

DRAFT STUDY PLAN

Ashton Hydroelectric Project FERC Project No. 2381



April 2023

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1.0 INTRODUCTION

PacifiCorp is licensed by the Federal Energy Regulatory Commission (FERC or Commission) to operate the 6.7-Megawatt (MW) Ashton Hydroelectric Project (Project, FERC No. 2381) located on the Henry's Fork of the Snake River near the City of Ashton, Idaho. This current license to operate the Project was issued on August 3, 1987, and expires on December 31, 2027. On July 5, 2022, PacifiCorp commenced relicensing the Project by filing with the Commission a Notice of Intent (NOI) to File Application for New License, a request to relicense the Project using the Commission's Traditional Licensing Process (TLP), and a Pre-Application Document (PAD).

On April August 29, 2022, the Commission approved PacifiCorp's request to use the TLP, which authorized PacifiCorp to relicense the Project following the TLP. Subsequently, PacifiCorp held two joint meetings and a site visit on October 4, 2022. At the joint meetings, PacifiCorp informed the resource agencies and other interested parties, of its intention to perform: a baseline water quality study, a Ute Ladies'-Tresses survey, a wetland complex delineation, a recreational use survey and condition assessment, and a cultural resources survey. Within 60-days following the joint meetings and site visit, the Idaho Governor's Office of Energy and Mineral Resources (OEMR), on behalf of the State of Idaho, provided two study requests – a baseline water quality monitoring study and an American with Disabilities Act (ADA) access study at the Project's Ashton Reservoir boat launch – to PacifiCorp.¹ No other study requests were received.

There is no requirement to prepare a formal study plan, as is required by the Integrated Licensing Process (ILP); therefore, there is no subsequent study plan determination by FERC. The purpose of this Draft Study Plan (DSP) document is to facilitate consultation with the resource agencies and interested parties so that a set of site-specific study plans are developed by PacifiCorp with input from the resource agencies and other interested parties. The anticipated result of the consultation would be the development of a Final Study Plan (FSP). The FSP, in turn, is to guide the collection of additional information to support the development of the license application. To support this goal, in Section 2, PacifiCorp presents the rationale for not adopting, and adopting with modification the recommended studies. In Section 3, PacifiCorp provides its' proposed site-specific individual study plans.

2.0 RESPONSE TO STUDY REQUESTS

The purpose of relicensing studies is to supplement existing, relevant, and reasonably available information so that the Commission and other licensing participants have an adequate factual record to assess Project effects and to inform proposed requirements in the new license. In developing this DSP, PacifiCorp evaluated the merits of the study request submitted by OEMR based on the seven study criteria set forth in §5.9(b) of the Commission's ILP regulations. These criteria are designed to ensure that any studies that are requested are needed to evaluate the effects of a project in question (FERC, 2012).

¹ OEMR filed two PAD comment and study requests letters with the Commission on December 2, 2022 (see Accession No. 20221202-5076) and December 5, 2023 (see Accession No. 20221205-5003).

Overall, PacifiCorp proposes to adopt, but with modification, the requested baseline water quality monitoring survey. PacifiCorp's justification for adopting this study, but with modification are provided in Section 2.1. In addition, but not requested by the resource agencies nor other interested party, PacifiCorp proposes to perform a reconnaissance wetland plant and wildlife survey, a Ute ladies'-tresses survey, a recreational use survey and condition assessment, and a cultural resources survey. Individual study plans for the above listed studies are provided in Section 3, Individual Study Plans.

2.1 Studies Adopted with Modification

Baseline Water Quality Monitoring Study

The water quality study requested by Idaho Department of Environmental Quality (IDEQ), by way of OEMR, aims to assess the effects the Project may have on the designated uses of the Henry's Fork in the vicinity of the Project. IDEQ states the 2022 Integrated Report for the Henry's Fork lists the assessment unit upstream of the Project dam as not meeting the salmonid spawning criteria, while the assessment unit downstream of the Project dam does not meet the salmonid spawning nor cold water aquatic life criteria. IDEQ, therefore, infers that the Project reservoir and operations contributes to the assessment unit downstream of the Project dam experiencing more severe water temperature exceedances than the assessment unit upstream of the Project (§5.9(b)(5)).

IDEQ recommends PacifiCorp measure water temperature and Dissolved Oxygen (DO) in a manner consistent with those employed by Cirrus and ERI (2013), with monitoring stations located upstream and downstream of the Project. As discussed below in section 3.1, Baseline Water Quality Study, PacifiCorp developed a study plan that includes the methods employed in Cirrus and ERI (2013), but additional monitoring sites, confining the study period from May 1 (or ice out) to November 1, and comparing the resulting data with Project operations.

IDEQ also recommends PacifiCorp collect the recommended data before and after the reservoir operating band is changed from ± 0.15 to ± 0.25 feet of the summer and winter reservoir water surface elevation targets of 5,155.5 and 5,155.0 feet, respectively. While PacifiCorp understands the value of performing before and after measurements to discern an effect of a proposed action, PacifiCorp's water quality study would collect information necessary to inform an effects analysis of PacifiCorp's proposed operating band change (§5.9(b)(4)). For instance, relating downstream water temperatures and DO concentrations to reservoir water levels and vertical profiles would indicate how water temperatures and DO concentrations would vary over time and over a range of reservoir water levels. For these reasons, PacifiCorp respectfully declines to incorporate IDEQ's recommendation of collecting data before and after the operating band is changed into the study.

American with Disabilities Act Access Study at the Project's Ashton Reservoir Boat Launch

The ADA access study requested by the Idaho Department of Parks and Recreation (IDPR) within OEMR's letter requests, "IDPR requests a study for ADA access at the boat launches involved in the project." PacifiCorp is interpreting this request consistent with §5.9(b) or

§16.8(b)(5), as being necessary to assess the condition and supply of accessible recreation facilities. As part of the recreation facility inventory and condition assessment, PacifiCorp will identify those facilities that are ADA compliant. The condition assessment will provide information to inform the need for additional ADA access, and modification or upgrade to ADA facilities. For instance, PacifiCorp anticipates the proposed study component will inform condition and capacity of ADA facilities at the recreation sites such that an evaluation of the need to modify current or enhance ADA facilities is understood.

3.0 INDIVIDUAL STUDY PLANS

3.1 Baseline Water Quality Study

Goals and Objectives

The goals of the water quality study are to 1) collect updated baseline water temperature and DO data to document the existing water quality conditions of the Henry's Fork in the Project area; 2) determine whether Project-affected waters of the Henry's Fork meet IDEQ surface water quality standards and designated uses; and 3) assess potential effects of the Project operations on these parameters. In order to reach these goals, the study has the following objectives:

- 1) Collect continuous water temperature (°C) and DO (mg/L and percent saturation) data in the Henry's Fork upstream and downstream of the Project;
- 2) Collect water temperature and DO data in Ashton Reservoir, including vertical profiles;
- 3) Characterize the baseline water temperature and DO data collected in the Project area.
- 4) Assess the effects Ashton Reservoir may have on the thermal regime of the Henry's Fork River downstream of the Project; and,
- 5) Analyze the baseline water temperature and DO data in comparison to applicable IDEQ state surface water quality standards and designated uses, and Project operations (i.e., headwater and tailwater elevations, and turbine discharge).

Existing Information and Need for Additional Information

PAD section 4.3.3 documented an extensive review of water quality, citing applicable standards and numerous data sources, including data collected by PacifiCorp and the Henry's Fork Foundation. That review concluded that state water temperature and DO standards for salmonid spawning were periodically exceeded in Ashton Reservoir and that water temperature standards for salmonid spawning had been exceeded in reaches of the Henry's Fork upstream and downstream of the reservoir. However, data from the reservoir is limited, and the updated 2022 IDEQ Integrated Report indicates the Henry's Fork upstream of the reservoir does not meet water temperature criteria for salmonid spawning and the river downstream of the Project dam does not meet water temperature criteria for both cold water aquatic life and salmonid spawning. Therefore, a need exists to collect additional water quality data to assess the effect the reservoir and operations may have on attaining compliance with cold water aquatic life and salmonid spawning water quality criteria.

Project Nexus

The Project dam impounds waters of the Henry's Fork, creating the Ashton Reservoir. Impounded waters generally have increased residence times, higher mean water temperatures, and may thermally stratify. Data presented in PAD section 4.3.3 show that Ashton Reservoir can stratify. As such, the water temperature and DO conditions from the reservoir's surface to the bottom can vary. Operational releases for power generation and spill from the Project may affect water quality and aquatic resources in the Henry's Fork downstream of the Project. The information from this study will provide data to PacifiCorp, resource agencies, and other

stakeholders that would inform an effects analysis of Project operations on water quality and license requirements.

Methodology

Study Area

The spatial extent of the study is anticipated to extend from the Henry's Fork Foundation's (HFF) Marysville gage (44.09885, -111.42418)² downstream to the Henry's Fork gage near Ashton, ID USGS streamflow gage (USGS Gage No. 13046000; 44.06972, -111.51056). The water quality study area includes two sites located on the Henry's Fork within 0.5 mile upstream and downstream of Ashton Reservoir to capture inflow and outflow. Two additional sites within the reservoir will allow characterization of thermal effects from the reservoir (Figure 3.1-1; Table 3.1-1).

Continuous Water Temperature and Dissolved Oxygen Monitoring

At the Henry's Fork upstream (HF-1) and downstream (HF-2) monitoring locations, water temperature and DO will be monitored continuously at 15-minute intervals from May 1 (or ice out) to November 1 using a HOBO U26 water temperature and DO logger (Onset Computer Corporation). Specifications of this logger are shown in Table 3.1-2. To facilitate collection of percent saturation data, a HOBO U20L-01 water level logger or similar, will be deployed in air in the vicinity of the powerhouse and configured to collect local barometric pressure continuously at 15-minute intervals. Data will be downloaded monthly from these sites, and the sensors cleaned, checked, and calibrated.³

Each month during the study, duplicate water temperature and DO data will be collected at the monitoring sites, using a recently calibrated Troll 9500 (In-Situ, Inc.) water quality meter, as a quality control measure to ensure the HOBO U26 water temperature and DO loggers remain accurate. For each quality control measurement the data will be collected every 30 seconds for a period of 10 minutes at each site to allow for stabilization of the sensors. Specifications for the Troll 9500 are provided in Table 3.1-2.

Two continuous water temperature monitoring stations will be established in Ashton Reservoir, including one near the dam (AR-1) and the other at a mid-reservoir location (AR-2; Figure 3.1-1). Water temperature at these two sites will be collected continuously at 15-minute intervals from May 1 (or ice out) to November 1 using suspended HOBO MX temperature pendants. Temperature sensors will be suspended from a cable near the log boom at AR-1, measured near the surface (1-foot) and fixed every 2 meters down to the bottom of the reservoir. At site AR-2, sensors will be fixed to a cable anchored to the bottom and extending vertically to 2 meters below the surface. An additional surface temperature sensor will be mounted at the shoreline. This will help prevent disturbance by boaters or entangling cables in propellers.

² All latitude and longitude coordinates are shown in decimal degrees.

³ The HOBO U20L-01 logger does not require calibration.

Water Temperature and Dissolved Oxygen Vertical Profiles

Vertical water temperature and DO profiles will be collected monthly through the study period with a recently calibrated Troll 9500. Water temperature and DO profiles will be collected by initially collecting a measurement at the water surface and slowly lowering the instrument by one meter increments, allowing sufficient time for the reading to stabilize before recording a measurement and proceeding to the next depth interval. The last reading will occur 0.2 meters above the reservoir bottom. These profiles would be collected concurrently with data downloads from the water temperature pendants at reservoir locations (AR-1 and AR-2).

Weather, River Flow, and Project Operations Data

Weather, river flow, and operations data will also be used to provide the context for the water temperature and DO data collection. Weather data (including air temperature, wind speed, solar radiation, and precipitation) will be obtained from a US Bureau of Reclamation weather station AHTI located approximately 4 miles southeast of the Project. River flow data will be obtained from the USGS gage 13046000, Henry's Fork near Ashton, Idaho, located roughly 1 mile downstream of the Project dam. Operations data, such as turbine discharge and water surface elevations will be provided by PacifiCorp.

Data Analysis

The water temperature and DO datasets will be initially reviewed and analyzed for outliers, aberrant measurements, and missing data to ensure the collected data are representative. The continuous water temperature, DO and vertical profile data will be used to characterize existing temporal (e.g., mean, median, maximum, minimum) and spatial water quality condition in the study area. The data will also be used to identify and evaluate potential effects that Project operations may have on water quality, including effects of reservoir warming on the thermal regime of the Henry's Fork downstream of the Project dam. This analysis would show the rate of temperature change from an upstream to downstream direction. The evaluation of Project effects will include a visual assessment of time-series plots of the continuous data with operations data. Data will also be evaluated through a comparison of applicable metrics for compliance with IDEQ surface water quality standards, including designated uses.

Reporting

A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study involves collecting water quality data using methods and practices generally accepted by the scientific community to measure and record water quality data.

Study Schedule

PacifiCorp anticipates this study would be implemented during the 2023 study season, with data collection occurring between May 1 (or ice out) to November 1, during conducive and safe flow conditions. Analysis and reporting is anticipated to occur during the last quarter of 2023 and the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

Table 3.1-1. The description of sample locations in the Henry’s Fork River and Ashton Reservoir from upstream to downstream.

| Site | Description | Parameters |
|-------------|---|--|
| HFF-MY | Henry’s Fork Foundation at Marysville site located 1.6 river miles upstream of the Highway 20 Bridge | DO & Temperature |
| HF-1 | The upper Henry’s Fork site will be located upstream of the boat launch near Highway 20 Bridge at a location where the reservoir does not influence river flows | DO, Temperature loggers |
| AR-2 | Ashton Reservoir, mid-reservoir near Rattlesnake Canyon | DO & Temperature profiles, Temperature loggers |
| AR-1 | Ashton Reservoir upstream of powerhouse | DO & Temperature profiles, Temperature loggers |
| HF-2 | The lower Henry’s Fork site will be located 0.4 river miles downstream of the Project dam and powerhouse where the Henry’s Fork would be mixed based on the releases from the powerhouse and Ashton Dam | DO, Temperature loggers |
| HFF-AD | Henry’s Fork Foundation at Ashton Dam site located 1 river miles downstream of the Project dam and powerhouse | DO & Temperature |

Table 3.1-2. Troll 9500, Hobo U26, and Hobo MX Temp sensor specifications.

| Meter | Parameter | Accuracy | Accuracy Range | Methodology |
|--------------|---------------------------|-------------------------|-----------------------|--------------------------------|
| Troll 9500 | Temperature, °C | ±0.1 °C | -5 °C to 50 °C | EPA 170.1 |
| | DO, mg/L and % saturation | ±0.1 mg/L, ±0.2 mg/L | 0-8 mg/L, 8-20 mg/L | ASTM D888-05, Test Method C |
| HOBO U26 | Temperature, °C | ±0.1 °C | -5 °C to 40 °C | |
| | DO, mg/L and % saturation | ±0.2 mg/L, ±0.5 mg/L | 0-8 mg/L, 8-20 mg/L | |
| HOBO MX | Temperature, °C | ±0.5 °C | -5 °C to 40 °C | |
| HOBO U20L-01 | Kilopascal | ±0.3 % | 0 to 207 kPa | |

