LOW-IMPACT RECERTIFICATION APPLICATION

Central Oregon Siphon Power Hydroelectric Project, LIHI # 73

(FERC NO. 3571)

December 2020

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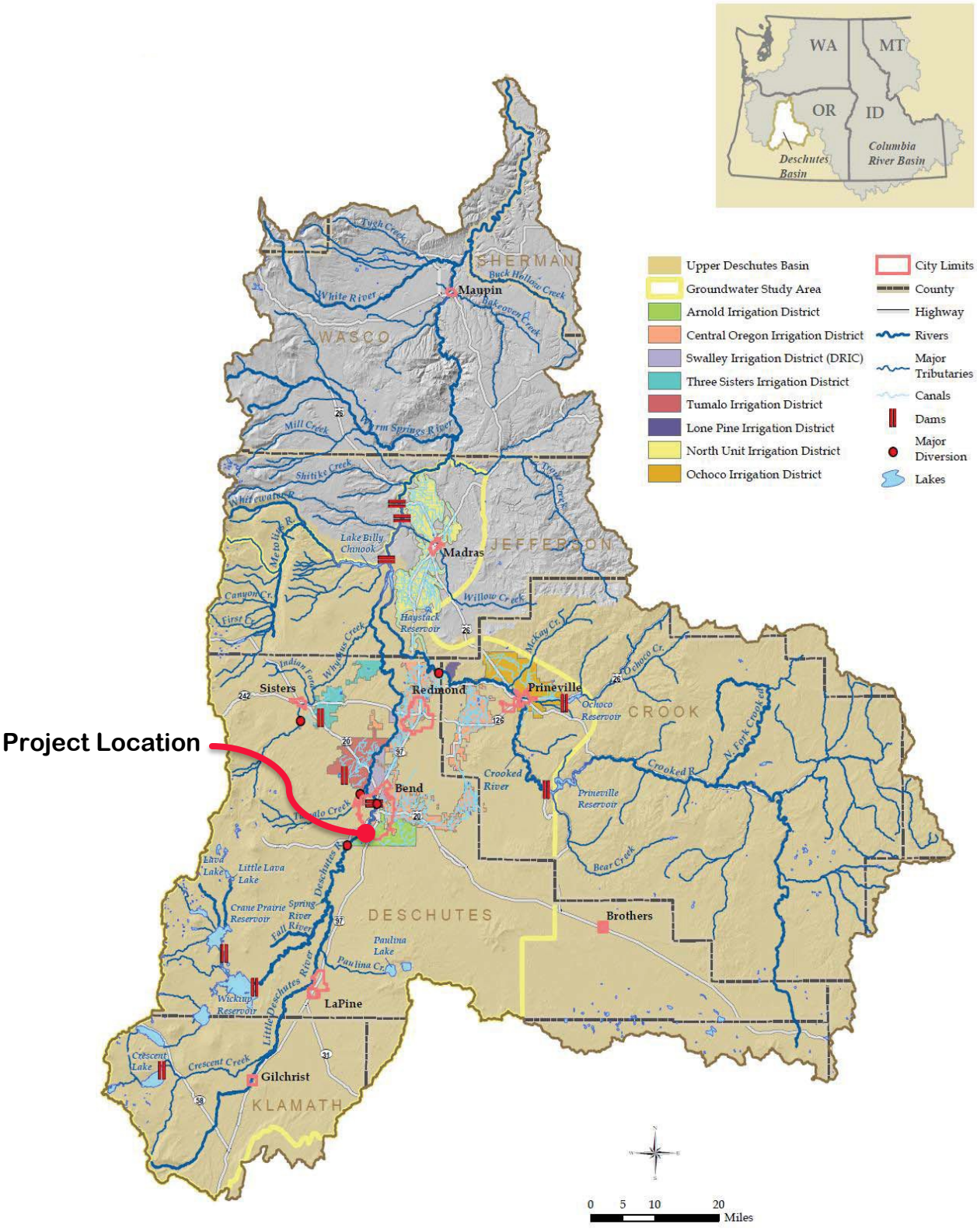
1. FACILITY DESCRIPTION

The Central Oregon Irrigation District owns and operates the Siphon Power hydropower project on a diversion from the Deschutes River in Bend, Oregon (Figure 1). Arising from its headwaters at Little Lava Lake, the Deschutes River flows into Crane Prairie Reservoir, then into Wickiup Reservoir. Major tributaries above Crane Prairie include Snow, Cultus, and Deer creeks, and Cultus and Quinn rivers. Davis and Brown's creeks are tributaries to Wickiup Reservoir. The river reach from Wickiup Dam to the North Canal Dam at Bend is generally referred to as the "upper" Deschutes River. Major tributaries to the upper Deschutes include the Little Deschutes, Fall, and Spring rivers. The reach from Bend downstream to Lake Billy Chinook is generally referred to as the "middle" Deschutes River and the primary tributaries to the middle Deschutes are Tumalo and Whychus creeks. The Deschutes River from the headwaters to Lake Billy Chinook is approximately 130 miles. From there, the Deschutes River flows another 100 miles to the Columbia River.

