 2018a). The following specific occurrences are known from CNDDDB within the project area and relevant water features that flow through the project area (i.e., Fish Creek and the Van Duzen River):

- One adult documented in 1995 at the eastern edge of the Eastern Monument Ridge portion of the project area about 2.5 mi southwest of the confluence of Bear Creek and the Eel River.
- One adult documented in 1995 at the southern extent of the Eastern Monument Ridge portion of the project area near Hubbard Prairie approximately 1.5 mi northeast of the confluence of Pullen Creek and the Bear River.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- One juvenile documented in 1995 at the eastern edge of the Western Monument Ridge portion of the project area in a roadcut seep located near the headwaters of Twin Creek 2 mi south of its confluence with Eel River.
- Unknown number of individuals collected in 1950 and 1970 in the Van Duzen River approximately 1.5 mi north of the Shively Ridge staging area and the gen-tie.
- One adult documented in 1995 approximately 0.5 mi southeast of a Bridgeville portion of the gen-tie in the headwaters of Fish Creek, two mi south-southeast of the confluence with the Van Duzen River.

HRC monitors for this species using an area-constrained search method of Class II waters after the first winter rains through May. (HRC 2015a). HRC has mapped the species within the following areas in the vicinity of the project (HRC 2018a):

- An unnamed tributary to Greenlow Creek south of the O&M facility location and west of the access road that leads to the Eastern Monument Ridge portion of the project
- Within and immediately adjacent to the Eastern Monument Ridge portion of the project near unnamed waterways
- Within the eastern most section of the Western Monument Ridge portion of the project including in Twin Creek and its tributaries
- Adjacent to the Western Monument Ridge portion of the project area in unnamed tributaries to Monument Creek, Brushy Creek, and the Bear River
- Adjacent to the Monument Ridge – Highway 101 portion of the gen-tie in Kiler Creek
- The Van Duzen River 3 mi north of the gen-tie and approximately 7.4 mi downstream of the Bridgeville Substation.

There is potential for this species in cold, well-shaded portions of Greenlow Creek near the O&M facility and along the gen-tie wherever there are cold, well-shaded permanent streams and spring seepages. There is no potential for this species in the potential transportation route improvement areas as there are no suitable water features.

4.3 REPTILES

4.3.1 Western Pond Turtle

Within California, the western pond turtle (*Emys marmorata*), a SSC, is present from the Pacific coast to 6,719 ft in elevation in the Sierra Nevada foothills (Holland 1992). Western pond turtle occurs in intermittent and permanent streams and rivers, lakes, ponds, reservoirs, shallow wetlands, stock ponds, abandoned gravel pits, and sewage treatment lagoons (Holland 1994). Preferred habitat is characterized by adequate emergent vegetation and basking sites, presence of suitable refugia, undercut banks, submerged vegetation, mud, rocks, and logs (Holland 1994). Western pond turtles also require terrestrial shelter sites for overwintering that may be as much as 197 ft from the water (USDA Forest Service 2018). Two distinct habitats may be used for oviposition (CDFW 2018g). Along large slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes moving considerable distances to find a suitable nest site. Nussbaum et al. (1983) reports a nest in a clover field 100 m (325 ft) from water. Nests have been observed in many soil types from sandy to very hard.

There are 11 occurrences of this species within 5 mi of the project site. These occurrences are restricted to the Eel River, Van Duzen River, and Larabee Creek (CDFW 2018a). Only one occurrence was documented in the last five years, when one adult was observed crossing the road in 2017 on the north side of the Van Duzen River about 1.4 mi west-southwest of Devil's elbow near Highway 36, approximately 1.5 mi north of the Shively Ridge staging area.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

HRC monitors for this species using visual searches, snorkel-surveys, and floating surveys (HRC 2015a). Currently, HRC has mapped the species within the following areas near the project (HRC 2018a):

- The Eel River northeast of the O&M facility location and approximately 5 mi upstream of the gen-tie crossing
- Larabee Creek approximately 1.7 mi south of the Shively Ridge portion of the gen-tie
- Multiple occurrences from the Van Duzen River north of the Shively Ridge portion of the gen-tie with the nearest occurrence to the Bridgeville Substation located approximately 9.7 mi downstream.

Western pond turtles are unlikely to occur in the proposed turbine and transportation route improvement area locations, as these areas lack suitable water features for the species. There is potential for this species to occur along the gen-tie and at the O&M facility location wherever there are intermittent and permanent waterways with suitable basking sites and refugia.

4.4 BIRDS

Stantec has conducted a series of avian and other resource surveys that help to inform what avian species are likely to occur in or near the project area; detailed results and methodology of these surveys are included in separate reports. Surveys have included:

- Aerial eagle and raptor nest survey,
- Northern spotted owl habitat assessment,
- Eagle use count survey,
- Bird use count survey (large birds and small birds), and
- Marbled murrelet radar survey

4.4.1 Birds Documented in the Project Area

Stantec has documented 18 special-status avian species during field surveys and incidentally in the project area.

- Cooper's hawk (*Accipiter cooperii*) – NL
- Sharp-shinned hawk (*Accipiter striatus*) – NL
- Grasshopper Sparrow (*Ammodramus savannarum*) – SSC
- Golden Eagle (*Aquila chrysaetos*) – FP
- Short-Eared Owl (*Asio flammeus*) – SSC
- Western Burrowing Owl (*Athene cunicularia*) – SSC
- Marbled Murrelet (*Brachyramphus marmoratus*) – Federally Threatened, State Endangered
- Ferruginous hawk (*Buteo regalis*) - NL
- Vaux's Swift (*Chaetura vauxi*) – SSC
- Northern Harrier (*Circus cyaneus*) – SSC
- Olive-Sided Flycatcher (*Contopus cooperi*) – SSC
- Black Swift (*Cypseloides niger*) – SSC
- White-Tailed Kite (*Elanus leucurus*) – FP
- Horned Lark (*Eremophila alpestris actia*)
- Prairie falcon (*Falco mexicanus*) – NL
- American Peregrine Falcon (*Falco peregrinus anatum*) –FP
- Common Loon (*Gavia immer*) – SSC
- Bald Eagle (*Haliaeetus leucocephalus*) – State Endangered, FP

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- Osprey (*Pandion haliaetus*) – NL
- Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*) – SSC
- Purple Martin (*Progne subis*) – SSC
- Yellow Warbler (*Setophaga petechia*) – SSC
- Northern Spotted Owl (*Strix Occidentalis*) – Federally Threatened, State Threatened, SSC

The BUC Report and EUC Report provide further detail for the frequency and location of detections.

4.4.2 Birds with the Potential to Occur Onsite

The following birds have the potential to occur in the project area and/or the transportation route improvement areas but have not been documented during Stantec's avian surveys.

4.4.2.1 Northern Goshawk

Northern goshawk (*Accipiter gentilis*), a SSC, is a widely species and in California occurs in the North Coast Ranges, through the Sierra Nevada, Klamath, Cascade, and Warner mountains (Polite and Pratt 2005). CNDDDB includes one record of a nest located approximately 2.2 mi north of the Bridgeville Substation (CDFW 2018a) that was monitoring for multiple years. During 2007-2008, a pair with dependent young were observed in this location. Follow up surveys in July of 2008 suggested that the nest failed. No individuals were detected at the site during four surveys from March–April 2016. McAllister and Fix (2008) documented one northern goshawk near Bear River Ridge. Northern goshawk has not been documented to be nesting near the project area by HRC.

Northern goshawk is found in dense, mature conifer and deciduous forests, interspersed with openings and riparian habitat. Foraging generally takes place in wooded areas (Polite and Pratt 2005).

Northern goshawk is unlikely to be found nesting on the ridgelines where turbines are proposed. There is low potential for this species to occur in the along the gen-tie wherever there are dense areas of forest habitat. There is no potential for this species in the potential transportation route improvement areas as there is no suitable dense forest habitat within these areas or in the immediate vicinity.

4.4.2.2 Long-eared Owl

Long-eared owls (*Asio otus*) occur in open coniferous or deciduous forests across North America; breeding in the southern half of Canada and, generally, the northern one-third (east) to two-thirds (west) of the United States and wintering across the United States and much of Mexico (Marks et al. 1994). In California, this species winters throughout the state, with limited areas where it occurs year-round (coastal areas from San Francisco Bay southward and the foothills along the Sierra Nevada).

There were no CNDDDB records for this species, but it has been reported through the online eBird database. Records of the species in Humboldt County appear to be of wintering birds or birds making extended stops during migration. While some portions of the project area either occur in landscape settings in which the species has been reported in Humboldt County or contain habitat suitable for the species, the likelihood of the species occurring within the project area is low due to its overall rarity in the county and the unpredictable nature at which it has been documented.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

4.4.2.3 Western Snowy Plover

The current breeding range of western snowy plover (*Charadrius alexandrinus nivosus*), a federally threatened species and SSC, on the west coast is from Washington to Baja California (USFWS 2016). The nearest CNDDDB occurrence (dated 2014) is mapped along the coast north of the outlet of the Eel River (CDFW 2018a) (approximately 16 mi northwest of the Highway 101 staging area of the project). The USFWS Humboldt Bay National Wildlife Refuge (USFWS 1999) lists this species as an uncommon species (present, but not certain to been seen) in spring, fall, and winter and an occasional species (seen only a few times during a season) in summer. Additionally, it is known to nest locally in the refuge.

Critical habitat for this species is designated for along the Pacific Ocean coast near the outlet of the Eel River and within the Eel River system from the State Route 211 bridge upstream to the junction of the Van Duzen River. Tuttle and Stein (1997) reported that during the summer of 1996 snowy plovers were observed on four gravel bars in the Eel River upstream of Worswick Bar before the junction with the Van Duzen River. Feucht et al (2017) reports breeding snowy plovers on gravel bars north of the junction with the Van Duzen River along the inland portions of the Eel River from 2001 through 2010, after which, none were documented.

The western snowy plover breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, salt pans at lagoons, and estuaries and less commonly on bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (USFWS 2016). Nests may be natural or scrapped shallow depressions lined with pebbles, shell fragments, fish bones, vegetation fragments, or invertebrate skeletons (USFWS 2017a). Western snowy plovers generally return to the same area each year for breeding (UFWS 2016a).

There is no potential for this species in the proposed turbine, O&M facility, or transportation route improvement area locations due to a lack of suitable nesting habitat (e.g., sandy beaches, gravel bars). There is very low potential for this species to occur along the gen-tie where it crosses the Eel River south of Scotia as this species does not appear to utilize areas this far inland.

4.4.2.4 Mountain Plover

Mountain plover inhabit xeric to semi-arid open grassland habitats, breeding in the Great Plains from New Mexico to Montana and wintering in similar habitats from southern Texas and central Mexico to southern California, northward to the Central, Imperial, and San Joaquin valleys of California (Knopf and Wunder 2006). The nearest CNDDDB occurrence of this species is located approximately 17 miles northwest of the project area along the south spit of Humboldt Bay (CDFW 2018a). This and other occurrences reported online, represent vagrant individuals observed well outside their normal migration and wintering range. Mountain plover are not expected to occur in or near the project area with any regularity or predictability. As such, there is no to very little likelihood for the species to occur in the project area. What little potential exists would only be at any coastal portions of the project, such as Fields Landing. But, even there the likelihood is extremely low due to the very intermittent occurrence of individuals of this species in the region.

4.4.2.5 Western Yellow-Billed Cuckoo

In California, western yellow-billed cuckoos (*Coccyzus americanus occidentalis*), a federally threatened and state endangered species, were distributed through the coastal valley from the Mexican border to Sebastopol, Sonoma

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

County, and the central valley from Bakersfield and Weldon, Kern County, to Redding, Shasta County (Grinnell and Miller 1944). The nearest CNDDDB occurrences (dated 2013 and 2010) are mapped approximately 12 and 14 mi, respectively, northwest of the Highway 101 staging area (CDFW 2018a). Critical habitat for this species is designated along Eel River from just west of Cock Robin Island to an area north of East Ferry Road (east of Waddington) on the southern bank of the Eel River.

The western yellow-billed cuckoo occupies low to moderate elevation riparian forests. They require large contiguous stretches of multilayered riparian habitat for nesting. Important tree species for the western yellow-billed cuckoo are cottonwood, willow, alder (*Alnus* spp.), box elder (*Acer negundo*), mesquite (*Prosopis* spp.), Arizona walnut (*Juglans major*), Arizona sycamore (*Platanus wrightii*), oak, netleaf hackberry (*Celtis reticulata*), velvet ash (*Fraxinus velutina*), Mexican elderberry (*Sambucus mexicanus*), seepwillow (*Baccharis glutinosa*), and sometimes tamarisk (*Tamarix* spp.) (National Park Service 2014). This species prefers patches of riparian habitat greater than 81 hectares in size and at least 100 m in width with canopy height 5–30 m and understory height 1–6 m (Hughes 2015). Nests are constructed as flat, oblong platform nests (USFWS 2017b) in willows, cottonwoods, alders, and box elders and sometimes in orchard trees (Laymon 1998, Gaines and Laymon 1984).

There is no potential for this species to occur in the proposed turbine, O&M facility, or transportation route improvement area locations, due to a lack of suitable nesting habitat (large, dense riparian areas). There is very low potential for this species along the gen-tie where it crosses the Eel River, as willow flycatchers require large, dense riparian areas and this section is likely too narrow and linear.

4.4.2.6 Little Willow Flycatcher

The current breeding range of little willow flycatcher (*Empidonax traillii brewsteri*), a state endangered species, includes California west of the Cascades and in the Sierra Nevada from southwest California up to southwest British Columbia (Sedgewick 2000). There are two CNDDDB records for the species (CDFW 2018a). One of the two occurrences is from Humboldt County in 2000 and is located 15 mi south of the Eastern Monument Ridge portion of the project area, within the Humboldt Redwoods State Park. The other occurrence, from 2016, is located in Del Norte County—close to 100 mi north of the project.