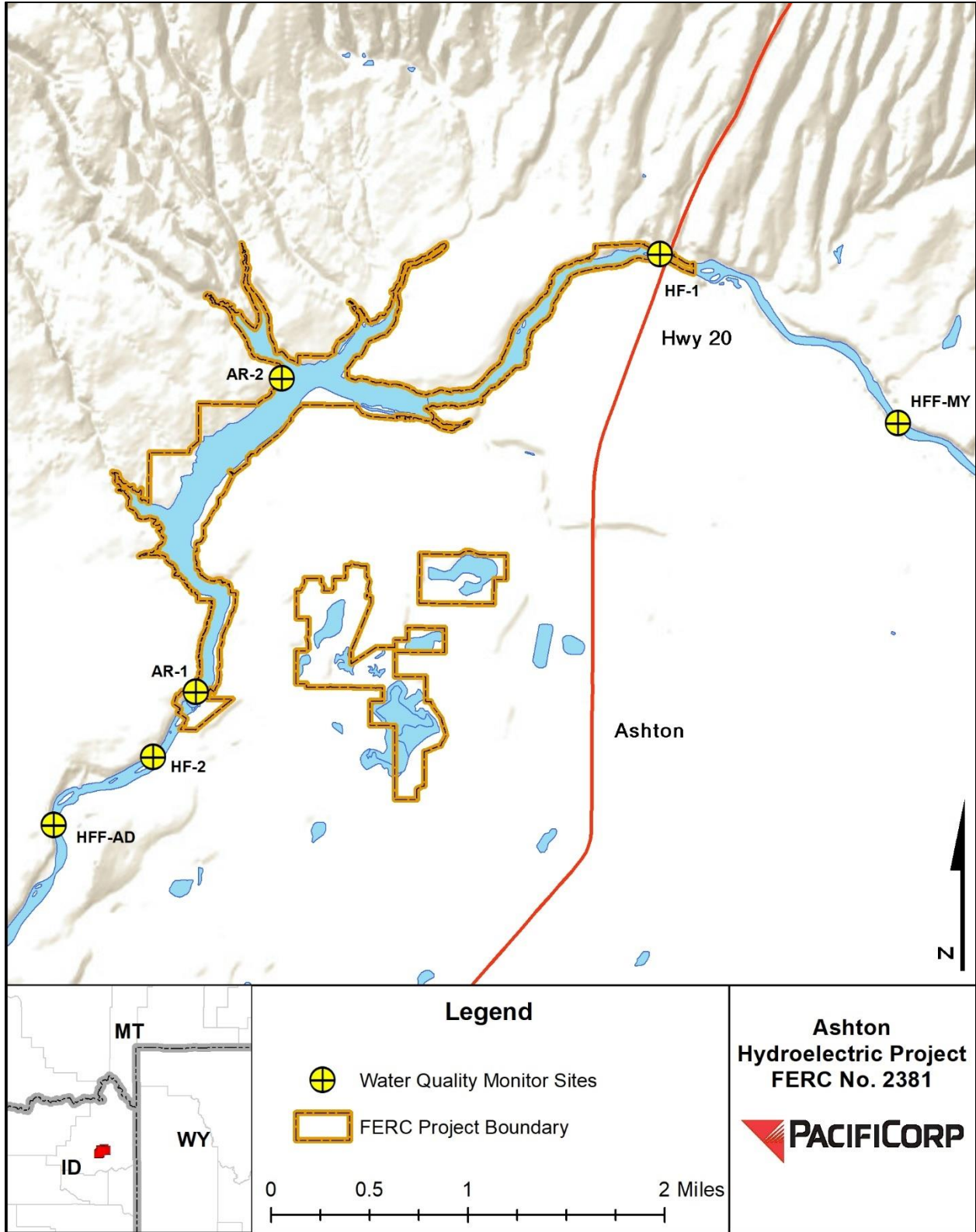


Figure 3.1-1. Baseline water quality study area.

3.2 Reconnaissance Wetland Plant and Wildlife Survey

Goals and Objectives

The goal of this study is to update baseline wetland resource information on the wetland complex and shoreline protection areas along the Project reservoir. To accomplish this goal, the study has the following objectives:

- 1) Identify changes in the location, extent, and type of wetlands in the wetland complex and shoreline protection areas;
- 2) Identify the dominant plant and wildlife species occupying these wetlands; and,
- 3) Characterize the changes in these wetland resources that have occurred since the last baseline inventory was completed.

Existing Information and Need for Additional Information

The U.S. Fish and Wildlife Service's (FWS) classification scheme for wetlands serves as the national standard for wetland classification and is used to classify wetlands identified in the National Wetlands Inventory (NWI). The NWI was the primary resource consulted in preparation of PAD section 4.6, which describes wetland, riparian and littoral habitats in the Project area. The review documented in the PAD characterized the wetlands present in the Project area based on NWI classifications. Irrigation practices (non-Project water use) in the vicinity of the Project has progressively shifted from flood to sprinkler systems, resulting in decreased surface and potentially subsurface flows to support area wetlands. Collectively, updated site-specific information is needed to document the existing condition of wetlands, plant species present, and the wildlife species that currently use Project wetlands in order to update, if needed, the existing Ashton Hydroelectric Project Wildlife Enhancement Plan (WEP; PacifiCorp, 2016).

Project Nexus

The WEP was developed pursuant to Article 405 of the current Project license in 1990. The intention of the WEP is to mitigate the effects of disturbing approximately 400 acres of wildlife habitat that occurred during original construction and reservoir filling (FERC, 1986). One way the WEP accomplished this was through improving riparian habitats around the reservoir and protecting existing wetland resources. Given PacifiCorp proposes to continue to implement the WEP, the measures within the WEP may need to be updated to facilitate detecting any Project-related change in wetlands or associated botanical and wildlife resources.

Methodology

Study Area

The study area includes all wetlands within the wetland complex and shoreline areas in the Project boundary (Figure 3.2-1), including wetlands on PacifiCorp fee-title property (i.e., PacifiCorp Pond and areas abutting the Project reservoir) and on other private lands managed

under various conservation-related easements (i.e., the Cordingly, Marshal, Jenkins, and temporary shoreline conservation easements, as described in PAD section 4.5.5).⁴ Access to conservation easement lands that are privately owned will require landowner permission; therefore, PacifiCorp will seek such landowner permissions. If permission is granted, the survey would be performed as discussed below. If permission is denied or otherwise not obtained (e.g., request for access is unanswered), PacifiCorp will not include those lands in the survey.

Plant and Wildlife Survey

The starting point for this study element will be existing wetland mapping and categorization included in previous PacifiCorp baseline documentation, where available, or wetland mapping data from the National Wetland Inventory database. This existing mapping will be updated using the most recent high-resolution data available for land in the Project Area. Imagery could include full-color and near infra-red coverage to help identify vegetation community types.

Wetland locations, extents, and community types will be field verified at representative sites to confirm wetland map coverage developed by analysis of aerial imagery. Locations will be manually selected prior to field work based on existing data and characteristics observed from aerial images. Based on field survey results, the map coverage will be updated as appropriate.

The wetland plant survey be completed concurrently with the field verification of wetland location, extent, and type. The existing PacifiCorp baseline information and NWI data include descriptions of dominant vegetation. These descriptions will be updated as necessary based on field observations.

The wildlife survey will include a review of existing information to identify avian, amphibian, and terrestrial wildlife species that utilize riparian/wetland habitat that are known to be or are likely to be present in the study area. The review will also address specific seasonal habitat requirements for these wildlife species (e.g., forage, cover, reproduction, etc.). Existing information sources may include published literature, past baseline information compiled by PacifiCorp, studies conducted by state or federal agencies, eBird data, Breeding Bird Survey data, and data collected by Henry's Fork Foundation and other NGOs or non-profit groups. Wildlife observations will be noted during field verification of wetland location, extent, and type and used to refine the results of the review of existing information.

Information on existing weed infestations will be gathered from available sources including PacifiCorp, Teton County, and adjacent landowners. Weed observations will be noted during field verification of wetland location, extent, and type and used to refine the results of the review of existing information.

⁴ PacifiCorp has no ability to access the Baum property because PacifiCorp no longer has easement rights to the property; such rights are held by the Teton Land Trust. Therefore, PacifiCorp will not include the Baum property in the study.

Data Analysis

Wetland mapping developed during the last baseline inventories completed (1993 for the Cordingly and Marshal easements, 1995 for PacifiCorp fee-title areas, 2016 for the Jenkins easement, and as documented in Teton Land Trust documentation for the Baum easement) will be compared to updated coverage provided by this study. Results of this comparison will be evaluated to identify changes in wetland resources. Because of the level of detail and resolution in past baseline descriptions, the comparison will be largely qualitative.

Reporting

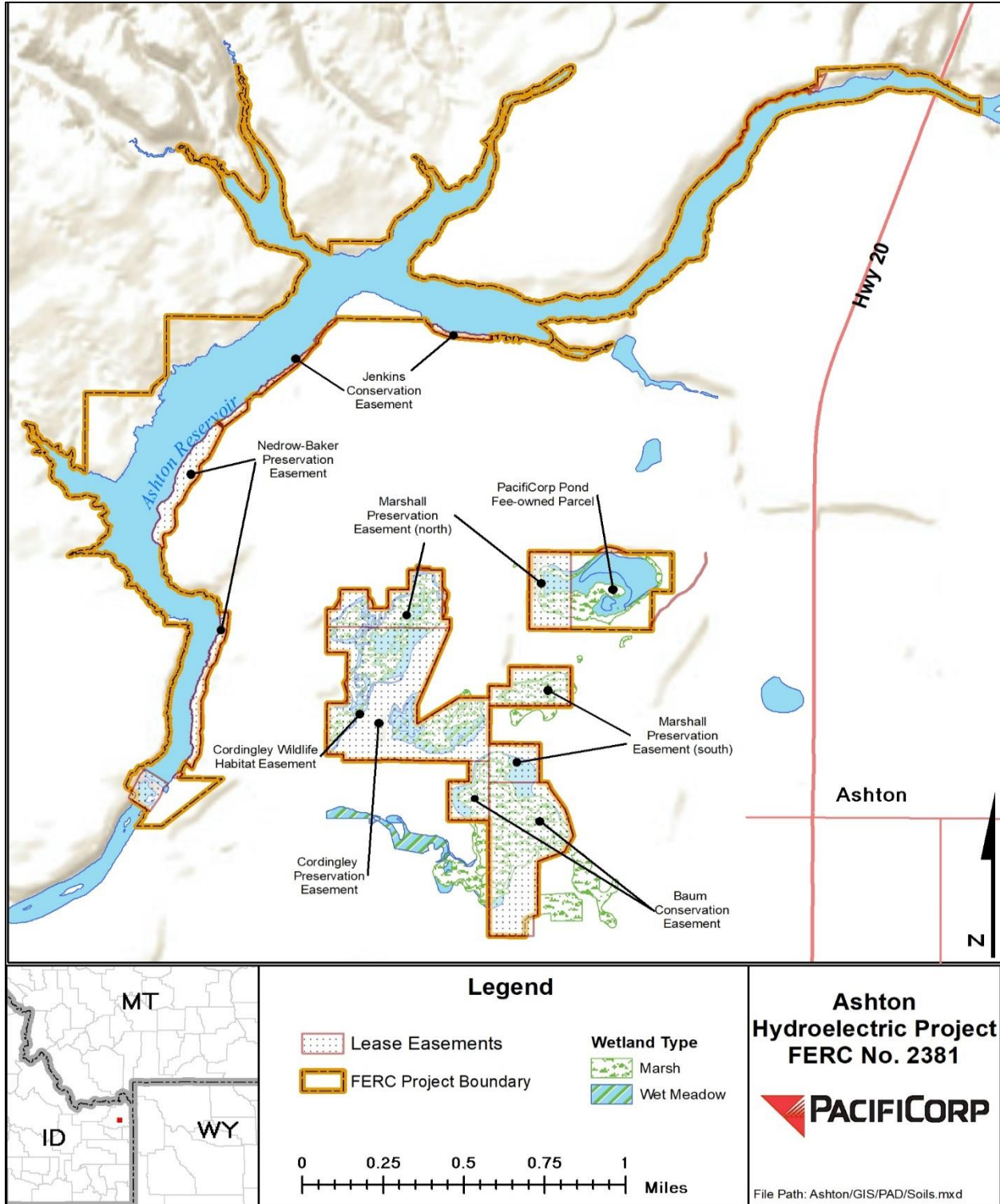
A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study involves conducting a reconnaissance-level inventory of wetlands and associated plants and wildlife resources in the Project boundary. The methods employed are standard practices for completing baseline resource inventories and documenting existing conditions in other hydroelectric project relicensing studies. These methods are not intended to meet regulatory requirements for wetland delineation or special-status plant or wildlife surveys.

Study Schedule

PacifiCorp anticipates this study would be implemented during the 2023 study season, with data collection during the summer. Analysis and reporting is anticipated to occur during the last quarter of 2023 and the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.



Note: Lands identified for survey within conservation easements are subject to landowner permission; see explanation under *Study Area*. The survey will not include the Baum Conservation Easement; see footnote 4.

Figure 3.2-1. Wetland plant and wildlife survey study area.

3.3 Ute Ladies'-Tresses Survey

Goals and Objectives

The goal of this study is to determine whether Ute ladies'-tresses orchid, federally listed as threatened, occurs in the Project boundary and to what extent continued Project operation would affect the species. To accomplish this goal, the study has the following objectives:

- 1) Systematically evaluate areas of potential suitable habitat and survey lands of potential suitable habitat within in the Project boundary to determine if and where Ute ladies'-tresses occurs.
- 2) Assess potential direct or indirect effects on this species resulting from Project operations.

Existing Information and Need for Additional Information

The Idaho Department of Fish and Game maintains a database of known locations of species of special concern (<https://idfg.idaho.gov/species/>). This database was used to identify any federally listed species potentially occurring in the Project Area based on recorded occurrences in the vicinity of the Project. Based on the review conducted for the PAD (section 4.7.1), Ute ladies'-tresses orchid is the only federally listed species documented to occur (or with the potential to occur) in the vicinity of the Project. It has been reported to occur along the Henry's Fork River approximately 1 mile downstream of Ashton Dam, near the Ora Bridge. No surveys for Ute ladies'-tresses have been conducted within the Project boundary. Due to the potential for suitable habitat and the proximity of known populations, a need exists to conduct a survey for Ute ladies'-tresses within the Project boundary (following established protocols) to determine if it is present and potentially affected by Project operations.

Project Nexus

The FWS (2005) identified, among others, hydrologic change (flood control, water development), grazing by livestock, recreation, invasive species competition, and pesticide application as threats to the persistence of the rare orchid. Collectively, these actions are present at the Project. Therefore, continued operation of the Project may affect Ute ladies'-tresses if they are present. In addition, as the federal agency with licensing authority over the Project, the FERC is subject to provisions of the Endangered Species Act Section 7, which requires federal agencies to consult with the Service to ensure that actions they fund, authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats.

Methodology

Study Area

The Ute ladies'-tresses orchid survey study area includes all land areas inside the FERC Project boundary under the direct control of PacifiCorp, and may include conservation easement lands owned by other entities in the wetland complex, other than the Baum Conservation Easement

(Figure 3.3-1).⁵ Access to conservation easement lands that are privately owned will require landowner permission; therefore, PacifiCorp will seek such landowner permissions. If permission is granted, the survey would be timed to correspond with the survey window for Ute ladies'-tresses (discussed below under Study Schedule). If permission is denied or otherwise not obtained (e.g., request for access is unanswered), PacifiCorp will not include those lands in the survey.

Field Survey

The FWS Interim Survey Requirements for Ute ladies'-tresses orchid, issued November 23, 1992, establishes the accepted survey protocol (Appendix A;FWS, 1992). This protocol will be followed to complete surveys for Ute ladies'-tresses within the Project boundary. Typically, this survey protocol requires 2 years of surveys because the species may not flower every year.

Important elements of the survey protocol include the following:

- Evaluation of the study area to determine where potentially suitable habitat exists using a combination of aerial imagery, existing information, and field reconnaissance.
- Scheduling field surveys to correspond to flowering in other known populations, likely beginning in the later part of July and extending through mid-to-late August, depending on the year.
- Completing pedestrian surveys providing 100 percent coverage in suitable habitat using closely spaced transects.
- Recording population information if any occurrences of Ute ladies'-tresses are located.

Analysis and Reporting

The results of the surveys will be documented in a draft report that presents the methods, analyses, and results of the study. The report will include: a map identifying the locations of potential suitable Ute ladies'-tresses habitat that were surveyed, a qualitative description of the habitat quality of the locations surveyed, identification of the location of populations of the rare orchid found, and provide an estimate of the number of individuals within each population and areal extent of each population found. If the species is located in the study area, the report will identify and discuss any direct or indirect effects on the species due to Project operations.

