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Date: 11/18/2021
To: Rowan Percheron, LLC
From: Margret Harburg, Natural Resource Specialist and Stacey Reed, Senior Biologist
Project Name: Percheron Site
AKS Job No.: 8858-04
Project Site: Near 73396 Tower Road, west of the Boardman Bombing Range in Boardman, Morrow County, Oregon
Subject: [Threatened and Endangered Species Assessment Memo](#)

Introduction

The study area consists of a portion of Tax Lot 100 of Morrow County Assessor's Map 3 N 24E located near 73396 Tower Road, west of the Boardman Bombing Range in Boardman, Morrow County, Oregon (study area outlined on attached Figures 1 and 2).

This memo provides a preliminary evaluation of plant, bird, insect/invertebrate, and mammal species federally or state listed as threatened or endangered at the time of this memo with the potential to occur on or near the project site. It also includes a review of whether the site holds suitable habitat for any of these listed species.

Background Review

According to the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online report, there are no federally protected, Endangered Species Act (ESA)-listed threatened or endangered species documented as occurring on or in the immediate vicinity of the study area, and no designated critical habitats mapped on the site. The IPaC report is attached for reference.

According to the IPaC report for the study area, the monarch butterfly (*Danaus plexippus*) is an insect species that is a candidate to be federal listing with the potential to occur in Morrow County. There is no designated critical habitat for monarchs in the study area, but if monarchs are seen they should be documented and reported.

According to the IPaC report, there are two birds protected under the Migratory Bird Treaty Act and one protected under the Bald and Golden Eagle Protection Act that may occur in the vicinity of the study area: the Rufous hummingbird (*Selasphorus rufus*), Clark's grebe (*Aechmophorus clarkii*), and the bald eagle (*Haliaeetus leucocephalus*). According to an IPaC report, the sage thrasher (*Oreoscoptes montanus*) is also a migratory bird that was documented within a 50-mile radius of the site in habitat similar to what was observed in the study area.

According to Oregon Department of Fish and Wildlife (ODFW), state-listed threatened, endangered, and/or candidate wildlife species with the potential to occur in the study area include the Washington ground squirrel (*Urocitellus washingtoni*), which is listed as endangered. According to the USFWS Population Range map, habitat for the Washington ground squirrel is present in the vicinity of the study area.

According to the Oregon Department of Agriculture (ODA), Lawrence's milkvetch (*Astragalus collinus* var. *laurentii*) is listed as a threatened plant in Oregon, and populations of Lawrence's milkvetch have been documented in Morrow County.

Habitat Requirements for Listed Species

Monarch Butterfly

According to the US Department of Agriculture (USDA), the monarch butterfly depends on milkweed species (*Asclepias* spp.). Milkweeds are considered a host plant because they are a required food source for monarch larvae (caterpillars). The USDA Plant List of Accepted Nomenclature, Taxonomy, and Symbols (PLANTS) Database shows that the only known milkweed species to occur in Morrow County is *A. speciosa*. This species typically grows in clumps near roadsides and on abandoned farmlands or other open areas. No milkweed species were observed in the study area; therefore, habitat for the monarch butterfly is not likely to occur in the study area.

Migratory Birds

According to the Cornell Lab of Ornithology, bald eagle typically nests in forested areas near large bodies of water. They prefer tall mature trees for perching and for nesting. They can also be found in open, dry uplands if there is open water access for fishing close by. None of these key habitat features for bald eagle was observed on-site or immediately off-site.

According to the Cornell Lab of Ornithology and ODFW, Clark's grebe nest on large freshwater lakes and marshes with emergent vegetation such as cattails and tules around the fringes. An emergent wetland with a small path of hardstem bulrush (*Scirpus acutus*) was present in the study area. The hydrology source of the wetland in the study area is seasonal and the wetland lacks fish, which comprise 80 percent of the Clark's grebe diet. Therefore, nesting habitat for Clark's grebe is not likely present in the study area.

