

Proposed Irrigation Improvements, Duck Valley Indian Reservation, Elko County, NV and Owyhee County, ID

Project: China Diversion and Related Infrastructure

**U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS**



DRAFT
ENVIRONMENTAL ASSESSMENT

November 2021

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Proposed Irrigation Improvements, Duck Valley Indian Reservation

**Project: China Diversion and Related Infrastructure
Elko County, Nevada and Owyhee County, Idaho**

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SUBMITTED TO:

**U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS**

**SHOSHONE-PAIUTE TRIBES OF THE
DUCK VALLEY INDIAN RESERVATION**

November 2021

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STATEMENT OF NO CONFLICT

The Bureau of Indian Affairs (BIA) is the lead agency for this project. The project applicant is the Shoshone-Paiute (Sho-Pai) Tribes of the Duck Valley Indian Reservation. This document was prepared by a consultant under contract with the Sho-Pai Tribes (DOWL). DOWL declares no financial or other interest in the outcome of the proposed project pursuant to the requirements of 40 Code of Federal Regulations (CFR) 1506.5(c). Prior to public review, the document was reviewed and evaluated by BIA Staff. As required by the National Environmental Policy Act (NEPA), this Environmental Assessment reflects independent judgment and analysis of the BIA. A list of organizations and persons consulted in support of the NEPA process and the personnel involved in the preparation of this document is provided in Sections 6 and 7 of this document.

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ACRONYMS AND ABBREVIATIONS

| | |
|-----------------|-------------------------------------------------|
| APE | Area of Potential Effect |
| BDA | Beaver Dam Analog |
| BIA | Bureau of Indian Affairs |
| BMP | Best Management Practice |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CO ₂ | Carbon Dioxide |
| CWA | Clean Water Act |
| CY | Cubic yards |
| DOI | Department of the Interior |
| DVIP | Duck Valley Irrigation Project |
| EA | Environmental Assessment |
| EPA | Environmental Protection Agency |
| FEMA | Federal Emergency Management Agency |
| IDEQ | Idaho Department of Environmental Quality |
| IDFG | Idaho Department of Fish and Game |
| ITA | Indian Trust Assets |
| ITRC | Irrigation Training and Research Center |
| MBTA | Migratory Bird Treaty Act |
| MSL | Mean sea level |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act |
| NDEP | Nevada Division of Environmental Protection |
| NDOW | Nevada Department of Wildlife |
| NHPA | National Historic Preservation Act |
| NPDES | National Pollution Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NVCRIS | Nevada Cultural Resource Information System |
| Reservation | Duck Valley Indian Reservation |
| ROW | Right-of-way |
| Sho-Pai | Shoshone-Paiute Tribes |
| SHPO | State Historic Preservation Office |
| SOD | Safety of Dams |
| SWPPP | Storm Water Pollution Prevention Plan |
| TERO | Tribal Employment Rights Ordinance |
| USACE | United States Army Corps of Engineers |
| USBR | United States Bureau of Reclamation |
| USC | United States Code |
| USDA | United States Department of Agriculture |
| USFS | United States Forest Service |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |

1.0 INTRODUCTION

1.1 Background

The Shoshone-Paiute (Sho-Pai) Tribes of the Duck Valley Indian Reservation (Reservation) are proposing improvements to the Duck Valley Irrigation Project (DVIP), including reconstruction of the China Diversion and construction of a new regulating reservoir upstream of the diversion in Elko County, Nevada. To compensate for unavoidable wetland impacts associated with construction of the regulating reservoir, the Sho-Pai Tribes have identified two mitigation sites within the Reservation and are planning to enhance, restore, and preserve wetlands and riparian areas, associated with the Owyhee River and its tributaries. The mitigation sites are located within Elko County, Nevada and Owyhee County, Idaho.

The China Diversion and related infrastructure are part of the DVIP, which is owned by the Bureau of Indian Affairs (BIA) and operated by the Sho-Pai Tribes through a Pub. L. 93-638 self-governance compact and annual funding agreement. Irrigation first began with Indian Settlement in Duck Valley in the 1870s (Cooper Consultants Inc. 1989). In 1937, China Diversion was built on the Owyhee River at the south end of Duck Valley. This structure, coupled with the completion of Wildhorse Dam, provided a regular flow of irrigation water. However, China Diversion is more than 80 years old, and, while it had a significant rehabilitation in 1982, the facility shows signs of distress and concrete deterioration. In addition, safety features are lacking at China Diversion and do not conform with general industry accepted guidelines or standards.

Rather than rehabilitating the DVIP to the original condition, the Sho-Pai desire to improve and modernize the DVIP in conjunction with rehabilitation. In 2015, the Sho-Pai Tribes hired the Irrigation Training and Research Center (ITRC) to develop a modernization plan for the DVIP to identify and prioritize modernization opportunities (ITRC 2017). The Modernization Plan includes recommendations at China Diversion, including construction of a new regulating reservoir. In addition, a *China Diversion Structural Assessment* was completed in 2017 by DOWL to determine the condition of the existing China Diversion structure, identify deficiencies, and develop options for remediation (DOWL 2017). The assessment determined three rehabilitation and replacement project alternatives ranging from \$629,000 to \$1,619,000. The proposed improvements described in this Environmental Assessment (EA) would implement recommendations from the Modernization Plan, the Sho-Pai Tribes preferred alternative from the 2017 *China Diversion Structural Assessment*, and the *China Diversion Compensatory Wetland Mitigation Plan* (Geum 2020).

Funding for water resource development and rehabilitation of the DVIP was authorized by the U.S. Congress in 2009 through the Sho-Pai Tribes water rights settlement, which is Title X, Subtitle C of the Omnibus Public Land Management Act of 2009 (Pub. L. 111-11). The settlement established rehabilitation of the DVIP as a priority use of the funds. Tribal water rights settlement funds would be used to construct the majority of the proposed improvements described in this EA.

1.2 Statutory and Regulatory Authority

The DVIP, including China Diversion, is owned by the BIA, and BIA would review and approve final engineering designs for improvements and upgrades at China Diversion. The regulating reservoir, being integral to the operation of the new, modernized China Diversion would also be

owned by the BIA. A reserved right-of-way (ROW) around the regulating reservoir would be delineated and recorded in the BIA title plan as part of the ROW process to protect the reservoir from future trespassing or encroachments. BIA would approve an encroachment permit to authorize construction of wetland mitigation components (e.g., culvert crossings) within BIA ROW along road BIA 141. To the extent the project improvements, and associated compensatory wetland mitigation, will be constructed using funds from the Tribal water rights settlement, BIA approval would be required to authorize disbursement from the settlement trust funds. In addition, a Clean Water Act (CWA) Section 404 Individual Permit would be prepared and submitted to the United States Army Corps of Engineers (USACE) for approval and authorization as part of this project.

The disbursement of federal funds and regulatory permitting constitute federal actions under implementing regulations for compliance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended, and under regulations of the Council on Environmental Quality (CEQ) at 40 Code of Federal Regulations (CFR) 1508.18(a).

This document is an EA generated under regulations of the CEQ at 40 CFR 1500.3 and the implementing procedures adopted by the BIA in accordance with the guidelines contained in the U.S. Department of the Interior (DOI), BIA NEPA Guidebook 59 IAM 3-H (BIA, 2012). This guidebook provides agency guidelines for complying with NEPA and its implementing regulations (40 CFR, Parts 1500-1508). The purpose of this EA is to evaluate the likely environmental consequences resulting from the proposed irrigation improvements at China Diversion and the corresponding compensatory wetland mitigation. An EA is conducted to decide whether to prepare a Finding of No Significant Impact or to undertake the preparation of an Environmental Impact Statement. The BIA is the lead federal agency responsible for preparation and documentation of this analysis.

1.3 Public and Agency Involvement and Issue Development

Relevant issues were solicited from the Sho-Pai Tribal Chairman; Sho-Pai Fish, Wildlife, and Parks Department; Sho-Pai Tribal Environmental Protection Program; Sho-Pai Land and Natural Resources Department; BIA Eastern Nevada Agency staff; United States Geological Survey (USGS) Nevada Water Science Center; USACE; EPA; and Nevada Division of Water Resources during the preparation of the EA. Consultation, pursuant to the National Historic Preservation Act (NHPA) of 1966, as amended, also took place with the Nevada State Historic Preservation Office (SHPO), Idaho SHPO, and Advisory Council on Historic Preservation.

The USACE provided comments during a January 10, 2019, meeting to address CWA Section 404 permitting of the proposed project. The USACE stated compensatory wetland mitigation would be required for wetland impacts proposed under the project, and the project and proposed wetland mitigation sites could all be authorized under one Section 404 Individual Permit. No other comments from resource agencies were received.

Based on consultation pursuant to NHPA, a Memorandum of Agreement (See Appendix D) has been developed in consultation with the Nevada SHPO, Advisory Council, and the Sho-Pai Tribe for the China Diversion project site. This would include an in-depth recording on the China Diversion dam. Cultural consultation, including an effect determination, with Nevada SHPO and Idaho SHPO on the two wetland mitigation sites has been completed. Concurrence letters for the

China Diversion, dated September 18, 2020; Boyle Creek Wetland Mitigation Site, dated September 9, 2020; and the Drain Recovery Wetland Mitigation Site, dated September 22, 2020 are included in Appendix D.

In December 2018, a public notice was posted at the Owyhee Post Office, Owyhee Grocery Store, Tribal Human Development Center, Owyhee Community Health Facility, Tribal Senior Center, Tribal Court, Tribal Headquarters, the Tribal Information Technology Computer Lab, and in the Sho-Pai News. The purpose of the notice was to explain the proposed China Diversion and Related Infrastructure project and solicit public comments, views, and suggestions to be addressed in the EA. Members of the public were offered the opportunity to provide written or electronic comment to Joseph McDade, BIA Eastern Nevada Agency, for a total of 30 days, ending December 31, 2018. Mr. McDade received no comments during the public input effort.

A public meeting to discuss the China Diversion project and the compensatory wetland mitigation sites proposed as part of the China Diversion project was held on March 9, 2020, in Owyhee, Nevada. The public notice announcing the meeting also offered members of the public the opportunity to provide written or electronic comment to Joseph McDade. Comments were due by March 28, 2020.

The following are relevant environmental issues identified during the March 9th scoping meeting:

- The EA and BIA NEPA process;
- The existing wetlands at China Diversion and the 2018 fire;
- The need for wetland compensatory mitigation sites and mitigation requirements;
- Effects of proposed mitigation sites on current tribal programs;
- Support from the public on the mitigation sites through additional education;
- Design elements, such as proposed fencing at Boyle Creek and water distribution at the Drain Recovery site;
- Potential groundwater recharge and benefits for migratory birds;
- Water access for cattle;
- Effects to the mitigation sites from beaver and other wildlife; and

A summary of the public and agency involvement effort is included in Appendix A (PENDING NOA and Public Meeting on Draft EA).

2.0 PURPOSE AND NEED

2.1 Location and General Description of the Affected Area

Water resource development and rehabilitation of the DVIP was authorized and funded by Congress through the establishment of the Shoshone-Paiute Tribes Water Rights Development Fund, Public Law 111-11 (123 Stat. 1405) and the Shoshone-Paiute Tribes of the Duck Valley Reservation Water Rights Settlement Act of 2009. All aspects of the project are located on Reservation lands. The Reservation is located in northeastern Nevada in Elko County and southeastern Idaho in Owyhee County, approximately 390 miles east of Reno, Nevada, and approximately 150 miles south of Boise, Idaho. The location of the China Diversion site is approximately two miles southeast of the town of Owyhee, Nevada, on the south side of State Highway 225 (Figure 1).

Two compensatory wetland mitigation sites are also proposed. The Drain Recovery Mitigation site is located approximately 2.5 miles northwest of the town of Owyhee and 1.35 miles west of the BIA 141 and Highway 225 intersection in Elko County, Nevada (Figure 2). The Boyle Creek Mitigation site is located northwest of the Mountain View Reservoir embankment, approximately eight miles northwest of the town of Owyhee, Nevada and two miles northwest of the Highway 51 and BIA 8 intersection (Figure 3).

The legal description of the three proposed project locations are:

- Township (T) 46 North (N), Range (R) 52 East (E), Section 01
- T47N, R52E, Section 36
- T46N, R53E, Section 06
- T47N, R53E, Section 31
- T47N, R52E, Sections 16 and 21
- T16S, R2E, Sections 1, 2, 11, and 12

The three proposed project sites are located within the upper Owyhee River Basin at elevations that range from approximately 5,400 feet above mean sea level (MSL) at China Diversion, 5,364 feet above MSL at the Drain Recovery Mitigation site, and 5,305 feet above MSL at the Boyle Creek Mitigation site. Both mitigation sites are found within the broad valleys of the upper Owyhee River and Blue Creek, while China Diversion is found further upstream within a more confined valley of the Owyhee River (Figure 4). Along the Owyhee River at China Diversion, there is a dense community of riparian/wetland shrub of varying width (primarily willow) and adjacent valley walls reach upwards of 6,000 feet above MSL. Lands adjacent to the river include sagebrush/shrubland steppe, primarily used for ranching and grazing, and State Highway 225 to the north (EPA 2012).