Established in 1918, the Central Oregon Irrigation District ("COID") is a Municipal Corporation of the State of Oregon. The irrigation system consists of two main canals: the Pilot Butte Canal, which runs north, through Bend, Redmond and Terrebonne; and the Central Oregon Canal, which runs east, through Bend, Alfalfa and Powell Butte. Both canals divert water from the Deschutes River. COID provides water for about 45,000 acres within an 180,000 acre area in Central Oregon. More than 700 miles of canals provide agricultural and industrial water to the Terrebonne, Redmond, Bend, Alfalfa and Powell Butte areas. In addition, COID provides water to the City of Redmond and numerous subdivisions; in Bend, many parks and schools receive water through the COID system.

FERC granted the project a 50-year license in 1987 (FERC Project No. 3571). Its two 2.75 MW units generate on average 22,470 MWH of electricity annually.

Figure 1. Project Location



The project consists of the use of COID's pre-existing Central Oregon Canal system including the Deschutes River diversion and the approximate two miles of water conveyance system downstream which delivers water to the project penstock and powerhouse.

The diversion and water conveyance were constructed in the early 1900's and utilized an on-grade wood flume to transport the irrigation water out of the steep, narrow river canyon where the water entered an open canal to deliver irrigation water to lands north and east of Bend. The wood flume was replaced in the early 1970's with a 10-foot diameter steel pipe in a double inverted siphon configuration to transport the irrigation water from the diversion to the open canal. The siphon pipe was designed for a flow of about 800 cubic feet per second (CFS) which is more than the irrigation demand most of the time. The diversion modifications at that time included a louver array to guide fish entering the diversion to a return facility to move the fish back into the river.

Downstream of the fish protection facility, water enters the 10-foot diameter double inverted siphon pipe. About 1,200 feet downstream of the start of the open canal, a buried 9-foot diameter pipe is utilized to deliver excess water to the powerhouse. About a mile and a quarter downstream from the diversion structure, an underground powerhouse contains two turbines and generators. From the penstock intake to the river downstream, there is a 135 foot drop available to drive the two turbines. At the powerhouse, the water enters one or both of the two turbines before being discharged back to the Deschutes River. The power generated is transported underground for about 800 feet to a small substation located out of sight from the river where it is stepped up from 4160 volts to a nominal 69,000 volts and delivered to the power purchaser.

The project was first certified by LIHI in 2010 and was recertified in 2015. There have been no material changes to the project or its operations during the current LIHI term. There are two conditions with the current certification and the project remains in compliance with these conditions.

> Condition 1. As part of their annual Compliance statement to LIHI, the Owner shall include electronic copies of or electronic addresses to the reports that they file with the Oregon Department of Fish and Wildlife related to conservation flows and tailrace fish observations, covering the prior four quarters.
>
> Condition 2. The Owner shall notify LIHI within 30 days of any changes in the level of mitigation enhancement funding for fish and wildlife, with particular attention to changes at or around January 1, 2021. (COID is currently working with ODFW on terms for the next five years of mitigation and enhancement funding)

Figure 2. Siphon Powerhouse & Discharge

Table 1. Facility Description

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Central Oregon Siphon Power Hydroelectric Project
Reason for applying for LIHI Certification	1. To participate in state RPS program 2. and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 3. To participate in voluntary REC market (e.g., Green-e) 4. To satisfy a direct energy buyer's purchasing requirement 5. To satisfy the facility's own corporate sustainability goals 6. For the facility's corporate marketing purposes 7. Other (describe)	#3 – To participate in voluntary REC market.
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	22,470 KWh, 100% of annual generation
Location	River name (USGS proper name)	Deschutes River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	HUC-8 17070301
	Nearest town(s), county(ies), and state(s) to dam	There is no water storage associated with the Siphon Power Project.
	River mile of dam above mouth	River Mile 170.9
	Geographic latitude of dam	44.030304
	Geographic longitude of dam	-121.335186
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Craig Horrell, Joshua Peed & Jenny Hartzell Hill
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Central Oregon Irrigation District Joshua Peed
	FERC licensee company name (if different from owner)	n/a
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Licensed, Project #3571 Issued September 29, 1987 expires September 1, 2037
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major project

Item	*Information Requested*	*Response (include references to further details)*
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	None, waived by Oregon DEQ, September 23, 1982
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories	FERC license https://lowimpacthydro.org/wp-content/uploads/2020/07/2.-Exhibit-I-License-3571.pdf License amendment 1990, removing article 401 https://elibrary.ferc.gov/eLibrary/filedownload?fileid=3454022
Powerhouse	Date of initial operation (past or future for pre-operational applications)	October 1989
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	5.5 MW
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	22,470 MWh/year
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Diversion with run of river operation
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	Two horizontal Francis turbines rated at 200 to 600cfs each power two synchronous AC generators producing 1,000kW at minimum turbine flow and 2,750kW at maximum.
	Trashrack clear spacing (inches) for each trashrack	3.5 inches
	Approach water velocity (ft/s) at each intake if known	5 ft/s
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	No changes
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	No changes
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	N/A

Item	*Information Requested*	*Response (include references to further details)*
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	The original diversion is from 1903, In the mid-70's it was updated to its current configuration including a first attempt at fish screening (a louver system), in 1995 the current fish screen was installed, and in 2013 the trash-rack was replaced for safety and operational benefits.
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	The diversion structure is 25.5' wide, 157' long, and 8.75' tall. Directly after the fish-screen is a set of inflatable crest gates. Total width of the crest gates is 24' (four 6' gates) with a maximum height of 3'. These are operated to keep water height at the backside of the fish-screen as high as possible. At higher summer flows the crest gates are minimally engaged and at lower winter flows the crest gates are raised to increase fish-screen/water surface area.
	Spillway maximum hydraulic capacity	N/A – there is no spillway
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	From the River water enters the concrete diversion and fish-screen area, this is 157' long, then there is a 100' long concrete flume leading to the Siphon pipe which is a 10' diameter steel pipe above ground for 4,400' and underground for 1,575' that discharges into the 1,240' long concrete forebay and finally enters the 8' diameter PCCP penstock which is 800' long leading to the powerhouse.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power supply within the existing irrigation system
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	n/a – not a conduit facility
	Source water	n/a
	Receiving water and location of discharge	n/a
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	n/a - no impoundment