According to the Cornell Lab of Ornithology, the sage thrasher nests exclusively in habitats dominated by big sagebrush (*Artemisia tridentata*) and other sagebrush species (*Artemisia* spp. or *Chrysothamnus* spp.). Sagebrush was observed in the study area.

According to Oregon State University Extension Service, Rufous hummingbird begin nesting as early as April through July, preferring to build nests in conifer trees and shrubs. Rufous hummingbird have the potential to nest in sagebrush on the site.

Washington Ground Squirrel

According to the USFWS, Washington ground squirrel are found in the Columbia plateau of both Washington and Oregon. Their preferred habitat consists of sagebrush and bunchgrasses. They nest and burrow in sandy or silt-loam textured soils that are conducive for their burrow structures. Potential habitat for Washington ground squirrel was observed in the study area.

Lawrence's Milkvetch

According to the ODA, Lawrence's milkvetch inhabits sandy or rocky soils overlying basalt on dry slopes, mostly at higher elevations of 2000 to 3400 feet, but occasionally as low as 400 feet. Associated plant species include blue bunch wheatgrass (*Pseudoroegneria spicata*), Sandberg bluegrass (*Poa secunda*), Idaho fescue (*Festuca idahoensis*), and cheatgrass (*Bromus tectorum*). Lawrence's milkvetch can also



occur with Carey's balsamroot (*Balsamorhiza careyana*) and bigflower agoseris (*Agoseris grandiflora*). Cheatgrass and a fescue species (*Festuca* spp.) were observed in the study area.

Site Visit Summary

AKS Natural Resource Specialists Margret Harburg and Sonya Templeton conducted a visit on October 14, 2021 to delineate potentially jurisdictional wetlands and waters in the study area. During the site visit, habitats for federal and state listed species were assessed. The study area is undeveloped with a gentle overall slope of approximately 5 percent or less. The vegetation in the study area is generally dominated by big sagebrush, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and prickly Russian thistle (*Salsola tragus*), with patches of cheatgrass and bare ground. One western juniper (*Juniperus occidentalis*) was observed in the study area.

A wetland and drainage (Sixmile Canyon drainage) were delineated in the eastern portion of the study area. The wetland vegetation community generally consisted of Russian olive tree (*Elaeagnus angustifolia*), twoscale saltbrush (*Atriplex micrantha*), alkali swainsonpea (*Sphaerophysa salsula*), bigbract verbena (*Verbena bracteata*), common reed (*Phragmites australis*), and hardstem bulrush.

Plant species associated with Lawrence's milkvetch and observed on site included cheatgrass and a fescue. However, the elevation of the site is estimated around 600 feet, which is outside of the typical preferred elevational range for this species. There are sandy soil textures on site, but no overlying basalt. Therefore, based on the authors' best professional judgment, the study area does not hold high potential to support Lawrence's milkvetch.

There was no suitable habitat for bald eagle in the study area or in the immediate vicinity, as there were no large trees suitable for perching. No nests of any kind were observed during the October 2021 site visit. However, the sage thrasher and Rufous hummingbird have the potential to nest in sagebrush on the site.

The study area provides suitable habitat for the state-listed Washington ground squirrel. There are documented populations of protected Washington ground squirrel within the Boardman Bombing Range and Boardman Conservation Area, located approximately 6 miles from the study area. The site contains sandy and silt-loam soil textures that are consistent with their preference for burrowing. Therefore, it is the authors' best professional judgment the site contains potential habitat for Washington ground squirrel.

Recommendations

Surveys are recommended to confirm whether the state-listed Washington ground squirrel are present in the study area. According to the Washington Department of Fish and Wildlife (WDFW), the ideal time to conduct surveys is between March and May, when ground squirrel are most active above ground.

According to USFWS, Washington ground squirrel begin to emerge from hibernation between January and March, depending on the weather, and return to hibernation in late May through June. We recommend contacting ODFW prior to commencing the surveys to confirm appropriate survey protocol.