Willow flycatchers breed in moist, shrubby areas that have either standing or running water (The Cornell Lab of Ornithology 2017a). Dominant vegetation includes willows, cottonwoods, and alders (CDFW 2018e). They winter in shrubby clearings and early successional growth (The Cornell Lab of Ornithology 2017a). Willow flycatchers are generally found from sea level to 8,000 ft (Grinnell and Miller 1944).

There is no potential for this species to occur along the ridgelines where turbines would be constructed, due to a lack of suitable riparian habitat and water features. There is very low potential for this species to move through this portion of the project site, as it has not been detected during any surveys or other documented occurrences. There is low potential for this species along the gen-tie where riparian habitat occurs and no potential within the transportation route improvement areas, due to a lack of suitable riparian habitat and water features.

4.4.2.7 Bank Swallow

Bank swallows (*Riparia riparia*), a state threatened species, are neotropical migrants of North America found in low areas along rivers, streams, coastlines, and reservoirs. Approximately 110 to 120 colonies remain within the state, with an estimated 75% of the current breeding population of California occurring along the banks of the Sacramento

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

and Feather rivers in the northern Central Valley. Other colonies persist along the central coast from Monterey to San Mateo counties and in northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc counties (Remsen 1978, CDFW 1999). There is one CNDDDB occurrence of the species, dated 1946, within 5 mi is located approximately 10 mi upstream of the mouth of the Van Duzen River (CDFW 2018a) and is presumably a nesting colony.

Their habitat includes vertical cliffs or banks where they nest in large colonies (Cornell Lab of Ornithology 2017b). Their range in California is estimated to have reduced 50% since 1900 (CDFW 1999). Historically, bank swallows were commonly found around natural bluffs or eroding streamside banks but are becoming more frequently documented utilizing human-made sites such as sand and gravel quarries or road cuts. They feed primarily on a wide variety of flying insects, foraging over open riparian areas, grasslands, wetlands, and agricultural field. Nest sites are almost always near water and require fine-textured or sandy banks or cliffs (CDFW 1999).

The bank swallow is a migratory species and there is potential for it to pass through or near any portion of the project area during migration and seasonal dispersal periods, though the species has not been documented during avian surveys. With respect to breeding colonies, there is no potential for this species to nest along the ridgelines where turbines would be constructed, most of the gen-tie, or along the transportation route. There is very low potential for this species to nest near the gen tie crossing of the Eel River or near the Bridgeville Substation along the Van Duzen River, as records of this species nesting along these rivers (along the Van Duzen) are dated and they have not been documented during field surveys.

4.4.2.8 Yellow-breasted Chat

The yellow-breasted chat (*Icteria virens*) breeds in areas of low dense vegetation throughout much of the United States and winters in lower Central America (Eckerle and Thompson 2001). Its distribution in California includes much of the state except for the very northeastern portion. There are no CNDDDB records for the species in Humboldt County (CDFW 2018a) but it has been fairly regularly reported on the online eBird database (eBird 2012). These occurrences are of birds during the nesting season and occur in low elevation areas with suitable habitat, such as farmlands and riparian areas.

Given the location of various portions of the project area, this species is not likely to occur along the ridgelines where turbines would occur or along much of the gen-tie. However, it could occur in some of the low forest, shrub, and riparian habitats along the transportation route and the gen-tie crossing of the Eel River. However, even in these areas this species would be expected to be infrequent or occur in low numbers.

4.4.2.9 Tricolored Blackbird

The tricolored Blackbird (*Agelaius tricolor*) is found almost exclusively in California. Historically tricolored blackbirds nested in wetlands with cattails, bulrushes, and willows. However, they started nesting in agricultural fields once more land was converted into farmland and urban areas (Beedy et al. 2018).

There is only one CNDDDB occurrence for this species in Humboldt County (CDFW 2018a). This record describes variable numbers of the species in this location through much of the middle 1990s but no observations of the species in 2000 and 2001. Online eBird occurrences for this species over the years largely include late fall to late winter observations, likely representing single to multiple individuals simply far outside their normal wintering range within California.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

There is very low potential for this species to occur in the project area due to their overall rarity and sporadic nature of past occurrences. The greatest likelihood for it to occur relative to the project, while still low, would be along the transportation route because its occurrence largely in winter limits its distribution to the more mild conditions occurring near the coast and at low elevations in the region.

4.4.2.10 Brant

Brant (*Branta bernicla*), a SSC, winters in Humboldt County and utilizes intertidal mudflats and shallow waters in sheltered estuaries and lagoons. While there are no CNDDDB records of this species, it commonly occurs throughout the County. The portion of the project site with suitable habitat for brant is located at the northern end of the transportation route in Fields Landing.

4.4.2.11 Yellow Rail

Yellow rail (*Coturnicops noveboracensis*), a SSC, is a marsh bird that inhabits freshwater and brackish marshes, sticking to the drier areas in the upper edges of the marshes. Yellow rail is an infrequent breeder in Humboldt County. The only portion of the project site that is located within a coastal area, is the northern end of the transportation route at Fields Landing. However, there is no suitable nesting habitat for the species in this location or throughout the project site, and this species is not expected to occur.

4.5 MAMMALS

4.5.1 Mammals Documented in the Project Area

Pacific fisher (*Pekania pennanti*), a state-threatened species and SSC, was documented twice in the project area during field surveys. In both instances, the fisher was crossing a road on Monument Ridge. Additionally, HRC has completed two long-term forest carnivore monitoring programs (2000-2005 and 2010-2017) and has detected fisher at 53 locations within the lands owned and managed by HRC (HRC 2018b). Exact survey locations are not provided in the annual HRC monitoring reports though it appears that fisher have been documented in 7 of the 14 HRC survey blocks in which the project features occur (HRC 2015b).

Acoustic bat monitoring has been conducted at 11 locations within the project area. Those surveys documented 12 of the 13 species potentially occurring in Humboldt County. No federal or state threatened or endangered species were detected during this survey and two California Species of Special Concern, western red bat (*Lasiurus blossevillei*) and Townsend's big-eared bat, were detected. Other species detected considered in this assessment included the hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*). The Acoustic Bat Monitoring Report provides further detail on these detections.

4.5.2 Mammals with the Potential to Occur Onsite

4.5.2.1 Sonoma Tree Vole

The Sonoma tree vole (*Arborimus pomo*), a SSC, occurs along the North Coast from Sonoma County north to the Oregon border. There are 13 CNDDDB occurrences within 5 mi of the project area (CDFW 2018a). The most recent occurrence, an occupied nest documented in 2002, is located approximately 0.2 mi south of the gen-tie (2.2 mi east

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

of the Shively Ridge staging area. Another record occurs at the western end of Monument Ridge while another occurs on Eel River shoreline approximately halfway between the Shively Ridge staging area and the O&M facility.

This is a forest species, favoring Douglas-fir, redwood, and montane hardwood-conifer habitats. They rely heavily on Douglas-fir foliage for both their main food source and for lining their nests (Maser 1965, Maser et al. 1981). An individual's home range may include one to several fir trees, with females typically inhabiting one tree while males visit several trees (Howell 1926). Nest sites are frequently in the broken tops of young, second-growth Douglas-fir (Maser et al. 1981). HRC developed a property-wide habitat model to evaluate tree vole habitat by watershed or sustainability unit (SU) (HRC 2018c). Results predicted the density of Sonoma tree vole nests in the Van Duzen and Bear SUs to be greater than the property-wide average. These results indicate that mature stands with larger Douglas-fir trees and those with higher densities of Douglas-fir trees tend to have higher relative densities of tree vole nests, while pole and young stands with relatively little to no Douglas-fir trees tend to have fewer nests (HRC 2018c).

The Sonoma tree vole is likely to occur in suitable, Douglas-fir dominated habitats where turbines and the O&M facility are proposed and along the gen-tie. There is no potential for this species in the potential transportation route improvement areas as there is no suitable habitat.

4.5.2.2 Ring-Tailed Cat

Ring-tailed cats (*Bassariscus astutus*), a FP, are distributed throughout California in areas containing shrubland and forested habitats. Camera trap monitoring by HRC has detected ring-tailed cats at 6 of 86 camera trap locations (HRC 2018b). Exact survey locations are not provided in the annual HRC monitoring reports though it appears that ringtails have been documented in none of the 14 HRC survey blocks in which the project features occur. HRC also reported that one ringtail was detected at Shaw Creek—greater than 10 mi north of the project area (HRC 2014).

Ringtails prefer areas containing hollow trees, logs, cavities, and rocky areas for cover and is usually not found more than 1 kilometer (km) away from a permanent water source. Their den sites are rocky crevices, hollow trees or snags, abandoned burrows, or woodrat nests (Taylor 1954).

Ring-tailed cats likely occur where turbines and the O&M facility are proposed, though their presence would likely be associated only with short-term movements between riparian areas of suitable habitat. Ringtails are likely to occur along the gen-tie, particularly portions closer to the Eel River and any larger tributaries that support their preferred riparian forest and shrub habitats. There is no potential for this species within the transportation route improvement areas due to a lack of suitable riparian habitat.

4.5.2.3 Humboldt Marten

The Humboldt marten (*Martes caurina humboldtensis*), a federally proposed threatened species, state candidate endangered species and a SSC, occurs in coastal northwestern California. Historically, this species occurred within the coast redwood zone from the Oregon border southward to Sonoma County. Current survey results indicate that the Humboldt marten no longer occurs in most of its historic range; however, one remnant population is known to occur in the Klamath-Siskiyou Bioregion—more than 65 mi north of the Bridgeville Substation (Slauson and Zielinski 2004, CDFW 2018b).

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Martens require closed-canopy, old-growth forests with complex structure on or near the ground. They generally avoid younger forests, fragmented areas, and open areas such as clearcuts. They avoid large areas with low canopy closure and require old-growth elements for denning sites (Center for Biological Diversity 2018).

Humboldt marten are not likely to occur throughout the project area or in the transportation route improvement areas based on the lack of suitable habitat and paucity of nearby occurrences.

4.5.2.4 American Badger

Historically, American badgers (*Taxidea taxusi*), a SSC, were found throughout most of the state, except in the northern North Coast area (Grinnell et al. 1938). The nearest CNDDDB occurrence was documented in annual grassland habitat on a flat river terrace along the Mattole River in 2007, approximately 12 mi southwest of the Monument Ridge segment of the project area (CDFW 2018a). McAllister and Fix (2008) reported evidence of the species on Bear River Ridge during resource evaluations for another proposed wind energy project.

American badgers are most abundant in drier open areas of shrub, forest, and herbaceous habitats. Badgers are non-migratory, although the extent of their territory is reduced in winter. They require friable soils for digging burrows, which badgers rely on for cover (Messick and Hornocker 1981).

There is limited potential for badger to occur where turbines are proposed; any presence in these areas would be limited largely to Bear River Ridge and the western portion of Monument Ridge, where suitable open grassland habitat occurs. Badgers are not likely to occur at the O&M facility location or along the gen-tie, and this species has no potential to occur in the transportation route improvement areas.

5.0 CONCLUSIONS

Based on the results of the literature and database review and field surveys, we generated a list of 65 wildlife species with potential to occur in the project area. Eight wildlife species were eliminated from analysis due to lack of habitat or because the project area is not within their known range; 57 wildlife species were evaluated for the potential to occur in the project area. Of these 57, 32 species have been documented within the project area either during field surveys or incidentally and 25 species have the potential to occur in the project area.

6.0 REFERENCES

- Anderson, J. D. 1968. *Rhyacotriton*, and *R. olympicus*. Cat. Am. Amphibians and Reptiles 68.1-68.2.
- Beedy, E. C., W. J. Hamilton, III, R. J. Meese, D. A. Airola, and P. Pyle (2018). Tricolored Blackbird (*Agelaius tricolor*), version 3.1. In The Birds of North America (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.tribla.03.1>
- Behler, J. L., and F. W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred Knopf, New York. 743pp.
- Bourque, R. 2008. Spatial ecology of an inland population of the foothill yellow-legged frog (*Rana boylei*) in Tehama County, California. Arcata, CA: Humboldt State University. 93 p. M.S. thesis. http://humboldt-dspace.calstate.edu/bitstream/handle/2148/437/Bourque_2008.pdf?sequence=1. Accessed October 17, 2018.
- Bury, R. Bruce. 1968. The distribution of *Ascaphus truei* in California. Herpetologica, 24: 39-46. https://www.jstor.org/stable/3891154?seq=1#metadata_info_tab_contents. Accessed October 17, 2018.
- Bury, R. B., and P. S. Corn. 1988. Douglas-fir forests in the Oregon and Washington Cascades: relation of the herpetofauna to stand age and moisture. In: Szaro, R. C., K. E. Severson, and D. R. Patton, (eds.). Management of Amphibians, Reptiles, and Small Mammals in North America. USDA For. Serv. Gen. Tech. Rept. RM-166. pp. 11-20. https://www.fs.fed.us/rm/pubs_rm/rm_gtr166.pdf. Accessed October 17, 2018.
- Busby, P. J., T. C Wainwright, G. J Bryant, L. J Lierheimer, R. S Waples, F. W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Department of Commerce, NOAA. NMFS-NWFSC-27. 261 pp.
- California Department of Fish and Wildlife (CDFW). 1999. Species Explorer Detail for Bank Swallow. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=158874>. Accessed October 14, 2018.
- _____. 2017a. Coastal Cutthroat Trout. <https://www.wildlife.ca.gov/Conservation/Fishes/Coastal-Cutthroat-Trout>. Accessed October 19, 2018.
- _____. 2017b. Conservation of Wildlife Through Education. Volume 103, Number 3. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=152476&inline>. Accessed June 29, 2017.
- _____. 2018a. California Natural Diversity Database. California Department of Fish and Wildlife, Sacramento, California, USA. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed August 20, 2018.
- _____. 2018b. Northern Green Sturgeon. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83706>. Accessed October 14, 2018.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- _____. 2018c. Longfin Smelt.
https://www.dfg.ca.gov/delta/data/longfinmelt/documents/LongfinmeltFactSheet_July09.pdf. Accessed October 14, 2018.
- _____. 2018d. Considerations for Conserving the Foothill Yellow-Legged Frog.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157562&inline>. Accessed October 14, 2018.
- _____. 2018e. Habitat Suitability Models for Use with ARC/Info. Willow Flycatcher. Available:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=7131>. Accessed: November 2, 2018.
- _____. 2018f. Coastal Tailed Frog. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=1466>. Accessed: November 2, 2018.
- _____. 2018g. Western Pond Turtle. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2657>. Accessed: November 2, 2018.
- California Trout, Inc. 2018a. Northern California Summer Steelhead. <https://caltrout.org/sos/native-species/steelhead/northern-california-summer-steelhead/>. Accessed October 15, 2018.
- _____. 2018b. California Coast Chinook Salmon, *Oncorhynchus tshawytscha*. <https://caltrout.org/sos/native-species/salmon/chinook-salmon/california-coast-chinook-salmon>. Accessed October 15, 2018.
- Center For Biological Diversity. 2018. Humboldt Marten Natural History.
https://www.biologicaldiversity.org/species/mammals/Humboldt_marten/natural_history.html. Accessed October 14, 2018.
- Daugherty, C. H., and A. C. Sheldon. 1982. Age specific movements of the frog *Ascaphus truei*. *Herpetologica*, 38:468-474. https://www.jstor.org/stable/3892177?seq=1#metadata_info_tab_contents. Accessed October 17, 2018.
- Feucht, E. J., M. A. Colwell, D. J. Orluck, N. C. Papian, K. M. Raby, and S. E. McAllister. 2017. Final Report: 2017 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.
<https://www.fws.gov/arcata/es/birds/wsp/documents/siteReports/California/2017%20SNPL%20Final%20Report%20RU2.pdf>. Accessed October 22, 2018.
- Gaines, D. A., and S. A. Laymon. 1984. Decline, status and preservation of the Yellow-billed cuckoo in California. *Western Birds* 15:49-80.
- Grinnell, J., and A. H. Miller. 1944. The distribution of the birds of California. *Pacific Coast Avifauna* 27:1-608.
https://sora.unm.edu/sites/default/files/journals/pca/pca_027.pdf. Accessed October 17, 2018.
- Grinnell, J., J. S. Dixon, and J. M. Linsdale. 1938. Fur-bearing mammals of California. University of California Press, Berkeley, USA.
- Harris, S.W. 2006. *Northwestern California Birds*, 3rd ed. Living Gold Press, Klamath River, CA
- Hayes, M. P. and M. R. Jennings. 1988. Management of Amphibians, Reptiles, and Small Mammals in North America, general technical report RM-166. U.S. Forest Service, Rocky Mountain Forest and Range