Item	*Information Requested*	*Response (include references to further details)*
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	n/a - no impoundment
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	n/a - no impoundment
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	n/a - no impoundment
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	While there is no impoundment there is a 3 inch per hour ramping rate restriction at the point of diversion (license article 405).
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	Crane Prairie (No fish passage) No Hydro River Mile - 8 Owned by Central Oregon Irrigation District (3/5), Arnold Irrigation District (1/5) & Lone Pine Irrigation District (1/5) and operated by Oregon Department of Water Resources. Wickiup (No fish passage) No Hydro River Mile – 13 Owned by North Unit Irrigation District and operated by Oregon Department of Water Resources.

Item	*Information Requested*	*Response (include references to further details)*
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	Pelton Round Butte project (3 dams), PGE, RM 110.4 – 100.1 FERC #2030. North Canal Dam Complex, Privately owned, Operated by COID, North Unit Irrigation District & Swalley Irrigation District, exempt, has downstream fish passage (partially funded via SPP M&E funds) Newport Hydroelectric Dam, Mirror Pond, PacifiCorp, exempt Tumalo Irrigation District diversion dam at Pioneer Park Colorado Ave, Bend dam, City of Bend
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	No agreements with other facilities
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	The FERC boundary accounts for 22.3 acres of land.
Hydrologic Setting	Average annual flow at the dam, and period of record used	249,960 Acre-ft at the River diversion for Hydro production Based on flows over the last 5-yrs
	Average monthly flows and period of record used	20,830 Acre-ft Based on flows over the last 5-yrs
	Location and name of closest stream gaging stations above and below the facility	Upstream OWRD 14064500 Deschutes River at Benham Falls Near Bend, OR Downstream OWRD 14070500 Deschutes River Below Bend, OR
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	There is no dam associated with the Siphon Power Project
	Other facility specific hydrologic information	n/a
Designated Zones of Effect	Number of zones of effect	3
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1: diversion Zone 2: bypass reach Zone 3: tailrace/downstream reach

Item	*Information Requested*	*Response (include references to further details)*
	Upstream and downstream locations by river miles	Zone 1: diversion RM 170.9 Zone 2: bypass reach RM 170.9 – 169.4 Zone 3: tailrace/downstream reach RM 169.4
	Delimiting structures or features	Diversion delimits zones 1 and 2 Powerhouse discharge location delimits zones 2 and 3