Prior to vegetation removal, a nest survey to determine if any migratory nests, specifically for sage thrasher and Rufous hummingbird, are present, as both species have the potential to nest within the upland sagebrush habitat on the site.



Attachments:

Figure 1: USGS Vicinity Map

Figure 2: Tax Map 3N 24E

IPaC Report

References

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Finger, R., G. J. Wiles, J. Tabor, and E. Cummins, 2007. *Washington Ground Squirrel Surveys in Adams, Douglas, and Grant Counties, Washington, 2004*. Olympia, Washington: Washington Department of Fish and Wildlife.

Natural Resources Conservation Service (NRCS), 2021. *Asclepias speciosa Torr. Showy milkweed*. Washington (DC): US Department of Agriculture. Available at: <https://plants.usda.gov/home/plantProfile?symbol=ASSP>

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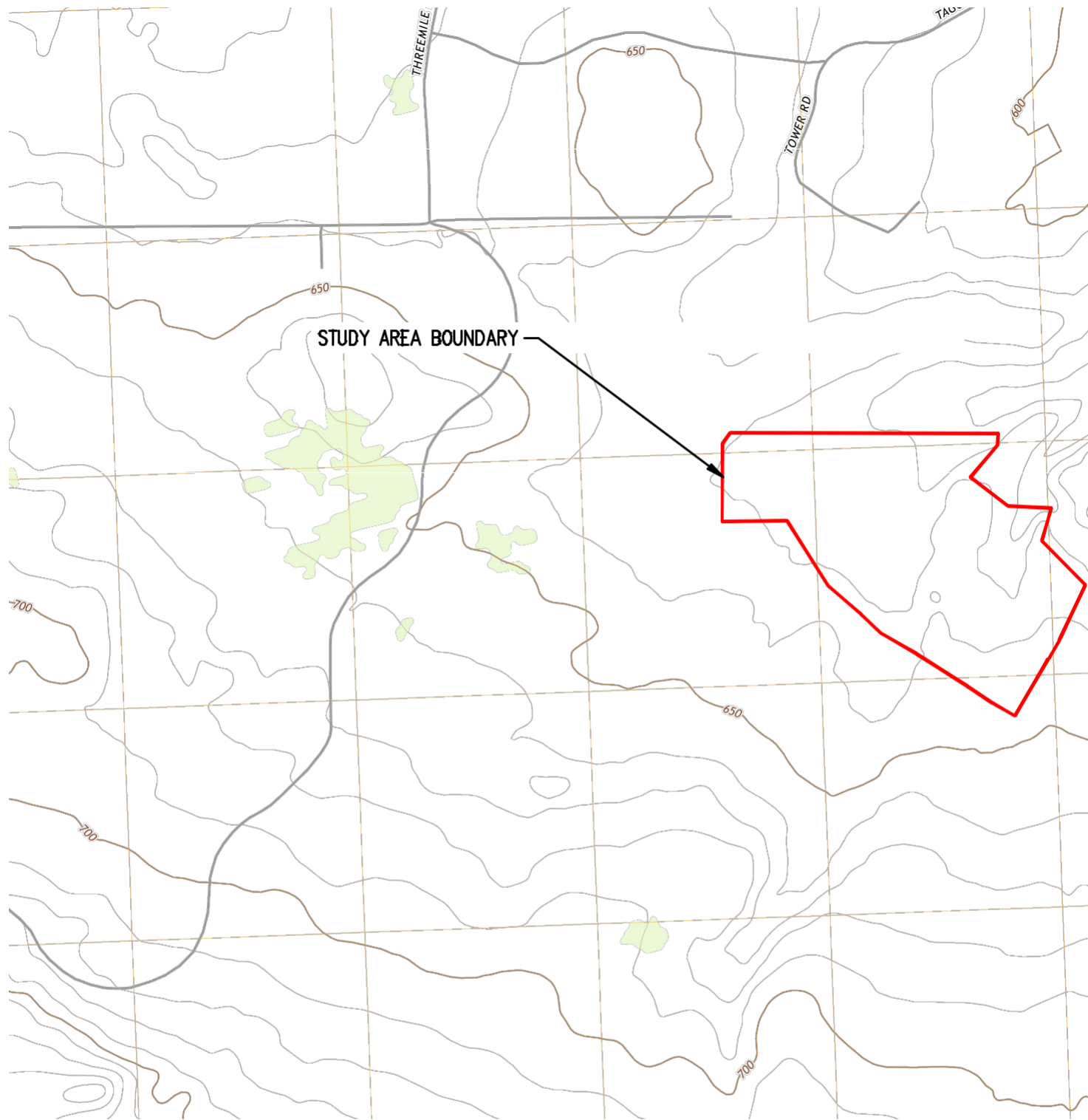
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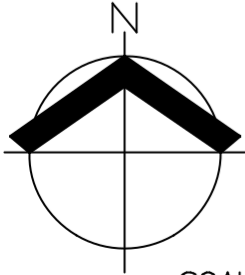
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US Forest Service (USFS), 2021. *Habitat Needs*. Washington (DC): US Department of Agriculture. Available at: https://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/habitat/index.shtml