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- Experiment Station, Flagstaff, Arizona. pp. 144-158. https://www.fs.fed.us/rm/pubs_rm/rm_gtr166.pdf. Accessed October 17, 2018.
- Holland, D. C. 1992. A synopsis of the ecology and status of the western pond turtle (*Clemmys marmorata*) in 1991. United States Fish and Wildlife Service, San Simeon, California.
- _____. 1994. The western pond turtle: habitat and history. U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon. http://www.fwspubs.org/doi/suppl/10.3996/012016-JFWM-005/suppl_file/fwma-08-01-05_reference+s2.pdf. Accessed October 17, 2018.
- Howell, A. B. 1926. Voles of the genus *Phenacomys*. II. Life history of the red tree mouse *Phenacomys longicaudus*. USDA, North Am. Fauna Ser. No. 48:39-64.
- Hughes, J. M. 2015. Yellow-billed Cuckoo (*Coccyzus americanus*), version 2.0. In The Birds of North America (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.418>. Accessed October 17, 2018.
- Humboldt Redwood Company (HRC). 2014. Pacific Fisher Annual Report. June 1, 2014. <https://www.hrcllc.com/habitat-conservation-plan-hcp-reports>. Accessed October 25, 2018.
- _____. 2015a. Amphibian and Reptile Annual Report. June 1, 2015. <https://www.hrcllc.com/wp-content/uploads/2012/01/2015-Amphib-Reptile-Report.pdf>. Accessed October 25, 2018.
- _____. 2015b. Pacific Fisher Annual Report. Humboldt Redwood Company, Scotia, California. June 1, 2015. 30 pp. <https://www.hrcllc.com/habitat-conservation-plan-hcp-reports>. Accessed October 25, 2018.
- _____. 2018a. GIS data documenting amphibian occurrences on HRC properties. Data provided on October 22, 2018
- _____. 2018b. Pacific Fisher Summary Report. Humboldt Redwood Company, Scotia, California. June 1, 2018. Accessed on December 3, 2018.
- _____. 2018c. Sonoma Tree Vole Summary Report 2017. Humboldt Redwood Company, Scotia, California. February 1, 2018. 20pp.
- Jennings, M. R., M. P. Hayes, and D. C. Holland. 1993. A petition to the U. S. Fish and Wildlife Service to place the California Red-legged Frog (*Rana aurora draytonii*) and the Western Pond Turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants.
- Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Department of Fish and Game. Rancho Cordova 255 pp. Available: <http://www.elkhornsloughctp.org/uploads/files/1401225720%20382%20%3D%20Jennings%20and%20Hayes.pdf>. Accessed: October 17, 2018.
- Knopf, F. L. and M. B. Wunder. 2006. Mountain Plover (*Charidrius montanus*), version 2.0. In the Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY. USA. <https://doi.org/10.2173/bna.211>.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- Laymon, S. A. 1998. Yellow-billed cuckoo (*Coccyzus americanus*). The riparian bird conservation plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Available at: http://www.prbo.org/calpif/htmldocs/species/riparian/yellow-billed_cuckoo.htm. Accessed February 14, 2017.
- Mad River Watershed Assessment. 2010. Final report. Prepared by Stillwater Sciences, Arcata, California in association with Redwood Community Action Agency, and Natural Resources. https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/mad_river/pdf/120329/FINAL_PDF_MRWA.PDF. Accessed October 16, 2018.
- Marks, J. S., D. L. Evans, and D. W. Holt (1994). Long-eared Owl (*Asio otus*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.133>
- Maser, C. 1965. Life histories and ecology of *Phenacomys albipes*, *Phenacomys longicaudus*, and *Phenacomys silvicola*. M.S. Thesis. Oregon State Univ., Corvallis. 221pp.
- Maser, C., B. R. Mate, J. F. Franklin, and C. T. Dyrness. 1981. Natural history of Oregon coast mammals. Pac. Northwest For. And Range Exp. Sta., USDA, For. Serv., Gen. Tech. Rep., PNW-133. 496pp.
- Mayer, K. E., and W. F. Laudenslayer, Jr., eds. 1988. A guide to wildlife habitats of California. Sacramento: California Department of Forestry and Fire Protection.
- McAllister, S. A., and D. M. Fix. 2008. A survey of birds and bats at a proposed wind energy site on Bear River Ridge, Humboldt County, California. Draft report prepared for Shell Wind Energy, Inc., Houston, Texas. Prepared by Mad River Biologists, Eureka California. February 25, 2008. 37 pp.
- Meehan, W. R., and T. C. Bjornn. 1991. Salmonid distribution and life histories. In Influences of forest and rangeland management on salmonid fishes and their habitats edited by W. R. Meehan. Bethesda: American Fisheries Society Special Publication 19.
- Messick, J. P., and M. G. Hornocker. 1981. Ecology of the badger in southwestern Idaho. Wildl. Monogr. No.76. 53pp.
- Moyle, P. B. 2002. Inland fishes of California: University of California Press, Berkeley, CA 502p. https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/state_board/1998/ref2608.pdf. Accessed October 16, 2018.
- Moyle, P. B., J. A. Israel, and S. E. Purdy. 2008. Salmon, steelhead, and trout in California: status of an emblematic fauna. A report commissioned by California Trout 2008. Center for Watershed Sciences, University of California, Davis. <http://docs.streamnetlibrary.org/CoastalCutthroatData/sn600356.pdf>. Accessed October 16, 2018.
- Moyle, P. B., R. M. Quiñones, J. V. Katz, and J. Weaver. 2015. Fish Species of Special Concern in California. Sacramento: California Department of Fish and Wildlife. www.wildlife.ca.gov

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- National Marine Fisheries Service (NMFS). 2014. Final recovery plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*). National Marine Fisheries Service. Arcata, CA.
- _____. 2016a. Five-year review summary and evaluation of Southern Oregon/ Northern California Coast Coho Salmon. National Marine Fisheries Service West Coast Region Arcata, CA. 70p.
- _____. 2016b. 2016 5-year review: summary and evaluation of California Coast Chinook salmon and Northern California steelhead. National Marine Fisheries Service Southwest Region, Long Beach, CA. 67p. <https://repository.library.noaa.gov/view/noaa/17016>. Accessed October 16, 2018.
- National Oceanic and Atmospheric Administration (NOAA). 2014. Southern Oregon Northern California Coast Coho Salmon Recovery Plan. https://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/southern_oregon_northern_california_coast/SONCC_recovery_plan.html. Accessed October 19, 2018.
- _____. 2015. Coastal Multispecies Plan. Volume III Northern California Steelhead. https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/north_central_california_coast/Final%20Materials/Vol%20III/vol._iii_nc_steelhead_coastal_multispecies_recovery_plan.pdf. Accessed October 19, 2018.
- _____. 2016. Coastal Multispecies Plan. Volume II California Coastal Chinook Salmon. https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/north_central_california_coast/Final%20Materials/Vol%20II/vol._ii_chinook_salmon_coastal_multispecies_recovery_plan.pdf. Accessed October 19, 2018.
- _____. 2018. https://www.westcoast.fisheries.noaa.gov/protected_species/green_sturgeon/green_sturgeon_biology.html. Accessed October 14, 2018.
- National Park Service. 2014. Western yellow-billed cuckoo. U.S. Department of the Interior. Available at: <https://www.nps.gov/articles/western-yellow-billed-cuckoo.htm>. Accessed February 14, 2017.
- Native Fish Society. 2018. Eel River. <https://nativefishsociety.org/watersheds/eel-river>. Accessed October 19, 2018.
- Nussbaum, R. A., E. Brodie, and T. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. University of Idaho Press, Moscow, Idaho. 322 pp
- Pacific Forest Trust. 2018 Pacific Tailed Frog. <https://www.pacificforest.org/species/pacific-tailed-frog/> Accessed October 14, 2018.
- Polite, C., and J. Pratt. 2005. Northern goshawk, *Accipiter gentilis*. California Wildlife Habitat Relationship System. California Department of Fish and Wildlife, California Interagency Wildlife Task Group. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=1669&inline=1>. Accessed October 17, 2018.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- Reid, S. B., and D. H. Goodman. 2017. Pacific Lamprey range and distribution in California. U.S. Fish and Wildlife Service as mapped by CDFW in their BIOS program. <https://map.dfg.ca.gov/bios/?al=ds2673>. Accessed October 17, 2018.
- Remsen, J. V., Jr. 1978. Bird species of special concern in California. Calif. Dep. Fish and Game, Sacramento. Wildl. Manage. Admin. Rep. No. 78-1. 54pp.
- Santos, N. R., J. V. E. Katz, P. B. Moyle, and J. H. Viers. 2014. A programmable information system for management and analysis of aquatic species range data in California. *Environmental Monitoring and Software*. 53 (2014), 13 – 16.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California vegetation, 2nd edition. California Native Plant Society, Sacramento, California.
- Shapovalov, L., and A. C. Taft. 1954. Life histories of the Steelhead rainbow trout (*Salmo gairdneri gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. California Department of Fish and Game, Fish Bull. No. 98. 375 p.
- Slauson, K. M., and W. J. Zielinski. 2004. Conservation status of American martens and fishers in the Klamath-Siskiyou bioregion. In: K. Merganther, J. Williams, and E. Jules, eds. Proceedings of the 2nd Conference on Klamath-Siskiyou Ecology, Cave Junction, Oregon, USA. 29-31 May, 2003. Siskiyou Field Institute, Cave Junction, Oregon.
- Stantec. 2018. Humboldt Wind Energy Project, Draft Biological Resources Work Plan.
- Stebbins, R. C. 1951. Amphibians of western North America. Univ. California Press, Berkeley. 538 pp. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=1521>. Accessed October 17, 2018.
- Stillwater Sciences and Wiyot Tribe Natural Resources Department. 2017. Status, distribution, and population of origin of green sturgeon in the Eel River: results of 2014–2016 studies. Prepared by Stillwater Sciences, Arcata, California and Wiyot Tribe, Natural Resources Department, Loleta, California, for National Oceanic and Atmospheric Administration, Fisheries Species Recovery Grants to Tribes, Silver Springs, Maryland. Available: <http://www.wiyot.us/DocumentCenter/View/126/Eel-River-Green-Sturgeon-Final-Report-PDF>. Accessed: October 17, 2018.
- Taylor, W. P. 1954. Food habits and notes on life history of the ring-tailed cat in Texas. *J. Mammal.* 35:55-63.
- The Cornell Lab of Ornithology. 2017a. Willow flycatcher. All about birds. Available at: https://www.allaboutbirds.org/guide/Willow_Flycatcher/lifehistory. Accessed October 22, 2018.
- _____. 2017b. Bank Swallow. All about birds. Cornell University. Available at: https://www.allaboutbirds.org/guide/Bank_Swallow/lifehistory. Accessed October 12, 2018.
- Thomson, R. C., A. N. Wright, and H. B. Shaffer. 2016. California amphibian and reptile species of special concern. University of California Press, Oakland, California. pp. 84-92, 166-173.