Figure 1. China Diversion Project Location and Vicinity



Figure 2. Drain Recovery Project Location and Vicinity

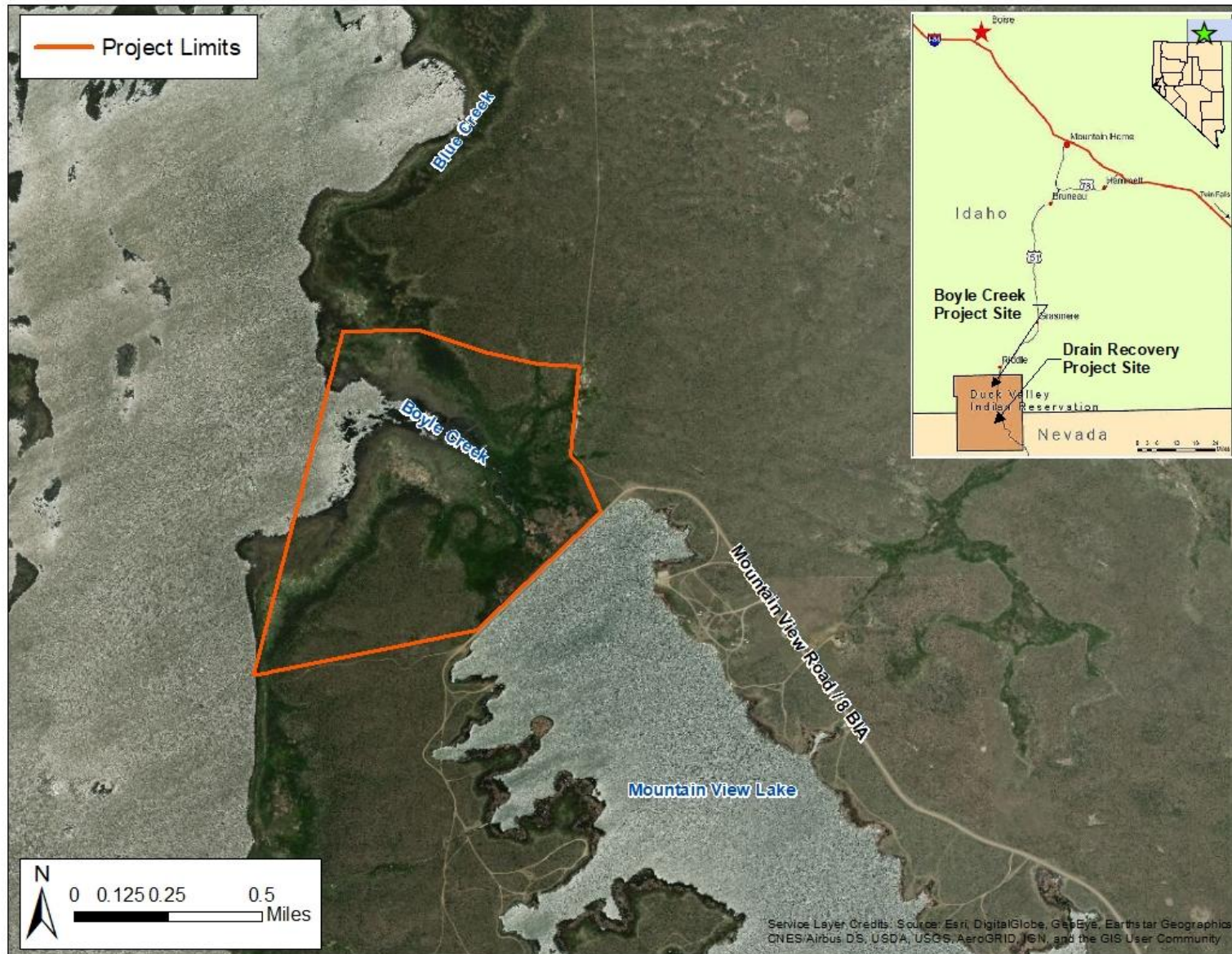


Figure 3. Boyle Creek Project Location and Vicinity

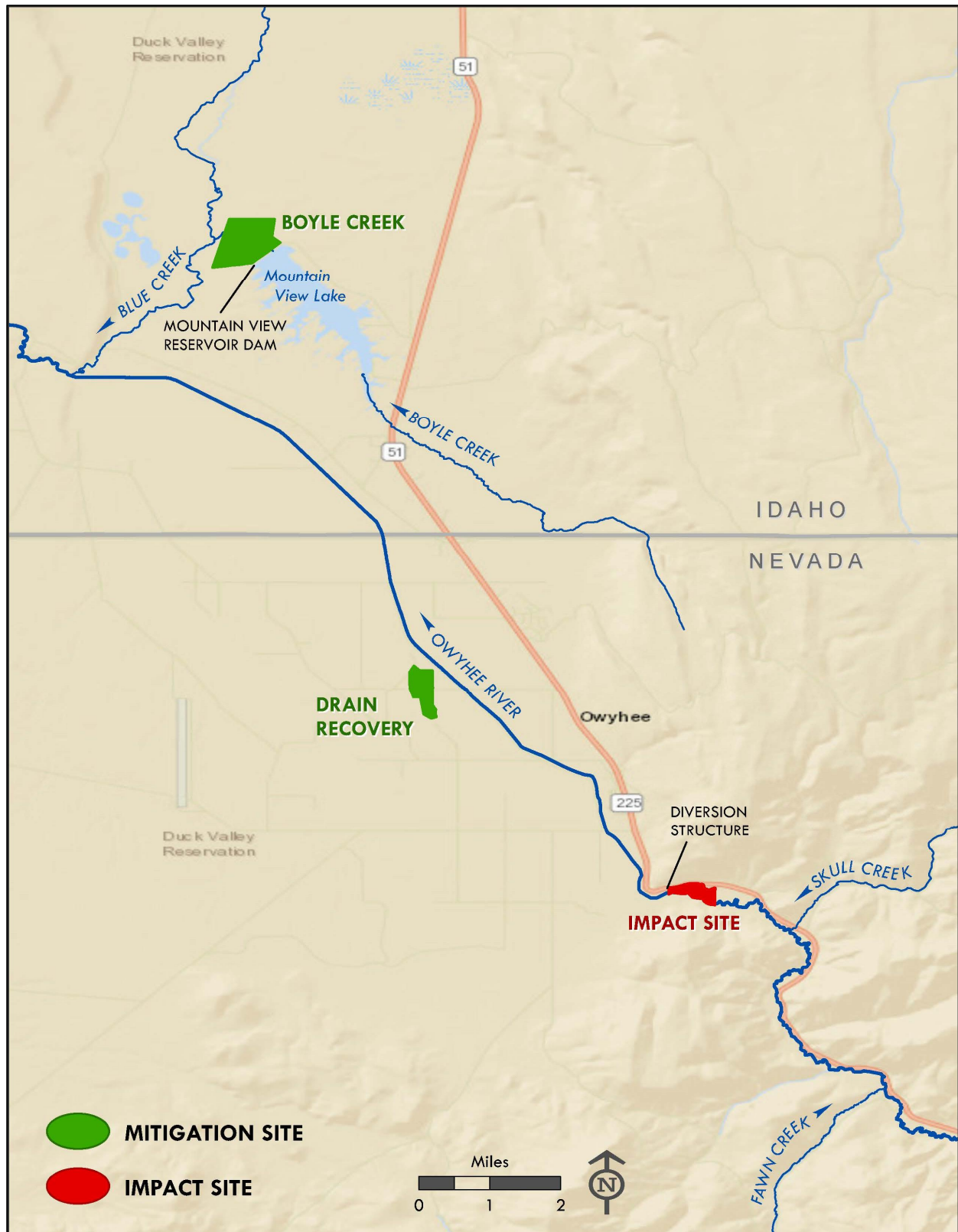


Figure 4. Proposed Compensatory Mitigation Sites in Relation to China Diversion

Boyle Creek is a small tributary to Blue Creek. Boyle Creek flows into Mountain View Reservoir. Boyle Creek flow, released from the Mountain View Dam outlet, continues through a groundwater-fed wetland complex to its confluence with Blue Creek, which is a tributary of the Owyhee River. A portion of the existing Boyle Creek wetland is submerged seasonally. Vegetation in the area includes cattails, willows, herbaceous wetland vegetation, and upland sagebrush/bunchgrass dominated hillsides. The proposed site includes 119.1 acres of existing wetland. Additionally, the site is known to be important habitat for sage grouse and waterfowl.

The Drain Recovery Mitigation site includes a network of historic channels that once connected with the Owyhee River. Hydrology in the site now drains into constructed ditches bordering the east and west limits of the site. Road BIA 141 runs through the center of the site in an east/west direction and includes an existing 80-ft wide BIA ROW (40-ft each side of the road center). Topography in the area reflects natural floodplain conditions, with emergent and scrub shrub wetlands located within the abandoned river channels. Currently, approximately 6.4 acres of wetland exists within the mitigation site. The site is currently used as winter range for livestock, with livestock generally present from September through March.

2.2 Purpose and Need of Project

The purpose of the proposed project is to provide a cost-effective, feasible solution to address the physical and operational deficiencies of China Diversion and related infrastructure and to improve the availability and distribution of water throughout the DVIP, as provided for by Congress in the 2009 Settlement Act. The proposed project would also support and improve the beneficial use of the water rights ratified and confirmed to the Sho-Pai Tribes by Congress in the 2009 Settlement Act.

The project is needed to address identified deficiencies as outlined below.

2.3.1 Physical Deterioration and Remaining Service Life

China Diversion was originally constructed in 1937 and was rehabilitated in 1982 to expand capacity and address areas of known deterioration. Physical deficiencies identified through the 2017 structural assessment include freeze-thaw damage along the tops of the diversion walls and piers, failure of several structural components, piers constructed of relatively low-quality concrete, abrasion damage of the spillway, and minor spalling and cracking at various locations. In addition, many of the 1982 rehabilitation project repairs have failed or are failing. An examination of the existing concrete revealed significant moisture movement through the concrete over time and concrete deficiencies that will ultimately lead to accelerated deterioration of the concrete.

2.3.2 Safety Deficiencies

According to USBR Safety and Health Standards (USBR 2014) and Reclamation Design Standards (USBR 2012), the existing safety features of the China Diversion do not meet applicable safety guidelines. In addition, the safety features do not meet current Occupational Safety and Health Administration regulations (29 CFR 1910.23) and do not provide the level of protection originally provided for and intended in the 1980 rehabilitation design drawings. Handrail is missing in some areas, such as along the north abutment headwall. The 1980 design drawings specified guard chain around gate operating mechanisms to provide safety while allowing ease of

operation; however, these chains are not present. The cable handrail strung between steel posts across the diversion does not meet current safety guidelines or regulations. The existing walkway width is adequate; however, the timber decking is no longer recommended in this type of installation, as it degrades over time and becomes slippery when wet.

2.3.3 Nonfunctional Gates

There are significant operational deficiencies associated with the existing China Diversion gates. Many of the gates are not operational and most have failing or failed mounting anchors. None of the sluiceway gates are currently fully operational, and only one can be opened. The inability to sluice water through these gates leads to a build-up of sediment in front of the headgates, and it exacerbates sedimentation issues within the Highline Canal.

2.3.4 Operational Deficiencies

The main source of water for the DVIP is the Owyhee River. Controlled deliveries to the Owyhee River are made through the Wildhorse Dam discharge gates; however, the river also receives uncontrolled flows from tributaries and runoff downstream of the dam. The Wildhorse Dam and Reservoir are located approximately 30 miles upstream of the China Diversion. Travel time in the river from Wildhorse Dam to China Diversion is approximately 30 hours. Given the unregulated inflows from tributaries downstream of the reservoir, coupled with variable precipitation and evaporation losses that fluctuate from day to night, flow at China Diversion is highly variable despite the release of steady flow from the dam. Because of the variable nature of Owyhee River flows and Wildhorse Dam discharge, irrigators wait longer for their water when water delivery requests exceed the available flow in the system. These operational deficiencies result in less than optimal water delivery service and are thought to be discouraging irrigation development and tract improvements throughout the DVIP.

3.0 ANALYSIS OF ALTERNATIVES

The CEQ regulations for implementing NEPA directs federal agencies to explore and objectively evaluate all reasonable alternatives to a proposed action, and to briefly discuss the rationale for eliminating alternatives that were not considered in detail.

Based on previous condition assessments of the DVIP and China Diversion, and to meet the purpose and need of the project, improvements are needed to address physical, operational, and safety deficiencies of China Diversion and related infrastructure and to improve the availability and distribution of water throughout the DVIP. Because no alternatives are necessary to respond to unresolved conflicts concerning alternate uses of available resources [40 CFR, 1507.2(d); 43 CFR, 46.310], it has been determined that the reasonable range of alternatives for this project is to move forward with construction of the China Diversion improvements, or not to construct at all.

Three China Diversion improvement alternatives were presented in the 2017 *China Diversion Structural Assessment* and considered by the Sho-Pai Tribes. These alternatives included minimum rehabilitation, comprehensive rehabilitation, and complete replacement of the diversion structure. In addition, the 2017 *Duck Valley Irrigation Project Modernization Recommendations* Technical Report proposed incorporating a regulating reservoir upstream of the diversion as part of the overall DVIP modernization strategy. Regulating reservoir alternatives of various sizes were considered by the Sho-Pai Tribes.

Improvement alternatives were judged based on their ability to meet the purpose and need of the project versus impacts to the human environment and costs. The following is a discussion of alternatives carried forward for detailed study (No Action and Proposed Action Alternatives) and those excluded from further analysis in this document.