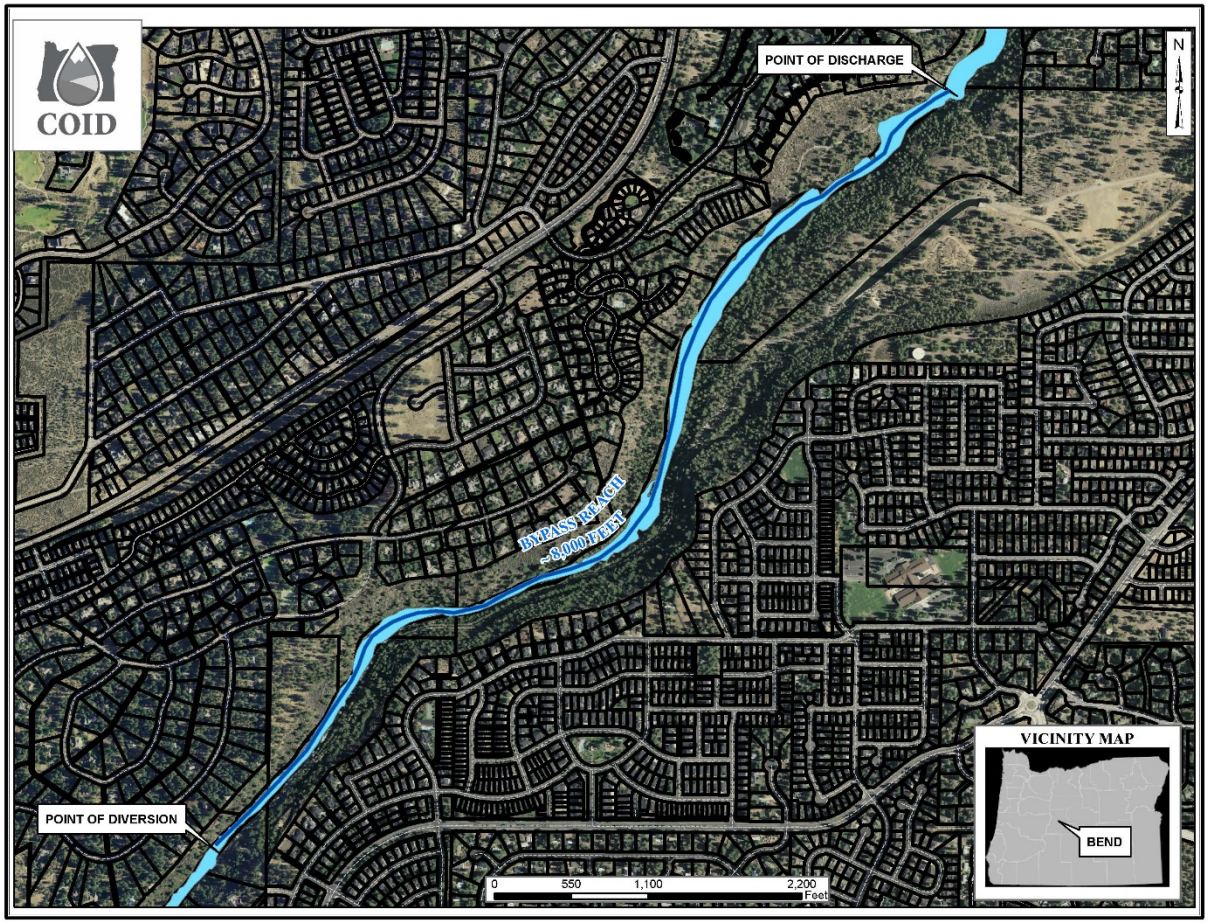
2.0 STANDARDS MATRICES

Table 2. Standard selections

	Zone:	**1: Diversion**	**2: Bypass**	**3. Downstream Reach**
	River Mile Extent:	RM 170.9	RM 170.9 - 169.4	RM 169.4
Criterion		**Standard Selected**		
A	**Ecological Flows**	2	2	2
B	**Water Quality**	1	1	1
C	**Upstream Fish Passage**	1	1	1
D	**Downstream Fish Passage**	2	2	2
E	**Shoreline and Watershed Protection**	1	1	1
F	**Threatened and Endangered Species**	3	3	3
G	**Cultural and Historic Resources**	1	1	1
H	**Recreational Resources**	3	3	3

Figure 3 below shows the Zones of Effect and the standards selected to meet the LIHI criteria are discussed in Section 3.

Figure 3. Zones of Effect



3.0 SUPPORTING INFORMATION

A. Ecological Flow Regimes

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to formal agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations). • Explain how flows are monitored for compliance.

All zones qualify for Standard A-2.

Stream flow upstream of the project is controlled by upstream storage reservoirs. An instream flow study was conducted at the time of licensing that showed some impacts at various flows to spawning habitat for different species at different times of the year. However, a 400cfs continual minimum flow along with off-site fisheries mitigation (see Section D below) was agreed to by resource agencies as protection of fish resources in the Deschutes River.

Ramping for power generation is restricted to 3 inches per hour at the point of diversion in order to protect the river from rapid flow reductions during turbine startup and to avoid fish stranding in the bypass and downstream of the tailrace as flows are diverted from the river to the powerhouse.

The project diverts on average, 25% of stream flow. The amount of water diverted varies from a minimum of about 80 cfs up to about 640 cfs and is dependent on the capacity of the siphon pipe in excess of the irrigation demand and the minimum flow requirement. The water available for power generation depends on irrigation flow releases from upstream storage reservoirs during the irrigation season and typically the flow in the bypassed reach is much more than the minimum 400 cfs. During the non-irrigation season, flow available will range from none to the maximum generation capacity of about 640 cfs. A stream gage was installed per license article 404 and flows are electronically monitored, and quarterly streamflow reports are provided to FERC, USFWS, ODFW, and LIHI.

B. Water Quality

Criterion	*Standard*	*Instructions*
B	1	Not Applicable / De Minimis Effect: • Explain the rationale for why the facility does not alter water quality characteristics below, around, and above the facility.

All zones qualify for Standard B-1.

Water quality certification, as required by Section 401 of the Clean Water Act, was waived for the project by the Oregon Department of Environmental Quality (ODEQ), on September 23, 1982. Designated water uses in the river from Bend downstream to the Pelton reregulating dam include water that is suitable for drinking, irrigation and industrial supply; livestock watering; fish and aquatic life; wildlife and hunting; primary and secondary contact recreation, and aesthetics.[1]

The state currently categorizes the river reach downstream of the project as "good" (Deschutes River at Lower Bridge).[2] However, the Deschutes River upstream of the project is listed as impaired for flow modification, habitat modification, sedimentation, turbidity and some temperature exceedances. The river downstream is listed as impaired for flow modification, temperature, and pH.[3] The entire 112.5 miles of the river from Wickiup Dam to Lake Billy Chinook are identified as water temperature limited under Section 303(d) of the Clean Water Act for exceeding the year-round maximum 7-DADM of 18°C for salmon and trout rearing and migration.[4]

On December 18, 2009, COID requested the Oregon Department of Environmental Quality (ODEQ) to provide a determination relating to water quality impacts of this project. The Department conducted an assessment of the project's water quality impacts relative to Oregon's water quality standards and the state's Clean Water Act Section 303(d) list of impaired water bodies. Based upon this assessment, the department determined that there was no net summertime temperature increase between the diversion and the discharge and thus no dissolved oxygen concern.

ODEQ concluded that the project neither contributes to current 303(d) water quality impairments of the Deschutes River, nor to violations of current state water quality standards. ODEQ's letter, dated January 15, 2010, was provided as Exhibit B of the original LIHI application.[5] Project operations have not changed since that assessment thus the project has no effect on water quality or existing impairments.