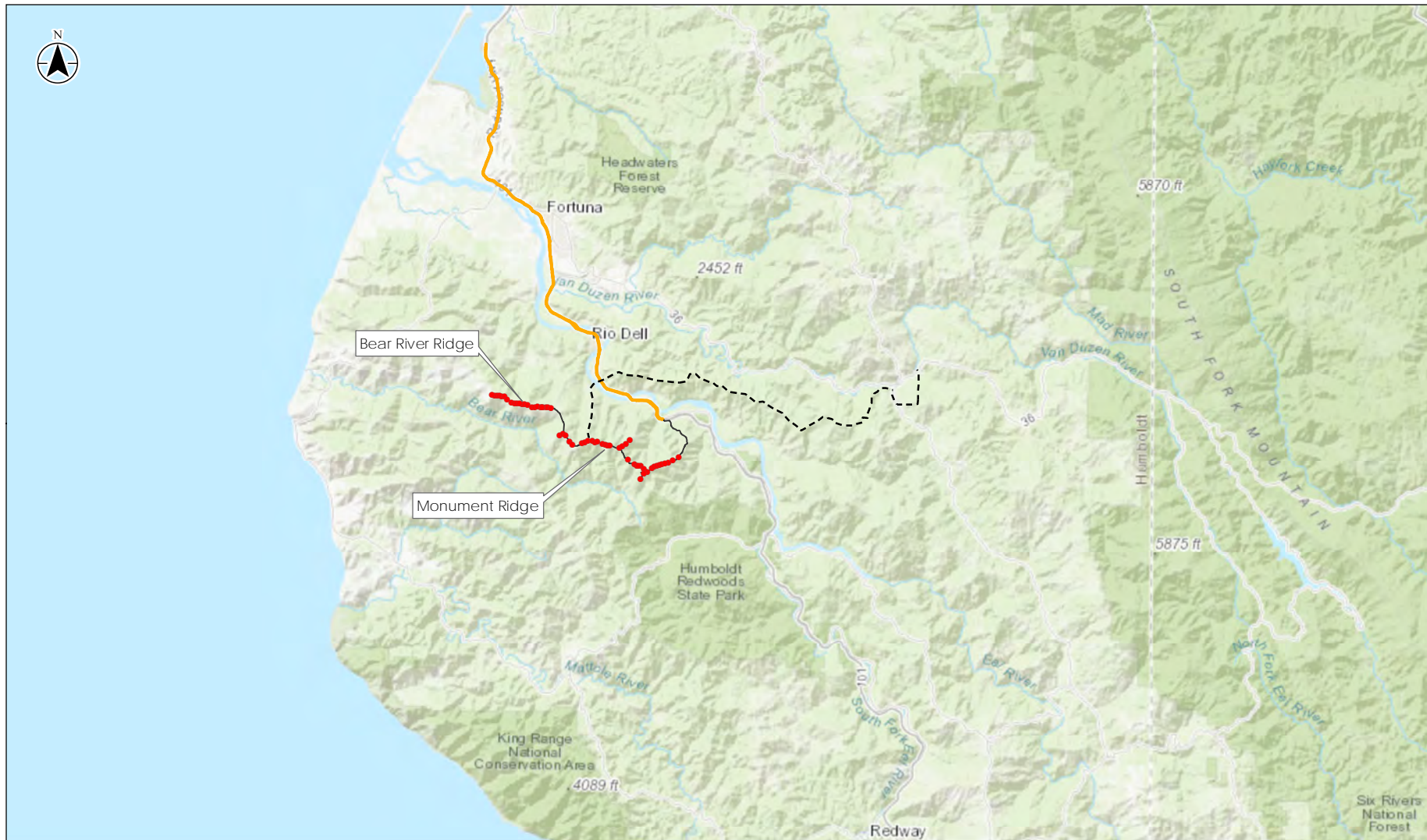
HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

- Tuttle, D. C., and R. Stein. 1997. Snowy Plover Nesting on Eel River Gravel Bars, Humboldt County. *Western Birds* 28: 174-176. <https://sora.unm.edu/sites/default/files/journals/wb/v28n03/p0174-p0176.pdf>. Accessed October 22, 2018.
- USDA Forest Service. 2018. Species Fact Sheet. Western Pond Turtle. Available: <https://webcache.googleusercontent.com/search?q=cache:OMHFilDv5IEJ:https://www.fs.fed.us/r6/sfpnw/issssp/documents/planning-docs/sfs-hr-actinemys-marmorata-2009-05.doc+&cd=2&hl=en&ct=clnk&gl=us>. Accessed: November 2, 2018.
- U.S. Fish and Wildlife Service (USFWS). 1999. Humboldt Bay National Wildlife Refuge Watchable Wildlife. https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Humboldt_Bay_Complex/Humboldt_Bay/Sections/Documents/Watchable%20Wildlife%20Brochure.pdf. Accessed October 19, 2018.
- _____. 2006. Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California. <https://www.fws.gov/arcata/es/birds/mm/documents/MAMU-NSO%20Harassment%20Guidance%20NW%20CA%202006Jul31.pdf>. Accessed October 25, 2018.
- _____. 2011. Species Fact Sheet Coastal Cutthroat Trout. <https://www.fws.gov/wafwo/species/Fact%20sheets/CCT%20Webpage%20final.pdf>. Accessed October 14, 2018.
- _____. 2012. Longfin Smelt 12 Month Finding. Available: <https://www.fws.gov/cno/es/speciesinformation/longfin.html>. Accessed October 15, 2018.
- _____. 2016. Western snowy plover, *Charadrius nivosus nivosus*. Arcata Fish and Wildlife Office. <https://www.fws.gov/arcata/es/birds/WSP/plover.html>. Accessed October 17, 2018.
- _____. 2017a. Western snowy plover (*Charadrius nivosus* ssp. *nivosus*). Environmental Conservation Online System. Available at: <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B07C>. Accessed October 17, 2018.
- _____. 2017b. Yellow-billed cuckoo (*Coccyzus americanus*). Environmental Conservation Online System. Available at: <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B06R>. Accessed February 14, 2017.
- _____. 2018. IPaC Information for Planning and Consultation. <https://ecos.fws.gov/ipac/>. Accessed August 4, 2018.
- United States Geological Survey (USGS). 2014. North American BBA Explorer: For Breeding Bird Atlases in the U.S. & Canada. <https://www.pwrc.usgs.gov/bba/>. Accessed October 25, 2018.
- University of California, Davis (UC Davis). 2018. <http://calfish.ucdavis.edu/species/?uid=26&ds=241> Accessed October 14, 2018.
- Welsh, H. H., Jr. 1990. Relictual amphibians and old-growth forests. *Conservation Biology*, 4:309-319. <https://www.fs.fed.us/psw/publications/welsh/welsh9.pdf>. Accessed October 17, 2018.
- Yoshiyama, R. M., and P. B. Moyle. 2010. Historical Review of Eel River Anadromous Salmonids, with Emphasis on chinook Salmon, Coho Salmon, and Steelhead.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

<https://watershed.ucdavis.edu/files/biblio/Eel%20River%20Final%20Report%202010%20Feb%201%281%29.pdf>. Accessed October 19, 2018.

FIGURES



- Proposed Representative Wind Turbine Locations
- Generation Transmission line (gen-tie)
- Proposed Access Roads
- Transportation Route



Notes
 1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Topographic Map web mapping service.



Project Location
 Humboldt County, California
 Prepared by PG on 2018-08-06
 Technical Reviewed by YA on 2018-08-07
 Independent Review by JD on 2018-08-07

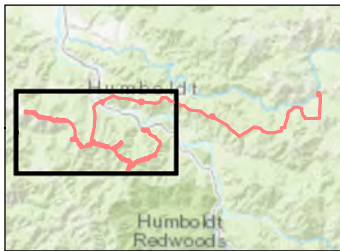
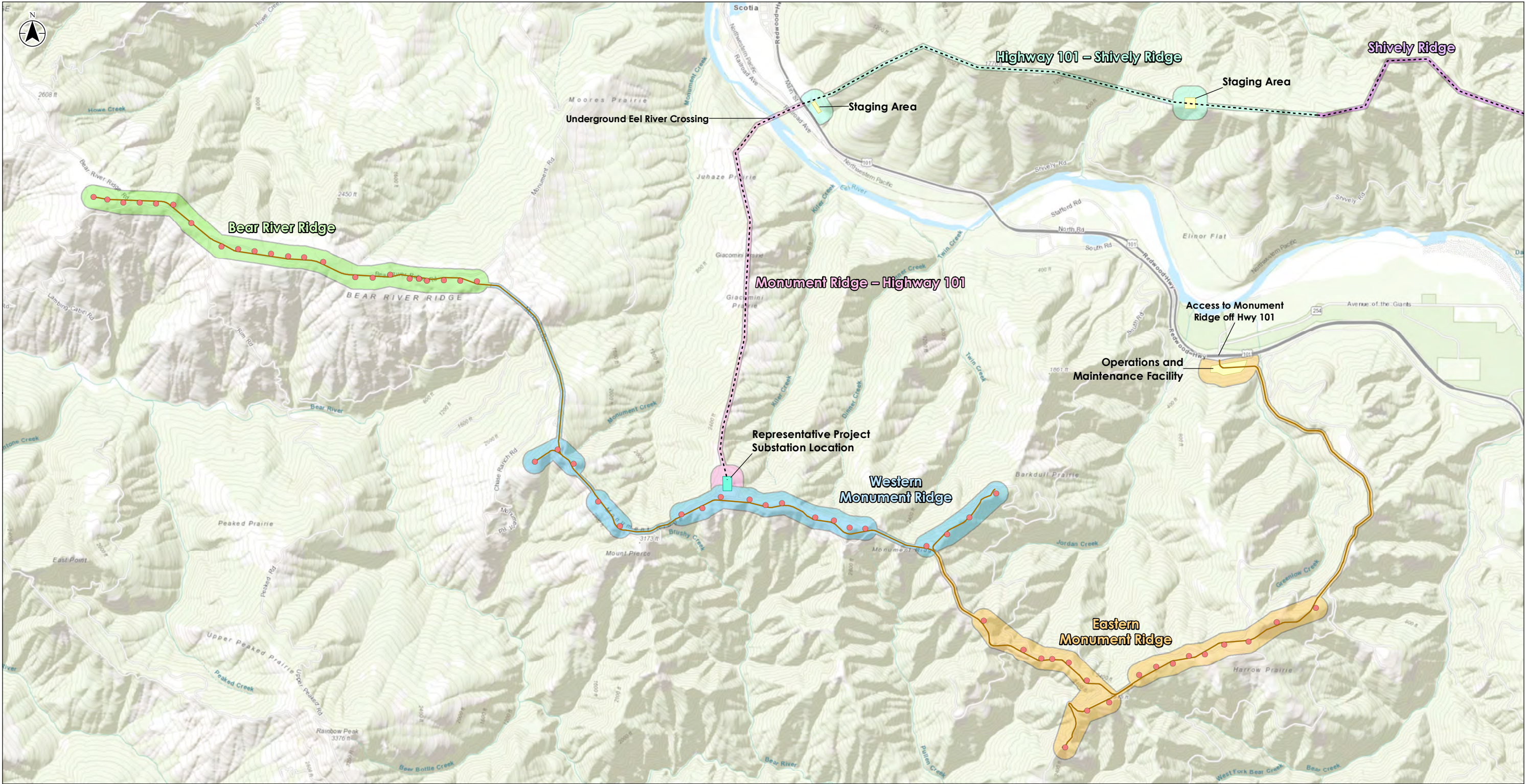
Client/Project
 Humboldt Wind, LLC
 Humboldt Wind Energy Project

Figure No.

1

Title

General Overview

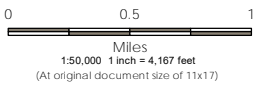


Project Area Segments

- | | |
|------------------------------|-----------------------------|
| Bear River Ridge | Highway 101 - Shively Ridge |
| Western Monument Ridge | Shively Ridge |
| Monument Ridge - Highway 101 | Bridgeville |
| Eastern Monument Ridge | |

Project Components

- Proposed Representative Wind Turbine Locations
- Generation Transmission Line (Gen-Tie)
- Proposed Access Roads
- Substation
- Staging Area



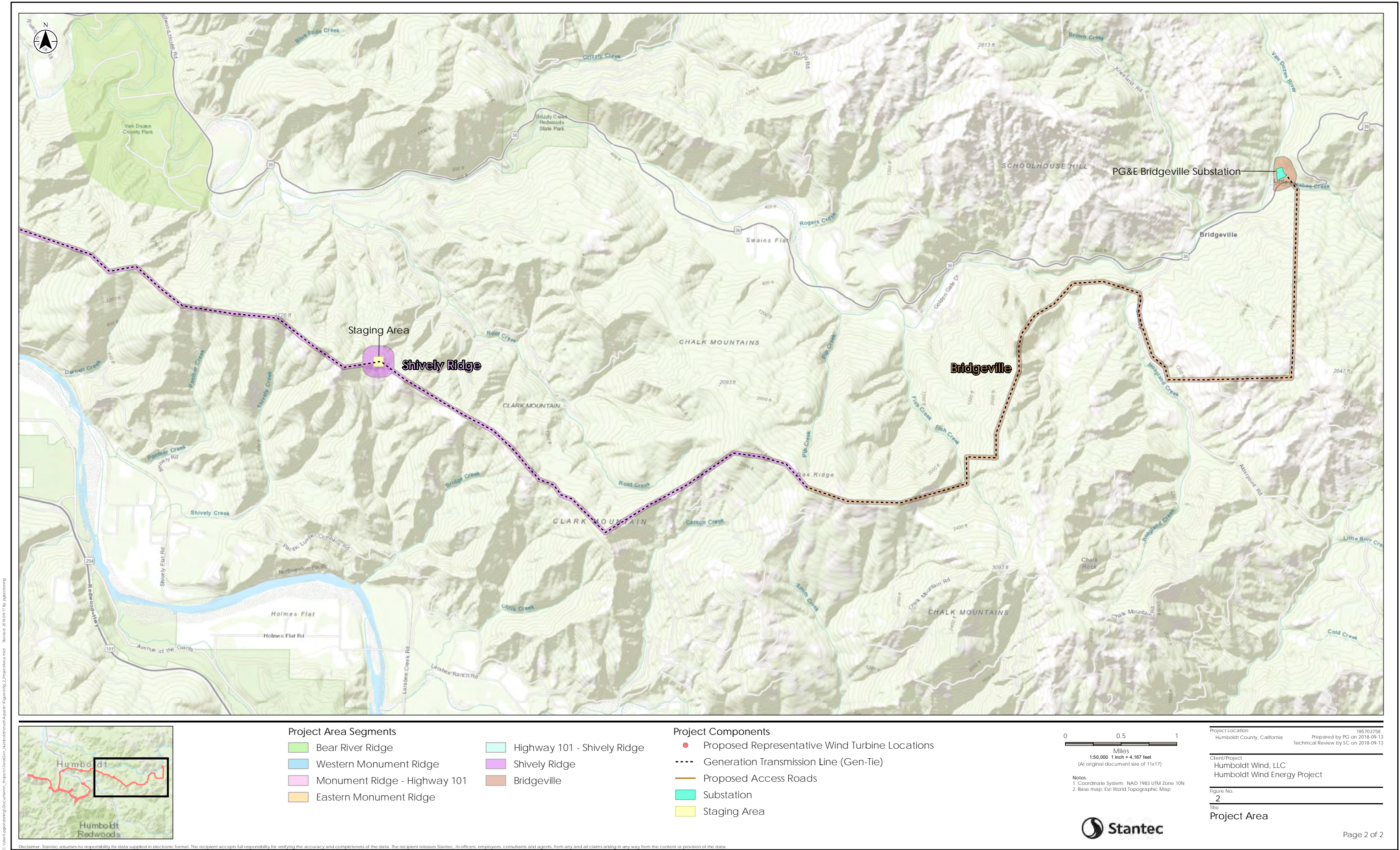
- Notes**
- Coordinate System: NAD 1983 UTM Zone 10N
 - Base map: Esri World Topographic Map