3.1 Alternatives Carried Forward for Detailed Study

3.1.1 No Action

Under the No Action Alternative, proposed improvements would not occur, the program and funding provided by Congress for the DVIP rehabilitation would not be spent, possible new ROW for the regulating reservoir would not be delineated and recorded as part of the ROW process, an encroachment permit would not be needed for wetland mitigation construction within existing BIA ROW, and CWA Section 404/401 permitting and certification would not be authorized by the USACE and the Sho-Pai Tribe. Routine operation and some maintenance of the existing system by the Sho-Pai Tribes would still occur.

Under the No Action Alternative, the condition of China Diversion would continue to deteriorate, the physical, operational, and safety deficiencies at China Diversion would remain, and the current system of inadequate water delivery would continue. In addition, efforts to improve the beneficial use of water rights ratified and confirmed by Congress for the Sho-Pai Tribes would not occur. This would further perpetuate the unbalanced distribution of water to users and inefficient field irrigation.

Impacts to wetlands and the Owyhee River would not be required under the No Action Alternative, and compensatory wetland mitigation would not be needed.

3.1.2 Proposed Action

The Proposed Action Alternative would include implementation of the comprehensive rehabilitation alternative at China Diversion and construction of a regulating reservoir upstream of the diversion. In addition, wetlands and riparian areas at two mitigation sites would be restored and enhanced to account for wetland loss resulting from the proposed improvements at China Diversion. The Proposed Action Alternative would include the following.

- China Diversion Improvements.
 - Reconstruction of the China Diversion at its current location to include new headworks, sluiceways, conduits, gates, outlet transitions, safety features, overlaying the existing spillway, and raising the spillway crest elevation.
- Regulating Reservoir.
 - Construction of a new regulating reservoir upstream of China Diversion, including raising the spillway crest at the diversion by approximately 3 feet and clearing and excavating an area within the Owyhee River floodplain/riparian corridor to develop new regulating reservoir storage. The footprint of the regulating reservoir excavation would be approximately 57 acres, with the final size dependent on excavation costs.
 - Excavated material from the regulating reservoir may be used to raise the height of the existing China Diversion embankment and/or processed to produce materials stockpiles (e.g. topsoil and aggregate) for use by the Sho-Pai Tribes. Excess excavation materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area.
 - Native riparian shrubs would be planted within a narrow buffer along edges of the regulating reservoir as part of the compensatory wetland mitigation plan.
 - Maintenance (e.g. periodic removal of accumulated sediment and aquatic vegetation) would be required for the regulating reservoir, and access routes into the reservoir are planned. Materials excavated as part of future, regular maintenance activities would be deposited in the designated waste area.
 - A reserved ROW around the regulating reservoir would be delineated and recorded with the BIA Land Title Records Office as part of the ROW process to protect the reservoir from future trespass or encroachment.
- Boyle Creek Wetland Mitigation Site
 - Development of a riparian management zone and construction of wildlife-friendly livestock fencing to limit livestock impacts and preserve wetland features through the expansion of riparian woody vegetation and herbaceous wetland and elimination of trampling and soil compaction.
 - Protect the upland buffer habitat important to sage grouse and waterfowl nesting through development of a riparian management zone and wildlife-friendly livestock fencing.
 - Implement a buffer of riparian revegetation along the Boyle Creek channel, including native riparian shrubs.

- Drain Recovery Wetland Mitigation Site
 - Divert hydrology from the existing drain ditch to reactivate historic Owyhee River channels and restore former floodplain wetlands.
 - Construct beaver dam analog (BDA) structures along a historic river channel alignment to maximize hydrologic connection between the channel and floodplain.
 - Excavate areas of high ground along historic channels to maximize distribution of flows and connectivity between channels and the floodplains.
 - Install wildlife-friendly livestock fencing around the mitigation site to prevent livestock impacts.
 - Install shallow perimeter berms to keep surface flows from flooding adjacent pastures and farmlands.
 - Install new culverts crossing existing BIA 141 ROW to provide wetland connectivity.
 - An encroachment permit from BIA would be acquired to authorize construction of wetland mitigation components within BIA ROW.
 - Discharge excess water routed through the wetland back into the West Main Canal.

The proposed China Diversion improvements would take place in the Fall of 2022 through the Spring of 2024, with construction generally occurring outside of the irrigation season and during a period of low flow in the Owyhee River. Construction at the two mitigation sites would be initiated within two years of the impact to wetlands at the regulating reservoir. Refer to Appendix B for detailed plan sheets of the proposed projects. Information shown on these figures is based on best available information; however, some plans are subject to change through final design.

3.2 Alternatives considered but eliminated from detailed study

The following improvement alternatives were considered and eliminated from further consideration.

3.2.1 China Diversion and Regulating Reservoir

3.2.1.1 China Diversion Rehabilitation/Replacement Alternatives

Minimum rehabilitation and complete replacement of the China Diversion Structure were alternatives considered and eliminated from further consideration.

Under the minimum rehabilitation alternative, safety features would be updated, gates would be replaced, and concrete repairs to the spillway and headwalls would occur. No regulating reservoir would be constructed. While improvements under this alternative resulted in the lowest construction costs, they would likely only provide a 30- to 40-year service life before more extensive repairs are needed. This alternative would perpetuate the current operational deficiencies of the diversion, particularly the inability to divert steady flow into the DVIP, as it is not compatible with a regulating reservoir.

The complete replacement alternative would include a full replacement of the entire China Diversion structure. This alternative was eliminated from further consideration because the comprehensive rehabilitation alternative provided the same 80-year service life for less cost.

3.2.1.2 On-Site Regulating Reservoir Alternatives

Construction of a regulating reservoir in conjunction with either the China Diversion comprehensive rehabilitation alternative or the complete replacement alternative was also reviewed. Three on-site regulating alternatives (see Table 1) considered, but eliminated from detailed study include: 1) improvements to the diversion structure only, without construction of a regulating reservoir, 2) construction of a large regulating reservoir (300- to 500-acre feet), and 3) excavation of off-stream storage (i.e., excavation of the upland area south of the diversion to create more storage space) upstream of the diversion with an in-stream reservoir (i.e., inundating the existing riparian corridor without excavating in wetlands). Table 1 provides additional information on these alternatives.

The no regulating reservoir alternative was eliminated because it would not provide enough operational benefit for the DVIP. The large regulating reservoir alternative was eliminated because construction cost and overall environmental impact were too high, and it was not necessarily feasible to construct. While the off-stream storage alternative would provide a high operational benefit, it was eliminated due to extremely high costs to excavate into the southern hillside; high environmental impacts, as wetlands would still be impacted through inundation; and low feasibility.

3.2.1.3 Off-Site Alternatives to On-Stream Regulating Reservoir

Several additional alternatives were suggested by regulatory agencies. These alternatives are generally off-site alternatives intended to either avoid or minimize impacts to waters of the United States by reducing or eliminating the need for an on-stream regulating reservoir or relocating the storage such that it is off of the Owyhee River. These alternatives are summarized in Table 1 discussed in the following paragraphs.

Changing Water Management and Conservation Techniques

The DVIP is already in the process of implementing new water management and conservation techniques across the DVIP. The Tribe has developed a Modernization Plan for the system (ITRC 2017) which focuses on water management changes and changing operations and infrastructure to improve system efficiency. These ongoing actions by the Tribe do not replace (i.e., are not an alternative to) constructing regulating storage; rather, they will provide more efficient delivery of a water supply made more reliable by the regulating reservoir. Although this potential action would provide operational benefit with relatively low impacts, the Tribe is already implementing many of these techniques (e.g., pipelines and changing delivery flow rates); as such, this alternative is not a viable stand-alone alternative.

Table 1. Regulating Reservoir Alternatives considered but eliminated from detailed study.

| Option | Impact | Operational Benefit | Cost | Constructability | Feasibility | Construction Comments |
|----------------------------------------------------------|-----------|---------------------|----------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------------|
| <i>On-Site Alternatives</i> | | | | | | |
| No Regulating Reservoir | Very low | Neutral | Very low | Very high | Very High | Construction would occur at the diversion structure only. |
| Large Regulating Reservoir | Very high | Very high | Very high | Low | Low | A large reservoir would be 100+ acres of excavation. |
| Off-Stream Storage | High | High | Extremely High | Low | Low | Off-stream storage with an in-stream reservoir. Would involve excavation into hillside to produce storage. |
| <i>Off-Site Alternatives</i> | | | | | | |
| Changing Management & Conservation Techniques | Very Low | High | High | High | Very Low | Does not replace the need for a reservoir; DVIP is currently implementing these techniques across the reservation. |
| Additional Water Reuse | Low | Very Low | Low | High | Very Low | Reduce the need for regulating storage by reusing water otherwise wasted from the system |
| Holding Tanks | High | High | Extremely High | Very Low | Very Low | Includes new structural tanks as opposed to earthen reservoirs. |
| Off-Stream Regulating Reservoirs | High | High | Extremely High | Low | Low | New reservoirs would be constructed downstream of the diversion in upland areas adjacent the existing canal system. |

Water Reuse

Reusing water is a practice that is currently employed by the Duck Valley Irrigation Project. Currently, excess water at the tail end of canals and laterals of the DVIP is captured at many locations within the project through the use of the open drain system and conveyed to secondary diversions where it is rediverted into the irrigation project. Several examples include water at the tail end of the 162A system being diverted into the Atkins Canal and the much larger scale example of Duck Valley Unit waste flows being rediverted at the Pleasant Valley Diversion. Further, water reuse only addresses water availability downstream of the initial point of use; by definition, this concept does not meet the objective of the project to provide a steady flow diversion of water at China Diversion. Although the impact and cost of this potential action are relatively low, the associated operational benefit is also low; this action alone does not meet the project purpose. While water reuse was dismissed as a viable stand-alone alternative to the regulating reservoir, the Drain Recovery mitigation site reuses water from the irrigation project to restore wetlands, in addition to returning that water to the irrigation system.

Holding Tanks

In general, a holding tank is the same concept as an off-stream regulating reservoir, with the difference being a holding tank is a structural solution (similar to a municipal water tank), whereas, an off-stream regulating reservoir is generally an open, earthen reservoir. Municipal water tanks are often in the realm of 200,000 to 700,000 gallons in capacity. By comparison, one acre-foot of water is the equivalent of 325,829 gallons. Providing the necessary minimum regulating storage of 160 acre-ft of water using holding tanks would require the equivalent of 104 tanks each with a volume of 500,000 gal. This would be cost prohibitive and the large number of tanks would occupy a significant footprint on the ground, near the water source, which would likely result in as much or more impact than the regulating reservoir. Consequently, this alternative was dismissed.

Off-Stream Regulating Reservoir

Constructing a regulating reservoir off of the main channel of the Owyhee River was considered as a way to limit impacts. Given that the China Diversion is the point of diversion for the Agency Canal (to the north) and the Highline Canal (to the south), constructing off-stream storage would require two off-stream regulating reservoirs, one for the Agency Canal system (approximately 26 acre-ft in volume) and a second for the Highline Canal system (approximately 134 acre-ft in volume). Off-stream reservoirs result in dramatically more excavation volume and associated cost, because the entire reservoir depth is developed through excavation (as opposed to a combination of excavation and ponded water above grade, as would be the case for an on-stream reservoir). Further, off-stream regulating reservoirs have environmental impacts of their own, such as the potential to strand fish in these upland, warmer, water features disconnected from the Owyhee River; potential worse water quality impacts due to excavation against steep, erodible hillsides; geotechnical risks to adjacent highway and other infrastructure; impacts to agricultural tracts and the allottees/lessees who farm those tracts; and more intensive operational and maintenance requirements. Further, impacts to wetlands upstream of the China Diversion would still result, as the diversion would need to be raised in order to provide an adequate hydraulic grade line to divert water into the reservoir. Therefore, this alternative is considered infeasible.

3.2.2 Compensatory Wetland Mitigation

To offset wetland impacts anticipated under the Proposed Action Alternative, several potential wetland mitigation sites were reviewed. These potential sites were selected using aerial imagery and LiDAR survey data to identify locations where natural ecological functions have been impaired by land management activities or where currently functioning systems could be enhanced. After potential sites were initially selected, a site visit was conducted to review each site. The review included finding sites within the same watershed as the impact, with similar soil and climatic characteristics, and similar character and function. Final site determination included public comments, input from Sho-Pai Tribal staff and members, and estimates of potential wetland mitigation needs. Two preferred sites were selected and are outlined under the Proposed Action Alternative. Table 2 provides details on the proposed sites that were considered but eliminated from further consideration.