The draft report will be distributed to the resource agencies and other interested parties during the first quarter of 2025 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

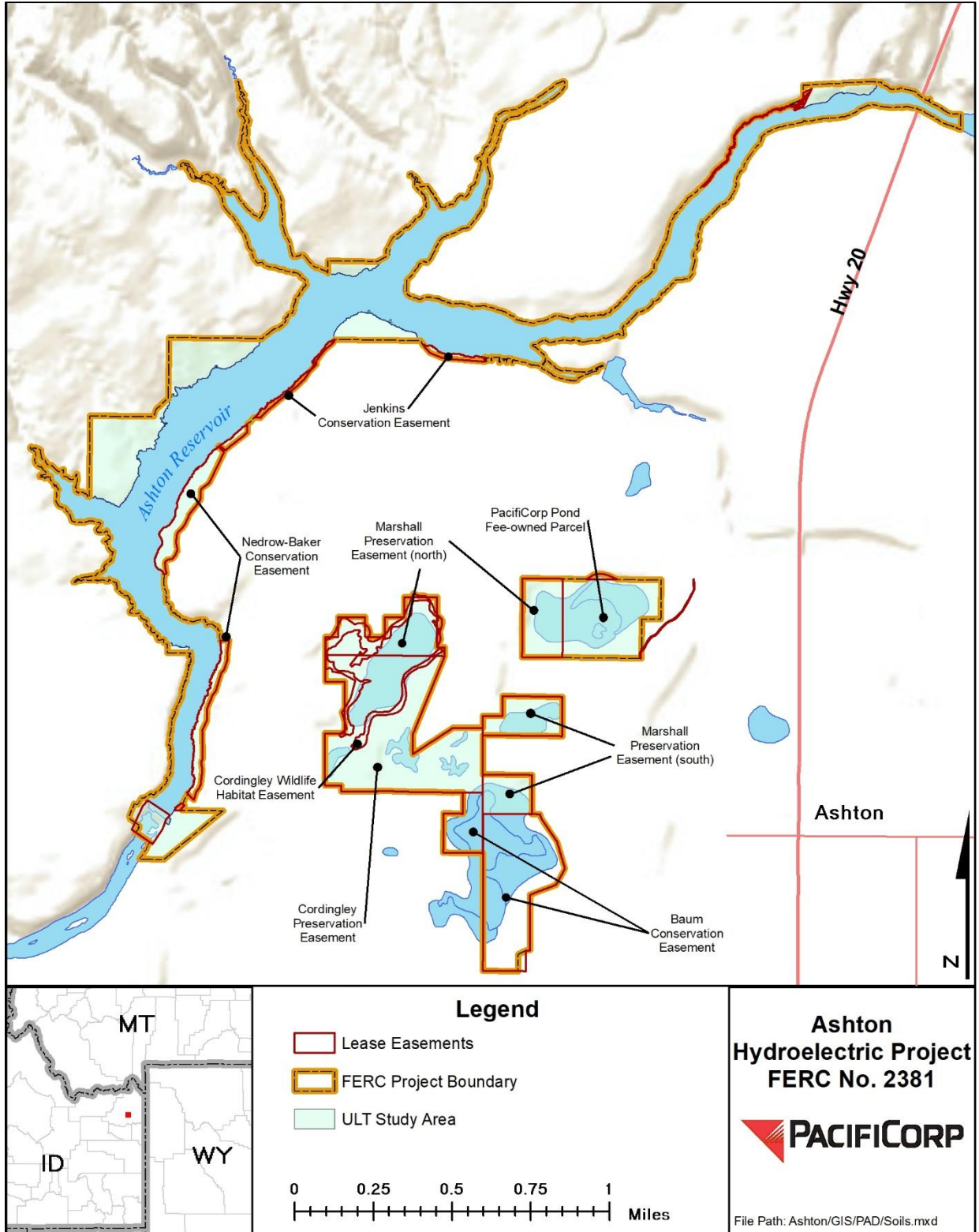
⁵ PacifiCorp has no ability to access the Baum property because PacifiCorp no longer has easement rights to the property; such rights are held by the Teton Land Trust. Therefore, PacifiCorp will not include the Baum property in the study.

Consistency with Generally Accepted Scientific Practices

Surveys for Ute ladies'-tresses will be completed following the protocol outlined by the FWS (1992). This protocol establishes the accepted practices for completing surveys for this species.

Study Schedule

The Ute ladies'-tresses survey is a 2-year protocol; therefore, field surveys are anticipated to occur in 2023 and 2024. Surveys will be scheduled for late-July through mid-to-late August, as specified in the survey protocol (FWS, 1992). This window corresponds to the period when this species is typically in flower and relatively easily to locate and identify. Analysis and reporting is anticipated to occur during the last quarter of 2024. PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the first quarter of 2025 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.



Note Lands identified for survey within conservation easements are subject to landowner permission; see explanation under *Study Area*.

Figure 3.3-1. Ute Ladies'-Tresses survey study area.

3.4 Recreation Use and Condition Assessment

Goals and Objectives

The goals of this study are to collect information on current levels of recreation use and demand at the Project, inventory facilities and identify ADA compliant facilities, assess any potential impacts of proposed Project operational changes. To accomplish these goals, the study has the following objectives:

- 1) Conduct a recreational use-count at the boat launch facility at the upper end of Ashton Reservoir and at the Fisherman's Access site immediately downstream of the Project dam to discern demand;
- 2) Complete a site assessment of these recreational facilities to document condition and capacity relative to demand;
- 3) Identify within the site assessment, those facilities that are ADA compliant;
- 4) Based on the results of Objectives 1, 2 and 3, identify any potential recreational effects of proposed Project operational changes.

Existing Information and Need for Additional Information

Sections 4.8.1 and 4.8.2 of the PAD discuss and describe regional recreation resources and the two recreational facilities at the Project, respectively. PAD section 4.8.3 discusses recreational use and activities that are typically enjoyed at the Project. In PAD section 4.8.3 and 5.1.7, PacifiCorp indicates that use of the Ashton Reservoir boat launch site often exceeds capacity, while the fisherman's access immediately downstream of the Project dam is underutilized. Comments received during the joint-agency meeting held by PacifiCorp on October 4, 2022, supported the observation that Ashton Reservoir boat launch site use is over capacity. Therefore, a study is needed to identify what, if any, changes are needed at the sites to ensure the two recreation sites meet anticipated demand and ADA compliance.

Project Nexus

The Project is located on the Henry's Fork of the Snake River, a highly prized recreational fishery, and creates a reservoir that has seen an increase in recreational boating. Article 406 of the current license requires PacifiCorp to operate and maintain the two recreation facilities at the Project. Direct observations and anecdotal evidence indicates that current capacity of the two facilities does not meet current recreational demand. This study would establish a baseline of recreational use and condition of the current facilities, and form the basis for inclusion of potential license requirements to protect, mitigate, or otherwise enhance recreational use at the Project.

Methodology

Study Area

The study will focus on the two recreation sites at the Project: the Ashton Reservoir boat launch at the upper end of the reservoir, and the fisherman's access downstream of the dam (Figure 3.4-1). Other areas will be surveyed for recreational use that are visible from the boat launch, including the upstream river segment at the Project boundary and the reservoir downstream of the boat launch.

Recreational Use – Ashton Reservoir Boat Lunch

The study will use programable all-weather cameras (Reconyx© Hyperfire 2) to record use at the boat launch (Figure 3.4-1). One camera will be installed to photograph the day use area, parking area, and boat ramps. A second camera will be located looking upriver to capture fishermen or day floaters drifting down river, and a third camera will be located to capture activities on the reservoir. The exact location of each camera at the boat launch will be determined based on sight lines, coverage area, and the ability to make the cameras inconspicuous. Cameras will be programmed to collect still photographs every 15-minutes. Each month the cameras internal SD card and batteries will be replaced to ensure cameras continue to operate as intended.

Recreational Use – Fisherman's Access

To capture use at the fisherman's access, a programable all-weather camera (Reconyx© Hyperfire 2) will be installed on the dam looking downstream to capture the fisherman's access area including the trail down from the parking area, the footbridge and picnic table on the island, and portions of the river. The camera will be programmed to collect still photographs every 15-minutes.

Site Condition and Capacity Assessment

The study will assess the physical condition and capacity of infrastructure at each of the two recreation sites. Assessment visits will be timed to coincide with conditions suitable for recreational activities to allow first-hand observations of the infrastructure in use.

At each site, the following information will be collected and documented photographically:

- Condition and capacity of single vehicle and vehicle with trailer parking relative to demand.
- Condition and capacity of restrooms, picnic tables, fire pits, boat launch facilities, and walkways.
- Condition of informational/interpretive displays.
- ADA accessibility.
- Safety and security concerns.

Data Analysis

All pictures collected by programmable cameras will be reviewed to quantify recreational use, including number of people, vehicles, and watercraft by type (i.e., motorized or unmotorized, inflatable or hard hulls). An analysis of physical capacity at each recreation site will be completed during the site condition assessment, taking into consideration parking, restrooms and picnic facilities, and boat launch infrastructure. Results will be compared to actual use (based on use counts collected from the programmable cameras), during peak and off-peak periods. Seasonal use patterns will be summarized.

Reporting

A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study includes observations and documentation of recreational use and capacity following methods that are generally accepted by the scientific community and utilized to study recreational use in other hydroelectric project relicensing studies.

Study Schedule

Most recreation use occurs from early May, prior to Memorial Day, through Labor Day; therefore, PacifiCorp anticipates the study would commence in early May and last through Labor Day, 2023. Analysis and reporting is expect to be completed during the last quarter of 2023 through the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

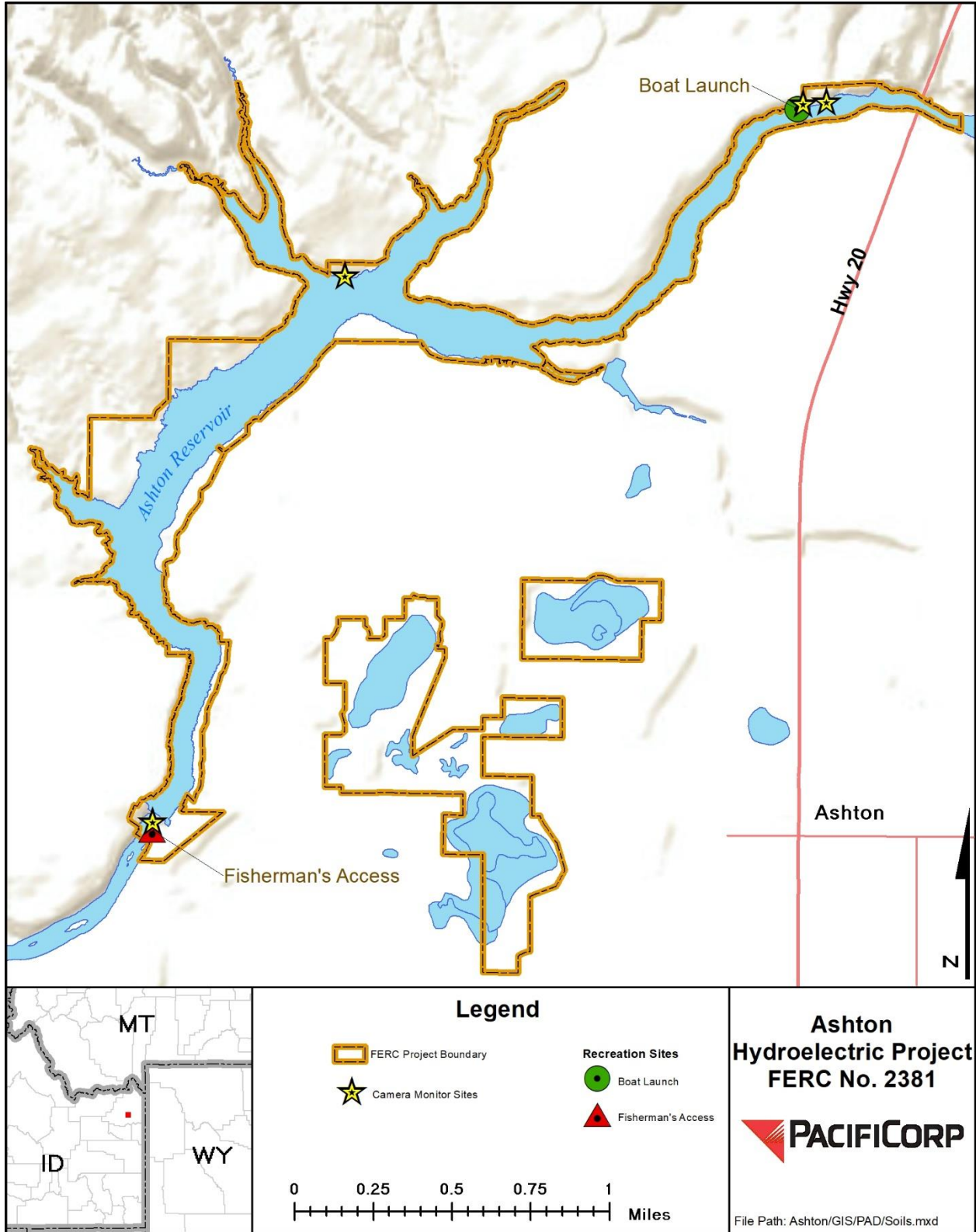


Figure 3.4-1. Recreation use and condition assessment study area.

3.5 Cultural Resources Survey

Goals and Objectives

The goal of this study is to collect information on cultural resources on lands within the Project boundary that are owned in fee by PacifiCorp to facilitate the evaluation of effects from Project operation, maintenance or recreation activities on such identified resources under the new license. To accomplish this goal, the study has the following objectives:

- 1) Consult with Idaho State Historic Preservation Office (ISHPO), Native American Tribes, and other consulting parties to define the area of potential effects (APE);
- 2) Conduct an intensive-level pedestrian survey of unsurveyed uplands within the Project boundary to locate and document cultural resources. Surveys of lands within the reservoir drawdown zone and around the powerhouse and related facilities have previously been completed;
- 3) Consult with the ISHPO, participating Native American Tribes, and other parties as appropriate to evaluate the National Register of Historic Places (National Register) eligibility all new cultural resource sites documented within the APE according to 36 CFR § 800.4.
- 4) Consult with the ISHPO, participating Native American Tribes and other parties as appropriate, to determine existing and potential project effects on the eligible cultural resources located and identified within the APE in accordance with 36 CFR § 800.5.

Existing Information and Need for Additional Information

ISHPO and PacifiCorp records indicate that three field inspections for historical and archaeological sites have been conducted within the Project boundary (Hovanes and Oliver, 2019; Herzog et al., 2012; Fenner et al., 2013). These surveys occurred in 1991, 2011 to 2012, and 2019. In total, these surveys resulted in the inspection of 266 acres within the Project boundary for archaeological resources and 10 acres for historical buildings and structures. The 1991 survey inspected 2 acres near the Project dam for a proposed stabilization project (Nielsen, 1991). The 2011 to 2012 survey examined 264 acres through a combination of intensive-level and reconnaissance-level methods and focused on identifying archaeological sites within the drawdown zone of the reservoir (Herzog et al. 2012; Fenner et al. 2013). Upland areas were not surveyed as part of that inspection, and no other cultural resource surveys have occurred on those uplands around the reservoir. As such, the presence or absence of archaeological sites in those upland locations remains unknown. The 2019 survey examined historical buildings and structures around the dam, powerhouse, and residential complex (Hovanes and Oliver, 2019).

The previous surveys in the Project boundary resulted in the identification of four prehistoric archaeological sites (site numbers 10FM520, 10FM521, 10FM522, and 10FM523), one historic bridge, and the Ashton Hydroelectric Project Historic District (Ashton Historic District). The four prehistoric sites documented in 2011 to 2012 were subjected to archaeological testing in 2012 to determine if buried artifacts or features (e.g., remains of hearths, structures, or burials) were present and could provide more information important to better understanding prehistoric

peoples, technologies, and lifeways. The testing determined that such buried materials were present at the sites. Subsequent to the testing, the sites were determined eligible for inclusion into the National Register of Historic Places (National Register). Therefore, these sites qualify as historic properties and are subject to the requirements of Section 106 of the National Historic Preservation Act to avoid, minimize, or mitigate adverse effects to them from present and future Project operation and maintenance.

The Ashton Hydroelectric Project Historic District consists of 24 historic and non-historic buildings and structures clustered around the Henry's Fork of the Snake River (Hovanes and Oliver, 2019, 2019). The District's character is a mix of residential and industrial uses. The types of buildings, which encompass residences, shop buildings, and buildings and structures for the generation and transmission of hydroelectric power, reflect these uses.

Section 106 consultation between PacifiCorp, the ISHPO, and other parties resulted in the determinations that both the historic bridge and Ashton Historic District are not eligible for listing on the National Register (ISHPO, 2012; ISHPO, 2019). As such, neither resource is subject to requirements for avoiding, minimizing, or mitigating adverse effects from present and future Project operation and maintenance activities.

As noted above, ISHPO and PacifiCorp records indicate that a relatively small portion of the overall Project area has been surveyed for cultural resources to date. The most substantive of the past surveys in the area comprised the inventory of historical buildings and structures at the powerhouse complex and intensive-level archaeological survey and testing of select sites in the drawdown zone of the reservoir. However, no comprehensive surveys for cultural resources has been conducted on the remaining uplands within the Project boundary. Because past surveys revealed cultural resources are present around the drawdown area of the reservoir, the possibility exists that additional cultural resources and sites in upland areas within the Project boundary may be present. Therefore, a survey of the previously unsurveyed upland areas within the Project boundary is needed.