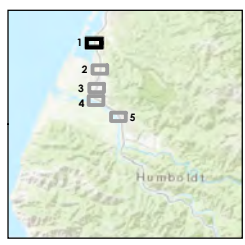


Project Location
Humboldt County, California
185703758
Prepared by PO on 2018-09-13
Technical Review by SC on 2018-09-13

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

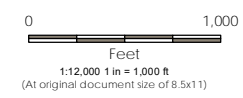
Figure No.
2
Title
Project Area





Improvement Area

Coastal Zone Boundary



Notes
 1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Topographic Map web mapping service

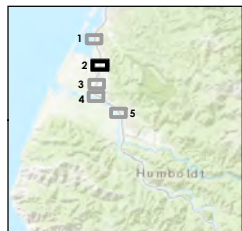
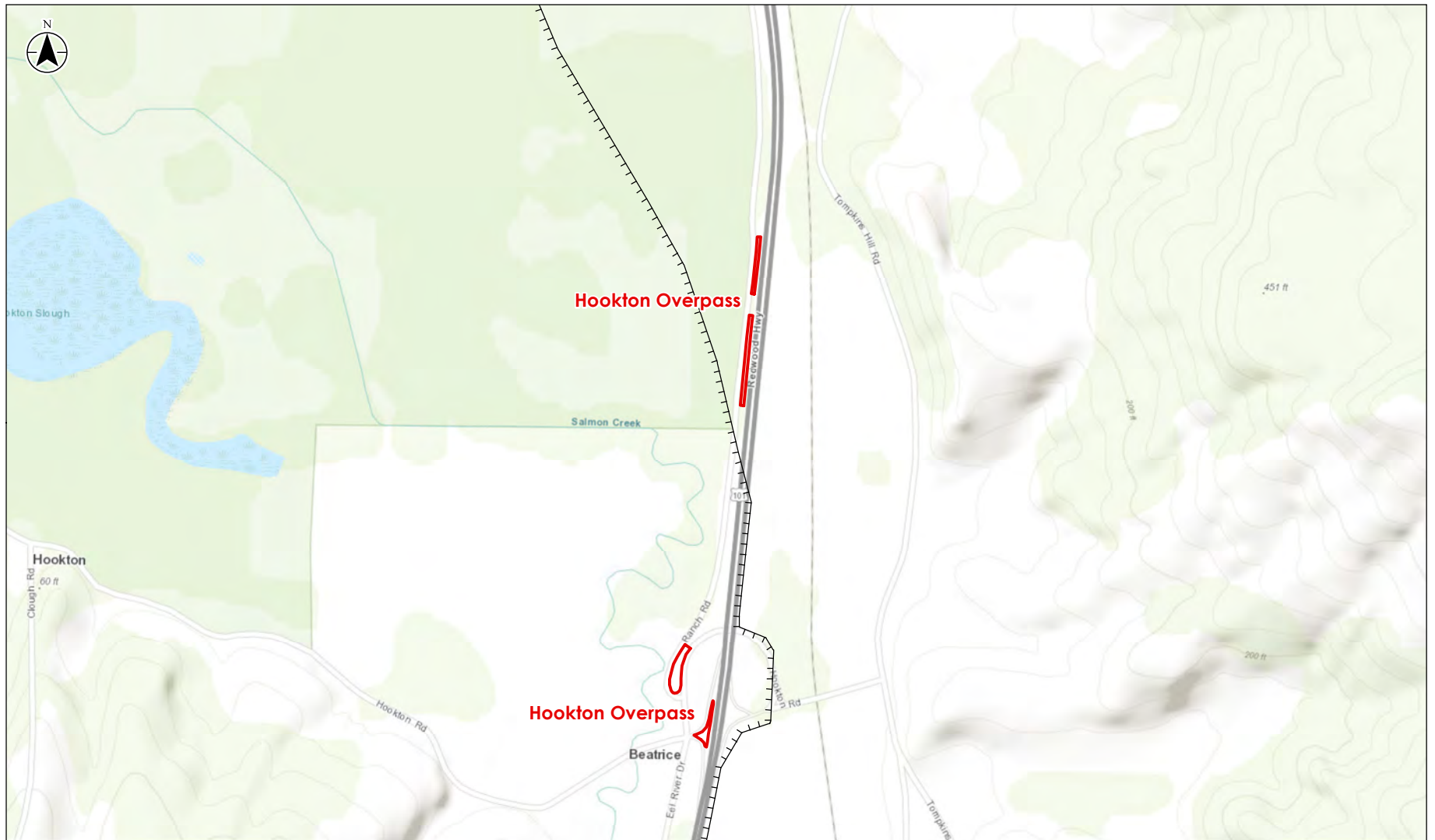


Project Location
 Humboldt County, California
 Prepared by PG on 2018-10-29
 Technical Review by SC on 2018-10-29
 Independent Review by JD on 2018-10-29

Client/Project
 Humboldt Wind, LLC
 Humboldt Wind Energy Project

Figure No.
2

Title
Project Area — Transportation Route



Improvement Area

Coastal Zone Boundary

0 1,000
Feet
1:12,000 1 in = 1,000 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service



Project Location
Humboldt County, California
Prepared by PG on 2018-10-29
Technical Review by SC on 2018-10-29
Independent Review by JD on 2018-10-29

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

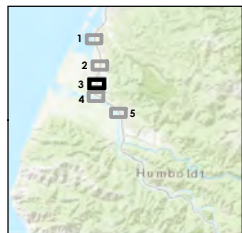
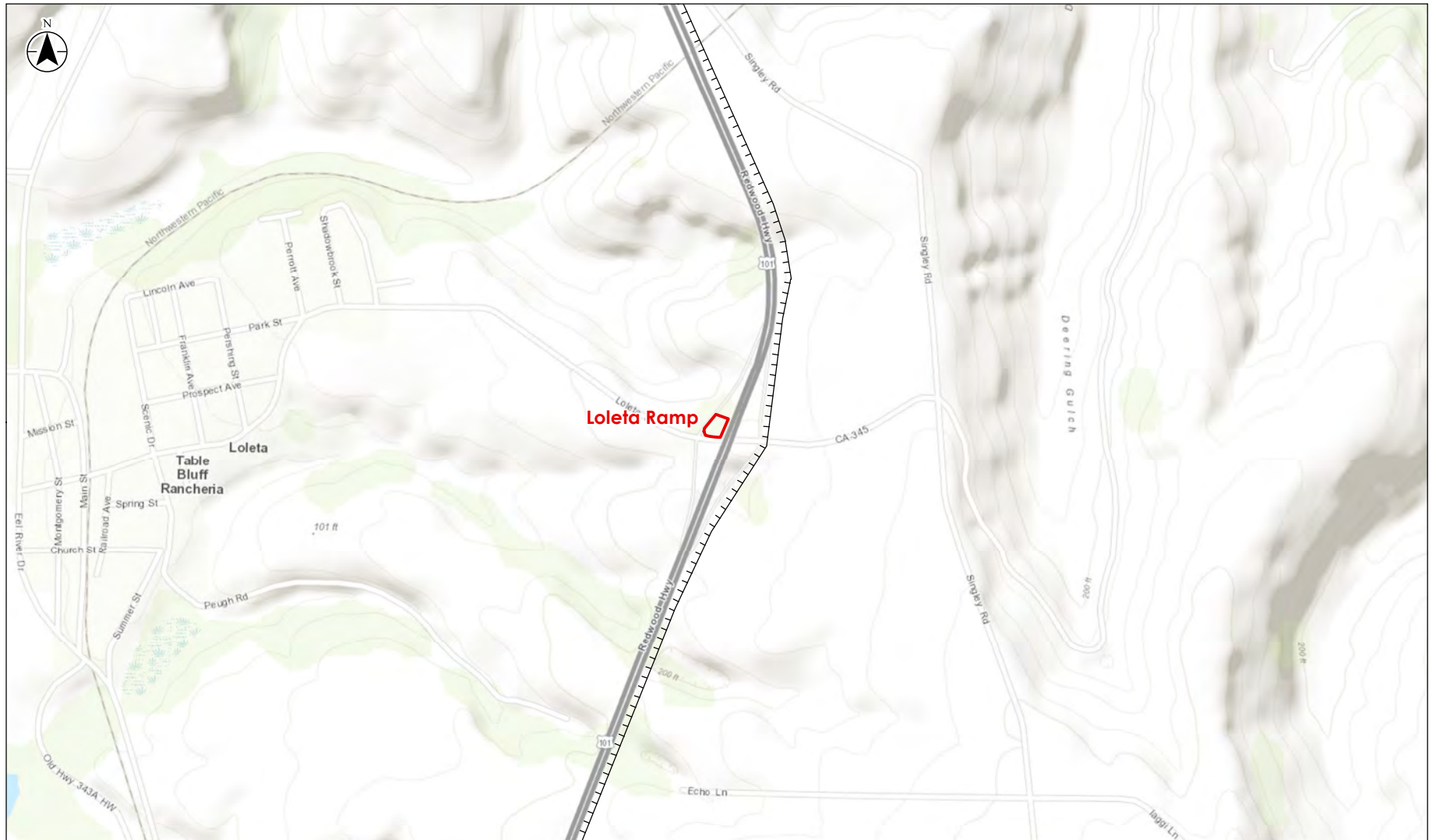
Figure No.

2

Title

**Project Area — Transportation
Route**

Page 2 of 5



 Improvement Area

 Coastal Zone Boundary

0 1,000
Feet
1:12,000 1 in = 1,000 ft
(At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service



Project Location
Humboldt County, California
Prepared by PG on 2018-10-29
Technical Review by SC on 2018-10-29
Independent Review by JD on 2018-10-29

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

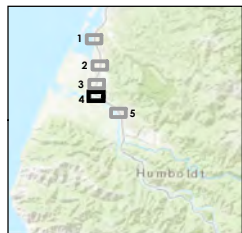
Figure No.

2

Title

**Project Area — Transportation
Route**

Page 3 of 5



- Improvement Area
- Coastal Zone Boundary

0 1,000
Feet
1:12,000 1 in = 1,000 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service



Project Location
Humboldt County, California
Prepared by PG on 2018-10-29
Technical Review by SC on 2018-10-29
Independent Review by JD on 2018-10-29

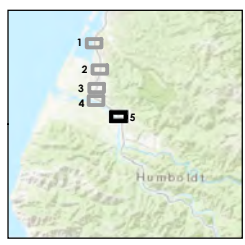
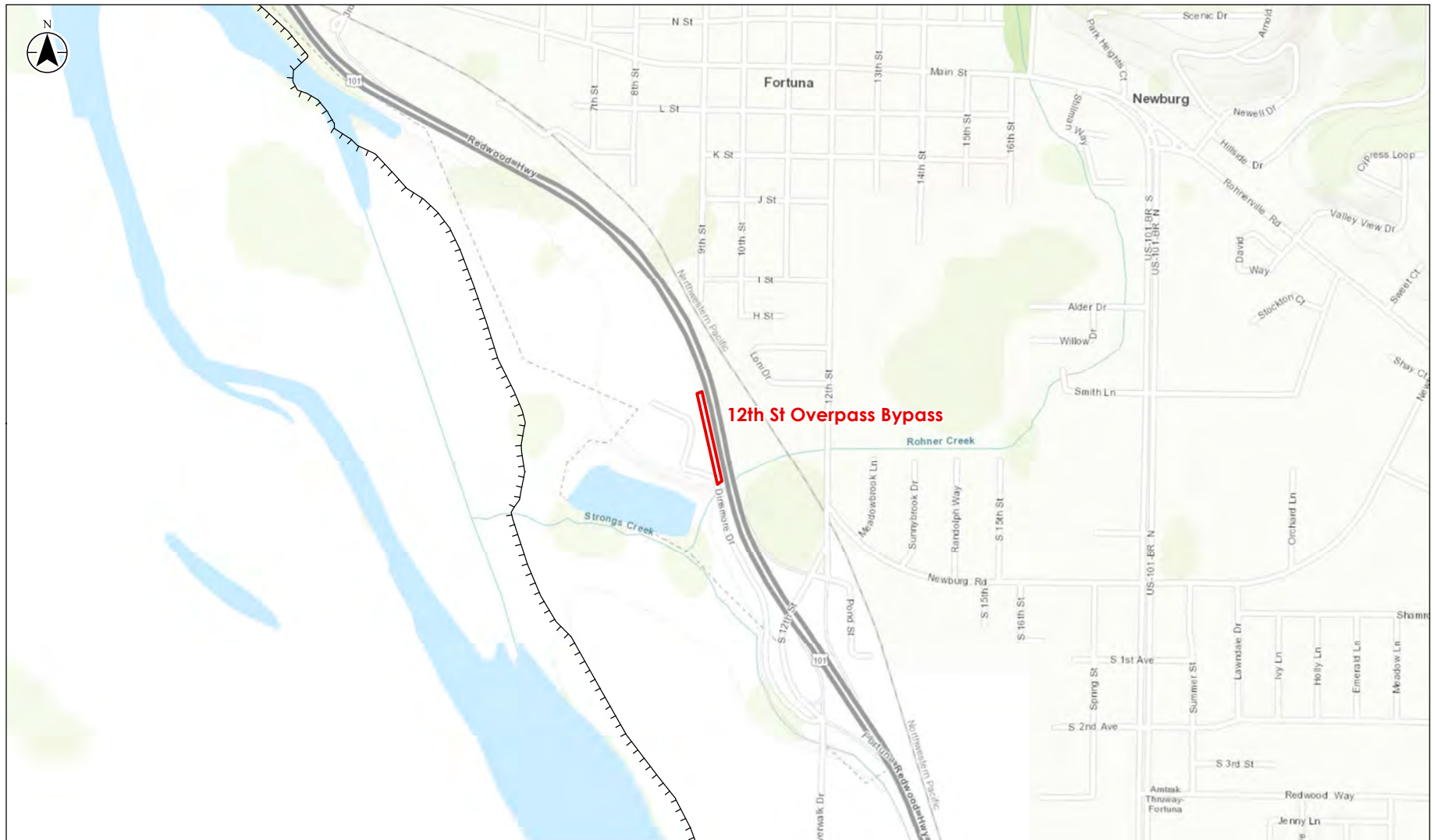
Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