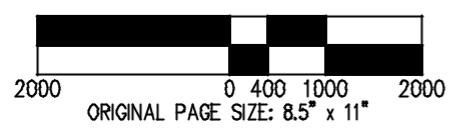
US Fish & Wildlife Service (USFWS), 2021. *IPaC Resource List*. Washington (DC): US Fish & Wildlife Service. Available at: <https://ecos.fws.gov/ipac/location/OYMBRHTJTVCXVLOQCF36WH474U/resources>



USGS 7.5' TOPOGRAPHIC SERIES QUADRANGLE:
DALREED BUTTE, OR (2020)



SCALE: 1" = 2000 FEET

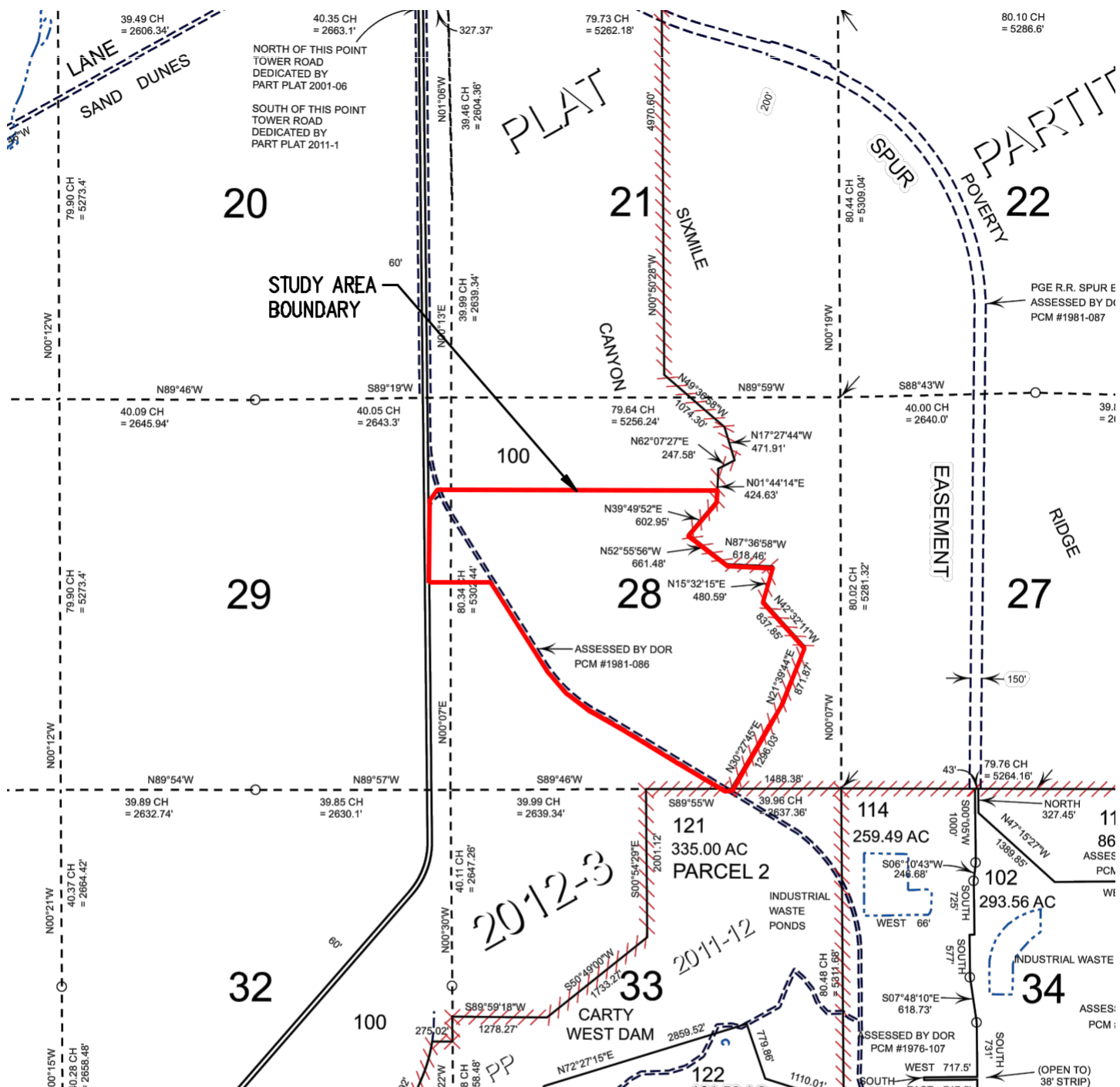


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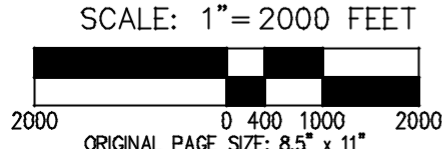
USGS VICINITY MAP		FIGURE
THREATENED AND ENDANGERED SPECIES ASSESSMENT MEMO		1
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: RAS CHKD: SKT AKS JOB: 8858-04





MORROW COUNTY
 PORTION OF TAX LOT 100
 TAX MAP 3N 24E W.M.

DATE: 10/18/2021



TAX MAP (MAP 3N 24E W.M.)		FIGURE 2
THREATENED AND ENDANGERED SPECIES ASSESSMENT MEMO		
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM		DRWN: RAS CHKD: SKT AKS JOB: 8858-04



IPaC resource list

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

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

Location

Morrow County, Oregon



Local office

Oregon Fish And Wildlife Office

(503) 231-6179

(503) 231-6195

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398

<https://www.fws.gov/oregonfwo/articles.cfm?id=149489416>

Endangered species

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

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

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

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

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

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list.

Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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

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

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

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

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

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

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<http://ecos.fws.gov/ecp/species/1626>

Clark's Grebe *Aechmophorus clarkii*

Breeds Jun 1 to Aug 31

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

Rufous Hummingbird *selasphorus rufus*

Breeds Apr 15 to Jul 15

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

<http://ecos.fws.gov/ecp/species/8002>

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Efort ()

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

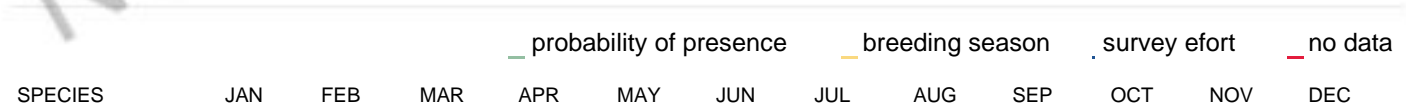
To see a bar's survey efort range, simply hover your mouse cursor over the bar.