Table 2. Compensatory mitigation sites considered but eliminated from further analysis.

| Site | Site Characteristics | Mitigation Strategy | Project Activities | Reason for Elimination |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blue Creek/Owyhee River Confluence | Blue Creek connects with the Owyhee River, creating a wetland complex at the confluence. Wetland vegetation includes both emergent and scrub shrub vegetative communities. The Owyhee River is diked and straightened at the confluence, isolating it from the floodplain and reducing wetland and aquatic habitat function. Areas within the site are used for agriculture and historic wetlands are seasonally drained and used for production of forage crops. | The confluence has the potential to support natural riverine function of the Owyhee River by relocating the channel to its historic alignment. This would improve aquatic habitat and floodplain function through the area. Restoring adjacent agriculture fields to native wetlands would provide water storage, increased wetland function, improved water quality and habitat value. | <p>Alternative 1:</p> <ul style="list-style-type: none"> Breach dike and place Owyhee River in its historic alignment. Plug the current, straightened Owyhee River channel to redirect river to its historic alignment. <p>Alternative 2:</p> <ul style="list-style-type: none"> Breach dike and place Owyhee River to its historic alignment. Fill and plug the current, straightened Owyhee River channel and regrade north portion of the dike. Eliminate agricultural land use. | Project would be costly, and it did not fit in with the timing of the China Diversion and regulating reservoir project. Additionally, there is an active agriculture lease at the project site. Overall, concerns regarding feasibility was the main reason it was eliminated. |
| Skull Creek | Tributary of the Owyhee River, approximately 1 mile south (upstream) of the China Diversion within a summer livestock range unit. The floodplain is approximately 200 to 500 feet wide and is bordered by sagebrush and bunchgrass dominated hillsides. The riparian area is primarily willow and alder communities. Current vegetation is heavily grazed, which has contributed to degrading fish habitat and riparian function. Two cattle water troughs are located along the creek. | Has the potential to increase riparian shrub canopy cover, improve channel complexity, floodplain connectivity, and improve aquatic habitat for redband trout. Denser shrub cover along the creek would result in a narrower bankfull width, promote flood plain connectivity and overbank flows, and reduce stream temperatures for fish species by increasing shade cover. | <ul style="list-style-type: none"> Develop a riparian management zone with a livestock fence. Reactivate historic side channels. Remove old roadbed material to restore hydrologic connection. Retrofit fish passage improvements at the Highway 225 culvert crossing. Utilize beaver mimicry structures. Develop an improved width/depth ratio of the channel. | The site is located in an important summer range unit for livestock in the valley. During preliminary mitigation design, concepts were opposed by local livestock groups because it would limit rangeland and riparian use for livestock. Skull Creek is also a culturally sensitive area for the Tribe, primarily for curing and special rituals (Archaeological Research Facility, 1991). The site does not have potential for educational benefits or public use and would be primarily preservation and enhancement, making the site less advantageous for mitigation than a restoration project. |

| Site | Site Characteristics | Mitigation Strategy | Project Activities | Reason for Elimination |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fawn Creek | Tributary of the Owyhee River approximately 3.5 miles south (upstream) of the China Diversion within a summer livestock range unit. Existing conditions are based on aerial imagery and comment from local managers. The area is similar to Skull Creek based on geomorphic setting and land use history. The floodplain ranges from 100 to 400 feet wide. Upland vegetation includes sagebrush and bunchgrass. A historic channel is visible from aerial imagery. Little riparian vegetation is present, likely from the lack of hydrology in the channel. | Has the potential for increased channel complexity and floodplain connectivity to expand riparian and wetland vegetation. Denser scrub riparian canopy would provide wildlife habitat and improve aquatic habitat by providing shade cover to reduce stream temperatures for fish species. | <ul style="list-style-type: none"> • Develop a riparian management zone with a livestock fence. • Utilize beaver mimicry structures. • Reactivate historic side channels to support riparian expansion. | The site is located in an important summer range unit for livestock in the valley. During preliminary mitigation design, the concepts were opposed by local livestock groups because it would limit rangeland and riparian use for livestock. The site would be primarily preservation and enhancement, making the site less advantageous for mitigation than a restoration project. Additionally, access to the site would be difficult for construction and future public/educational use. |
| Downstream Owyhee River Restoration Site | On a conceptual level, potential sites downstream of the China Diversion were considered for restoration on the Owyhee River. A downstream site on the Owyhee River would have little to no impact on livestock in the area. | Potential to restore lost channel plan form features and return the river to a meandering flood pattern. | Concept was looked at a conceptual level, but a detailed potential mitigation plan was not conducted. | Restoring the channel would result in a large amount of earthwork and would result in higher costs making feasibility unlikely. |

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

The following Chapter describes the existing natural, cultural, and built environment, i.e., the affected environment, and the potential effects that the No Action Alternative and the Proposed Action Alternative would have on the listed resources should one of these alternatives be implemented. NEPA requires that environmental documents disclose impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented.

Section 4.1 below addresses the resource topics dismissed from detailed analysis (i.e., the resource is not present within the project area/vicinity or has no potential to be impacted). Sections 4.2 through 4.9 addresses the resource topics evaluated in detail in this EA. The detailed analysis includes likely beneficial and adverse effects on the human environment, including short-term and long-term effects, direct and indirect effects, and cumulative effects. Interpretation of impacts in terms of their duration, intensity, and scale are provided, where possible.

Terms referring to impact intensity, context, and duration are used in the effects analyses. Unless otherwise stated, the standard definitions for these terms are as follows:

- **Negligible:** The impact would be at the lower level of detection, and there would be a small change.
- **Minor:** The impact would be slight but detectable, and there would be a small change.
- **Moderate:** The impact would be apparent, and there would be a permanent measurable change.
- **Major:** The impact would be highly noticeable, and there would be a permanent measurable change.
- **Localized impact:** The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts would be detectable only in the localized area.
- **Short-term Effect:** The effect would occur only during or immediately after implementation of the alternative.
- **Long-term Effect:** The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

For the purposes of this document, “project area” refers to the limits of potential improvements; whereas, “project vicinity” refers to a much broader area, which includes the project area and surrounding lands.

4.1 Resource Topics Dismissed from Detailed Analysis

Several resource topics typically addressed in a NEPA document are not present within the project area/vicinity or have no potential to be impacted by the No Action or Proposed Action Alternatives. The resource topics listed below are not analyzed in detail in this EA.

4.1.1 Geologic, Minerals, and Paleontological Resources

Neither alternative would involve mining or deep materials excavation. As such, there would be no impact on geologic setting, mineral resources, or paleontological resources that would be measurably different from existing conditions. These resource topics have been eliminated from detailed analysis in this EA.

4.1.2 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Maps (FEMA 2018), no regulatory floodplains have been delineated within the project areas and vicinity. The entire area is mapped as Zone D (no analysis of flood hazards has been conducted). Therefore, neither alternative would have direct or indirect impacts on regulatory floodplains, as they do not exist within the project areas and vicinity. This topic has been eliminated from detailed analysis in this EA.

4.1.3 Demographic Trends

Activities associated with the No Action Alternative and the Proposed Action Alternative are not anticipated to affect demographic trends. The decision on whether to improve or not improve the China Diversion would not affect demographic statistics such as age, gender, marital status, religion, etc. No displacement of residents or businesses would occur under either alternative. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.4 Environmental Justice

Title VI of the Civil Rights Act of 1964 and Executive Order 12898 give guidance on identifying sensitive populations to ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity on the basis of race, color, national origin, age, sex, and disability. Executive Order 12898 directs federal agencies to identify and address disproportionately high and adverse human health and environmental impacts on minority and low-income populations.

Approximately 94 percent of the population on the Duck Valley Indian Reservation identified themselves as American Indian alone (USCB 2018a). Approximately 36.2 percent of the people and 34.6 percent of the families on the reservation were below poverty levels in 2018 (USCB 2018b). The entire reservation is considered a minority or low-income population. However, because this is a tribal action on the reservation, minority or low-income populations would not be disproportionately affected by the implementation of the alternatives as defined in the EPA's Environmental Justice Guidelines. Therefore, this issue was dismissed from further analysis.

4.1.5 Lifestyle and Cultural Values

The Duck Valley Indian Reservation encompasses 289,819 acres (Sho-Pai Tribes 2018a). It is comprised of various bands of the Western Shoshone and Northern Paiute Tribes. The reservation was established in April 1877 and was expanded in May 1886 for the Northern Paiute. Prior to contact with white culture, the Shoshone and Paiute divided themselves into small extended family groups who confined themselves to specific areas for hunting and gathering. Over time, farming and cattle ranching have served as the main source of income for the Tribes. The community of Owyhee is the cultural center of the Reservation (Sho-Pai Tribes 2018a).

Cultural values would not be affected by either the No Action Alternative or the Proposed Action Alternative, as farming and ranching would continue regardless of the action taken, and livestock access to water and a rancher's ability to move livestock would be maintained. Lifestyles of some farmers/ranchers may improve under the Proposed Action Alternative; however, it would likely have a negligible effect on overall lifestyle and cultural values on the Reservation. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.6 Timber Harvesting

No timber harvesting occurs within the project areas; therefore, implementation of the alternatives has no potential to impact timber harvesting. This resource-use pattern has been eliminated from detailed analysis in this EA.

4.1.7 Mining

Some gravel extraction occurs near the proposed regulating reservoir project area, but it would not be impacted under either alternative. No other mining activity is found within the project vicinity of any of the proposed action sites (Nevada Division of Environmental Protection [NDEP] 2018c). Therefore, this resource-use pattern has been eliminated from detailed analysis in this EA.

4.1.8 Wilderness

There are no federally recognized wilderness areas within or immediately adjacent to the project areas. The closest wilderness area is the Owyhee River Wilderness area, located about 20-miles northwest of the Duck Valley Indian Reservation. Neither alternative would impact this resource; therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.9 Noise

The China Diversion project area and the two mitigation sites are located in a rural, agricultural portion of the reservation where little development exists. The primary source of ambient noise is traffic on Highway 51/225 and Highway 11. Other dispersed, low, and intermittent sources include agricultural equipment.

Noise-sensitive receptors can include residences, schools, churches, hotels, and libraries. There are no noise receptors located within the project areas; however, a few sensitive receptors are dispersed throughout the project vicinity. A small cluster of sensitive receptors (residences and a school) are found in the community of Owyhee, 2 miles north of the China Diversion project area and 2.5 miles southeast of the Drain Recovery Mitigation site. Two additional residences are also located within 0.25 mile of the Drain Recovery Mitigation site. A small campground is located 0.30 mile of the Boyle Creek Mitigation site.

Neither the No Action or the Proposed Action Alternative would permanently increase noise levels, traffic noise, or the rural characteristics of the area. Under the Proposed Action Alternative, some short-term, minor, localized noise impacts associated with the proposed improvements would be anticipated. Construction noise impacts would likely occur during any earthwork phase. These noise impacts would be intermittent and cease once construction was completed. Therefore, this issue was dismissed from detailed analysis in this EA.

4.1.10 Light

No change in light conditions would take place under either alternative. Permanent lighting is not part of the Proposed Action Alternative, and all work associated with the Proposed Action would occur during daylight hours. Therefore, this topic has been eliminated from detailed analysis in this EA.

4.1.11 Waste and Hazardous Materials Management

The Idaho Department of Environmental Quality (IDEQ) and the NDEP databases show no hazardous materials sites within the project areas. The closest site is a brownfield site in Owyhee at the Owyhee Combined School. The contaminant is listed as heating oil. The closure date was in 2006 (NDEP 2018a).

The No Action Alternative and the Proposed Action Alternative would have no direct or indirect impacts on waste and hazardous materials management. Some hazardous materials, such as oil and gas, would be used by construction equipment near wetlands and waterways. These would be limited quantities and managed according to standard best practices. Such practices typically include proper disposal of hazardous materials and prompt cleanup of any spills. Based on the small quantities of hazardous materials that would be used, this issue was dismissed from further analysis.

4.2 Land Resources – Detailed Analysis

4.2.1 Topography

The Reservation is located in northern Nevada and southwest Idaho within the Great Basin physiographic region and the Columbia Plateau physiographic region. The Great Basin region in Nevada is found between the Sierra Nevada Range to the west and the Snake and Deep Creek Mountains to the east along the Utah border. It is characterized by north/south trending mountains and broad, arid valleys that create considerable elevational relief (U.S. Department of Agriculture [USDA] 2018). The Columbia Plateau is a wide flood basalt plateau between the Cascade Range and the Rocky Mountains (Britannica 2020).

Both mitigation sites are found within the broad, arid valley of the upper Owyhee River, while China Diversion is found further upstream within a more confined valley of the river. This area is part of the upper Owyhee River Basin, a sub-basin of the greater Snake River Basin. The area is bounded by the Bull Run Mountains and the Bruneau Range. Topography on the broad valley floor is generally flat and follows the river gradient from 5,400 feet above MSL at the southern end of the valley, to 5,300 feet MSL towards the northern end of the valley. Topography upstream of China Diversion, within the more confined Owyhee River valley, follows the river gradient from 5,422 feet above MSL at the western end of the China Diversion and 5,437 feet above MSL at the eastern end. Drainage in the area generally flows north and northwest to the plains of the Snake River.

Impacts to Topography

No Action Alternative

Other than operation and maintenance procedures that currently occur at China Diversion, the No Action Alternative would not require the movement or importation of fill material or grading of existing material. The No Action Alternative would not result in any changes to the existing ground elevations within the project area. Therefore, the No Action Alternative would have no direct or indirect impacts on topography.

Proposed Action Alternative

The Proposed Action Alternative would require the excavation of approximately 550,000 cubic yards (CY) of soil material to construct the regulating reservoir. Material from the regulating reservoir may be used to raise the height of the existing China Diversion embankment and/or processed to produce materials stockpiles (e.g. topsoil and aggregate) for use by the Sho-Pai Tribes. Excess excavation materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area. Additionally, 3,260 CYs of excavation would occur at the Drain Recovery Mitigation Site, where high ground areas would be excavated near channels to maximize distribution of flows and connectivity between channels and the floodplain.

Overall, the Proposed Action Alternative would have moderate, long-term impacts on the topography. No indirect impacts on topography would be anticipated.