[1] p. 4-13 in https://www.fws.gov/oregonfwo/Documents/DeschutesHCP/deisFR/DBHCP%20Entire%20Document%20August%202019.pdf
[2] https://www.oregon.gov/deq/FilterDocs/wqmColumbiaPal.pdf
[3] See searchable database assessment units OR_SR_1707030104_05_102628 and OR_SR_1707030108_02_102627 at https://www.oregon.gov/deq/wq/Pages/2018-Integrated-Report.aspx
[4] p. 4-7 in https://www.fws.gov/oregonfwo/Documents/DeschutesHCP/deisFR/DBHCP%20Entire%20Document%20August%202019.pdf
[5] https://lowimpacthydro.org/wp-content/uploads/2020/07/Exhibits-B-G.pdf

C. Upstream Fish Passage

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

All zones quality for Standard C-1.

Migratory bull trout, steelhead, redband trout (*O. mykiss gairdneri*), summer/fall and spring chinook salmon, and sockeye and kokanee salmon historically were able to migrate up the Columbia River and into the Deschutes River as far as the natural 30-foot tall Big Falls at river mile 132 northwest of Terrebone, OR, about 20 miles due north (downstream) of Bend.[6] Therefore, there are no migratory species in the project vicinity and the project is not the cause of extirpation in the project vicinity.

D. Downstream Fish Passage and Protection

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)
D	4	Acceptable Mitigation: • Describe the alternative mitigation measures being deployed in lieu of downstream fish passage and/or protection strategies and provide documentation of agency approval of the measures. • Explain how the total benefits of the mitigation strategy equals or exceeds the benefits that might accrue from providing downstream passage in terms of reproductive success (e.g., numbers of fish produced, or area of suitable habitat provided). • Explain how the alternative mitigation measures sustain the abundance and diversity of fish stocks in the river system.

[6] *A Conceptual Foundation for the Management of Native Salmonids in the Deschutes River*, Jim Lichatowich, November 1998.

All zones qualify for Standard D-2, or alternatively, Standard D-4.

The Deschutes River in the Project area supports a coldwater fishery primarily consisting of brown and rainbow trout. Non-migratory fish that occur in the Deschutes River[7] include mountain whitefish, several species of sculpin, longnose and speckled daces, chiselmouth, and largescale and bridgelip sucker. Upper watershed populations of bull trout and redband are also considered resident species. Pacific lamprey were extirpated and are no longer present above the Pelton Round Butte project at river mile 100.

Non-native introduced species that occur in the Upper Deschutes River[8] include brook, brown and rainbow trout, largemouth and smallmouth bass, white and black crappie, brown bullhead catfish, bluegill, three-spined stickleback, tui and blue chub, goldfish and carp.

The project is in compliance with Mandatory Fish Passage Prescriptions of downstream passage of riverine fish. The pre-project irrigation diversion that is also used for diversion of the water for the hydropower project was constructed in the early 1970's and provided downstream passage using a louver array. FERC license articles 406 and 407 required modification of the passage facility and evaluation of the louver array and to quantify fish losses at the existing facility. The evaluation was preformed after the facility was operational and it was determined that fish losses were unacceptable.

An evaluation of downstream fish passage options was conducted and fixed panel vertical screens with one-eighth inch openings was proposed and agreed to by the Oregon Department of Fish and Wildlife (ODFW) and the U. S. Fish and Wildlife Service (USFWS). The criteria established for the facility was for juvenile fish since the evaluation did not find any fry present at the diversion. The new facility was evaluated in cooperation with ODFW who determined that the facility met the survival criteria of ODFW and USFWS for all fish passing through the facility, including fry.

The project is also in compliance with resource agency recommendations for riverine fish entrainment protection, such as tailrace barriers. Tailrace barriers in the form of screens were installed across the tailrace channel where it enters into the river. Following start of operation, ODFW indicated that they felt that the barrier was not needed for the riverine fish present at the site due to the velocity of the water exiting the turbines and the configuration of the water flow entering the river. COID proposed to monitor the tailrace area for indications of fish injury and or mortality and report the results to ODFW, USFWS, and FERC. The screens were removed, and ongoing monitoring of the site is performed and reported on a quarterly basis.

Although pre-licensing population surveys suggested natural reproduction occurs in the project area, limited suitable substrate was found in the 1.5-mile-long bypassed reach. As part of the licensing process, COID performed an instream flow study that considered habitat needs for spawning and rearing of trout.

From that stemmed an agreement with the U.S. Fish and Wildlife Service (USFWS) and the Oregon Department of Fish and Wildlife (ODFW) to maintain a year-round conservation flow of 400cfs in the bypassed reach along with annual payments to ODFW for a mitigation and enhancement fund intended to compensate for lost spawning habitat. COID and ODFW entered into an Agreement in March 1987 "…to ensure no net loss of wild game fish or fish and wildlife-related recreation opportunities results from construction and operation of the Project." Payments for the first 30 years of commercial operation vary from $45,000 to $95,000, and then become subject to negotiation for the remainder of the license term, subject to a floor of $95,000, that becomes effective in 2021.

[7] pp. 19-20 at https://nativefishsociety.org/assets/watershed-assets/upper-deschutes/UpperDeschutesReport.pdf
[8] Ibid., pp. 26-29

Funds are to be directed towards design and construction of mitigation and enhancement measures in the bypassed reach and throughout the greater Deschutes basin, with a focus on the former. The USFWS is not a party to the Agreement but gave its concurrence. Article 408 of the FERC license approved the agreement but did not establish a role for FERC in subsequent review and approval of specific measures to be funded and implemented.