2

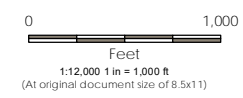
Title

Project Area — Transportation Route



Improvement Area

Coastal Zone Boundary



Notes
 1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Topographic Map web mapping service

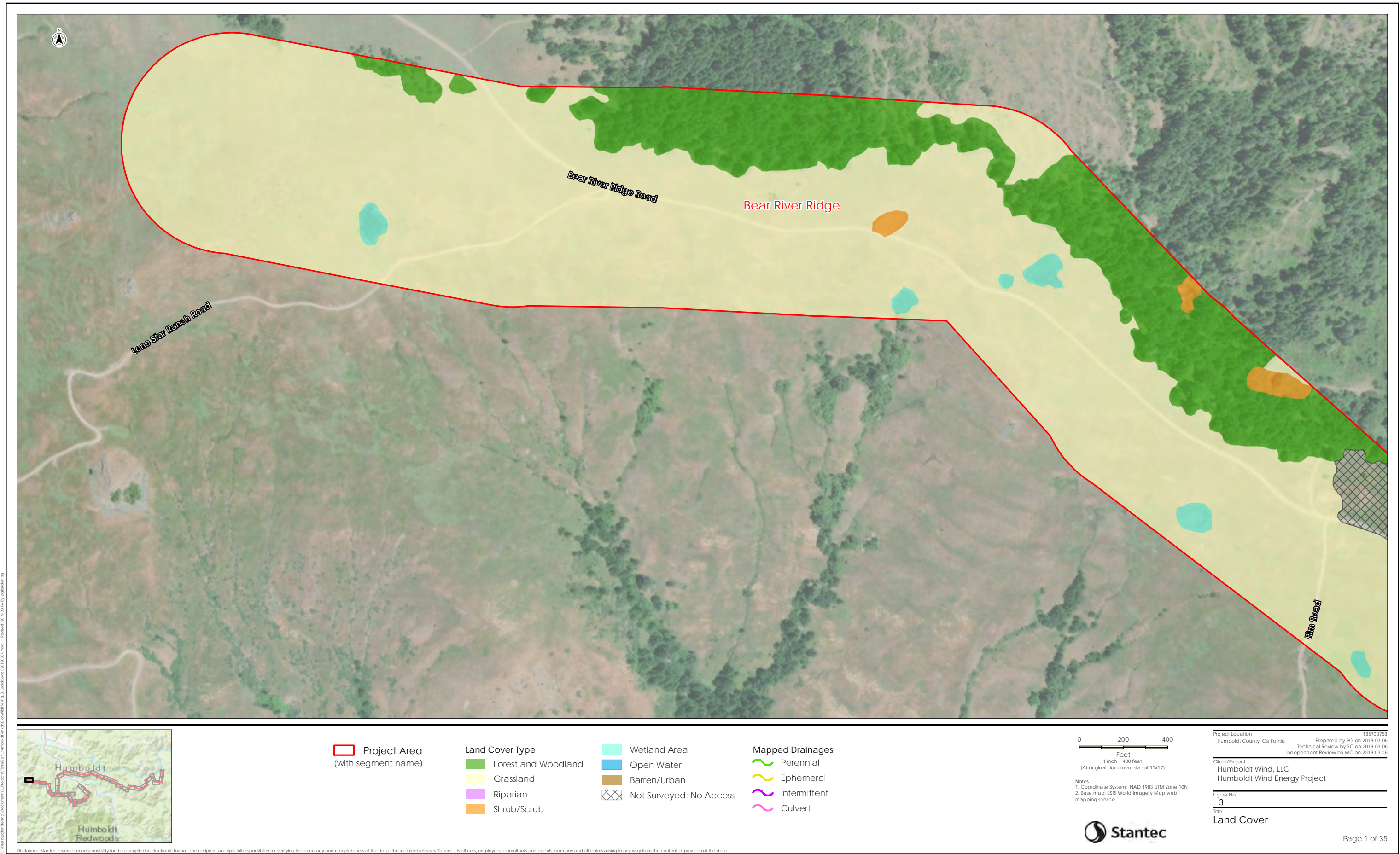


Project Location: Humboldt County, California
 Prepared by PG on 2018-10-29
 Technical Review by SC on 2018-10-29
 Independent Review by JD on 2018-10-29

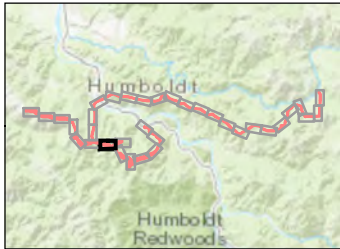
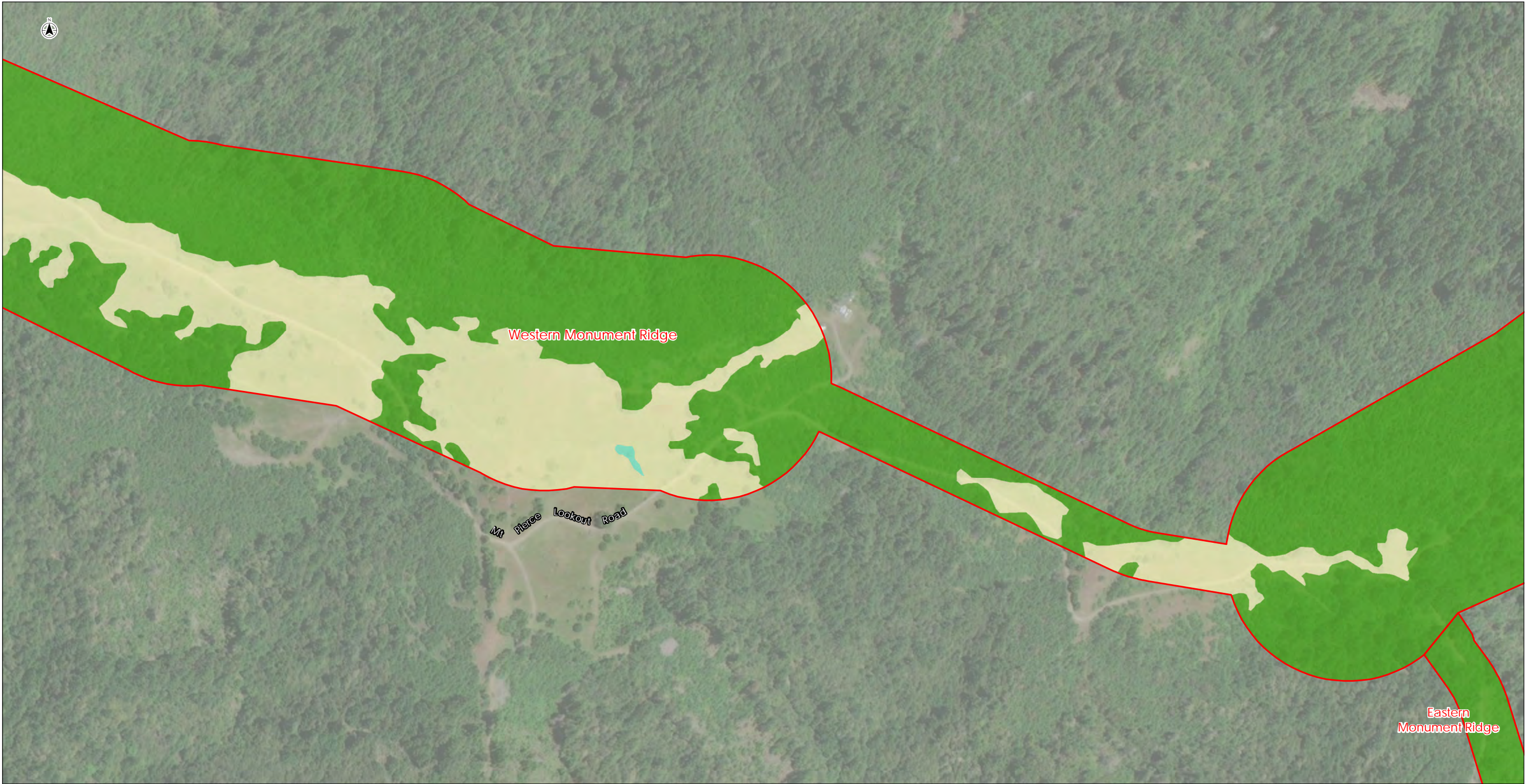
Client/Project: Humboldt Wind, LLC
 Humboldt Wind Energy Project


Figure No. **2**



Project Area — Transportation Route











C:\Users\planning\Documents\Projects\Humboldt\HumboldtWind\HumboldtWind\Fig_3_LandCover_20190304.mxd Revised: 2019-03-06 By: jrg/andrew



 Project Area
(with segment name)

Land Cover Type
 Forest and Woodland
 Grassland
 Riparian
 Shrub/Scrub

 Wetland Area
 Open Water
 Barren/Urban
 Not Surveyed: No Access

Mapped Drainages
 Perennial
 Ephemeral
 Intermittent
 Culvert

0 200 400
Feet
1 inch = 400 feet
(At original document size of 11x17)

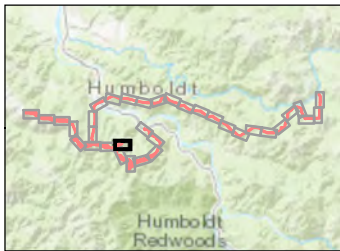
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06





Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project





Figure No.
3
Title
Land Cover

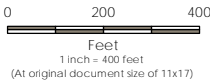


 Project Area
(with segment name)

- Land Cover Type**
-  Forest and Woodland
 -  Grassland
 -  Riparian
 -  Shrub/Scrub

-  Wetland Area
-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

- Mapped Drainages**
-  Perennial
 -  Ephemeral
 -  Intermittent
 -  Culvert



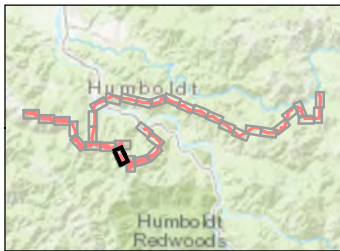
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover

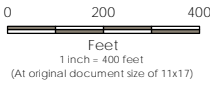


Project Area
(with segment name)

- Land Cover Type
- Forest and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub

- Wetland Area
- Open Water
- Barren/Urban
- Not Surveyed: No Access

- Mapped Drainages
- Perennial
 - Ephemeral
 - Intermittent
 - Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

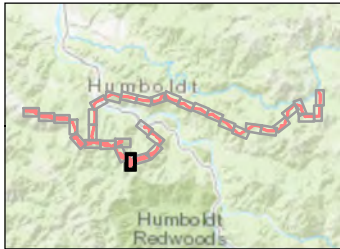


Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project





Figure No.
3
Title
Land Cover

C:\Users\lgilens\Documents\Projects\Humboldt\HumboldtWind\GIS\LandCover\20180304.mxd Revised: 2019-03-06 By: jrgilens






 Project Area
(with segment name)





Land Cover Type

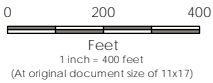
-  Forest and Woodland
-  Grassland
-  Riparian
-  Shrub/Scrub

Wetland Area

-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California

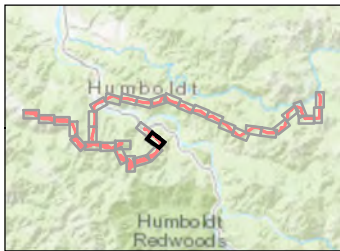
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3





Title
Land Cover

C:\Users\lgilens\Documents\Projects\Humboldt\HumboldtWind\GIS\LandCover_20190304.mxd Revised: 2019-03-06 By: jgilens






 Project Area
(with segment name)

Land Cover Type

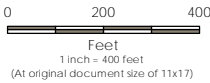
-  Forest and Woodland
-  Grassland
-  Riparian
-  Shrub/Scrub

Wetland Area

-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert



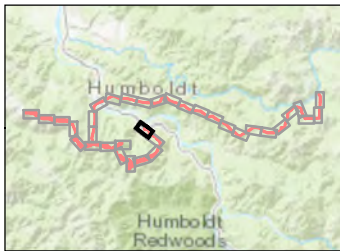
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California 185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover

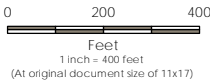


 Project Area
(with segment name)

- Land Cover Type**
- Forest and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub

- Wetland Area
- Open Water
- Barren/Urban
- Not Surveyed: No Access

- Mapped Drainages**
- Perennial
 - Ephemeral
 - Intermittent
 - Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

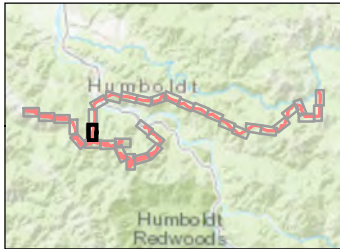


Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project





Figure No.
3
Title
Land Cover





C:\Users\planning\Documents\Projects\Humboldt\HumboldtWind\GIS\LandCover\20190304.mxd Revised: 2019-03-06 By: jrg/andrew

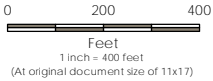


 Project Area
(with segment name)

- Land Cover Type**
-  Forest and Woodland
 -  Grassland
 -  Riparian
 -  Shrub/Scrub

-  Wetland Area
-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

- Mapped Drainages**
-  Perennial
 -  Ephemeral
 -  Intermittent
 -  Culvert



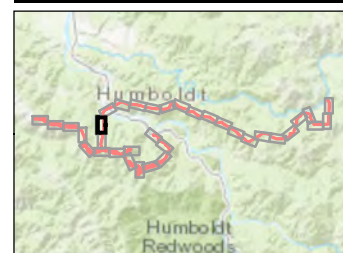
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California 185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project





Figure No.
3
Title
Land Cover



 Project Area
(with segment name)

Land Cover Type

- Forest and Woodland
- Grassland
- Riparian
- Shrub/Scrub

 Wetland Area
 Open Water
 Barren/Urban
 Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert

0 200 400
Feet
1 inch = 400 feet
(At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

Project Location	185703758
Humboldt County, California	Prepared by PG on 2019-03-06
	Technical Review by SC on 2019-03-06
	Independent Review by WC on 2019-03-06

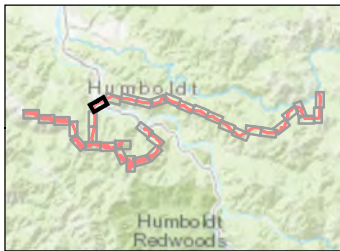
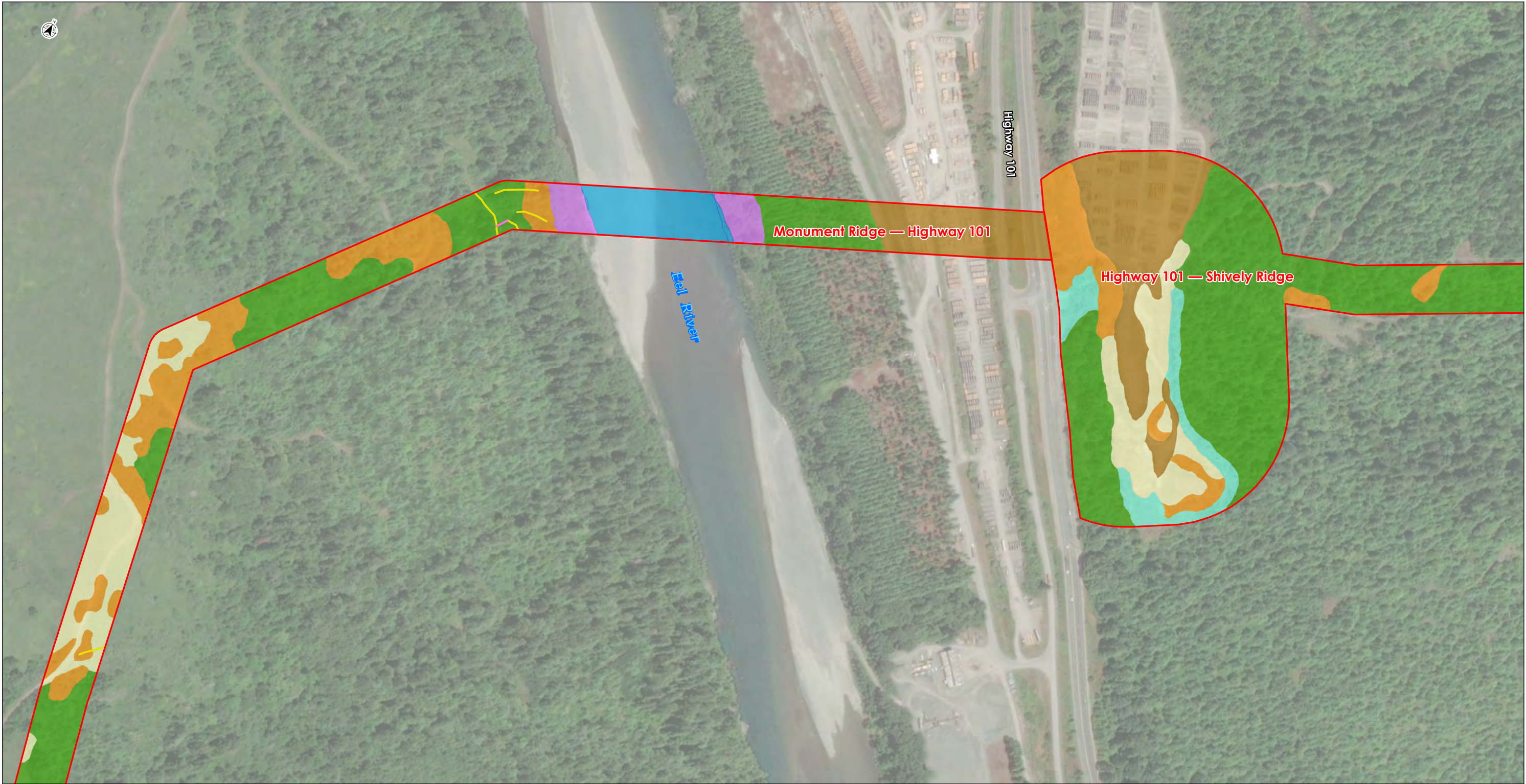
Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3

Title
Land Cover




Page 16 of 35





 Project Area
(with segment name)


Land Cover Type

-  Forest and Woodland
-  Grassland
-  Riparian
-  Shrub/Scrub





 Wetland Area

 Open Water

 Barren/Urban

 Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert

0 200 400
Feet
1 inch = 400 feet
(At original document size of 11x17)

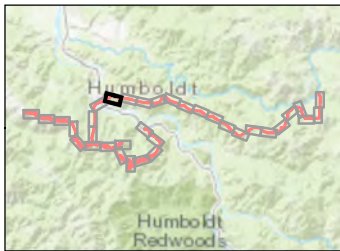
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06





Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover






 Project Area
(with segment name)





Land Cover Type

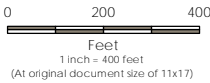
-  Forest and Woodland
-  Grassland
-  Riparian
-  Shrub/Scrub

 Wetland Area

-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert



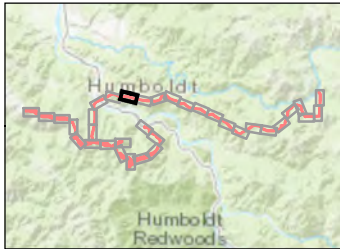
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover



Project Area
(with segment name)

Land Cover Type

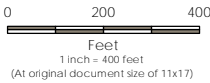
- Forest and Woodland
- Grassland
- Riparian
- Shrub/Scrub

Wetland Area

- Open Water
- Barren/Urban
- Not Surveyed: No Access

Mapped Drainages

- Perennial
- Ephemeral
- Intermittent
- Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

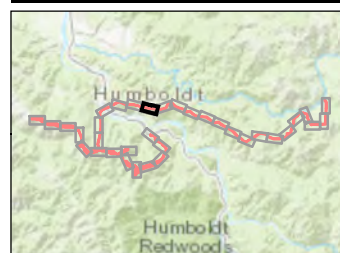


Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3





Land Cover



 Project Area
(with segment name)

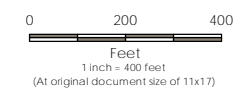
Land Cover Type

- Forest and Woodland
- Grassland
- Riparian
- Shrub/Scrub

-  Wetland Area
 Open Water
 Barren/Urban
 Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert



Notes

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Imagery Map web mapping service

Project Location	185703758
Humboldt County, California	Prepared by PG on 2019-03-06
	Technical Review by SC on 2019-03-06
	Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

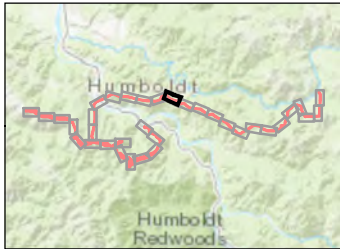
Figure No.

Title



Land Cover











C:\Users\lgilens\Documents\Projects\Humboldt\HumboldtWind\GIS\LandCover\20190304.mxd Revised: 2019-03-06 By: jlgilens

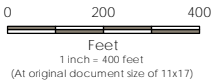


 Project Area
(with segment name)

- Land Cover Type
-  Forest and Woodland
 -  Grassland
 -  Riparian
 -  Shrub/Scrub

-  Wetland Area
-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

- Mapped Drainages
-  Perennial
 -  Ephemeral
 -  Intermittent
 -  Culvert



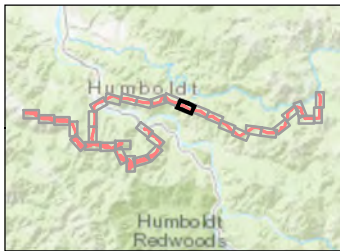
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California 185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover



Project Area
(with segment name)

Land Cover Type

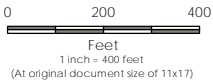
- Forest and Woodland
- Grassland
- Riparian
- Shrub/Scrub

Wetland Area

- Open Water
- Barren/Urban
- Not Surveyed: No Access

Mapped Drainages

- Perennial
- Ephemeral
- Intermittent
- Culvert



Notes

- Coordinate System: NAD 1983 UTM Zone 10N
- Base map: ESRI World Imagery Map web mapping service



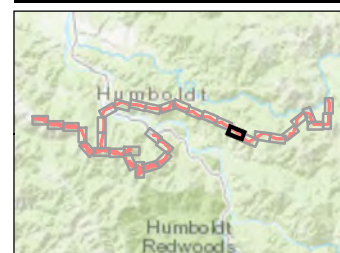
Project Location
Humboldt County, California

185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3

Title
Land Cover



 Project Area
(with segment name)

Land Cover Type

Forest and Woodland

Grassland

 Riparian

Shrub/Scrub

 Wetland Area


 Open Water

Barren/Urban

Not Surveyed: No Access

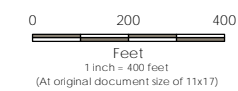
Mapped Drainages

 Perennial

 Ephemeral

 Intermittent

 Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

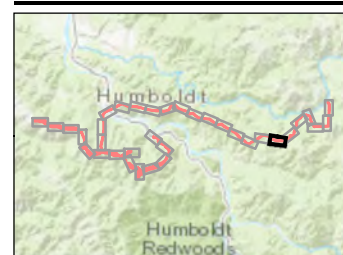
Project Location	185703758
Humboldt County, California	Prepared by PG on 2019-03-06
	Technical Review by SC on 2019-03-06
	Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3

Title
Land Cover





 Project Area
(with segment name)

Land Cover Type

Forest and Woodland

Grassland

 Riparian

Shrub/Scrub

 Wetland Area

Open Water

Barren/Urban

Not Surveyed: No Access

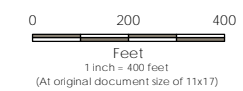
Mapped Drainages

 Perennial

 Ephemeral

 Intermittent

 Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

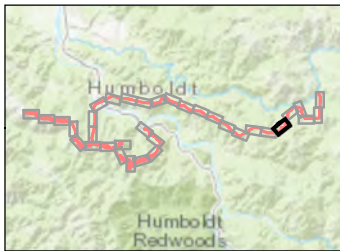
Project Location	185703758
Humboldt County, California	Prepared by PG on 2019-03-06
	Technical Review by SC on 2019-03-06
	Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3

Title
Land Cover



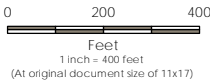


Project Area
(with segment name)

- Land Cover Type
- Forest and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub

- Wetland Area
- Open Water
- Barren/Urban
- Not Surveyed: No Access

- Mapped Drainages
- Perennial
 - Ephemeral
 - Intermittent
 - Culvert



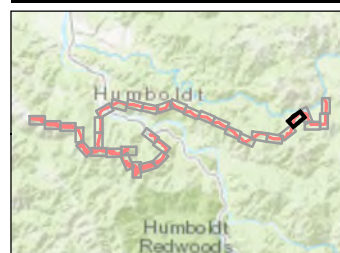
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover



 Project Area
(with segment name)

Land Cover Type

Forest and Woodland

Grassland

Riparian

Shrub/Scrub

 Wetland Area

Open Water

Barren/Urban

Not Surveyed: No Access

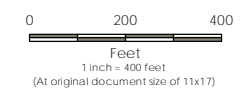
Mapped Drainages

 Perennial

 Ephemeral

Intermittent

 Culvert



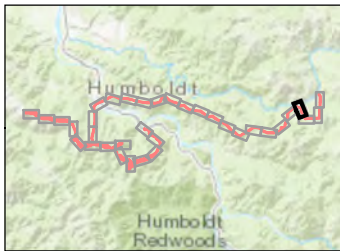
Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

Project Location	185703758
Humboldt County, California	Prepared by PG on 2019-03-06
	Technical Review by SC on 2019-03-06
	Independent Review by WC on 2019-03-06

Client/Project	Humboldt Wind, LLC Humboldt Wind Energy Project
----------------	--

Figure No.
3


Title
Land Cover





 Project Area
(with segment name)


Land Cover Type

-  Forest and Woodland
-  Grassland
-  Riparian
-  Shrub/Scrub





 Wetland Area

 Open Water

 Barren/Urban

 Not Surveyed: No Access

Mapped Drainages

-  Perennial
-  Ephemeral
-  Intermittent
-  Culvert

0 200 400
Feet
1 inch = 400 feet
(At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

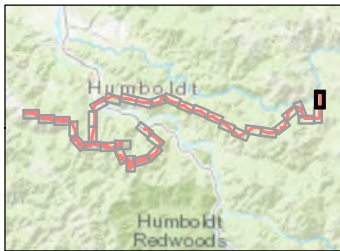


Project Location
Humboldt County, California
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project





Figure No.
3





Title
Land Cover

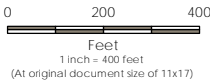


 Project Area
(with segment name)

- Land Cover Type**
-  Forest and Woodland
 -  Grassland
 -  Riparian
 -  Shrub/Scrub

-  Wetland Area
-  Open Water
-  Barren/Urban
-  Not Surveyed: No Access

- Mapped Drainages**
-  Perennial
 -  Ephemeral
 -  Intermittent
 -  Culvert



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service



Project Location
Humboldt County, California
185703758
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
3
Title
Land Cover



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location 185703758
Humboldt County, California Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location 185703758
Humboldt County, California Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

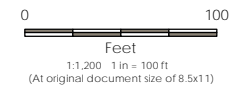
Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban



Notes
 1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Topographic Map web mapping service.