4.2.2 Soils

The USDA Natural Resources Conservation Service (NRCS) Web Soil Survey for the project areas show a range of soil types. At China Diversion, parent material for the soils primarily consists of volcanic ash, mixed alluvium, loess, welded tuff, and rhyolite. These soils have a high susceptibility for soil degradation (NRCS 2019). At the Boyle Creek Mitigation site, parent material consists primarily of mixed alluvium, volcanic ash, and colluvium derived from igneous rock. These soils have a slight to moderate susceptibility for soil degradation. Parent material for the Drain Recovery Site consists primarily of volcanic ash and mixed alluvium derived from welded tuff. These soils have a slight susceptibility to degradation (NRCS 2019).

Impacts to Soils

No Action Alternative

Other than operation and maintenance procedures that currently occur, the No Action Alternative would not require ground disturbance. Therefore, the No Action Alternative would have no direct or indirect impacts on soils.

Proposed Action Alternative

Under the Proposed Action Alternative, construction-related soil disturbance would occur during the excavation of the regulating reservoir and at the Drain Recovery Mitigation site. Construction of the regulating reservoir would involve the excavation of 550,000 CY of material. Material from the regulating reservoir may be used to raise the height of the existing China Diversion

embankment and/or processed to produce materials stockpiles (e.g. topsoil and aggregate) for use by the Sho-Pai Tribes. Excess excavation materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area. Once construction is complete the area would be stabilized through seeding.

Proposed mitigation at the Drain Recovery site would result in 3,260 CYs of material excavation. Excavating material at the Drain Recovery site would allow for a greater connection between the floodplain and historic channels, allowing more wetland vegetation to establish.

Overall, the Proposed Action Alternative would have a moderate, long-term direct impact on the soils.

Potential indirect impacts on soils resulting from construction of the Proposed Action would be related to soil disturbance from construction activities. Although erosion-control measures would be implemented according to standard practice, some erosion may still occur during rain and wind events until these disturbed areas have stabilized. The impact would be noticeable in the short term after construction but would diminish over time. Therefore, the Proposed Action Alternative would have minor, localized impacts.

4.3 Water Resources – Detailed Analysis

4.3.1 Surface Waters and Wetlands – Clean Water Act 404 Permitting

A formal wetland delineation was conducted at the China Diversion project area in May 2018 and at the two mitigation sites in September 2018.

In the project areas, surface waters include the Owyhee River, Agency Canal, and Highline Canal at China Diversion; and a drain ditch at the Drain Recovery site. These surface waters are all key components of the DVIP, with water conveyed downstream in the Owyhee River to the China Diversion. From here, irrigation flows are diverted into two canals, the Agency Canal and the Highline Canal. Irrigation water from these two main canals is then diverted into a series of smaller canals and laterals, conveyed throughout Duck Valley, and delivered to individual farm tracts. The drain ditch at the Drain Recovery site collects excess flows from flood irrigation and groundwater and conveys that water back to the Owyhee River. Approximately 7.8 acres of waters were delineated at the China Diversion, including 7.3 acres of the Owyhee River and 0.5 acre of the Agency and Highline Canals. At the Drain Recovery site, 1.2 acre of the drain ditch was delineated (Geum 2018 and 2019a).

Approximately 78.3 acres of palustrine wetlands were delineated at the China Diversion project area. This includes 77.0 acres of palustrine scrub-shrub wetland, 0.1 acre of palustrine emergent wetland, and 1.2 acre of palustrine unconsolidated bottom. At the Drain Recovery site, 6.4 acres of palustrine wetland were delineated, including 5.1 acres of palustrine scrub-shrub wetland and 1.3 acres of palustrine emergent wetland. A total of 119.1 acres of wetland were delineated at the Boyle Creek site. This includes 2.3 acres of palustrine scrub-shrub wetlands and 116.8 acres of palustrine emergent wetland. Figures 5, 6, and 7 present the delineated wetlands and surface waters within the project areas.

The Owyhee River, the Agency and Highline Canals, the drain ditch at the Drain Recovery site, and all associated wetlands would all fall under the jurisdiction of the USACE and CWA Section 404/401.

Impacts to Surface Waters and Wetlands

No Action Alternative

The No Action Alternative would not require modifications to, or placement of fill within, surface waters and wetlands, as no construction would take place. Under the No Action Alternative, the condition of China Diversion would also continue to deteriorate, and operational deficiencies would persist. The No Action Alternative would, over time, have a long-term, adverse effect on the operation and distribution of irrigation surface water throughout the DVIP, potentially leading to reduced crop production or water disputes. Additionally, existing wetlands at Boyle Creek and the Drain Recovery sites would not be restored or enhanced.

Proposed Action Alternative

The Proposed Action Alternative would have both major beneficial and adverse effects to surface waters and wetlands. Proposed work would involve structural improvements to the China Diversion, and the construction of an estimated 57-acre regulating reservoir east of China Diversion. These improvements would be beneficial by reducing the highly variable flow at China Diversion and helping to stabilize water distribution throughout the DVIP.

The construction of the regulating reservoir would, however, convert 4.7 acres of a riverine system (i.e., the Owyhee River) into a lacustrine system. This means 4,335 linear feet of river would be substantially widened to create a system with warmer, slow moving waters that may not be ideal for aquatic species that have adapted to riverine environments. The Proposed Action would also permanently remove 50.0 acres of identified palustrine scrub-shrub wetlands and 1.2 acres of palustrine unconsolidated bottom wetlands through excavation to construct the reservoir. This means 65 percent of the high-quality shrub-scrub wetland habitat delineated within the China Diversion project limits (77 acres total) would be eliminated. In addition, 0.2 acre of palustrine scrub-shrub wetlands, 0.3 acre of a riverine system, and 0.1 acre of irrigation ditch would be impacted during structural improvements to the China Diversion. While these actions may only have minor individual and cumulative impacts on the greater Owyhee River aquatic environment, these actions would have a major, long-term adverse effect on surface waters and wetlands within the project area, as the impact would be highly noticeable, and there would be a permanent change to the ecosystem directly upstream of the diversion.

To offset wetland impacts associated with the regulating reservoir, compensatory wetland mitigation is proposed. Under the Proposed Action Alternative, native wetland vegetation would be planted along the edges of the regulating reservoir. Natural colonization along the edges is also expected to occur. At the Boyle Creek and Drain Recovery Mitigation sites, wetlands and riparian areas would be enhanced, restored, and preserved. Based on the 2020 *China Diversion Compensatory Wetland Mitigation Plan*, over 270 Functional Credit Units would be created as part of the compensatory wetland mitigation effort (Geum, 2020). Overall, the mitigation proposed under the Proposed Action Alternative would have a long-term beneficial impact on aquatic resources in the area.

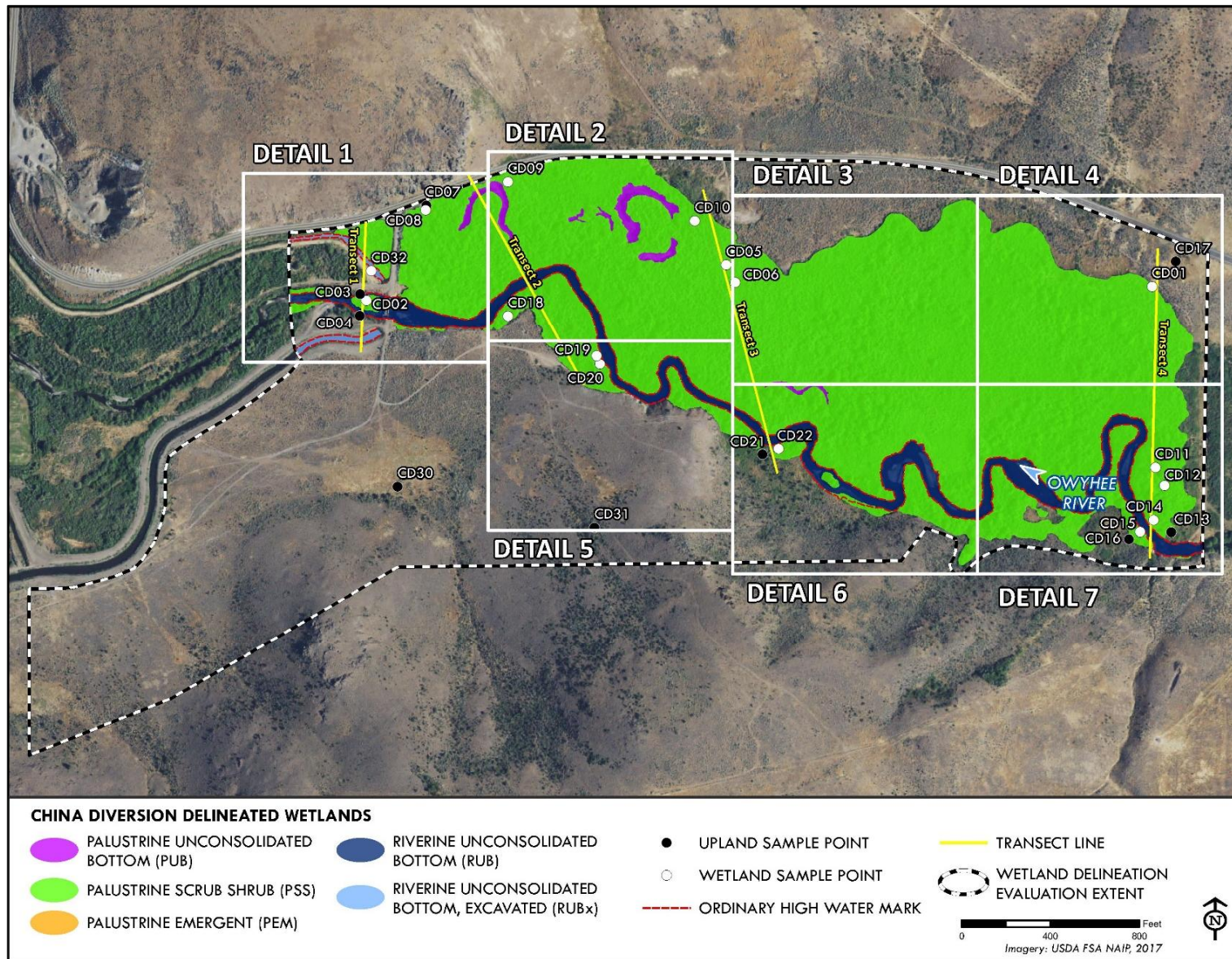


Figure 5. Delineated wetlands and waters at China Diversion.

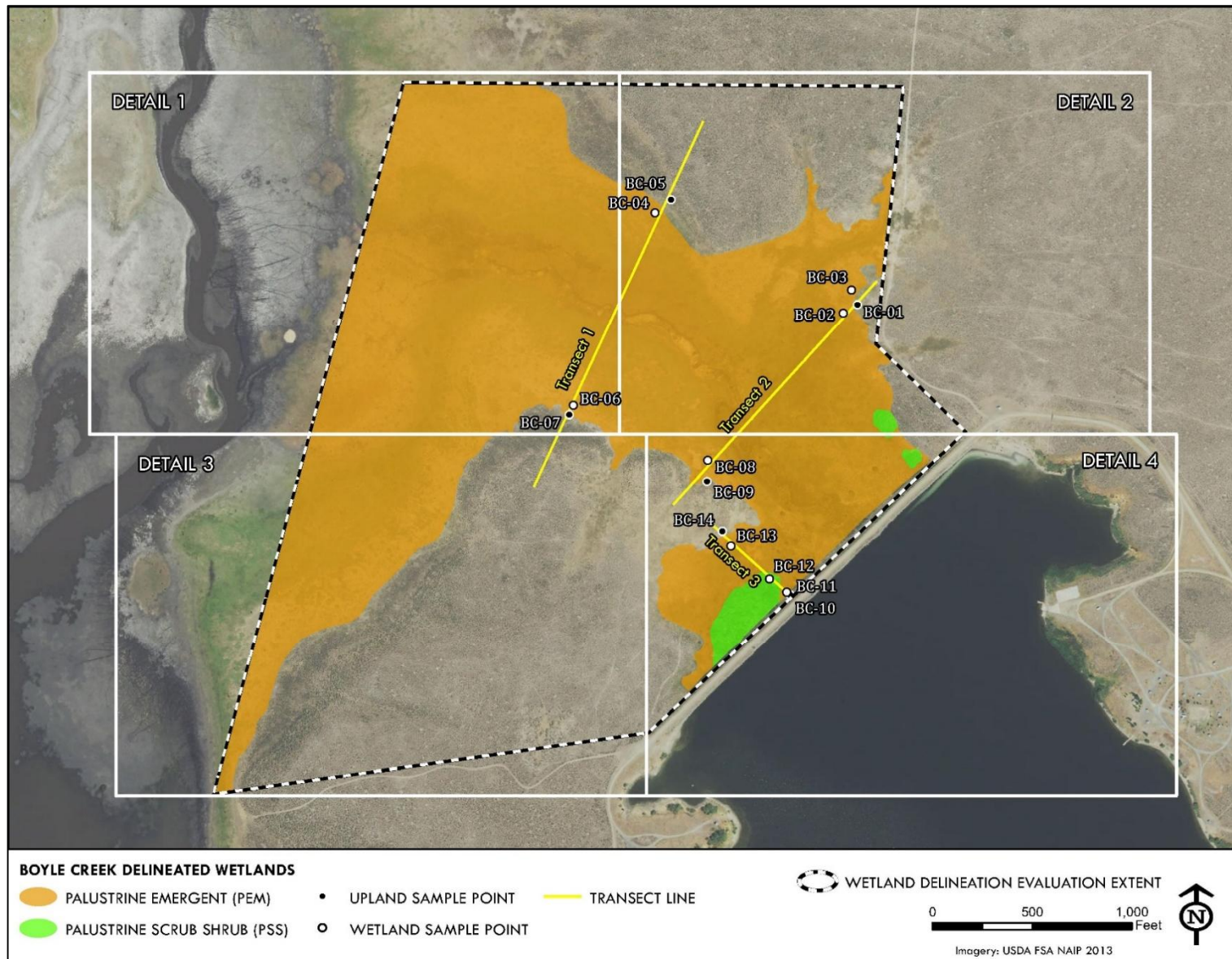


Figure 6. Delineated wetlands and waters at Boyle Creek.