Project Nexus

The Project is operated under a license from the FERC. Issuance of that license constitutes an undertaking as defined by the National Historic Preservation Act and its implementing regulations at 36 CFR § 800. To comply with this regulation, FERC must make a good faith effort to a) define the types of Project operations with the potential to affect cultural resources; b) identify historic properties (i.e., cultural resources that are listed on or determined eligible for listing on the National Register of Historic Places) that could be affected by operations under the license; and c) develop measures to avoid, minimize, or mitigate adverse effects to historic properties. FERC may delegate portions of their responsibility for compliance with 36 CFR § 800, such as identifying historic properties, consulting with select parties, and developing a plan to manage historic properties to avoid adverse effects, to the licensee.

Past surveys for cultural resources within the Project boundary have focused on select areas within the Project boundary, while other areas of uplands remain unsurveyed. While PacifiCorp is not proposing changes to land development—i.e., no new capital improvements or ground disturbing activity—in these upland areas, accommodating recreational activities, including in

areas accessible only by boat, could affect cultural resources located in these areas. Other Project operation and maintenance activities, such as vegetation management, habitat enhancements, grazing, etc., also have the potential to affect cultural resources in these upland areas. The results of the survey would provide information on the cultural resource sites within the defined APE, and the study report would provide information on which sites are potentially eligible for inclusion into the National Register and any potential Project-related effects on the sites. If it is determined that continued Project operation and maintenance activities adversely affect such cultural resources or sites, a Historic Properties Management Plan may be needed.

Methodology

Study Area

Prior to conducting any field survey, PacifiCorp, as delegated by FERC, must consult with the ISHPO, Native American Tribes, and other consulting parties, under 36 CFR § 800.4(a)(1) to determine the area of potential effects (APE) for the relicensing.⁶ Typically for FERC licensing or relicensing undertakings, that APE is defined as the limits of the FERC-regulated Project boundary but may extend beyond the Project boundary to account for project effects. PacifiCorp must then consult with these parties to define efforts that will be undertaken to make a good faith effort at identifying historic properties in the APE. This effort may include a combination of previous surveys conducted in the area and new surveys. PacifiCorp assumes at the present time that this consultation will result in agreement that the only portions of the APE/Project area that require new survey are the previously unsurveyed areas around Ashton Reservoir.

The study area for the cultural resource survey would comprise those areas of uplands within the Project boundary and around Ashton Reservoir not previously inspected for cultural resources. Uplands in the wetlands complex that are not owned in fee (i.e., easements) would be excluded from the survey area. Upland areas around Ashton Reservoir that have not been inspected in detail for cultural resources comprise six locations encompassing a total of approximately 73 acres. Figure 3.5-1 presents the overall survey area.

Field Survey

The field survey for cultural resources within the study area would consist of an intensive-level archaeological resources survey. No buildings or structures are known to be present in any of these areas, and, as such, no historical structures inventory would be conducted. The archaeological inventory methods would adhere to the ISHPO's standard survey transect spacing (no more than 30 m apart) and site documentation protocols in place at the time of the survey, unless the aforementioned consultation under 36 CFR § 800 results in an agreement to employ alternative survey methods (ISHPO, undated). Limited subsurface testing of identified archaeological sites in the newly surveyed upland areas would be undertaken if such testing is

⁶ Area of Potential Effect is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16).

agreed upon during consultation. The nature and extent of such testing would be defined during consultation but could include a combination of shovel probes and formal excavation units.

Data Analysis

All sites documented during the new field survey would be evaluated for their National Register eligibility according to 36 CFR § 8004(b). Potential adverse effects from the Project on those resources qualifying as historic properties also would be carried out according to 36 CFR § 800.5.

Reporting

A draft report of survey and testing results, if applicable, would be prepared and submitted to the ISHPO, Native American Tribes, and other consulting parties for review and comment according to 36 CFR § 800. The report would meet industry and ISHPO standards in place at the time of reporting. The draft report will be distributed to the above parties and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

As noted above, all of the work under this study plan would be conducted in accordance with the 36 CFR § 800 regulations and ISHPO survey and reporting protocols. These regulations and protocols establish the generally accepted scientific practice for addressing cultural resources that could be affected by licensing the Project as proposed by PacifiCorp..

Study Schedule

Consultation to define the APE and approach to identifying historic properties would begin in late-winter or early-spring 2023. Any fieldwork conducted under this consultation and the study plan may take place at any time so long as snow cover is not present at the time of the survey. Ideal times to maximize ground visibility for the field survey are spring, prior to full vegetation growth, or late fall, after vegetation growth has stopped. Analysis and reporting is expected to occur during the last quarter of 2023 through the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

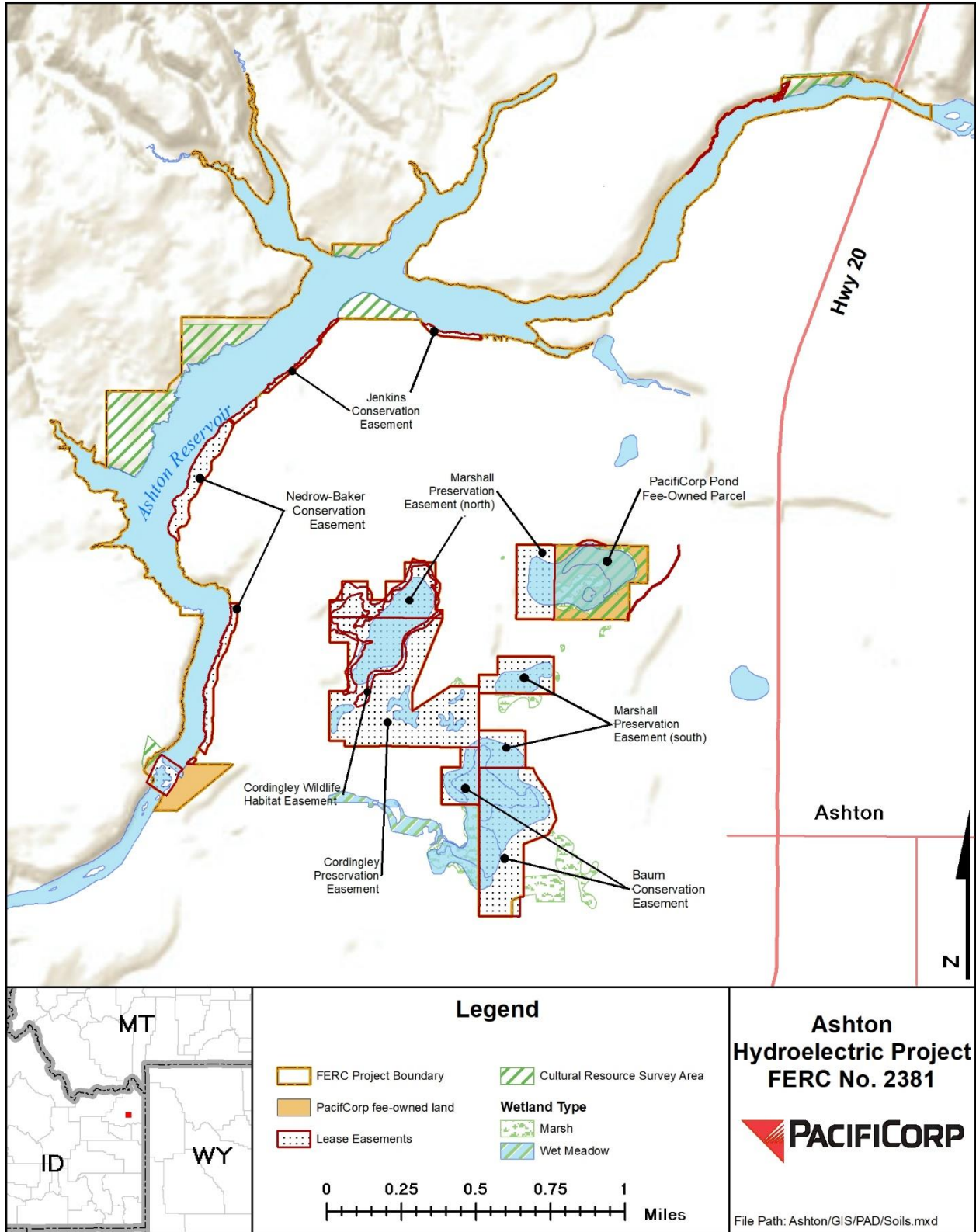


Figure 3.5-1. Cultural resources survey study area.

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APPENDIX A

1992 Interim Survey Requirements Ute Ladies'-tresses Revised 2017

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DRAFT STUDY PLAN

Ashton Hydroelectric Project FERC Project No. 2381



March 2023

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1.0 INTRODUCTION

PacifiCorp is licensed by the Federal Energy Regulatory Commission (FERC or Commission) to operate the 6.7-Megawatt (MW) Ashton Hydroelectric Project (Project, FERC No. 2381) located on the Henry's Fork of the Snake River near the City of Ashton, Idaho. This current license to operate the Project was issued on August 3, 1987, and expires on December 31, 2027. On July 5, 2022, PacifiCorp commenced relicensing the Project by filing with the Commission a Notice of Intent (NOI) to File Application for New License, a request to relicense the Project using the Commission's Traditional Licensing Process (TLP), and a Pre-Application Document (PAD).

On April August 29, 2022, the Commission approved PacifiCorp's request to use the TLP, which authorized PacifiCorp to relicense the Project following the TLP. Subsequently, PacifiCorp held two joint meetings and a site visit on October 4, 2022. At the joint meetings, PacifiCorp informed the resource agencies and other interested parties, of its intention to perform: a baseline water quality study, a Ute Ladies'-Tresses survey, a wetland complex delineation, a recreational use survey and condition assessment, and a cultural resources survey. Within 60-days following the joint meetings and site visit, the Idaho Governor's Office of Energy and Mineral Resources (OEMR), on behalf of the State of Idaho, provided two study requests – a baseline water quality monitoring study and an American with Disabilities Act (ADA) access study at the Project's Ashton Reservoir boat launch – to PacifiCorp.¹ No other study requests were received.

There is no requirement to prepare a formal study plan, as is required by the Integrated Licensing Process (ILP); therefore, there is no subsequent study plan determination by FERC. The purpose of this Draft Study Plan (DSP) document is to facilitate consultation with the resource agencies and interested parties so that a set of site-specific study plans are developed by PacifiCorp with input from the resource agencies and other interested parties. The anticipated result of the consultation would be the development of a Final Study Plan (FSP). The FSP, in turn, is to guide the collection of additional information to support the development of the license application. To support this goal, in Section 2, PacifiCorp presents the rationale for not adopting, and adopting with modification the recommended studies. In Section 3, PacifiCorp provides its' proposed site-specific individual study plans.

2.0 RESPONSE TO STUDY REQUESTS

The purpose of relicensing studies is to supplement existing, relevant, and reasonably available information so that the Commission and other licensing participants have an adequate factual record to assess Project effects and to inform proposed requirements in the new license. In developing this DSP, PacifiCorp evaluated the merits of the study request submitted by OEMR based on the seven study criteria set forth in §5.9(b) of the Commission's ILP regulations. These criteria are designed to ensure that any studies that are requested are needed to evaluate the effects of a project in question (FERC, 2012).

¹ OEMR filed two PAD comment and study requests letters with the Commission on December 2, 2022 (see Accession No. 20221202-5076) and December 5, 2023 (see Accession No. 20221205-5003).

Overall, PacifiCorp proposes to adopt, but with modification, the requested baseline water quality monitoring survey. PacifiCorp's justification for adopting this study, but with modification are provided in Section 2.1. In addition, but not requested by the resource agencies nor other interested party, PacifiCorp proposes to perform a reconnaissance wetland plant and wildlife survey, a Ute ladies'-tresses survey, a recreational use survey and condition assessment, and a cultural resources survey. Individual study plans for the above listed studies are provided in Section 3, Individual Study Plans.

2.1 Studies Adopted with Modification

Baseline Water Quality Monitoring Study

The water quality study requested by Idaho Department of Environmental Quality (IDEQ), by way of OEMR, aims to assess the effects the Project may have on the designated uses of the Henry's Fork in the vicinity of the Project. IDEQ states the 2022 Integrated Report for the Henry's Fork lists the assessment unit upstream of the Project dam as not meeting the salmonid spawning criteria, while the assessment unit downstream of the Project dam does not meet the salmonid spawning nor cold water aquatic life criteria. IDEQ, therefore, infers that the Project reservoir and operations contributes to the assessment unit downstream of the Project dam experiencing more severe water temperature exceedances than the assessment unit upstream of the Project (§5.9(b)(5)).

IDEQ recommends PacifiCorp measure water temperature and Dissolved Oxygen (DO) in a manner consistent with those employed by Cirrus and ERI (2013), with monitoring stations located upstream and downstream of the Project. As discussed below in section 3.1, Baseline Water Quality Study, PacifiCorp developed a study plan that includes the methods employed in Cirrus and ERI (2013), but additional monitoring sites, confining the study period from May 1 (or ice out) to November 1, and comparing the resulting data with Project operations.

IDEQ also recommends PacifiCorp collect the recommended data before and after the reservoir operating band is changed from ± 0.15 to ± 0.25 feet of the summer and winter reservoir water surface elevation targets of 5,155.5 and 5,155.0 feet, respectively. While PacifiCorp understands the value of performing before and after measurements to discern an effect of a proposed action, PacifiCorp's water quality study would collect information necessary to inform an effects analysis of PacifiCorp's proposed operating band change (§5.9(b)(4)). For instance, relating downstream water temperatures and DO concentrations to reservoir water levels and vertical profiles would indicate how water temperatures and DO concentrations would vary over time and over a range of reservoir water levels. For these reasons, PacifiCorp respectfully declines to incorporate IDEQ's recommendation of collecting data before and after the operating band is changed into the study.

American with Disabilities Act Access Study at the Project's Ashton Reservoir Boat Launch

The ADA access study requested by the Idaho Department of Parks and Recreation (IDPR) within OEMR's letter requests, "IDPR requests a study for ADA access at the boat launches involved in the project." PacifiCorp is interpreting this request consistent with §5.9(b) or

§16.8(b)(5), as being necessary to assess the condition and supply of accessible recreation facilities. As part of the recreation facility inventory and condition assessment, PacifiCorp will identify those facilities that are ADA compliant. The condition assessment will provide information to inform the need for additional ADA access, and modification or upgrade to ADA facilities. For instance, PacifiCorp anticipates the proposed study component will inform condition and capacity of ADA facilities at the recreation sites such that an evaluation of the need to modify current or enhance ADA facilities is understood.

3.0 INDIVIDUAL STUDY PLANS

3.1 Baseline Water Quality Study

Goals and Objectives

The goals of the water quality study are to 1) collect updated baseline water temperature and DO data to document the existing water quality conditions of the Henry's Fork in the Project area; 2) determine whether Project-affected waters of the Henry's Fork meet IDEQ surface water quality standards and designated uses; and 3) assess potential effects of the Project operations on these parameters. In order to reach these goals, the study has the following objectives:

- 1) Collect continuous water temperature (°C) and DO (mg/L and percent saturation) data in the Henry's Fork upstream and downstream of the Project;
- 2) Collect water temperature and DO data in Ashton Reservoir, including vertical profiles;
- 3) Characterize the baseline water temperature and DO data collected in the Project area.
- 4) Assess the effects Ashton Reservoir may have on the thermal regime of the Henry's Fork River downstream of the Project; and,
- 5) Analyze the baseline water temperature and DO data in comparison to applicable IDEQ state surface water quality standards and designated uses, and Project operations (i.e., headwater and tailwater elevations, and turbine discharge).

Existing Information and Need for Additional Information

PAD section 4.3.3 documented an extensive review of water quality, citing applicable standards and numerous data sources, including data collected by PacifiCorp and the Henry's Fork Foundation. That review concluded that state water temperature and DO standards for salmonid spawning were periodically exceeded in Ashton Reservoir and that water temperature standards for salmonid spawning had been exceeded in reaches of the Henry's Fork upstream and downstream of the reservoir. However, data from the reservoir is limited, and the updated 2022 IDEQ Integrated Report indicates the Henry's Fork upstream of the reservoir does not meet water temperature criteria for salmonid spawning and the river downstream of the Project dam does not meet water temperature criteria for both cold water aquatic life and salmonid spawning. Therefore, a need exists to collect additional water quality data to assess the effect the reservoir and operations may have on attaining compliance with cold water aquatic life and salmonid spawning water quality criteria.