In the early years of the mitigation and enhancement (M&E) agreement a lot of focus was on fairly isolated habitat enhancement projects and rebuilding of riparian areas. As time went by and funds grew in the M&E account from continued COID payments larger projects were envisioned and completed, the most recent was the partial funding of a fish passage ladder at the North Canal Dam, see Figure 4. In the last couple of years ODFW has felt strongly that more data from studies is needed in order to identify areas to focus M&E efforts. The M&E committee agreed with this approach and ODFW is heading up the research and data acquisition. ODFW is hoping to get at least five years of data and they are currently two years into it.

Figure 4. North Canal Dam Fish Passage

E. Shoreland and Watershed Protection

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

All zones qualify for Standard E-1.

There is little land associated with the project, just 22.3 acres. Vegetative buffers are present along the river shorelines, which consist of the ponderosa pine shrub type. Land use in the immediate project vicinity is mostly undeveloped although residential development and the City of Bend and its suburbs are located nearby.

There is no shoreline management plan required for the project and there are no critical habitats for listed species. However, the Deschutes River is designated as a Wild and Scenic River from Wikiup Dam to 0.9 miles upstream of the project's diversion.

F. Threatened and Endangered Species Protection

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

All zones qualify for Standard F-3.

USFWS lists the following species that are or may be present in the project vicinity: the endangered gray wolf, and the threatened yellow-billed cuckoo and Oregon spotted frog (Attachment 1). The Oregon spotted frog became state-listed in August of 2014 and while the Oregon spotted frog is present upstream and downstream of the project it is not present within the project area. COID is expected to have an Incidental Take Permit from USFWS issued by December 31st, 2020.

Eight irrigation districts in the Deschutes Basin of Oregon and the City of Prineville, Oregon prepared the Deschutes Basin Habitat Conservation Plan (HCP) to support the issuance of incidental take permits by the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), under Section 10(a)(2)(A) of the federal Endangered Species act of 1973, as amended (ESA). The Districts and the City utilize waters of the Deschutes River and its tributaries where their activities have the potential to incidentally harm (take) one wildlife species (Oregon spotted frog) and two fish species (steelhead trout

and bull trout) that are currently listed as threatened under the ESA.

The Deschutes Basin HCP is the result of nearly twelve years of collaboration between irrigators, federal and state agencies, the Confederated Tribes of the Warm Springs Reservation, cities, counties, multiple non-governmental organizations, and the general public in the Deschutes Basin of Central Oregon. The HCP protects habitat for three species of fish and one amphibian (steelhead trout, bull trout, sockeye salmon, and the Oregon spotted frog) for the next 30 years, and addresses the effects of eight irrigation districts and the City of Prineville on over 480 miles of rivers and creeks. The HCP includes adaptive management to provide long-term certainty for irrigations, fish and frogs alike.

It provides year-round habitat for Oregon spotted frogs in Crane Prairie Reservoir, the upper Deschutes River, Crescent Creek, and the little Deschutes River. The irrigation districts and the City of Prineville will collectively contribute $174,000 annually to fish and wildlife habitat conservation funds in the basin. (Over $5.2 million in restoration funds collected over 30 years to leverage grant funding and in-kind contributions.). In 30 years, the Deschutes Basin HCP will improve winter flows from 100cfs to 400-500cfs, and summer flows dam the 1200cfs from 1800cfs. The HCP maintain winter flows in the Crooked River downstream of Bowman Dam of at least 50cfs and increases summer flows and provides habitat restoration funds for Whychus, Ochoco, and McKay Creek.

G. Cultural and Historic Resources Protection

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

All Zones qualify for Standard G-1.

A cultural resources survey was completed as part of project licensing and no resources were found within the project's area of potential effect. The SHPO issued a finding of no effect on cultural or historic resources.

License article 412 requires consultation with the SHPO in the event that previously undiscovered resources are found. In that event COID would file a cultural resources management plan with the SHPO to protect or mitigate those resources. To date no cultural resources have been found within the vicinity of the project.

The Central Oregon Irrigation project as a whole is eligible for listing on the National Register of Historic Places as a historic district As a result, COID is party to a programmatic agreement among US Department of Interior, US Bureau of Reclamation, and the Oregon State Historic Preservation Office (SHPO).[9] The agreement was based on a 2014 Memorandum of Agreement covering proposed piping modifications in the irrigation system, a project that is not directly related to the hydro project.

[9] https://www.usbr.gov/pn/programs/ea/oregon/coidpa/final.pdf

H. Recreational Resources

Criterion	*Standard*	*Instructions*
H	3	Assured Accessibility: • In lieu of existing agency recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from recreation interests for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.

All Zones qualify for Standard H-3.

Article 410 of the license required a plan to monitor whitewater boating use in the bypassed reach. However, in 1989 COID requested deletion of this article. During agency consultation it was agreed that there is limited, and the rapids pose life-threatening conditions for boaters, although some advanced boaters still occasionally use the reach. Warning signs alert boaters to the hazardous waters. In 1990, FERC approved modification of that license article and the monitoring requirement pending any changes in conditions in the bypassed reach or additional information suggesting that monitoring would be appropriate.