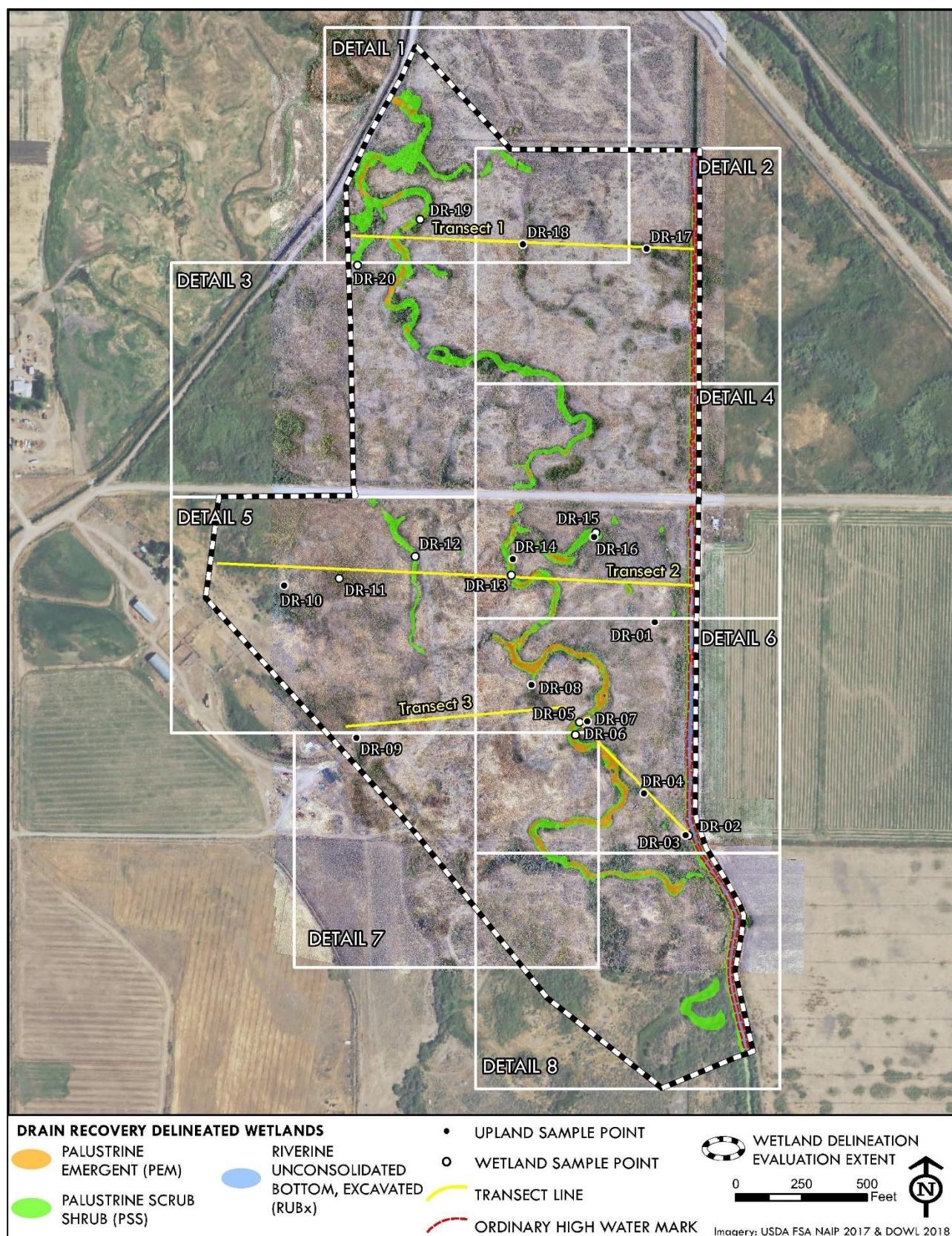


Figure 7. Delineated wetlands and waters at the Drain Recovery

4.3.2 Surface Water Quality

According to the 2020 Nevada Water Quality Integrated Report, which provides an assessment from 2016 through 2018, the Owyhee River upstream of China Diversion, at the Reservation boundary, is not listed on the state 303d Impaired Waters list; however, this segment of river is listed as not supporting aquatic life and recreation that involves contact with water (NDEP 2020). In the assessment, water quality standards were not met for copper, iron, total phosphorus, and turbidity (NDEP 2020).

Tribal water quality data on the Owyhee River was collected at China Diversion in June 2017 and August 2017 (Sho-Pai 2017a). Mercury data was collected in October 2017 (Sho-Pai 2017b). Sampling data at the diversion indicate nitrates remained relatively low in June and August (0.00 to 0.05 micrograms [mg] per liter [L]), while total phosphorus levels were much higher than Reservation water quality threshold standards (0.25 mg/L in August). Ammonia levels remained relatively low in both June and August (0.00 to 0.05 mg/L). E coli also remained below Reservation water quality thresholds standards for both June and August (0 to 50 ct/100ml). For turbidity, sampling showed levels below the Reservation water quality threshold standards for both June and August (2.0 to 4.0 Nephelometric Turbidity Units). Mercury levels at China Diversion were detectable, but relatively low (1.52 nanograms [ng]/L).

No water quality data is available for the Drain Recovery Mitigation site. For the Boyle Creek Mitigation site, mercury levels have been collected for Mountain View Reservoir (Sho-Pai 2017b). Mercury levels at Mountain View Reservoir were detectable, but very low (0.581 ng/L).

Impacts to Surface Water Quality

No Action Alternative

Under the No Action Alternative, long-term, minor, adverse impacts on water quality would occur. None of the sluiceway gates at China Diversion are currently fully operational, and only one can be opened. The inability to sluice water through these gates leads to a build-up of sediment in front of the headgates, and it exacerbates sedimentation issues within the Highline Canal. This sedimentation would be perpetuated or may become worse if structural deficiencies at China Diversion are not corrected.

Proposed Action Alternative

Under the Proposed Action Alternative, structural changes would be made to China Diversion and a 57-acre regulating reservoir would be excavated east of China Diversion on the Owyhee River. Construction of the regulating reservoir and improvements to the China Diversion would not produce and/or increase copper, iron, total phosphorus, turbidity and other potential water quality impairments within the Owyhee River. The regulating reservoir may, however, collect and retain upstream contaminants, as sediment laden water (turbid water) within the Owyhee River slows as it reaches the reservoir. During this process, sediment and contaminants would drop to the bottom of the reservoir. This process would help to reduce sedimentation in the DVIP, and the new sluiceways at China Diversion would help improve the transport of fine sediment downstream. However, there would likely be increased maintenance at the reservoir, as periodic removal of accumulated sediment, and potential contaminants, would be required. During construction of the regulating reservoir, water quality would be protected by using best management practices (BMPs).

As part of the proposed wetland mitigation, livestock fencing would be installed at the Boyle Creek and Drain Recovery sites to protect the areas from livestock grazing. Restricting livestock from these areas would help reduce bacteria and nutrients associated with livestock from entering wetlands and adjacent waters. Restored wetlands at Boyle Creek and an increase of wetlands at the Drain Recovery site would allow both areas to be more efficient at the capture and filtration of surface water that flows through the sites.

Overall, the Proposed Action Alternative would have a moderate, long-term, beneficial impact on water quality.

4.3.3 Groundwater

Limited published data exists regarding groundwater within the project areas. The Nevada Division of Water Resources has well logs for Duck Valley, downstream of China Diversion. Only 13 wells are recorded with depths of 100 feet or greater (ITRC 2017). However, shallow groundwater is likely present in many areas throughout Duck Valley, as evidenced by the fact that livestock nose pumps, which function when groundwater is within approximately 20 feet of the surface, are being successfully used at locations throughout the valley. Flood irrigation and canal seepage contribute to groundwater recharge in the area.

While particulate matter in groundwater naturally filters contaminants, both naturally-occurring and human-caused contaminants may still exist and affect groundwater quality standards (USGS 2020). Contaminants may enter groundwater through surface filtration or seeping of underground substances (i.e. septic systems or decaying organic matter). A 2015 Public Water System Consumer Confidence Report for the Reservation provides water quality data from five groundwater wells that make up the Duck Valley Community Water System (Owyhee Wells 3 and 2 and Newton Wells 1, 2, and 3). While most contaminants were not sampled, trace amounts of nitrate (0.0008 mg/L) were documented. In addition, the report noted that hydrocarbons, including gasoline and heating oil, contaminated groundwater in the Town of Owyhee. The contamination forced the closure of one well in the town (Sho-Pai 2015).

Impacts to Groundwater

No Action Alternative

No direct or indirect impacts to groundwater would be anticipated under the No Action Alternative as improvements would not occur and current groundwater recharge and water quality would be perpetuated.

Proposed Action Alternative

The Proposed Action Alternative would construct a new regulating reservoir east of China Diversion. The reservoir would greatly increase holding capacity of water in the area and, therefore, may increase groundwater recharge potential. Additionally, operational improvements may allow for more area within Duck Valley to be effectively irrigated. With more area effectively flood irrigated, deep percolation into the aquifer is likely to occur, helping to contribute to groundwater recharge. The proposed project activities at China Diversion are not anticipated to produce and/or increase contaminants that may enter and impair groundwater wells and aquifers.

Restored wetlands at Boyle Creek and an increase of wetlands at the Drain Recovery Mitigation site would allow both areas to be more efficient at the capture and filtration of surface water that flows through the sites. Some of which may percolate into the groundwater. New fencing would also limit contaminants that could percolate into the groundwater by restricting livestock and removing livestock waste from these areas. In addition, proposed restoration efforts at the Drain Recovery Mitigation site include diverting water from the drain ditch to reactivate channels and constructing BDA structures to maximize hydrologic connection. These efforts would improve surface water storage at the site and the potential for groundwater recharge.

Overall, impacts under the Proposed Action Alternative to groundwater storage and groundwater quality are expected to be minor and beneficial.

4.3.4 National Pollutant Discharge Elimination System

Section 402 of the CWA pertains, in part, to the maintenance of water quality by managing storm water runoff from projects affecting one or more acres. On the Reservation, the EPA administers this section of the CWA under the National Pollutant Discharge Elimination System (NPDES). Permitting requires that project proponents, with projects that result in one or more acres of ground disturbance, complete a Storm Water Pollution Prevention Plan (SWPPP) for project construction and that the overall project design provide for the protection of waters.

Storm Water Pollution Impacts

No Action Alternative

Other than current operation and maintenance activities, no construction would take place under the No Action Alternative; therefore, no ground disturbance would take place and direct or indirect storm water pollution impacts during construction would not occur.

Proposed Action Alternative

The Proposed Action Alternative would result in the ground disturbance of approximately 91.3 upland, wetland, and riverine acres during the construction of the regulating reservoir, structural improvements at the China Diversion, and during the wetland restoration/enhancement activities at the two mitigation sites. A NPDES Construction Storm Water General Permit, however, would likely only be required for the proposed regulating reservoir. The reservoir would involve approximately 89 acres of ground disturbance and would be built separately from the China Diversion project and the two mitigation sites, which are all proposed to disturb less than one acre.

As part of the NPDES permit, A SWPPP would be prepared and implemented. The purpose of the SWPPP is to identify temporary erosion and sediment control measures to be installed during construction to prevent sediment-laden storm water from exiting the construction site. By strictly adhering to the SWPPP and proposed BMPs for erosion and sediment control, storm water pollution impacts would be minor. No indirect impacts would be anticipated.

4.3.5 Water Rights

The water rights claims of the Sho-Pai Tribes of the Duck Valley Reservation have been settled through federal legislation (*Subtitle C—Shoshone-Paiute Tribes of the Duck Valley Reservation Water Rights Settlement of P.L. 111-11*) and a judgment and decree issued in the East Fork Owyhee

River Adjudication by the State District Court in Elko, NV. Negotiations to settle the Tribes' federally reserved water rights began in 1991. The negotiations culminated in *The Agreement to Establish the Relative Water Rights of the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation and the Upstream Water Users, East Fork Owyhee River* (the Agreement). By November 15, 2006, all parties had signed the Agreement and the U.S. Congress ratified the Agreement through the above referenced legislation on March 30, 2009. The Agreement also addresses upstream water rights.