Project Nexus

The Project dam impounds waters of the Henry's Fork, creating the Ashton Reservoir. Impounded waters generally have increased residence times, higher mean water temperatures, and may thermally stratify. Data presented in PAD section 4.3.3 show that Ashton Reservoir can stratify. As such, the water temperature and DO conditions from the reservoir's surface to the bottom can vary. Operational releases for power generation and spill from the Project may affect water quality and aquatic resources in the Henry's Fork downstream of the Project. The information from this study will provide data to PacifiCorp, resource agencies, and other

stakeholders that would inform an effects analysis of Project operations on water quality and license requirements.

Methodology

Study Area

The spatial extent of the study is anticipated to extend from the Henry's Fork Foundation's (HFF) Marysville gage (44.09885, -111.42418)² downstream to the Henry's Fork gage near Ashton, ID USGS streamflow gage (USGS Gage No. 13046000; 44.06972, -111.51056). The water quality study area includes two sites located on the Henry's Fork within 0.5 mile upstream and downstream of Ashton Reservoir to capture inflow and outflow. Two additional sites within the reservoir will allow characterization of thermal effects from the reservoir (Figure 3.1-1; Table 3.1-1).

Continuous Water Temperature and Dissolved Oxygen Monitoring

At the Henry's Fork upstream (HF-1) and downstream (HF-2) monitoring locations, water temperature and DO will be monitored continuously at 15-minute intervals from May 1 (or ice out) to November 1 using a HOBO U26 water temperature and DO logger (Onset Computer Corporation). Specifications of this logger are shown in Table 3.1-2. To facilitate collection of percent saturation data, a HOBO U20L-01 water level logger or similar, will be deployed in air in the vicinity of the powerhouse and configured to collect local barometric pressure continuously at 15-minute intervals. Data will be downloaded monthly from these sites, and the sensors cleaned, checked, and calibrated.³

Each month during the study, duplicate water temperature and DO data will be collected at the monitoring sites, using a recently calibrated Troll 9500 (In-Situ, Inc.) water quality meter, as a quality control measure to ensure the HOBO U26 water temperature and DO loggers remain accurate. For each quality control measurement the data will be collected every 30 seconds for a period of 10 minutes at each site to allow for stabilization of the sensors. Specifications for the Troll 9500 are provided in Table 3.1-2.

Two continuous water temperature monitoring stations will be established in Ashton Reservoir, including one near the dam (AR-1) and the other at a mid-reservoir location (AR-2; Figure 3.1-1). Water temperature at these two sites will be collected continuously at 15-minute intervals from May 1 (or ice out) to November 1 using suspended HOBO MX temperature pendants. Temperature sensors will be suspended from a cable near the log boom at AR-1, measured near the surface (1-foot) and fixed every 2 meters down to the bottom of the reservoir. At site AR-2, sensors will be fixed to a cable anchored to the bottom and extending vertically to 2 meters below the surface. An additional surface temperature sensor will be mounted at the shoreline. This will help prevent disturbance by boaters or entangling cables in propellers.

² All latitude and longitude coordinates are shown in decimal degrees.

³ The HOBO U20L-01 logger does not require calibration.

Water Temperature and Dissolved Oxygen Vertical Profiles

Vertical water temperature and DO profiles will be collected monthly through the study period with a recently calibrated Troll 9500. Water temperature and DO profiles will be collected by initially collecting a measurement at the water surface and slowly lowering the instrument by one meter increments, allowing sufficient time for the reading to stabilize before recording a measurement and proceeding to the next depth interval. The last reading will occur 0.2 meters above the reservoir bottom. These profiles would be collected concurrently with data downloads from the water temperature pendants at reservoir locations (AR-1 and AR-2).

Weather, River Flow, and Project Operations Data

Weather, river flow, and operations data will also be used to provide the context for the water temperature and DO data collection. Weather data (including air temperature, wind speed, solar radiation, and precipitation) will be obtained from a US Bureau of Reclamation weather station AHTI located approximately 4 miles southeast of the Project. River flow data will be obtained from the USGS gage 13046000, Henry's Fork near Ashton, Idaho, located roughly 1 mile downstream of the Project dam. Operations data, such as turbine discharge and water surface elevations will be provided by PacifiCorp.

Data Analysis

The water temperature and DO datasets will be initially reviewed and analyzed for outliers, aberrant measurements, and missing data to ensure the collected data are representative. The continuous water temperature, DO and vertical profile data will be used to characterize existing temporal (e.g., mean, median, maximum, minimum) and spatial water quality condition in the study area. The data will also be used to identify and evaluate potential effects that Project operations may have on water quality, including effects of reservoir warming on the thermal regime of the Henry's Fork downstream of the Project dam. This analysis would show the rate of temperature change from an upstream to downstream direction. The evaluation of Project effects will include a visual assessment of time-series plots of the continuous data with operations data. Data will also be evaluated through a comparison of applicable metrics for compliance with IDEQ surface water quality standards, including designated uses.

Reporting

A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study involves collecting water quality data using methods and practices generally accepted by the scientific community to measure and record water quality data.

Study Schedule

PacifiCorp anticipates this study would be implemented during the 2023 study season, with data collection occurring between May 1 (or ice out) to November 1, during conducive and safe flow conditions. Analysis and reporting is anticipated to occur during the last quarter of 2023 and the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

Table 3.1-1. The description of sample locations in the Henry’s Fork River and Ashton Reservoir from upstream to downstream.

| Site | Description | Parameters |
|-------------|---|--|
| HFF-MY | Henry’s Fork Foundation at Marysville site located 1.6 river miles upstream of the Highway 20 Bridge | DO & Temperature |
| HF-1 | The upper Henry’s Fork site will be located upstream of the boat launch near Highway 20 Bridge at a location where the reservoir does not influence river flows | DO, Temperature loggers |
| AR-2 | Ashton Reservoir, mid-reservoir near Rattlesnake Canyon | DO & Temperature profiles, Temperature loggers |
| AR-1 | Ashton Reservoir upstream of powerhouse | DO & Temperature profiles, Temperature loggers |
| HF-2 | The lower Henry’s Fork site will be located 0.4 river miles downstream of the Project dam and powerhouse where the Henry’s Fork would be mixed based on the releases from the powerhouse and Ashton Dam | DO, Temperature loggers |
| HFF-AD | Henry’s Fork Foundation at Ashton Dam site located 1 river miles downstream of the Project dam and powerhouse | DO & Temperature |

Table 3.1-2. Troll 9500, Hobo U26, and Hobo MX Temp sensor specifications.

| Meter | Parameter | Accuracy | Accuracy Range | Methodology |
|--------------|---------------------------|-------------------------|-----------------------|--------------------------------|
| Troll 9500 | Temperature, °C | ±0.1 °C | -5 °C to 50 °C | EPA 170.1 |
| | DO, mg/L and % saturation | ±0.1 mg/L, ±0.2 mg/L | 0-8 mg/L, 8-20 mg/L | ASTM D888-05, Test Method C |
| HOBO U26 | Temperature, °C | ±0.1 °C | -5 °C to 40 °C | |
| | DO, mg/L and % saturation | ±0.2 mg/L, ±0.5 mg/L | 0-8 mg/L, 8-20 mg/L | |
| HOBO MX | Temperature, °C | ±0.5 °C | -5 °C to 40 °C | |
| HOBO U20L-01 | Kilopascal | ±0.3 % | 0 to 207 kPa | |

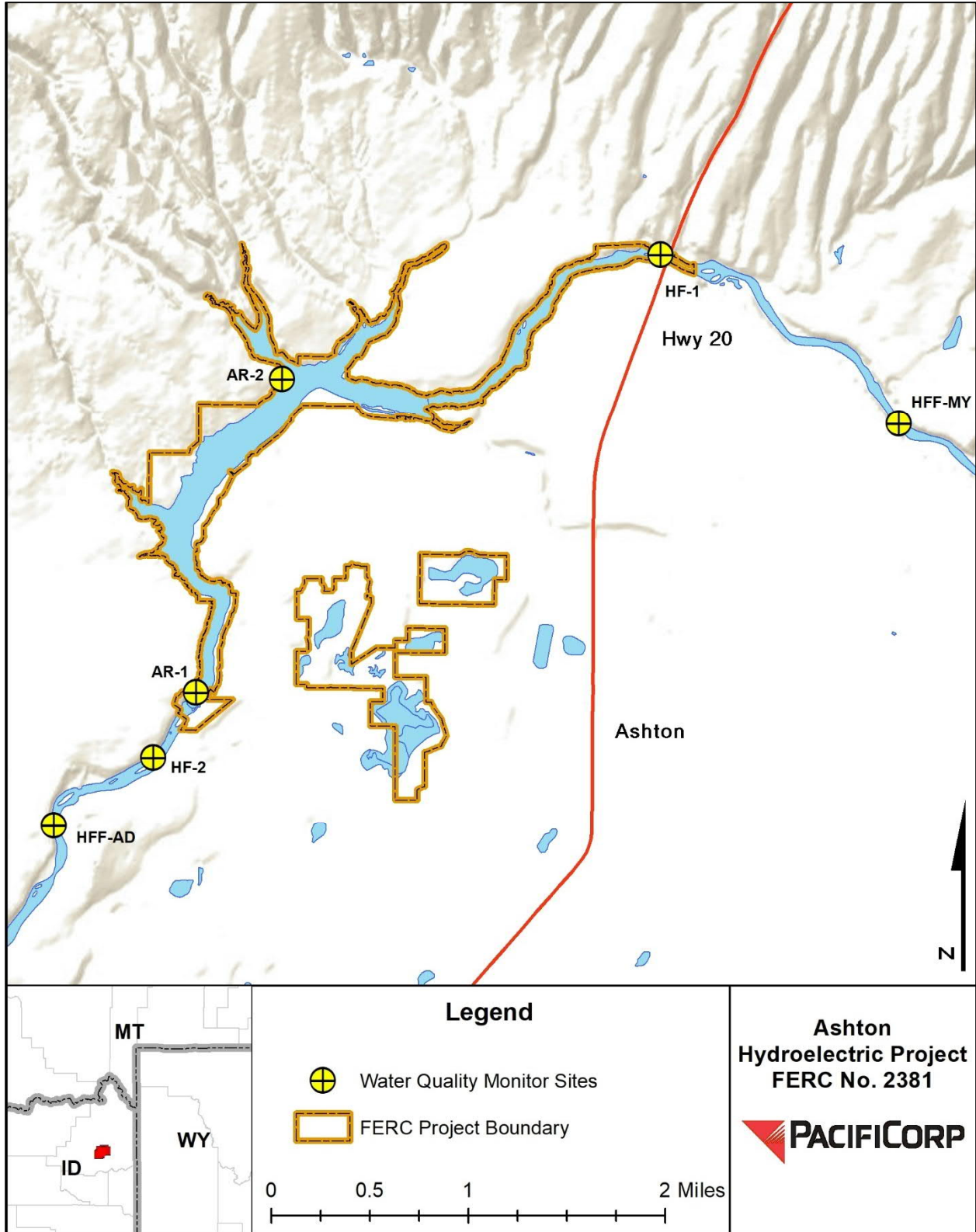


Figure 3.1-1. Baseline water quality study area.

3.2 Reconnaissance Wetland Plant and Wildlife Survey

Goals and Objectives

The goal of this study is to update baseline wetland resource information on the wetland complex and shoreline protection areas along the Project reservoir. To accomplish this goal, the study has the following objectives:

- 1) Identify changes in the location, extent, and type of wetlands in the wetland complex and shoreline protection areas;
- 2) Identify the dominant plant and wildlife species occupying these wetlands; and,
- 3) Characterize the changes in these wetland resources that have occurred since the last baseline inventory was completed.

Existing Information and Need for Additional Information

The U.S. Fish and Wildlife Service's (FWS) classification scheme for wetlands serves as the national standard for wetland classification and is used to classify wetlands identified in the National Wetlands Inventory (NWI). The NWI was the primary resource consulted in preparation of PAD section 4.6, which describes wetland, riparian and littoral habitats in the Project area. The review documented in the PAD characterized the wetlands present in the Project area based on NWI classifications. Irrigation practices (non-Project water use) in the vicinity of the Project has progressively shifted from flood to sprinkler systems, resulting in decreased surface and potentially subsurface flows to support area wetlands. Collectively, updated site-specific information is needed to document the existing condition of wetlands, plant species present, and the wildlife species that currently use Project wetlands in order to update, if needed, the existing Ashton Hydroelectric Project Wildlife Enhancement Plan (WEP; PacifiCorp, 2016).

Project Nexus

The WEP was developed pursuant to Article 405 of the current Project license in 1990. The intention of the WEP is to mitigate the effects of disturbing approximately 400 acres of wildlife habitat that occurred during original construction and reservoir filling (FERC, 1986). One way the WEP accomplished this was through improving riparian habitats around the reservoir and protecting existing wetland resources. Given PacifiCorp proposes to continue to implement the WEP, the measures within the WEP may need to be updated to facilitate detecting any Project-related change in wetlands or associated botanical and wildlife resources.

Methodology

Study Area

The study area includes all wetlands within the wetland complex and shoreline areas in the Project boundary (Figure 3.2-1), including wetlands on PacifiCorp fee-title property (i.e., PacifiCorp Pond and areas abutting the Project reservoir) and on other private lands managed

under various conservation-related easements (i.e., the Cordingly, Marshal, Jenkins, and temporary shoreline conservation easements, as described in PAD section 4.5.5).⁴ Access to conservation easement lands that are privately owned will require landowner permission; therefore, PacifiCorp will seek such landowner permissions. If permission is granted, the survey would be performed as discussed below. If permission is denied or otherwise not obtained (e.g., request for access is unanswered), PacifiCorp will not include those lands in the survey.

Plant and Wildlife Survey

The starting point for this study element will be existing wetland mapping and categorization included in previous PacifiCorp baseline documentation, where available, or wetland mapping data from the National Wetland Inventory database. This existing mapping will be updated using the most recent high-resolution data available for land in the Project Area. Imagery could include full-color and near infra-red coverage to help identify vegetation community types.

Wetland locations, extents, and community types will be field verified at representative sites to confirm wetland map coverage developed by analysis of aerial imagery. Locations will be manually selected prior to field work based on existing data and characteristics observed from aerial images. Based on field survey results, the map coverage will be updated as appropriate.

The wetland plant survey be completed concurrently with the field verification of wetland location, extent, and type. The existing PacifiCorp baseline information and NWI data include descriptions of dominant vegetation. These descriptions will be updated as necessary based on field observations.

The wildlife survey will include a review of existing information to identify avian, amphibian, and terrestrial wildlife species that utilize riparian/wetland habitat that are known to be or are likely to be present in the study area. The review will also address specific seasonal habitat requirements for these wildlife species (e.g., forage, cover, reproduction, etc.). Existing information sources may include published literature, past baseline information compiled by PacifiCorp, studies conducted by state or federal agencies, eBird data, Breeding Bird Survey data, and data collected by Henry's Fork Foundation and other NGOs or non-profit groups. Wildlife observations will be noted during field verification of wetland location, extent, and type and used to refine the results of the review of existing information.

Information on existing weed infestations will be gathered from available sources including PacifiCorp, Teton County, and adjacent landowners. Weed observations will be noted during field verification of wetland location, extent, and type and used to refine the results of the review of existing information.

⁴ PacifiCorp has no ability to access the Baum property because PacifiCorp no longer has easement rights to the property; such rights are held by the Teton Land Trust. Therefore, PacifiCorp will not include the Baum property in the study.

Data Analysis

Wetland mapping developed during the last baseline inventories completed (1993 for the Cordingly and Marshal easements, 1995 for PacifiCorp fee-title areas, 2016 for the Jenkins easement, and as documented in Teton Land Trust documentation for the Baum easement) will be compared to updated coverage provided by this study. Results of this comparison will be evaluated to identify changes in wetland resources. Because of the level of detail and resolution in past baseline descriptions, the comparison will be largely qualitative.