Article 411 required COID to construct a 6,400-foot long foot riverside trail. An access trail ties into a trail developed by the Bend Metro Park and Recreation District. COID provided an easement for the river trail to continue about 0.75 miles upstream where a foot bridge was installed by the park district to connect with a river trail on the opposite side of the river and extend about 1.5 miles downstream to complete about 3 miles of loop trail along the river. Article 411 also required, and COID provides a portable toilet at the powerhouse, and signage and trash facilities along the trail. No fees are charged for public access.

4.0 FACILITY AND STAKEHOLDER CONTACTS FORMS

Project Owner:	
Name and Title	Craig Horrell – Managing Director
Company	Central Oregon Irrigation District
Phone	(541)548-6047
Email Address	chorrell@coid.org
Mailing Address	1055 SW Lake Court, Redmond, OR 97756
Project Operator (if different from Owner):	
Name and Title	Joshua Peed – Director of Hydro
Company	Central Oregon Irrigation District
Phone	(541)548-6047
Email Address	jpeed@coid.org
Mailing Address	1055 SW Lake Court, Redmond, OR 97756
Consulting Firm / Agent for LIHI Program (if applicable):	
Name and Title	N/A
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Joshua Peed
Company	
Phone	
Email Address	
Mailing Address	
Party responsible for accounts payable:	
Name and Title	Joshua Peed
Company	
Phone	
Email Address	
Mailing Address	

Current and relevant state, federal, and tribal resource agency contacts with knowledge of the facility (copy and repeat the following table as needed).

Agency Contact		*Area of Responsibility*
Agency Name	Oregon Department of Fish and Wildlife	✓ Flows ☐ Water Quality ✓ Fish/Wildlife ☐ Watershed ✓ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Brett Hodgson, Fish Biologist	
Phone	(541)388-6363	
Email address	Brett.L.Hodgson@state.or.us	
Mailing Address	61374 Parrell Rd Bend, OR 97702	

Agency Contact		*Area of Responsibility*
Agency Name	U.S. Fish and Wildlife Services	✓ Flows ☐ Water Quality ✓ Fish/Wildlife ☐ Watershed ✓ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Bridget Moran, Field Supervisor	
Phone	(541)383-7146	
Email address	Bridget_moran@fws.gov	
Mailing Address	63095 Deschutes Market Rd Bend, OR 97701	

Agency Contact		*Area of Responsibility*
Agency Name	Department of Environmental Quality	☐ Flows ✓ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Bonnie Lamb, Basin Coordinator	
Phone	(541)633-2027	
Email address	bonnie.lamb@state.or.us	
Mailing Address	475 NE Bellevue Dr., Suite 110 Bend, OR 97702	

Agency Contact		*Area of Responsibility*
Organization Name	Confederated Tribes of the Warm Springs Reservation	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T&E Species ✓ Cultural/Historic ☐ Recreation
Name and Title	Robert “Bobby” Brunoe, Branch of Natural Resources General Manager	
Phone	(541)553-2002	
Email address	robert.brunoe@ctwsbnr.org	
Mailing Address	1233 Veterans Street Warm Springs, OR 97761	

Current stakeholder contacts that are actively engaged with the facility (copy and repeat the following table as needed).

No Stakeholders.

5.0 SWORN STATEMENT

As an Authorized Representative of Central Oregon Irrigation District, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

Company Name: Central Oregon Irrigation District

Authorized Representative:

Name: Craig Horrell

Title: Managing Director

Authorized Signature: 

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

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

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

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

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

Mammals

NAME	STATUS
Gray Wolf Canis lupus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
Oregon Spotted Frog Rana pretiosa There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6633	Threatened

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

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

Additional information can be found using the following links:

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

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

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

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

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.
https://ecos.fws.gov/ecp/species/1626

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Brewer's Sparrow Spizella breweri — Breeds May 15 to Aug 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9291

Golden Eagle Aquila chrysaetos — Breeds Dec 1 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/1680

Green-tailed Towhee Pipilo chlorurus — Breeds May 1 to Aug 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9444

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

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

Pinyon Jay Gymnorhinus cyanocephalus — Breeds Feb 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9420

White Headed Woodpecker *Picoides albolarvatus* — Breeds May 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9411

Williamson's Sapsucker *Sphyrapicus thyroideus* — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8832

Willow Flycatcher *Empidonax traillii* — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/3482