The Sho-Pai Tribes have the right to 111,476 acre-feet of surface water from the East Fork Owyhee River Basin and 2,606 acre-feet of groundwater. The period of use is from January 1 through December 31 of each year, the priority date for the right is April 16, 1877. Wildhorse Reservoir is used to store irrigation water for agriculture on the Reservation. The Preliminary Order of Determination East Fork of Owyhee River, signed by Jason King, the State Engineer, on April 29, 2010, lists both federally reserved rights with a priority date of 1877 and subsequent state-based rights with later priority dates. Several uses of the Tribal Right listed in the Preliminary Order include irrigation, stock water, domestic, lake level maintenance, instream flow for fish, municipal, and industrial.

Impacts to Water Rights

No direct or indirect impacts to Sho-Pai water rights would occur under the No Action Alternative and the Proposed Action Alternative, as uninterrupted irrigation flows would be maintained under both alternatives. The Proposed Action Alternative, however, would be able to distribute irrigation flows under the water rights agreement more effectively to irrigation users.

4.4 Air Quality – Detailed Analysis

National Ambient Air Quality Standards (NAAQS) have been established for six criteria pollutants: carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead. Vehicle emissions are major sources of many of these pollutants. Sources of particulate matter include the suspension of dust through ground-disturbing activities, road dust from vehicles, and emissions from internal combustion engines.

The project areas are located in an area designated as having attained the desired levels for NAAQS criteria pollutants (NDEP 2018b). Therefore, conformity procedures under NAAQS do not apply. Air quality in this general area is normally good. Air pollutants produced in the immediate vicinity of the project areas are limited to dust from farm fields and unpaved roads and vehicular emissions.

Impacts to Air Quality

No Action Alternative

Under the No Action Alternative, temporary or long-term impacts on air quality would not occur, as construction activities would not be implemented. The No Action Alternative would not result in any meaningful increase in traffic volumes, vehicle mix, or any other factor that would cause an increase in emissions impacts. Therefore, the No Action Alternative would have no direct or indirect impacts on air quality.

Proposed Action Alternative

Under the Proposed Action Alternative, a negligible, short-term deterioration of air quality may be experienced due to vehicle emissions from the operation of construction equipment, demolition of concrete irrigation structures (e.g. portions of China Diversion), dust that would be caused by movement of dirt to excavate the new regulating reservoir, and dust generating from moving excavated dirt on unpaved haul roads. This deterioration would be a localized condition that would not persist after the improvements are completed. Water may be sprayed on disturbed roadway surfaces within the project area to suppress any dust generated. Overall, the amount of dust generated would be less than what is generated in the area from agricultural fields and unpaved roads. All Tribal and federal dust abatement measure would be adhered to during construction activities. No potential indirect impacts on air quality resulting from construction of the Proposed Action Alternative would be anticipated.

4.5 Living Resources – Detailed Analysis

4.5.1 Ecosystems and Biological Communities

The China Diversion project area occurs within a confined valley of the Owyhee River, while the two mitigation sites are found within the broad open valleys of the Owyhee River and Blue Creek. All three project areas are within the upper Owyhee River Basin, a sub-basin of the greater Snake River Basin. The Owyhee River Basin encompasses nearly 11,049 square miles that begins at the outer edge of the Great Basin and ends to the north within the Columbia Plateau. This area is found within the Northern Basin and Range ecoregion, which includes primarily arid tablelands, intermontane basins, dissected lava plains, and scattered mountains. Vegetation includes mountain sagebrush, mountain brush, Idaho fescue, Douglas-fir, and aspen (US Fish and Wildlife Service [USFWS] 2018a). While the overall region is very dry and not suitable for agriculture, rangeland and irrigated agriculture occurs in the eastern basins.

Topography within the China Diversion project area and general vicinity varies greatly, with elevations reaching over 7,400 feet in the adjacent Bull Run Mountains and the Bruneau Range. Topography on the valley floor is generally flat and follows the river gradient from 5,422 feet above MSL at the western end of the project, to 5,440 feet MSL at the eastern end of the project area. Sagebrush-grass constitutes the predominant plant cover over much of the higher elevations surrounding the river valley; however, corridors of willows are found in the semi-wet meadows along the Owyhee River. Lands in the river valley are comprised of BIA administered land or lands managed by the Sho-Pai Tribes. Land use within the project vicinity is largely ranching/grazing with some dispersed residential properties and significant irrigated agriculture within Duck Valley

The Boyle Creek Mitigation Site is located northwest of the Mountain View Reservoir embankment, approximately 8-miles northwest of Owyhee, Nevada. Elevations within the site average around 5,305 feet above MSL. The site is dominated by a seasonally inundated wetland, with influence from groundwater and surface flows from Blue Creek and Boyle Creek. Vegetation is primarily cattails, willows, herbaceous wetland plants, and upland sagebrush/bunchgrass dominated hillsides. Land surrounding the area is largely comprised of ranching/grazing, water storage/recreation at Mountain View Lake, and key wildlife habitat at the Boyle Creek and Blue Creek confluence. The area is also a known sage grouse habitat and important habitat for waterfowl.

The Drain Recovery Mitigation Site is located approximately 2.5-miles northwest of Owyhee, Nevada within portions of non-assessable agricultural tracts. Elevations within the site average around 5,360 feet above MSL. The site is a network of abandoned historic channels that once connected to the Owyhee River. Lower elevations have shallow groundwater and support wetland and riparian vegetation, while higher elevations are dominated by sagebrush and non-wetland vegetation. The site is currently used as winter range for livestock, with livestock generally present from September through March. Land surrounding the area is primarily ranching/grazing, agricultural, designated BIA roadways, and dispersed residential.

Impacts to Ecosystems and Biological Communities

No Action Alternative

The No Action Alternative would not result in impacts on wildlife habitat or vegetation in the project areas, as no improvements would take place. However, some vegetation at China Diversion may continue to be removed as part of existing operations and maintenance and the effects of livestock at the two mitigation sites would be perpetuated. Therefore, the No Action Alternative would have negligible direct or indirect impacts on ecosystems and biological communities.

Proposed Action Alternative

Under the Proposed Action Alternative, improvements to China Diversion and construction of a regulating reservoir would occur. Approximately 55.9 acres of wetland and riverine habitat would be permanently impacted by conversion of the area from a riverine / wetland system to a lacustrine / open water system. Another 2.0 acres of wetland would be temporarily impacted by construction equipment maneuvering in the area of the regulating reservoir. In addition, 0.2 acre of palustrine scrub-shrub wetlands, 0.3 acre of a riverine system, and 0.1 acre of irrigation ditch would be impacted during structural improvements to the China Diversion. Approximately 30 acres of sagebrush / grassland habitat would also be permanently and temporarily impacted at the proposed waste site. These impacts would have a moderate, adverse effect on wildlife habitat and biological communities in the project area and vicinity.

To offset these impacts associated with the regulating reservoir, compensatory wetland mitigation is proposed. Under the Proposed Action Alternative, native wetland vegetation would be planted along the edges of the regulating reservoir. Natural colonization along the edges is also expected to occur. At the Boyle Creek and Drain Recovery Mitigation sites, wetlands and riparian areas would be enhanced, restored, and preserved, and wildlife friendly fencing, to be installed at Boyle Creek, would protect the sagebrush habitat surrounding the Boyle Creek wetlands, eliminating livestock grazing and the reduction/trampling of sagebrush associated with grazing. In addition, vegetation within temporarily-disturbed-areas would be seeded following construction. Overall, the mitigation proposed under the Proposed Action Alternative would have a long-term beneficial impact on biological communities and ecosystem function in area. Indirect impacts would not be anticipated.

4.5.2 Wildlife

General Terrestrial and Aquatic Species

Various habitats found within all three project areas support a wide variety of wildlife species such as mule deer, rabbits, ground squirrels, racoons, skunks, and a wide variety of birds (NDOW 2018a

& Idaho Department of Fish and Game [IDFG] 2020a). A wetland/sagebrush transition zone in the Boyle Creek project vicinity is important habitat to sage grouse, migratory waterfowl, and nesting birds. Several fish species are listed as occurring in the Owyhee River in the vicinity of the China Diversion project area, including inland redband trout, brook trout, rainbow trout, brown trout, and yellow perch (NDOW 2018b). No suitable fish habitat exists at the two mitigation sites.

Impacts to Terrestrial and Aquatic Species

No Action Alternative

The No Action Alternative would not result in direct or indirect impacts to wildlife or wildlife habitat, as no project activities would take place and current condition would be perpetuated.

Proposed Action Alternative

Under the Proposed Action Alternative, approximately 90 acres of terrestrial and aquatic habitat may be temporarily or permanently impacted during the construction of the regulating reservoir, improvements at China Diversion, and disturbance within the waste area for the reservoir. This would include impacts to wetland habitat, upland habitat, and aquatic (river) habitat. Additionally, 0.93 acre of wetland at the Drain Recovery Mitigation site would be temporarily or permanently impacted. Approximately 0.01 acre of upland vegetation would also be excavated at the Drain Recovery site to maximize hydrologic distribution of flows and connectivity. Construction-related impacts to terrestrial wildlife would primarily include the temporary or permanent loss of these habitats and the displacement of resident wildlife from the construction area; possible injury or death to smaller, less mobile animals, including small burrowing mammals, snakes, and frogs; and noise related disturbance. At the China Diversion project area, conversion of a riverine / wetland system to a lacustrine system may also change the types of wildlife species found in the area (e.g., less wetland species and more species suited to living around open water).

Aquatic species that may be found within the Owyhee River upstream of the China Diversion would be permanently impacted as part of the reservoir construction. A new regulating reservoir upstream of the diversion may deter fish species from moving through the area during the irrigation season, as the warmer, slow moving waters that may be present during this period may not be ideal for cold-water species. If temperatures are suitable, juvenile fish may be attracted to the reservoir, where they may be more susceptible to predation. Currently, very few fish species inhabit the Owyhee River downstream of the China Diversion as the river regularly dries up during the irrigation season. In addition, there is currently no upstream fish passage at China Diversion. This condition will be perpetuated.

Overall, the Proposed Action Alternative would have primarily long-term, moderate impacts on terrestrial wildlife species through the permanent loss of suitable wetland vegetation at the regulating reservoir. Long-term, moderate impacts on aquatic species are also anticipated from the construction of the regulating reservoir. To reduce potential impacts to wildlife habitat, work would be confined to the designated construction limits to the extent practicable. Temporarily disturbed areas would be seeded following construction, and vegetation is anticipated to return after completion of the project. BMPs would also be installed during construction to limit sediment from entering surface waters. No indirect impacts to wildlife would be anticipated under the Proposed Action Alternative at the China Diversion.

While minimal permanent habitat impacts are anticipated at the mitigation sites, this compensatory wetland mitigation is anticipated to offset the permanent impacts to suitable wildlife habitat at the China Diversion project area. Proposed mitigation activities would enhance, restore, and preserve riparian and wetland habitat, providing a long-term, beneficial impact on wildlife and improved suitable wildlife habitat in the project area.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, pursuing, hunting, taking, capturing, killing, selling, or possessing any migratory bird, part, nest, or product is unlawful (16 USC 703-712). “Taking” of species protected by the MBTA includes the removal of vegetation containing active nests of protected species. Birds protected under the act include all songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, and swallows; feathers, plumes, nests, and eggs are also protected. A complete list of protected species is found in Code of Federal Regulations Title 50, Part 10.13.

The USFWS Information for Planning and Consultation (IPaC) database identified ten migratory bird species as potentially occurring at the Boyle Creek and Drain Recovery sites and eight as potentially occurring within the China Diversion project vicinity. These bird species were determined by the USFWS to be Birds of Conservation Concern (BCC) or species which warrant special attention (USFWS 2020). Numerous additional migratory bird species are also known to use the areas within and surrounding all three sites (Intermountain Bird Observatory [IBO] 2020 and Gossett 2008).

Boyle Creek is a small tributary that conveys flows into Blue Creek just west of the Boyle Creek Mitigation project area. Blue Creek, and the wetlands associated with Blue Creek, are an important stopover site for migrating birds, especially waterfowl and water birds in the spring and fall. This area is also found to be an important greater sage-grouse (*Centrocercus urophasianus*) area on the reservation (Gossett 2008). Much of the tributary area for Boyle Creek also provides suitable riparian habitat for migratory birds. Bird surveys along the Blue Creek wetland complex have identified seven of the USFWS IPaC-listed BCC migratory bird species within the vicinity of the Boyle Creek Mitigation site at Mountain View Reservoir and Blue Creek East. Species include bald eagle (*Haliaeetus leucocephalus*), brewer’s sparrow (*Spizella breweri*), Clark’s grebe (*Aechmophorus clarkia*), golden eagle (*Aquila chrysaetos*), long-billed curlew (*Numenius americanus*), sage thrasher (*Oreoscoptes montanus*), and willet (*Tringa semipalmata*). In the project vicinity, on Blue Creek East, breeding was confirmed for the long-billed curlew (IBO 2020), and evidence of breeding was identified for the Brewer’s sparrow, Clark’s grebe, golden eagle, sage thrasher, willet, and willow flycatcher (IBO 2020 and Gossett 2008). Additionally, a white-faced ibis colony exists on Blue Creek (IBO 2020). Suitable habitat for these species in the general area includes sagebrush-steppe, lakes and reservoirs, mudflats, shallow ponds, vegetated shorelines, moist meadows, wetlands, and flooded fields.

Shrub-scrub wetland, the Owyhee River, and adjacent sagebrush-steppe provide suitable habitat within the China Diversion project area. Habitat within and adjacent to the area is used by migratory birds for dispersal, foraging and nesting. The Drain Recovery site is currently grazed

and surrounded by agricultural land. Suitable nesting habitat at this site is primarily limited to the shrub-scrub vegetation found along the historic channels.