Project Location
 Humboldt County, California
 Prepared by PG on 2019-03-06
 Technical Review by SC on 2019-03-06
 Independent Review by WC on 2019-03-06

Client/Project
 Humboldt Wind, LLC
 Humboldt Wind Energy Project

Figure No.
3

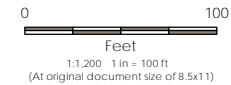
Title
Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

Land Cover Type

- Forests and Woodland
- Grassland
- Riparian
- Shrub/Scrub
- Wetland Areas
- Barren/Urban



Notes

1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

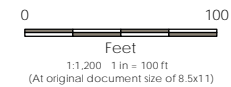
Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban



Notes
 1. Coordinate System: NAD 1983 UTM Zone 10N
 2. Base map: ESRI World Topographic Map web mapping service.



Project Location: Humboldt County, California
 Prepared by PG on 2019-03-06
 Technical Review by SC on 2019-03-06
 Independent Review by WC on 2019-03-06

Client/Project: Humboldt Wind, LLC
 Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Coastal Zone Boundary

- Land Cover Type**
- Forests and Woodland
 - Grassland
 - Riparian
 - Shrub/Scrub
 - Wetland Areas
 - Barren/Urban

0 100
Feet
1:1,200 1 in = 100 ft
(At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Topographic Map web mapping service.



Project Location
Humboldt County, California
Prepared by PG on 2019-03-06
Technical Review by SC on 2019-03-06
Independent Review by WC on 2019-03-06

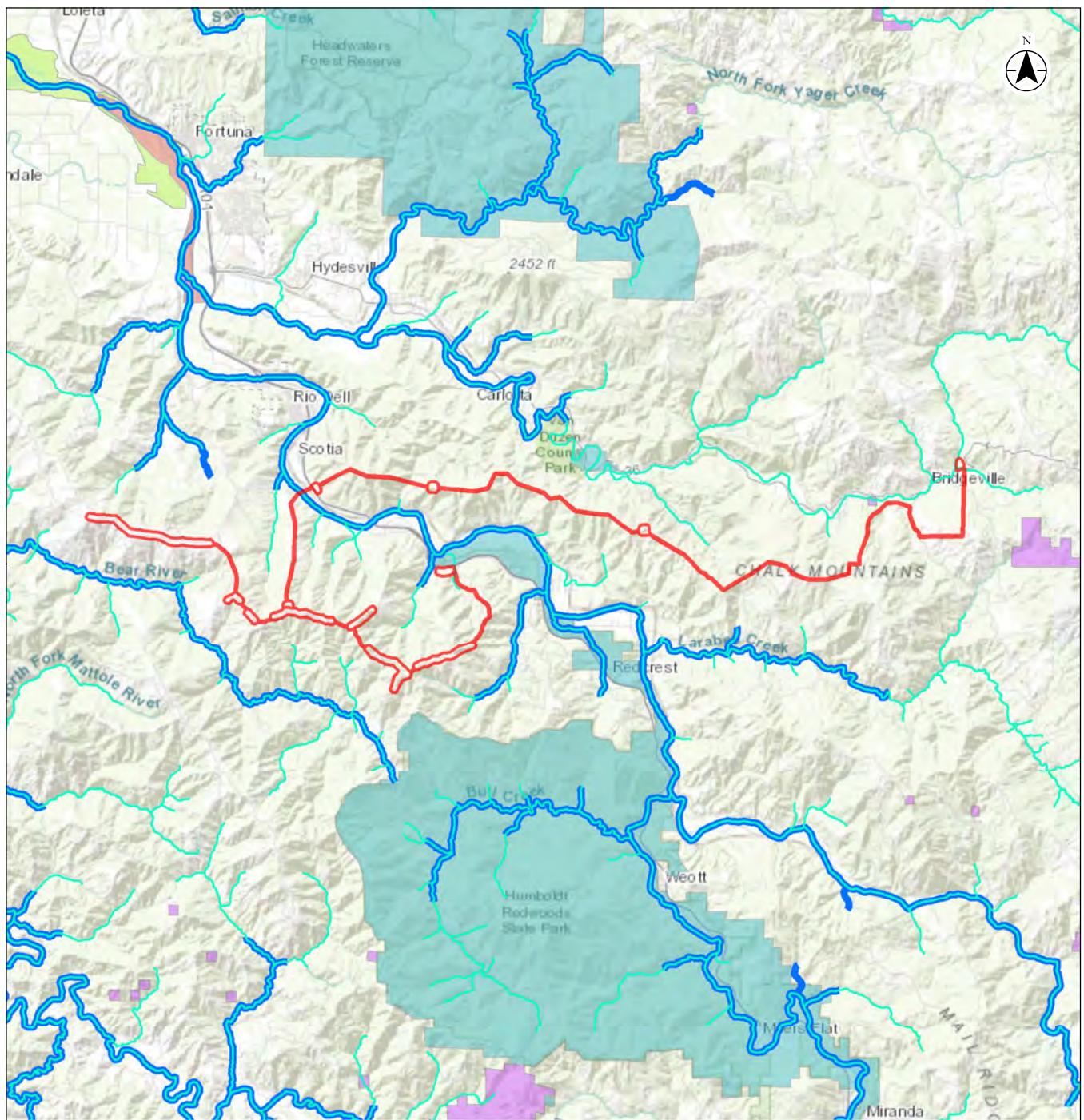
Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.

3

Title

Land Cover
— Transportation Route



- Project Area
- Critical Habitat**
- Chinook Salmon
- Steelhead
- Marbled murrelet
- Northern spotted owl
- Western snowy plover
- Yellow-billed Cuckoo

0 1.5 3 Miles
1:250,000 (at original document size of 8.5x11)



Project Location: Humboldt County, California
185703758
Prepared by JD on 2018-10-19
Technical Review by KP on 2018-10-19

Client/Project: Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.: 4

Title: Critical Habitat

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

HUMBOLDT WIND ENERGY PROJECT WILDLIFE ASSESSMENT

Appendix A WILDLIFE SPECIES OBSERVED IN THE HUMBOLDT WIND ENERGY PROJECT AREA

Appendix A. Wildlife Species Observed in the Humboldt Wind Energy Project Area

Common Name	Scientific Name
Acorn Woodpecker	<i>Melanerpes formicivorus</i>
Allen's Hummingbird	<i>Selasphorus sasin</i>
Alligator Lizard	<i>Elgaria coerulea</i>
American crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Spinus tristis</i>
American kestrel	<i>Falco sparverius</i>
American Pipit	<i>Anthus rubescens</i>
American robin	<i>Turdus migratorius</i>
Anna's Hummingbird	<i>Calypte anna</i>
Audubon's Yellow-rumped Warbler	<i>Setophaga coronata</i>
Baird's Sandpiper	<i>Calidris bairdii</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Band-tailed pigeon	<i>Patagioenas fasciata</i>
Barn swallow	<i>Hirundo rustica</i>
Belted Kingfisher	<i>Megaceryle alcyon</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Black Phoebe	<i>Sayornis nigricans</i>
Black Swift	<i>Cypseloides niger</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Black-throated Gray Warbler	<i>Setophaga nigrescens</i>
Bobcat	<i>Lynx rufus</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Botta's Pocket Gopher	<i>Thomomys bottae</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown Creeper	<i>Certhia americana</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Brush Rabbit	<i>Sylvilagus bachmani</i>
Burrowing owl	<i>Athene cunicularia</i>
Bushtit	<i>Psaltirparus minimus</i>
Cackling goose	<i>Branta hutchinsii</i>
California Quail	<i>Callipepla californica</i>
California Scrub-Jay	<i>Aphelocoma californica</i>
Canada goose	<i>Branta canadensis</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Chestnut-backed Chickadee	<i>Poecile rufescens</i>
Chestnut-collared Longspur	<i>Calcarius ornatus</i>
Chipping Sparrow	<i>Spizella passerina</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Coast garter snake	<i>Thamnophis elegans terrestris</i>
Columbian Black-tailed Deer	<i>Odocoileus hemionus columbianus</i>
Common Loon	<i>Gavia immer</i>
Common merganser	<i>Mergus merganser</i>
Common raven	<i>Corvus corax</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Coyote	<i>Canis latrans</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Eurasian-Collared Dove	<i>Streptopelia decaocto</i>
European Starling	<i>Sturnus vulgaris</i>

Common Name	Scientific Name
Ferruginous Hawk	<i>Buteo regalis</i>
Pacific Fisher	<i>Pekania pennant</i>
Fox Sparrow	<i>Passerella iliaca</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Golden-Crowned Kinglet	<i>Regulus satrapa</i>
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>
Gopher Snake	<i>Pituophis catenifer</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Horned Owl	<i>Bubo virginianus</i>
Greater White-fronted Goose	<i>Anser albifrons</i>
Greater Yellowlegs	<i>Tringa melanoleuca</i>
Hairy Woodpecker	<i>Leuconotopicus villosus</i>
Hermit Thrush	<i>Catharus guttatus</i>
Hermit Warbler	<i>Setophaga occidentalis</i>
Herring Gull	<i>Larus argentatus</i>
Horned Lark	<i>Eremophila alpestris</i>
House Finch	<i>Haemorhous mexicanus</i>
House Wren	<i>Troglodytes aedon</i>
Hutton's Vireo	<i>Vireo huttoni</i>
Killdeer	<i>Charadrius vociferus</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Lapland Longspur	<i>Calcarius lapponicus</i>
Lawrence's Goldfinch	<i>Spinus lawrencei</i>
Lazuli Bunting	<i>Passerina amoena</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
Lincoln's Sparrow	<i>Melospiza lincolnii</i>
Long-billed Curlew	<i>Numenius americanus</i>
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>
Marbled Murrelet	<i>Brachyramphus marmoratus</i>
Mountain Lion	<i>Puma concolor</i>
Mountain Quail	<i>Oreortyx pictus</i>
Mourning Dove	<i>Zenaida macroura</i>
Myrtle Yellow-rumped Warbler	<i>Setophaga coronata</i>
Nashville Warbler	<i>Leiothlypis ruficapilla</i>
Northern Harrier	<i>Circus hudsonius</i>
Northern Pygmy Owl	<i>Glaucidium gnoma</i>
Northern Red-legged Frog	<i>Rana aurora</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Northern Shrike	<i>Lanius borealis</i>
Northwestern Black Bear	<i>Ursus americana altifrontalis</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Osprey	<i>Pandion haliaetus</i>
Pacific Golden-Plover	<i>Pluvialis fulva</i>
Pacific Wren	<i>Troglodytes pacificus</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Pileated Woodpecker	<i>Hylatomus pileatus</i>
Pine Siskin	<i>Spinus pinus</i>
Prairie Falcon	<i>Falco mexicanus</i>

Common Name	Scientific Name
Purple Finch	<i>Haemorhous purpureus</i>
Purple Martin	<i>Progne subis</i>
Red Crossbill	<i>Loxia curvirostra</i>
Red-breasted Nuthatch	<i>Sitta canadensis</i>
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>
Red-shafted Flicker	<i>Colaptes auratus</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-throated Loon	<i>Gavia stellata</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Rock Wren	<i>Salpinctes obsoletus</i>
Roosevelt Elk	<i>Cervus elaphus roosevelti</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Ruffed Grouse	<i>Bonasa umbellus</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Say's Phoebe	<i>Sayornis saya</i>
Sharp-shinned Hawk	<i>Accipiter striatus</i>
Short-eared Owl	<i>Asio flammeus</i>
Song Sparrow	<i>Melospiza melodia</i>
Sooty Grouse	<i>Dendragapus fuliginosus</i>
Spotted Owl	<i>Strix occidentalis caurina</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Steller's Jay	<i>Cyanocitta stelleri</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Townsend's Solitaire	<i>Myadestes townsendi</i>
Townsend's Warbler	<i>Setophaga townsendi</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Turkey Vulture	<i>Cathartes aura</i>
Varied Thrush	<i>Ixoreus naevius</i>
Vaux's Swift	<i>Chaetura vauxi</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Warbling Vireo	<i>Vireo gilvus</i>
Western Bluebird	<i>Sialia mexicana</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Western Palm-warbler	<i>Setophaga palmarum</i>
Western Sandpiper	<i>Calidris mauri</i>
Western Screech-owl	<i>Megascops kennicottii</i>
Western Tanager	<i>Piranga ludoviciana</i>
Western Wood-Pewee	<i>Contopus sordidulus</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
White-tailed Kite	<i>Elanus leucurus</i>
White-throated Swift	<i>Aeronautes saxatalis</i>
Wild Pig	<i>Sus scrofa</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Wilson's Snipe	<i>Gallinago delicata</i>
Wilson's Warbler	<i>Cardellina pusilla</i>
Wrentit	<i>Chamaea fasciata</i>
Yellow Warbler	<i>Setophaga petechia</i>