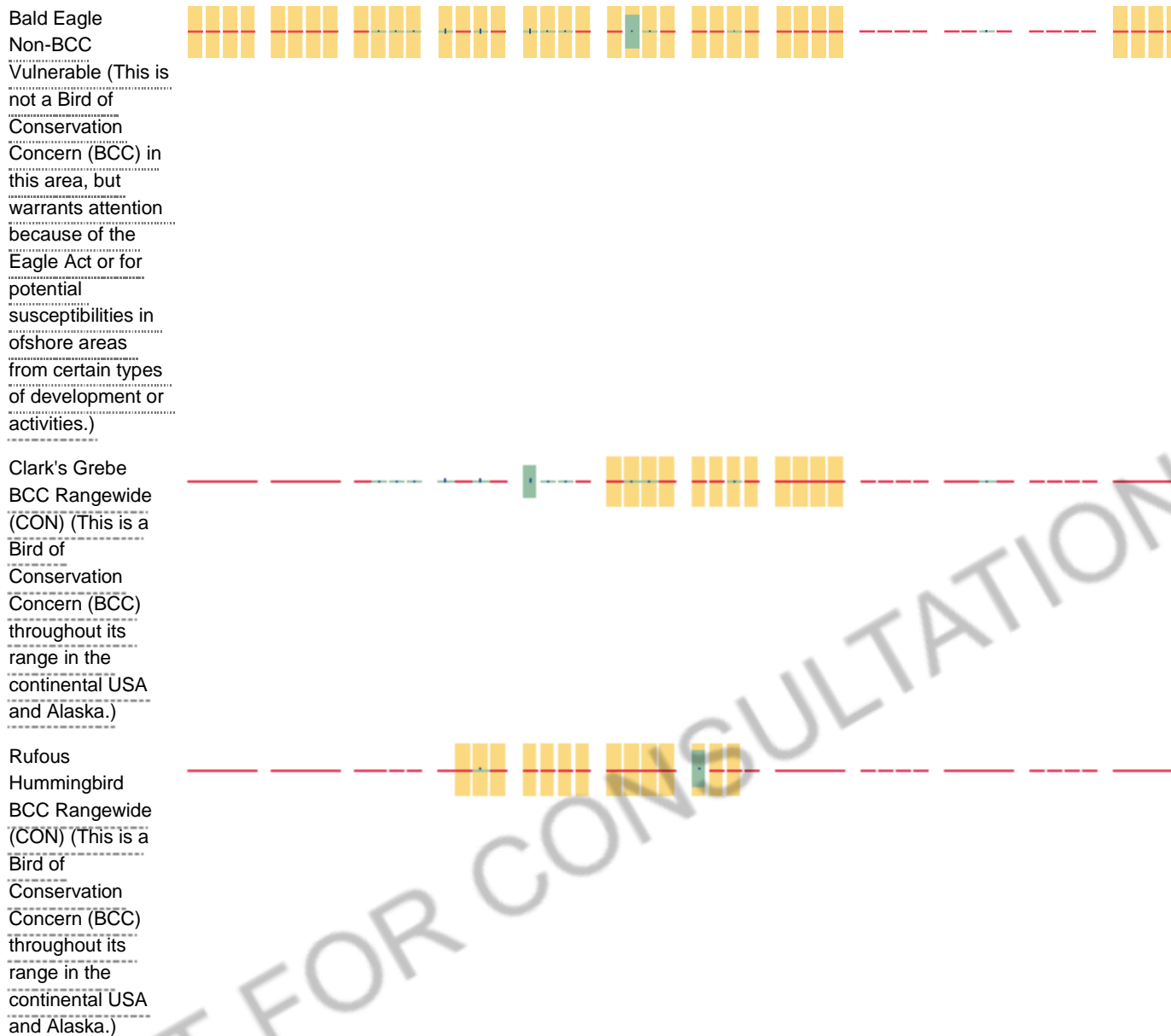
No Data (.)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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





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

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

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

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

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area of the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

[Loring](#).

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

[PEM1A](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

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

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

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

Data exclusions

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

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.