Reporting

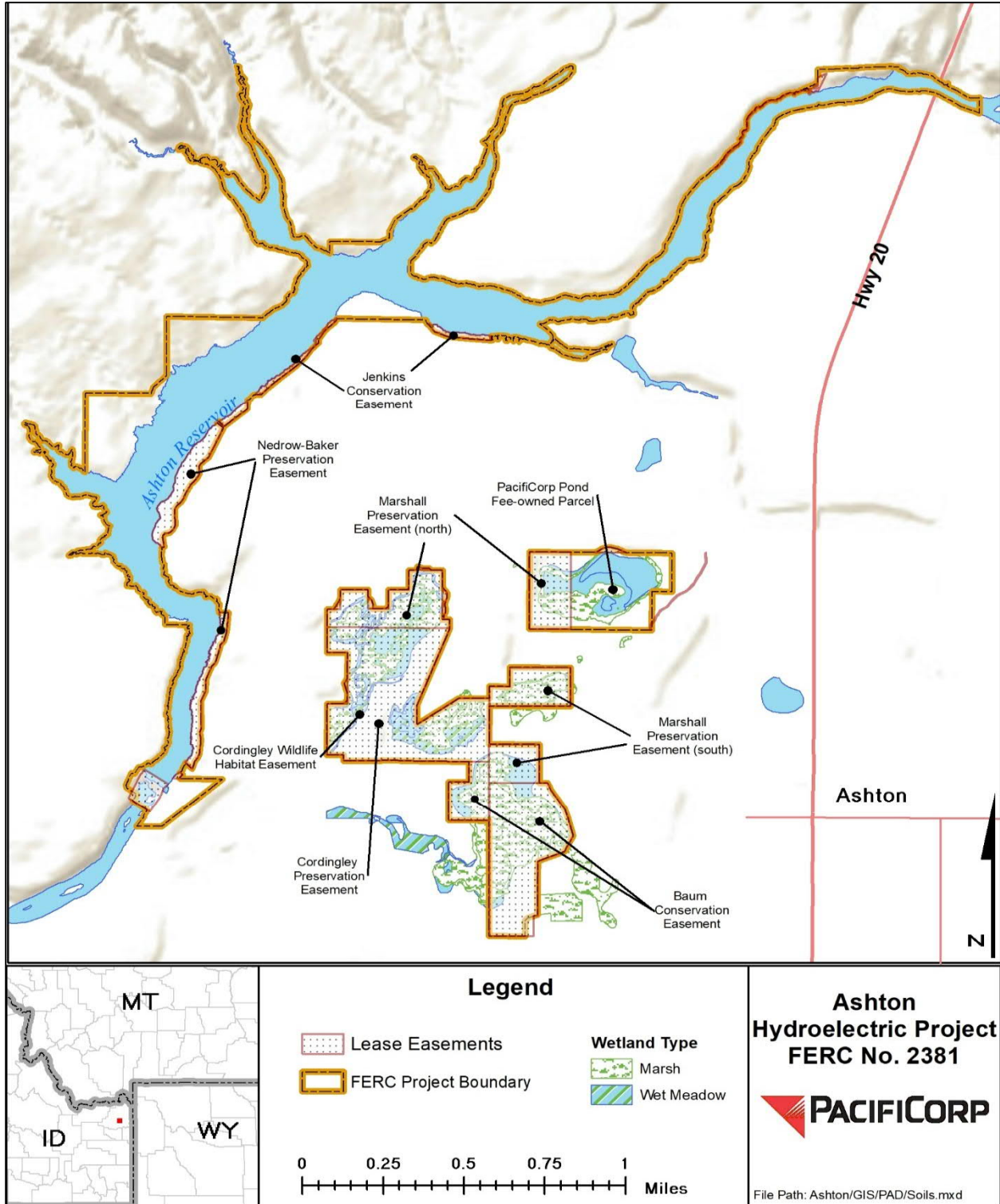
A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study involves conducting a reconnaissance-level inventory of wetlands and associated plants and wildlife resources in the Project boundary. The methods employed are standard practices for completing baseline resource inventories and documenting existing conditions in other hydroelectric project relicensing studies. These methods are not intended to meet regulatory requirements for wetland delineation or special-status plant or wildlife surveys.

Study Schedule

PacifiCorp anticipates this study would be implemented during the 2023 study season, with data collection during the summer. Analysis and reporting is anticipated to occur during the last quarter of 2023 and the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.



Note: Lands identified for survey within conservation easements are subject to landowner permission; see explanation under *Study Area*. The survey will not include the Baum Conservation Easement; see footnote 4.

Figure 3.2-1. Wetland plant and wildlife survey study area.

3.3 Ute Ladies'-Tresses Survey

Goals and Objectives

The goal of this study is to determine whether Ute ladies'-tresses orchid, federally listed as threatened, occurs in the Project boundary and to what extent continued Project operation would affect the species. To accomplish this goal, the study has the following objectives:

- 1) Systematically evaluate areas of potential suitable habitat and survey lands of potential suitable habitat within in the Project boundary to determine if and where Ute ladies'-tresses occurs.
- 2) Assess potential direct or indirect effects on this species resulting from Project operations.

Existing Information and Need for Additional Information

The Idaho Department of Fish and Game maintains a database of known locations of species of special concern (<https://idfg.idaho.gov/species/>). This database was used to identify any federally listed species potentially occurring in the Project Area based on recorded occurrences in the vicinity of the Project. Based on the review conducted for the PAD (section 4.7.1), Ute ladies'-tresses orchid is the only federally listed species documented to occur (or with the potential to occur) in the vicinity of the Project. It has been reported to occur along the Henry's Fork River approximately 1 mile downstream of Ashton Dam, near the Ora Bridge. No surveys for Ute ladies'-tresses have been conducted within the Project boundary. Due to the potential for suitable habitat and the proximity of known populations, a need exists to conduct a survey for Ute ladies'-tresses within the Project boundary (following established protocols) to determine if it is present and potentially affected by Project operations.

Project Nexus

The FWS (2005) identified, among others, hydrologic change (flood control, water development), grazing by livestock, recreation, invasive species competition, and pesticide application as threats to the persistence of the rare orchid. Collectively, these actions are present at the Project. Therefore, continued operation of the Project may affect Ute ladies'-tresses if they are present. In addition, as the federal agency with licensing authority over the Project, the FERC is subject to provisions of the Endangered Species Act Section 7, which requires federal agencies to consult with the Service to ensure that actions they fund, authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats.

Methodology

Study Area

The Ute ladies'-tresses orchid survey study area includes all land areas inside the FERC Project boundary under the direct control of PacifiCorp, and may include conservation easement lands owned by other entities in the wetland complex, other than the Baum Conservation Easement

(Figure 3.3-1).⁴ Access to conservation easement lands that are privately owned will require landowner permission; therefore, PacifiCorp will seek such landowner permissions. If permission is granted, the survey would be timed to correspond with the survey window for Ute ladies'-tresses (discussed below under Study Schedule). If permission is denied or otherwise not obtained (e.g., request for access is unanswered), PacifiCorp will not include those lands in the survey.

Field Survey

The FWS Interim Survey Requirements for Ute ladies'-tresses orchid, issued November 23, 1992, establishes the accepted survey protocol (Appendix A;FWS, 1992). This protocol will be followed to complete surveys for Ute ladies'-tresses within the Project boundary. Typically, this survey protocol requires 2 years of surveys because the species may not flower every year.

Important elements of the survey protocol include the following:

- Evaluation of the study area to determine where potentially suitable habitat exists using a combination of aerial imagery, existing information, and field reconnaissance.
- Scheduling field surveys to correspond to flowering in other known populations, likely beginning in the later part of July and extending through mid-to-late August, depending on the year.
- Completing pedestrian surveys providing 100 percent coverage in suitable habitat using closely spaced transects.
- Recording population information if any occurrences of Ute ladies'-tresses are located.

Analysis and Reporting

The results of the surveys will be documented in a draft report that presents the methods, analyses, and results of the study. The report will include: a map identifying the locations of potential suitable Ute ladies'-tresses habitat that were surveyed, a qualitative description of the habitat quality of the locations surveyed, identification of the location of populations of the rare orchid found, and provide an estimate of the number of individuals within each population and areal extent of each population found. If the species is located in the study area, the report will identify and discuss any direct or indirect effects on the species due to Project operations.

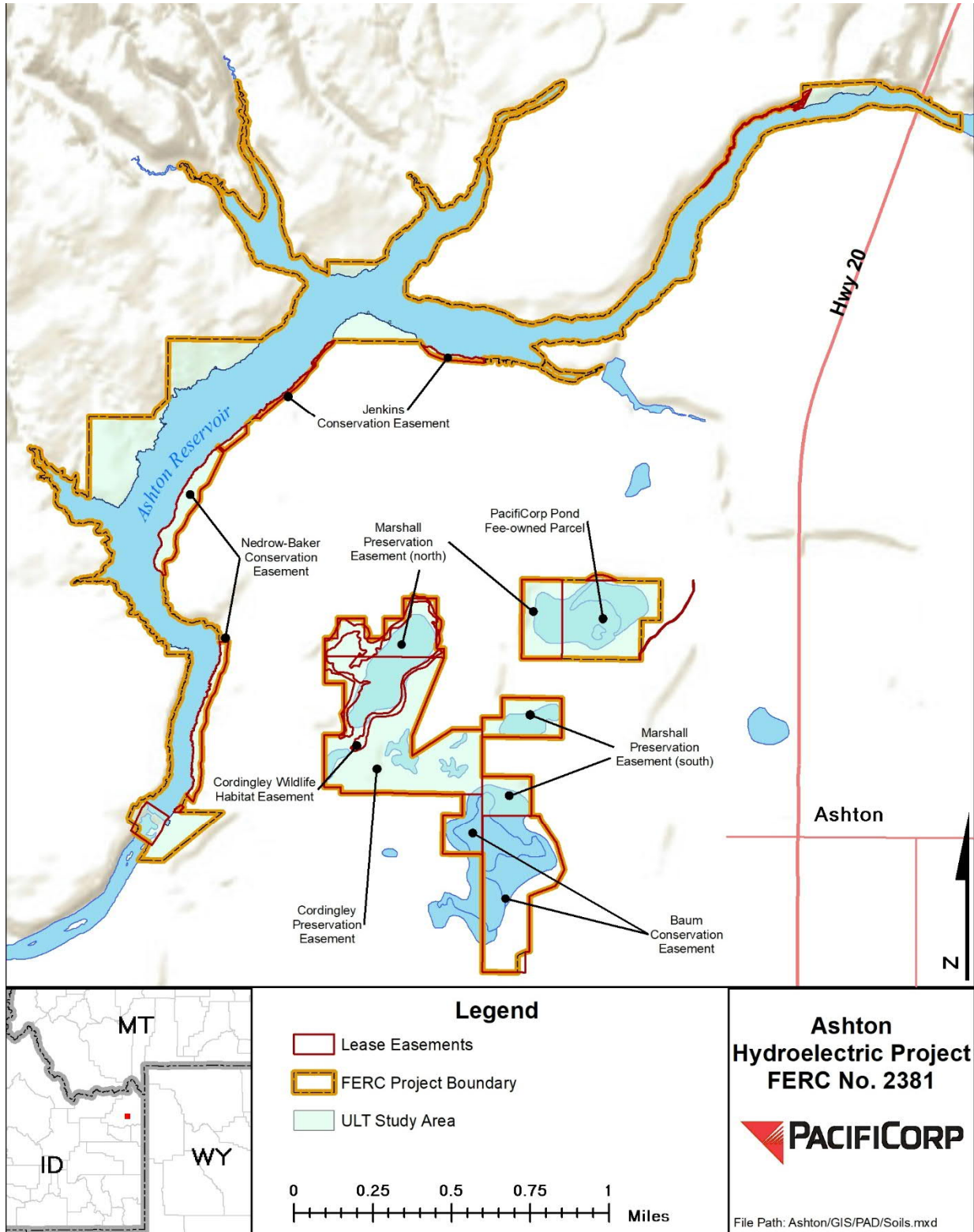
The draft report will be distributed to the resource agencies and other interested parties during the first quarter of 2025 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practices

Surveys for Ute ladies'-tresses will be completed following the protocol outlined by the FWS (1992). This protocol establishes the accepted practices for completing surveys for this species.

Study Schedule

The Ute ladies'-tresses survey is a 2-year protocol; therefore, field surveys are anticipated to occur in 2023 and 2024. Surveys will be scheduled for late-July through mid-to-late August, as specified in the survey protocol (FWS, 1992). This window corresponds to the period when this species is typically in flower and relatively easily to locate and identify. Analysis and reporting is anticipated to occur during the last quarter of 2024. PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the first quarter of 2025 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.



Note Lands identified for survey within conservation easements are subject to landowner permission; see explanation under *Study Area*.

Figure 3.3-1. Ute Ladies'-Tresses survey study area.

3.4 Recreation Use and Condition Assessment

Goals and Objectives

The goals of this study are to collect information on current levels of recreation use and demand at the Project, inventory facilities and identify ADA compliant facilities, assess any potential impacts of proposed Project operational changes. To accomplish these goals, the study has the following objectives:

- 1) Conduct a recreational use-count at the boat launch facility at the upper end of Ashton Reservoir and at the Fisherman’s Access site immediately downstream of the Project dam to discern demand;
- 2) Complete a site assessment of these recreational facilities to document condition and capacity relative to demand;
- 3) Identify within the site assessment, those facilities that are ADA compliant;
- 4) Based on the results of Objectives 1, 2 and 3, identify any potential recreational effects of proposed Project operational changes.

Existing Information and Need for Additional Information

Sections 4.8.1 and 4.8.2 of the PAD discuss and describe regional recreation resources and the two recreational facilities at the Project, respectively. PAD section 4.8.3 discusses recreational use and activities that are typically enjoyed at the Project. In PAD section 4.8.3 and 5.1.7, PacifiCorp indicates that use of the Ashton Reservoir boat launch site often exceeds capacity, while the fisherman’s access immediately downstream of the Project dam is underutilized. Comments received during the joint-agency meeting held by PacifiCorp on October 4, 2022, supported the observation that Ashton Reservoir boat launch site use is over capacity. Therefore, a study is needed to identify what, if any, changes are needed at the sites to ensure the two recreation sites meet anticipated demand and ADA compliance.

Project Nexus

The Project is located on the Henry’s Fork of the Snake River, a highly prized recreational fishery, and creates a reservoir that has seen an increase in recreational boating. Article 406 of the current license requires PacifiCorp to operate and maintain the two recreation facilities at the Project. Direct observations and anecdotal evidence indicates that current capacity of the two facilities does not meet current recreational demand. This study would establish a baseline of recreational use and condition of the current facilities, and form the basis for inclusion of potential license requirements to protect, mitigate, or otherwise enhance recreational use at the Project.

Methodology

Study Area

The study will focus on the two recreation sites at the Project: the Ashton Reservoir boat launch at the upper end of the reservoir, and the fisherman's access downstream of the dam (Figure 3.4-1). Other areas will be surveyed for recreational use that are visible from the boat launch, including the upstream river segment at the Project boundary and the reservoir downstream of the boat launch.

Recreational Use – Ashton Reservoir Boat Lunch

The study will use programable all-weather cameras (Reconyx© Hyperfire 2) to record use at the boat launch (Figure 3.4-1). One camera will be installed to photograph the day use area, parking area, and boat ramps. A second camera will be located looking upriver to capture fishermen or day floaters drifting down river, and a third camera will be located to capture activities on the reservoir. The exact location of each camera at the boat launch will be determined based on sight lines, coverage area, and the ability to make the cameras inconspicuous. Cameras will be programmed to collect still photographs every 15-minutes. Each month the cameras internal SD card and batteries will be replaced to ensure cameras continue to operate as intended.

Recreational Use – Fisherman's Access

To capture use at the fisherman's access, a programable all-weather camera (Reconyx© Hyperfire 2) will be installed on the dam looking downstream to capture the fisherman's access area including the trail down from the parking area, the footbridge and picnic table on the island, and portions of the river. The camera will be programmed to collect still photographs every 15-minutes.

Site Condition and Capacity Assessment

The study will assess the physical condition and capacity of infrastructure at each of the two recreation sites. Assessment visits will be timed to coincide with conditions suitable for recreational activities to allow first-hand observations of the infrastructure in use.

At each site, the following information will be collected and documented photographically:

- Condition and capacity of single vehicle and vehicle with trailer parking relative to demand.
- Condition and capacity of restrooms, picnic tables, fire pits, boat launch facilities, and walkways.
- Condition of informational/interpretive displays.
- ADA accessibility.
- Safety and security concerns.