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

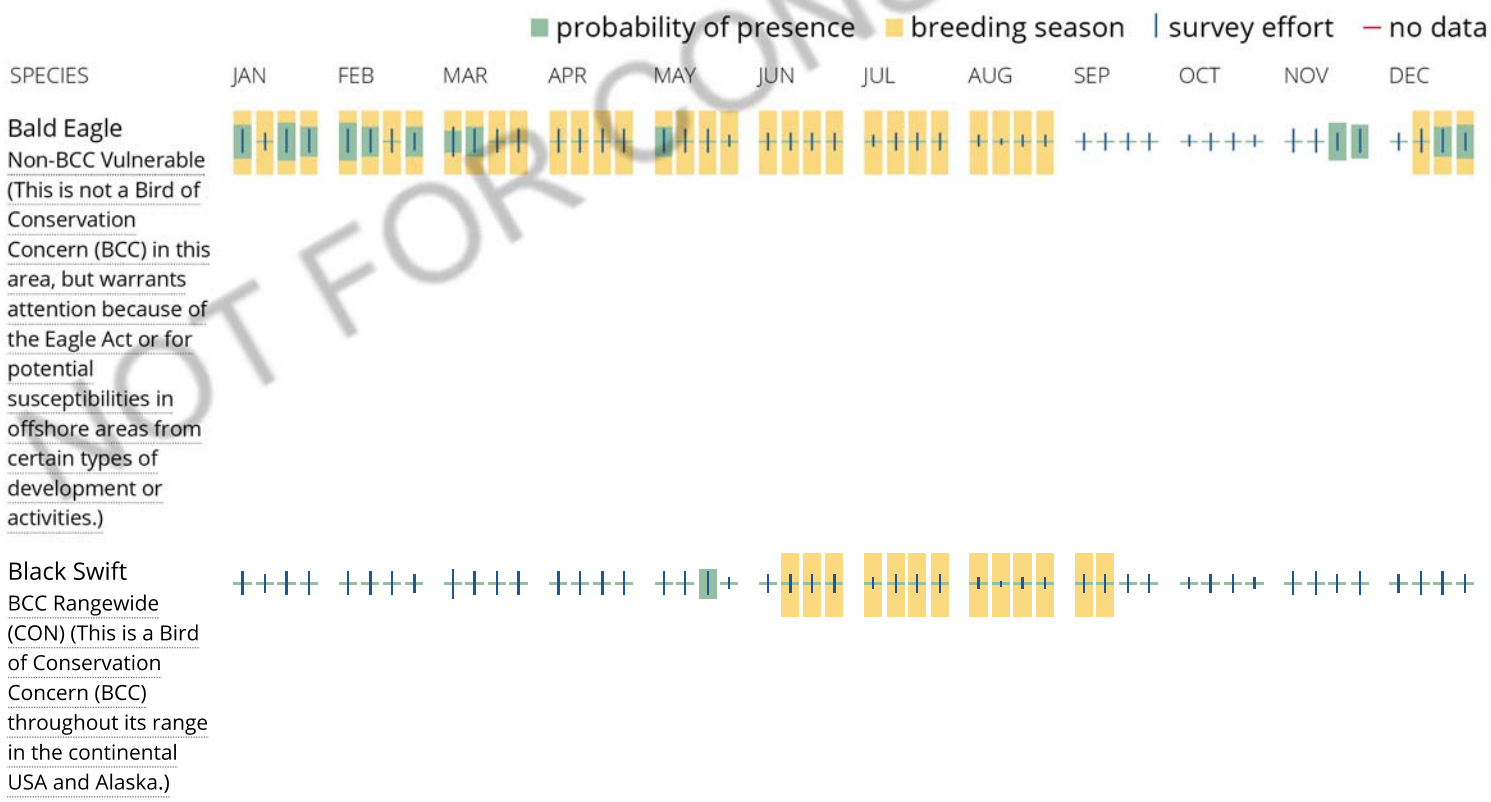
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

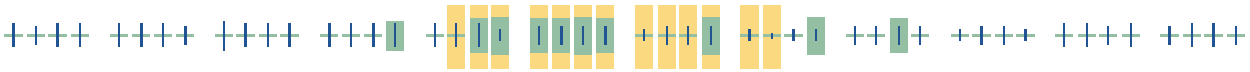
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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

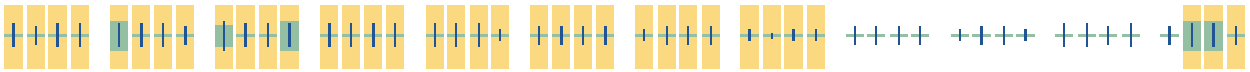
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



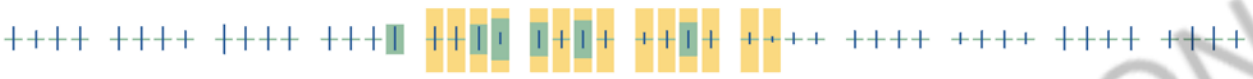
Brewer's Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



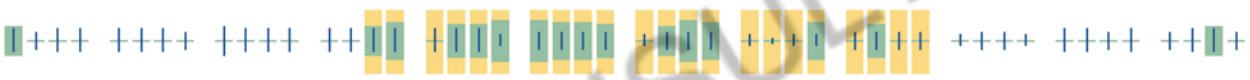
Golden Eagle
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Green-tailed Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



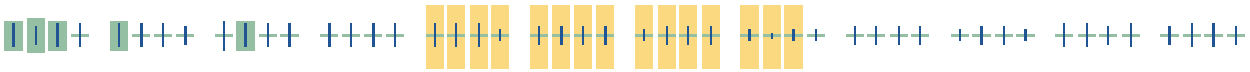
Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



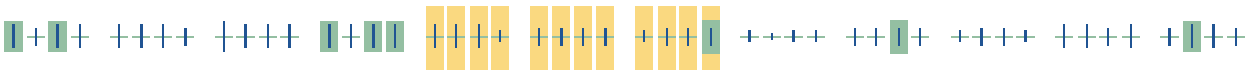
Olive-sided Flycatcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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

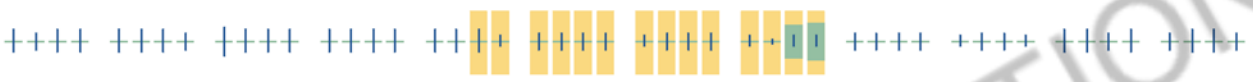
White Headed Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Williamson's Sapsucker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Willow Flycatcher
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND
- PSSC

LAKE
- L1UBHh

RIVERINE
- R3UBH
- R3UBHx
- R4SBC
- R5UBFx
- R5UBH

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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