Data Analysis

All pictures collected by programmable cameras will be reviewed to quantify recreational use, including number of people, vehicles, and watercraft by type (i.e., motorized or unmotorized, inflatable or hard hulls). An analysis of physical capacity at each recreation site will be completed during the site condition assessment, taking into consideration parking, restrooms and picnic facilities, and boat launch infrastructure. Results will be compared to actual use (based on use counts collected from the programmable cameras), during peak and off-peak periods. Seasonal use patterns will be summarized.

Reporting

A draft report will be prepared that presents the methods, analyses, and results of the study. The draft report will be distributed to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

This study includes observations and documentation of recreational use and capacity following methods that are generally accepted by the scientific community and utilized to study recreational use in other hydroelectric project relicensing studies.

Study Schedule

Most recreation use occurs from early May, prior to Memorial Day, through Labor Day; therefore, PacifiCorp anticipates the study would commence in early May and last through Labor Day, 2023. Analysis and reporting is expect to be completed during the last quarter of 2023 through the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

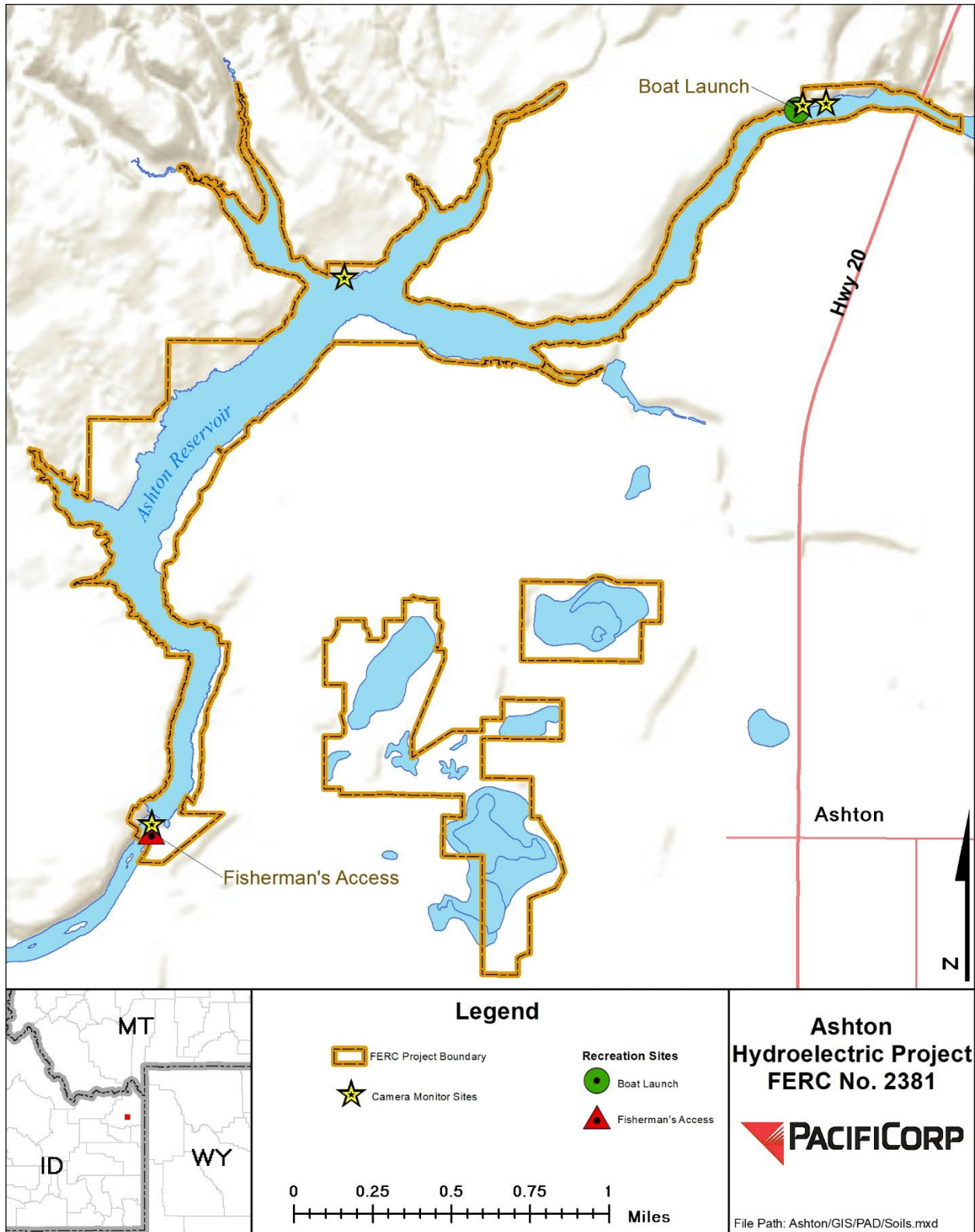


Figure 3.4-1. Recreation use and condition assessment study area.

3.5 Cultural Resources Survey

Goals and Objectives

The goal of this study is to collect information on cultural resources on lands within the Project boundary that are owned in fee by PacifiCorp to facilitate the evaluation of effects from Project operation, maintenance or recreation activities on such identified resources under the new license. To accomplish this goal, the study has the following objectives:

- 1) Consult with Idaho State Historic Preservation Office (ISHPO), Native American Tribes, and other consulting parties to define the area of potential effects (APE);
- 2) Conduct an intensive-level pedestrian survey of unsurveyed uplands within the Project boundary to locate and document cultural resources. Surveys of lands within the reservoir drawdown zone and around the powerhouse and related facilities have previously been completed;
- 3) Consult with the ISHPO, participating Native American Tribes, and other parties as appropriate to evaluate the National Register of Historic Places (National Register) eligibility all new cultural resource sites documented within the APE according to 36 CFR § 800.4.
- 4) Consult with the ISHPO, participating Native American Tribes and other parties as appropriate, to determine existing and potential project effects on the eligible cultural resources located and identified within the APE in accordance with 36 CFR § 800.5.

Existing Information and Need for Additional Information

ISHPO and PacifiCorp records indicate that three field inspections for historical and archaeological sites have been conducted within the Project boundary (Hovanes and Oliver, 2019; Herzog et al., 2012; Fenner et al., 2013). These surveys occurred in 1991, 2011 to 2012, and 2019. In total, these surveys resulted in the inspection of 266 acres within the Project boundary for archaeological resources and 10 acres for historical buildings and structures. The 1991 survey inspected 2 acres near the Project dam for a proposed stabilization project (Nielsen, 1991). The 2011 to 2012 survey examined 264 acres through a combination of intensive-level and reconnaissance-level methods and focused on identifying archaeological sites within the drawdown zone of the reservoir (Herzog et al. 2012; Fenner et al. 2013). Upland areas were not surveyed as part of that inspection, and no other cultural resource surveys have occurred on those uplands around the reservoir. As such, the presence or absence of archaeological sites in those upland locations remains unknown. The 2019 survey examined historical buildings and structures around the dam, powerhouse, and residential complex (Hovanes and Oliver, 2019).

The previous surveys in the Project boundary resulted in the identification of four prehistoric archaeological sites (site numbers 10FM520, 10FM521, 10FM522, and 10FM523), one historic bridge, and the Ashton Hydroelectric Project Historic District (Ashton Historic District). The four prehistoric sites documented in 2011 to 2012 were subjected to archaeological testing in 2012 to determine if buried artifacts or features (e.g., remains of hearths, structures, or burials) were present and could provide more information important to better understanding prehistoric

peoples, technologies, and lifeways. The testing determined that such buried materials were present at the sites. Subsequent to the testing, the sites were determined eligible for inclusion into the National Register of Historic Places (National Register). Therefore, these sites qualify as historic properties and are subject to the requirements of Section 106 of the National Historic Preservation Act to avoid, minimize, or mitigate adverse effects to them from present and future Project operation and maintenance.

The Ashton Hydroelectric Project Historic District consists of 24 historic and non-historic buildings and structures clustered around the Henry's Fork of the Snake River (Hovanes and Oliver, 2019, 2019). The District's character is a mix of residential and industrial uses. The types of buildings, which encompass residences, shop buildings, and buildings and structures for the generation and transmission of hydroelectric power, reflect these uses.

Section 106 consultation between PacifiCorp, the ISHPO, and other parties resulted in the determinations that both the historic bridge and Ashton Historic District are not eligible for listing on the National Register (ISHPO, 2012; ISHPO, 2019). As such, neither resource is subject to requirements for avoiding, minimizing, or mitigating adverse effects from present and future Project operation and maintenance activities.

As noted above, ISHPO and PacifiCorp records indicate that a relatively small portion of the overall Project area has been surveyed for cultural resources to date. The most substantive of the past surveys in the area comprised the inventory of historical buildings and structures at the powerhouse complex and intensive-level archaeological survey and testing of select sites in the drawdown zone of the reservoir. However, no comprehensive surveys for cultural resources has been conducted on the remaining uplands within the Project boundary. Because past surveys revealed cultural resources are present around the drawdown area of the reservoir, the possibility exists that additional cultural resources and sites in upland areas within the Project boundary may be present. Therefore, a survey of the previously unsurveyed upland areas within the Project boundary is needed.

Project Nexus

The Project is operated under a license from the FERC. Issuance of that license constitutes an undertaking as defined by the National Historic Preservation Act and its implementing regulations at 36 CFR § 800. To comply with this regulation, FERC must make a good faith effort to a) define the types of Project operations with the potential to affect cultural resources; b) identify historic properties (i.e., cultural resources that are listed on or determined eligible for listing on the National Register of Historic Places) that could be affected by operations under the license; and c) develop measures to avoid, minimize, or mitigate adverse effects to historic properties. FERC may delegate portions of their responsibility for compliance with 36 CFR § 800, such as identifying historic properties, consulting with select parties, and developing a plan to manage historic properties to avoid adverse effects, to the licensee.

Past surveys for cultural resources within the Project boundary have focused on select areas within the Project boundary, while other areas of uplands remain unsurveyed. While PacifiCorp is not proposing changes to land development—i.e., no new capital improvements or ground disturbing activity—in these upland areas, accommodating recreational activities, including in

areas accessible only by boat, could affect cultural resources located in these areas. Other Project operation and maintenance activities, such as vegetation management, habitat enhancements, grazing, etc., also have the potential to affect cultural resources in these upland areas. The results of the survey would provide information on the cultural resource sites within the defined APE, and the study report would provide information on which sites are potentially eligible for inclusion into the National Register and any potential Project-related effects on the sites. If it is determined that continued Project operation and maintenance activities adversely affect such cultural resources or sites, a Historic Properties Management Plan may be needed.

Methodology

Study Area

Prior to conducting any field survey, PacifiCorp, as delegated by FERC, must consult with the ISHPO, Native American Tribes, and other consulting parties, under 36 CFR § 800.4(a)(1) to determine the area of potential effects (APE) for the relicensing.⁵ Typically for FERC licensing or relicensing undertakings, that APE is defined as the limits of the FERC-regulated Project boundary but may extend beyond the Project boundary to account for project effects. PacifiCorp must then consult with these parties to define efforts that will be undertaken to make a good faith effort at identifying historic properties in the APE. This effort may include a combination of previous surveys conducted in the area and new surveys. PacifiCorp assumes at the present time that this consultation will result in agreement that the only portions of the APE/Project area that require new survey are the previously unsurveyed areas around Ashton Reservoir.

The study area for the cultural resource survey would comprise those areas of uplands within the Project boundary and around Ashton Reservoir not previously inspected for cultural resources. Uplands in the wetlands complex that are not owned in fee (i.e., easements) would be excluded from the survey area. Upland areas around Ashton Reservoir that have not been inspected in detail for cultural resources comprise six locations encompassing a total of approximately 73 acres. Figure 3.5-1 presents the overall survey area.

Field Survey

The field survey for cultural resources within the study area would consist of an intensive-level archaeological resources survey. No buildings or structures are known to be present in any of these areas, and, as such, no historical structures inventory would be conducted. The archaeological inventory methods would adhere to the ISHPO's standard survey transect spacing (no more than 30 m apart) and site documentation protocols in place at the time of the survey, unless the aforementioned consultation under 36 CFR § 800 results in an agreement to employ alternative survey methods (ISHPO, undated). Limited subsurface testing of identified archaeological sites in the newly surveyed upland areas would be undertaken if such testing is

⁵ Area of Potential Effect is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16).

agreed upon during consultation. The nature and extent of such testing would be defined during consultation but could include a combination of shovel probes and formal excavation units.

Data Analysis

All sites documented during the new field survey would be evaluated for their National Register eligibility according to 36 CFR § 8004(b). Potential adverse effects from the Project on those resources qualifying as historic properties also would be carried out according to 36 CFR § 800.5.

Reporting

A draft report of survey and testing results, if applicable, would be prepared and submitted to the ISHPO, Native American Tribes, and other consulting parties for review and comment according to 36 CFR § 800. The report would meet industry and ISHPO standards in place at the time of reporting. The draft report will be distributed to the above parties and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Comments on the draft report will be addressed and incorporated into the final report for inclusion in the draft and final license applications.

Consistency with Generally Accepted Scientific Practice

As noted above, all of the work under this study plan would be conducted in accordance with the 36 CFR § 800 regulations and ISHPO survey and reporting protocols. These regulations and protocols establish the generally accepted scientific practice for addressing cultural resources that could be affected by licensing the Project as proposed by PacifiCorp..

Study Schedule

Consultation to define the APE and approach to identifying historic properties would begin in late-winter or early-spring 2023. Any fieldwork conducted under this consultation and the study plan may take place at any time so long as snow cover is not present at the time of the survey. Ideal times to maximize ground visibility for the field survey are spring, prior to full vegetation growth, or late fall, after vegetation growth has stopped. Analysis and reporting is expected to occur during the last quarter of 2023 through the first quarter of 2024. As stated above, PacifiCorp anticipates it will provide the draft study report to the resource agencies and other interested parties during the second or third quarter of 2024 for a 30-day period of review and comment. Should the study schedule deviate significantly from what is anticipated, PacifiCorp would apprise the resource agencies and interested stakeholders of schedule updates.

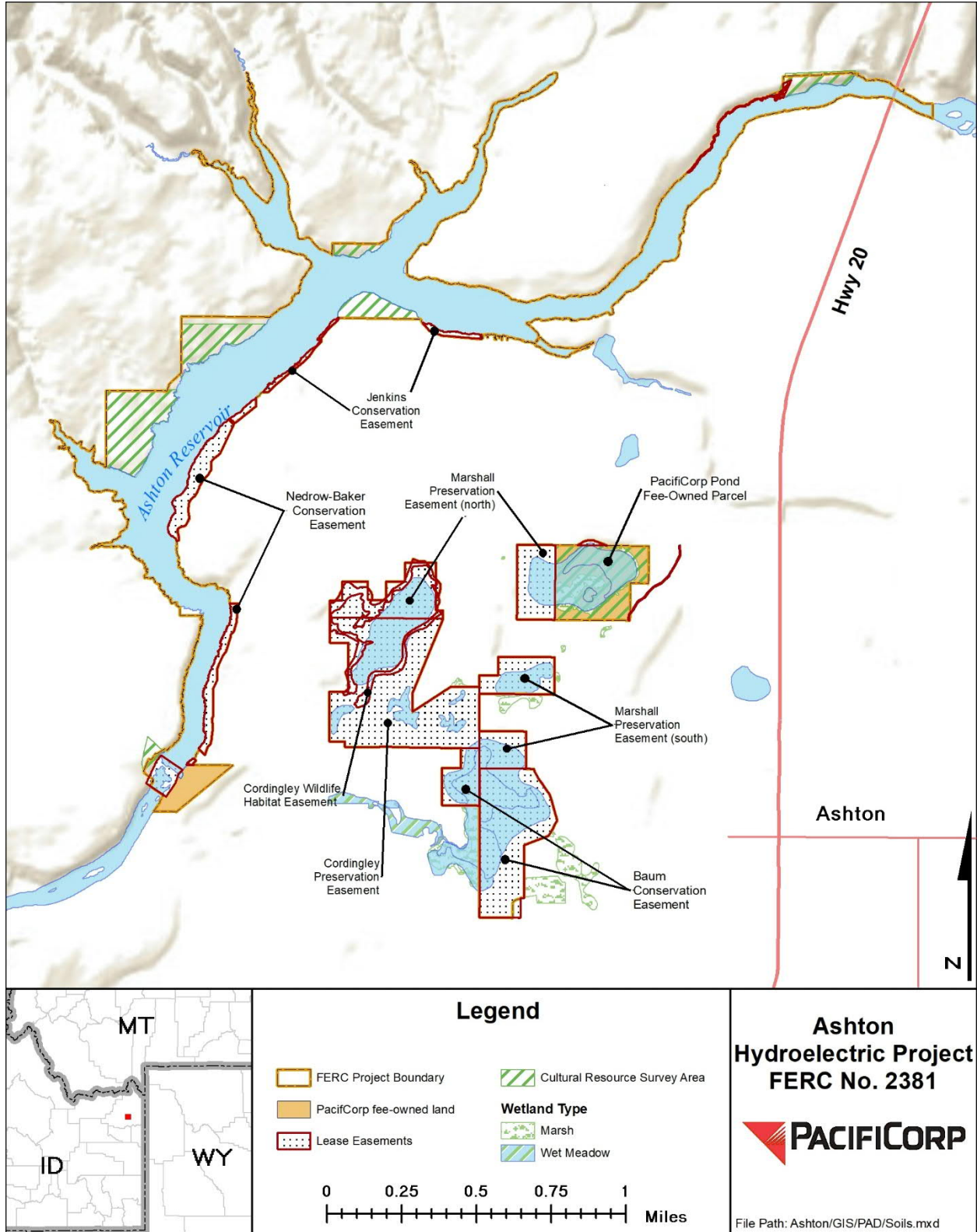


Figure 3.5-1. Cultural resources survey study area.

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APPENDIX A

1992-Interim-Survey-Requirements-Ute-ladies'-treses-revised-2017

Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes Diluvialis*)

November 23, 1992

The U. S. Fish and Wildlife Service (Service) has established the following interim requirements and guidelines for surveys to determine the presence or absence of the Federally threatened plant species *Spiranthes diluvialis*, Ute ladies'-tresses orchid. These guidelines were developed by the Service in consultation with biologists and ecologists knowledgeable about the species. These guidelines and recommendations are designed to supplement, not substitute for, professional methods, expertise, and judgment typically used to conduct rare plant surveys.

Because the species is so rare, very little is known about its habitat preferences and population ecology. These interim survey requirements have been developed in order to gain more information about the species, identify potential habitat, streamline and standardize survey procedures. As more information becomes available through these surveys, the interim requirements will be revised and simplified as appropriate.

Documentation of compliance with these requirements and recommendations is accomplished through submission to the Service of a survey report. The Service will respond with a letter indicating acceptance of the report.

All Federal agencies have a responsibility under Section 7(a)(1) of the Endangered Species Act to conserve Federally listed threatened and endangered species. The Service encourages all Federal agencies to review their properties and projects and make funds available to conduct surveys in all appropriate potential habitat, including habitat outside the areas specified in these guidelines.

1. Introduction

Spiranthes diluvialis occurs in seasonally moist soils and wet meadows near springs, lakes, or perennial streams and their associated flood plains below ~~6,500~~ 7,000 feet elevation in Utah, Colorado, and Nevada. Typical sites include old stream channels and alluvial terraces, sub-irrigated meadows, and other sites where the soil is saturated to within 18 inches of the surface at least temporarily during the spring or summer growing seasons. Associated vegetation typically falls into the Facultative Wet wetland vegetation classification category (from the National List of Plant Species that Occur in Wetlands developed by the Service). The species occurs primarily in areas where the vegetation is relatively open and not overly dense, overgrown, or over grazed. Although very rare now, it is estimated that it was once common in low elevation riparian areas in Colorado, Utah, and Nevada.

The moist soil conditions and vegetation composition of known *Spiranthes diluvialis* sites suggest that wetlands regulated under the Clean Water Act qualify as potential *Spiranthes diluvialis* habitat. Therefore, jurisdictional wetlands, as well as other drier sites matching the description above, should be surveyed.

~~2. Qualification of Surveyor~~ **Replaced by the 2011 USFWS Utah Surveyor Guidelines**

~~*Spiranthes diluvialis* is difficult to identify in the field, and since the orchid is rare and flowers for such a short time, few people have had the opportunity to become acquainted with the species. The Service does not want to exclude any person from conducting surveys. Therefore, the Service has developed a minimum set of qualification criteria that demonstrate whether a surveyor is sufficiently acquainted with *Spiranthes diluvialis* to collect consistent and accurate information for the survey report. Documentation that these criteria have been met is accomplished by submitting a statement of surveyor qualifications as part of the survey report.~~

~~The survey report shall contain a statement of qualifications of the individual conducting the survey, including:~~

- ~~a. Description of botanical expertise and training (e.g., graduate degree in botany, ecology, or other appropriate discipline).~~
- ~~b. Experience in conducting rare plant surveys (list dates, locations, and plants included in previously conducted surveys).~~
- ~~c. Actions taken to become acquainted with the known locations and appearance of *Spiranthes diluvialis* (such as visiting herbaria to look at specimens, conversations or site visits with others familiar with the species for a description of ecology and likely occurrences).~~
- ~~d. Documentation of correct identification of *Spiranthes diluvialis* in the field. The surveyor is required to enclose a photograph of the species taken at a known site and a statement certifying when and where the photograph was taken.~~
- ~~e. References, particularly documenting contact with known *Spiranthes diluvialis* experts.~~

~~3. Areas Requiring a Survey~~ **Out of Date. Use Fertig 2005 instead.**

~~The following areas in Colorado have been determined to have a high probability of occurrence of *Spiranthes diluvialis* based on current and historical records of the species. Surveys are required for appropriate sites below 6,500 feet elevation within these areas:~~

- ~~a. Boulder and Jefferson counties.~~
- ~~b. The South Platte River 100 year flood plain and perennial tributaries from the Front Range as far east as Brush, Morgan county.~~
- ~~c. The Fountain Creek 100 year flood plain and perennial tributaries from the Front Range to the southern boundary of El Paso county.~~

- d. ~~The Yampa River 100 year flood plain and its perennial tributaries from Steamboat Springs west to the Utah border.~~

~~A perennial stream is usually represented by a solid blue line on a USGS 7 2 minute quad map.~~

4. ~~Habitat Description and Sites Requiring a Survey~~ **Out of Date. Use Fertig 2005 instead.**

~~*Spiranthes diluvialis* is typically found associated with alluvial deposits of silty, sandy, gravelly, or cobbly soil. The species may occasionally also be found in highly organic soils or peat. The species seems to prefer well drained soils with fairly high moisture content (soil around the roots will form a soft ball). Soils may exhibit some gleying or mottling but are generally not strongly anaerobic. *Spiranthes diluvialis* is found in some heavily disturbed sites, for example, old gravel mines that have since been developed into wetlands, and along well traveled footpaths built on old berms. The species is also found in grazed pastures with introduced pasture grasses.~~

~~*Spiranthes diluvialis* is found with grasses, sedges, and rushes, in shrubs, and riparian trees such as willow species. It rarely occurs in deeply shaded sites and prefers partially shaded open glades or pastures and meadows in full sunlight. Common associated species on the Front Range include:~~

- ~~Horsetail (*Equisetum spp.*)~~
- ~~Milkweed (*Asclepias incarnate*)~~
- ~~Verbena (*Verbena hastate*)~~
- ~~Agalinis (*Agalinis tenuifolia*)~~
- ~~Lobelia (*Lobelia siphilitica*)~~
- ~~Blue-eyed grass (*Sisyrinchium spp.*)~~
- ~~Triglochin (*Triglochin spp.*)~~
- ~~Carpet bentgrass (*Agrostis stolonifera*)~~
- ~~Reedgrass (*Calamagrostis*)~~
- ~~Goldenrod (*Solidago spp.*)~~

~~Sites below 6,500 feet elevation occurring within the areas described in Section 3 exhibiting the following features shall be surveyed for *Spiranthes diluvialis*:~~

- a. ~~Seasonally high water table (within 18 inches of the soil surface for at least one week sometime during the growing season, growing season defined as when soil temperatures are above 41 degrees Fahrenheit).~~
- b. ~~In or near wet meadows, stream channels, or flood plains.~~
- c. ~~Vegetation falling into the Facultative Wet or Obligate Wet classification, including introduced pasture grasses.~~
- d. ~~Jurisdictional wetlands as specified under the Clean Water Act.~~

~~Heavily grazed and weedy sites shall be surveyed for the orchid if they otherwise meet the criteria indicating potential suitability as *Spiranthes* habitat as listed above.~~

5. Sites Not Requiring a Survey

Some sites are either clearly not appropriate *Spiranthes diluvialis* habitat or have very low potential to be *Spiranthes diluvialis* habitat. A survey for *Spiranthes diluvialis* is not required for such sites. Sites below 7,000 feet elevation occurring within the areas described in Section 3 **not** requiring a survey for *Spiranthes* include:

- a. Highly disturbed or modified sites such as:
 1. Highway right-of-ways built on filled and compacted soil material.
 2. Highway right-of-ways build on rock fills, either revegetated or not revegetated.
 3. Rock or soil fills with steep back slopes (may or may not be associated with a road).
 4. Active construction sites where all vegetation has been stripped exposing bare soil.
 5. Construction sites where construction has been completed within the last five years, but the area has not been revegetated.
 6. Landscaped and maintained (mowed) bluegrass lawns.
- b. Upland sites, including, for example:
 1. Prairie dog towns.
 2. Short grass prairie.
 3. Sagebrush or shadscale rangeland.
- c. Sites entirely inundated by standing water, including, for example, monocultures of cattails (*Typha latifolia*) or Olney=s three-square (*Scirpus americanus*). Note that although inundated areas need not be surveyed, mesic slopes surrounding or adjacent to standing water must be surveyed if they otherwise meet the criteria indicating potential suitability as *Spiranthes diluvialis* habitat.
- d. Sites composed entirely of heavy clay soils. However, *Spiranthes diluvialis* is found in areas where more well-drained soils or peat overlay a clay layer.

- e. Very saline sites. *Spiranthes diluvialis* occurs in alkaline conditions and is somewhat tolerant of saline conditions. However, it has not been found in highly saline sites as indicated by dense monospecific stands of saltgrass (*Distichlis spicata stricta*).
- f. Sites entirely composed of dense strands of:
 1. Reed canary grass (*Phalaris arundinacea*)
 2. Tamarisk or Salt-cedar (*Tamarix ramosissima*)
 3. Greasewood (*Sarcobatus vermiculatus*)
 4. Teasel (*Dipsacus sylvestris*)
 5. Common reed (*Phragmites australis*)

6. Timing of Survey

Because *Spiranthes diluvialis* is very difficult to locate unless it is flowering, because timing of flowering varies, and because the species may not flower every year, the following requirements must be met:

- a. Reconnaissance may be conducted at any time of year to determine whether a site exhibits the characteristics described in Section 5 and therefore does not require a survey. If potential habitat is found to exist on the site, then a survey must be conducted at the appropriate time.
- b. Surveys shall be conducted during the blooming season, which is normally between July 20 and August 31. However, surveys may be conducted earlier or later if flowering is occurring in a nearby known population comparable to the site being surveyed. Surveyors shall verify that a nearby population is flowering at the time the survey is conducted either by calling a Service representative or including a dated photograph of the flower population. The date of the survey shall be noted in the survey report.
- c. *Spiranthes diluvialis* does not necessarily flower every year. Therefore, in drainages where *Spiranthes diluvialis* is known to occur, the Service recommends that surveys be conducted annually for three consecutive years. Also, for any site within required survey areas where habitat alteration has not yet occurred following an initial approved survey. Surveys shall be conducted annually for three consecutive years or until habitat alteration commences.

Under very special circumstances, earlier surveys may be possible for sites small enough to allow a complete a "hands and knees" search for vegetative parts of *Spiranthes diluvialis*. The Service shall be contacted for prior approval and procedural requirements for such early surveys.

Surveys will be considered final for three years. If habitat alteration has not begun within three years, the Service must be contacted regarding the need for a survey update.

7. Maps

The Service recommends that, where available, Soil Conservation Service (S. C. S.) maps (for location of wetland soils) and National Wetland Inventory maps be consulted prior to site surveys to help identify likely potential habitat. Surveyors should be aware that *Spiranthes diluvialis* is not limited to mapped wetlands. In order to avoid duplication of effort and gain more information about the ecology and distribution of *Spiranthes diluvialis*, a USGS 7.2 minute quad map must be submitted with the survey report showing routes taken for all search sites regardless of whether a population of the species was located during the search.

For survey sites too small to be adequately represented on a USGS 7.2 minute quad map, an engineering drawing or more detailed map showing the area that has been surveyed must be included in the report. The site(s) should be indicated and labeled on the accompanying USGS 7.2 minute quad map.

8. Ecological and Site Features

In order to gain more information about the ecology and site characteristics of *Spiranthes diluvialis*, so that better predictions about its location and distribution can be marked, the following information must be collected and reported for each site surveyed:

- a. For sites disqualified as potential *Spiranthes diluvialis* habitat, describe the basis on which the site was disqualified.
- b. For sites requiring a survey, the following information must be collected. This information can be brief and qualitative for sites where *Spiranthes diluvialis* is not found (a few words, a phrase, or a descriptive sentence is sufficient).
 1. List the most frequent or dominant associated plant species of both the over story and under story vegetation (e.g., over story of mature cottonwood trees with an under story of orchard grass and smooth brome).
 2. Describe the plant community, including a qualitative assessment of dominance (e.g., riparian willow community, willows dominant, with native grasses *Deschampsia caespitose* and sedges).
 3. Describe the ecological condition/management history of the site (such as cultivated field, old gravel mine, good condition native grassland with winter cattle grazing, recently flooded stream edge).

4. Describe the geomorphology of the site, including, for example, the nature of the material (e.g., alluvium), the landscape position (e.g., bench above old stream bed).
5. Describe the soils including, for example, texture, whether moist, presence of mottling or other hydric soil indicators, and list the map unit from the S. C. S. county soil survey if available.
6. Describe the hydro logic characteristics, for example, depth to water table (if possible to determine without major excavation), inferences about frequency, duration, and season of flooding, presence of standing water, high water mark of a stream or water body in relation to location of surveyed site.
7. Describe any other site characteristics that appear relevant to understanding the ecology, population biology, or distribution of *Spiranthes diluvialis*.

In addition, for **each** site where a population of *Spiranthes diluvialis* is found, the following information must be collected and included in the survey report:

- a. Map the population on a USGS 7.2 minute quad map and on a finer scaled map or engineering drawing if appropriate.
- b. Count the number of individuals if fewer than 500.
- c. Estimate the number of individuals if more than 500. Include a description of the method used for population estimation.
- d. Note the phenological stage of the plants (e.g., proportion of plants that are flowering, proportion of flowers that have set seed).
- e. Note the specific geomorphologic, hydrologic, and soil conditions where the population occurs if it varies from the site description above.
- f. Note any other possibly relevant ecological information.
- g. Include a photograph of the population that illustrates its setting and habitat.

9. Survey Report

The survey report submitted to the Service should follow the outline below:

- a. Name and qualifications of surveyor.
- b. Brief project description indicating proposed impact to the site.
- c. Site location (address and legal description).
- d. Dates surveys were conducted.
- e. Ecological and site features as described above.
- f. Appendices.
 1. Maps
 2. Photographs

10. Notification

The Service shall be notified immediately if a new population of *Spiranthes diluvialis* is discovered. For sites located in Colorado and Utah, the surveyor shall notify either:

Bernardo Garza, U.S. Fish and Wildlife Service, P.O. Box 25486 – DFC, Denver, Colorado 80225, telephone 303-236-4377 or

Rita Reisor, U.S. Fish and Wildlife Service, 2369 West Orton Circle, West Valley City, Utah 84119, telephone 801-975-3330

11. Service Approval

Survey reports for sites in Colorado shall be submitted to either of the two Colorado addresses above. The Service will review submitted reports and reply with a written letter of acceptance within 30 days of receipt of the report. If the survey report is judged insufficient for any reason, the Service will notify the author within 30 days and discuss revisions. If the report is judged insufficient due to an inadequate survey, the Service will make every effort to notify the author promptly so that a satisfactory survey may be completed during the allowed survey time. However, given the narrow survey time frame, it may not be possible to rectify an inadequate survey effort during the current field season.

Surveys will be considered final for three years. If habitat alteration has not begun within three years, the Service must be contacted regarding the need for a survey update.

12. Service Follow-up

Survey reports and maps will be retained by the Service. Ecological information will be summarized and used to improve our understanding of *Spiranthes diluvialis* habitat and help predict actual and potential habitat. The Service will prepare periodic reports to keep the public informed about the distribution and ecology of *Spiranthes diluvialis*. The reports will include recommendations for protection strategies and habitat management practices and will identify additional research needs.

Survey requirements will be revised as appropriate based upon the most current available information.