Bald and golden eagles are protected under both the MTBA and the Bald and Golden Eagle Protection Act, and both have been regularly observed in Owyhee and Elko Counties (IDFG 2020b and NNHP 2020). No suitable bald eagle nesting habitat (i.e., very large trees) is found within the project areas or general vicinity of all three sites, and no bald eagle nests are known to occur on the Reservation in Owyhee County (Gossett 2008). All three project sites, however, do include suitable bald eagle foraging habitat. Approximately 93 percent of golden eagle nests in Elko County are found on cliffs (Page and Seibert 1973). Evidence of nesting golden eagles on the high cliffs near Blue Creek (Owyhee County) have also been documented (Gossett 2008). While suitable nesting habitat (i.e., cliffs) is found in the project vicinity, these areas are not adjacent to the China Diversion, Boyle Creek Mitigation site, or Drain Recovery Mitigation site. All three project sites, however, do include suitable golden eagle foraging habitat.

Impacts to Migratory Birds

No Action Alternative

Under the No Action Alternative, improvements at China Diversion and the two mitigation sites would not take place, and suitable migratory bird nesting and dispersal habitat would not be impacted. Therefore, the No Action Alternative would have no direct or indirect impacts on migratory birds.

Proposed Action Alternative

Habitat within and adjacent to all three project areas is used by migratory birds for dispersal, foraging, and nesting during the breeding season. Temporary impacts to migratory birds may result from activities associated with construction, such as noise, vibration, human activity, and construction equipment movement. In addition, construction of the regulating reservoir at China Diversion and overall restoration efforts at Boyle Creek and the Drain Recovery Mitigation sites have the potential to permanently impact nesting birds protected under the MBTA if vegetation (any trees, shrubs, or emergent vegetation) removal occurs during the bird-breeding season (generally March 1 through July 31 of any calendar year). To limit impacts to migratory birds, all tree/shrub removal should take place before or after the designated breeding season (remove before March 1 or after July 31 of any calendar year). If tree/shrub removal must take place during the breeding season, the contractor would hire a qualified biologist to survey trees/shrubs for active nests before vegetation removal takes place. If an active nest is discovered, the nest would be left in place and protected until young hatch and depart.

The construction of the regulating reservoir would permanently convert a riverine system into a lacustrine system, removing suitable habitat for migratory birds that rely on the existing riverine/riparian habitat. The conversion may force these birds to find suitable habitat elsewhere. However, the regulating reservoir could provide new habitat for bird species that prefer lacustrine habitat.

Overall, long-term, beneficial impacts to migratory birds and their habitat would be anticipated from the restoration efforts at the two wetland mitigation sites. The mitigation projects would preserve and expand wetland habitat by planting native wetland and riparian species, deterring

livestock grazing/access through wildlife friendly fencing, and diverting hydrology into historic channels of the Owyhee River floodplain. These activities would increase suitable foraging and nesting habitat for several bird species, and, through upland buffer habitat protection, reduce grazing impacts to important greater sage-grouse and waterfowl nesting areas.

The Proposed Action Alternative would have no impact on bald and golden eagle nesting habitat, as none exist within the project areas. Construction noise and activity would likely deter foraging bald and golden eagles from using the project sites. In addition, construction of a regulating reservoir may improve foraging habitat for bald eagles that may be hunting fish; therefore, a long-term, negligible, beneficial impact to eagles is anticipated.

Tribal Sensitive Species

No species have been designated as tribally sensitive by the Sho-Pai Tribes; however, the Tribal Fish, Wildlife, and Parks Department requested special consideration for redband trout (*Oncorhynchus mykiss gairdnerii*), the Columbia spotted frog (*Rana luteiventris*), and the pygmy rabbit (*Brachylagus idahoensis*).

Redband trout do occur in the upper Owyhee River, upstream of the China Diversion. Primary waterways to the project limits that contain redband trout are Skull Creek, approximately 1.4 miles upstream of the China Diversion; Fawn Creek, approximately 5 miles upstream of the China Diversion; and Beaver Creek, located just downstream of Wildhorse Dam (Sho-Pai 2006 – 2018b). 2017 sampling of the Owyhee River revealed few juveniles using the main stem of the Owyhee River, but these results may be skewed by sampling methodologies (Sho-Pai Communications, 2018b). No suitable habitat exists for redband trout at the Boyle Creek and Drain Recovery Mitigation sites.

The Great Basin population of the Columbia spotted frog is typically found at elevations from 5,600 to 8,700 feet and live in spring seeps, meadows, marshes, ponds, small low and foothill streams, and other areas where there is abundant vegetation, including emergent or floating vegetation. They most often occur in structurally complex wetlands with diverse pool and meadow components (NDOW 2016). This frog is found in three distinct locations in Nevada: the Toiyabe range (Nye County); the Ruby Mountain and Jarbridge-Independence Ranges (Elko County); and on the Utah border in the Deep Creek drainage (White Pine County) (NDOW 2016). In southwest Idaho, the frog is found on the east slopes of the Owyhee Mountains and in the Bruneau River drainage, both within Owyhee County. The species has also been identified in pools adjacent to the Owyhee River in Idaho (Gossett, 2008). Suitable habitat is very limited within the China Diversion project area, as the densely vegetated shrub-scrub wetland along the Owyhee River is not preferred by Columbia spotted frog. Both the Boyle Creek and Drain Recovery Mitigation sites do contain suitable lower elevation habitat, including inundated areas, emergent vegetation, and meadow components. While the mitigation sites are outside of the distinct locations for this species, Columbia spotted frog has been recorded within the Blue Creek drainage near the Boyle Creek site (Gossett 2008).

Pygmy rabbits are typically found in areas of tall, dense sagebrush (*Artemisia spp.*) cover, and are highly dependent on sagebrush to provide both food and shelter throughout the year. Pygmy rabbit burrows are typically found in relatively deep, loose soils of wind-borne or water-born origin (USFWS 2015). No suitable habitat for the pygmy rabbit occurs within the Drain Recovery project

area, as the mitigation site is found within agricultural/grazing lands. Tall, dense sagebrush does occur south of the China Diversion and north and south of the Boyle Creek Mitigation site.

A full description of the Tribal sensitive species analysis is found in the Biological Evaluation Report in Appendix C.

Impacts to Tribal Sensitive Species

No Action Alternative

Under the No Action Alternative, no improvements would take place and conditions at China Diversion and the two wetland mitigation sites would be perpetuated. Therefore, the No Action Alternative would have no direct or indirect impacts on redband trout, Columbia spotted frog, and pygmy rabbit.

Proposed Action Alternative

Very limited suitable habitat is found at the China Diversion project area, and impacts to the Columbia spotted frog under the Proposed Action Alternative are not anticipated at this site. Suitable habitat does exist at the two wetland mitigation sites, and temporary impacts to the Columbia spotted frog may occur under the Proposed Action Alternative, if the frog is present at the sites during restoration efforts. The wetland mitigation sites would provide a beneficial impact to the species by expanding and enhancing suitable Columbia spotted frog habitat; protecting and diversifying riparian and wetland habitat through revegetation and wildlife friendly fencing; and through constructed BDA structures at the Drain Recovery site, allowing ponding and pools to form. Overall, a long-term, minor, beneficial impact to the Columbia spotted frog is anticipated.

Tall, dense sagebrush suitable for pygmy rabbit does occur south of the China Diversion and north and south of the Boyle Creek Mitigation site. During excavation of the proposed regulating reservoir, excess materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area. Sagebrush may be uprooted or buried during this process, and some foraging habitat near the diversion may be lost or temporarily impacted. If pygmy rabbit burrows are present, there is potential to be buried. This may cause the loss of some individual pygmy rabbits that may be occupying their burrows at the time of construction. At the Boyle Creek Mitigation site, no construction is currently proposed in the adjacent sagebrush habitat; however, the project would likely have long-term beneficial impacts on pygmy rabbit, as wildlife friendly fencing, to be installed, would protect the sagebrush habitat surrounding the Boyle Creek wetlands, eliminating livestock grazing and the reduction/trampling of sagebrush associated with grazing.

Only a small number of juvenile redband trout have been noted using the main stem of the Owyhee River. Construction of a regulating reservoir upstream of the diversion may deter redband trout from moving through the area, as the warmer, slow moving waters may not be ideal for this cold-water species. If temperatures are suitable, some juvenile redband trout may be attracted to the reservoir, where they may be more susceptible to predation. Additionally, there is currently no upstream fish passage at China Diversion and this condition would be perpetuated. The proposed Drain Recovery and Boyle Creek Mitigation projects would involve the expansion/restoration of existing wetland complexes, which do not provide suitable habitat for fish species. However, the

expansion/restoration of the wetland sites would provide additional filtration of any surface water flowing through the sites, improving water quality downstream. Overall, the Proposed Action Alternative would have both negative and beneficial, minor, long-term impacts on redband trout

4.5.3 Threatened and Endangered Species

The USFWS IPaC database was reviewed to identify threatened and endangered species listed within Elko and Owyhee Counties that may occur within or near the China Diversion, Drain Recovery, and Boyle Creek project areas (USFWS 2020). Five wildlife species and one plant species are listed as occurring within Elko County; however, only the gray wolf (*Canis lupus*) was identified as potentially occurring within the project areas (USFWS 2020). For Owyhee County, four wildlife species, one plant species, critical habitat for bull trout (*Salvelinus confluentus*) and proposed critical habitat for slickspot peppergrass (*Lepidium papilliferum*) are listed as occurring within the county. No listed species or critical habitat within Owyhee County are identified in the IPaC report as occurring in the project areas or vicinity (USFWS 2020).

A full description of the threatened and endangered species analysis is found in the Biological Evaluation Report in Appendix C. The analysis resulted in all ten species classified as **do not occur** in the project areas or vicinity, as the species have distribution ranges that are known to be far from the site and/or the species occupy specific habitats not found within or adjacent to the project areas.

Impacts to Threatened and Endangered Species

The No Action Alternative and the Proposed Action Alternative would have **no effect** on the ten-listed species, as these species do not occur within or near the China Diversion, Drain Recovery, and Boyle Creek project areas. In addition, the No Action Alternative and the Proposed Action Alternative would not result in modification of designated critical habitat, as no critical habitat is found within or directly adjacent to the project areas.

4.5.4 Vegetation

General Vegetation

The China Diversion project area is within the upper, confined valley of the Owyhee River, which includes a somewhat narrow floodplain. Along the river there is a dense community of riparian/wetland shrubs of varying width that includes willows (*Salix sp.*), Woods' rose (*Rosa woodsia*), and red-osier dogwood (*Cornus alba*). Other shrub species include golden currant (*Ribes aureum*) and gray alder (*Alnus incana*) (Geum 2018). The entire river valley is surrounded by miles of sagebrush/shrubland steppe. West / northwest of the diversion, the Owyhee River flows into a large, flat, valley of irrigated farmland/pastureland, consisting of cultivated crops and grassland. For nearly a century these lands have been farmed and irrigated with water from the Owyhee River through a series of canals and drainage ditches.

The Boyle Creek Mitigation site is a unique groundwater-fed wetland complex. The site is seasonally submerged due to a high-water table and flooding associated with Blue Creek. Vegetation within the project area is primarily comprised of Baltic rush (*Juncus balticus*), spreading bentgrass (*Agrostis stolonifera*), silverweed (*Potentilla anserine*), clover species (*Trifolium spp.*), hardstem bulrush (*Schoenoplectus acutus*), willow species (*Salix spp.*), and Nebraska sedge (*Carex nebrascensis*). Adjacent upland species include big sagebrush (*Artemisia*

tridentata), cheatgrass (*Bromus tectorum*), mustard species (*Sisymbrium spp.*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and Canada thistle (*Cirsium arvense*) (Geum 2019a).

The Drain Recovery Mitigation site is located within portions of non-assessable agricultural tracts that include a network of historic channels that once connected to the Owyhee River. The site has both upland and wetland habitat throughout the project area. At lower elevations within the site, groundwater is near the surface and supports wetland scrub-shrub and emergent vegetation, while the higher elevations are dominated by sagebrush and other non-wetland plants. Vegetation within the site includes American mannagrass (*Glyceria grandis*), foxtail barley (*Hordeum jubatum*), common cattail (*Phalaris arundinacea*), coyote willow (*Salix exigua*), Woods' rose, and golden current. Higher elevations include species tolerate of drier conditions, such as big sagebrush, rubber rabbitbrush, Kentucky bluegrass (*Poa pratensis*), and cheatgrass (Geum 2019b).

Impacts to General Vegetation

No Action Alternative

The No Action Alternative would not result in impacts to vegetation in the project areas, as no improvements would take place. However, some vegetation at China Diversion may continue to be removed as part of existing operations and maintenance. Therefore, the No Action Alternative would have negligible direct or indirect impacts on vegetation.

Proposed Action Alternative

Under the Proposed Action Alternative, both adverse and beneficial impacts are proposed. As part of the project, roughly 83.4 acres of vegetation may be temporarily or permanently impacted during the construction of the regulating reservoir and structural improvements to the China Diversion. This would include permanent and temporary impacts to 30 acres of upland vegetation, permanent impacts to 50.0 acres of identified palustrine scrub-shrub wetlands and 1.2 acres of palustrine unconsolidated bottom wetlands that have established upstream of the diversion along the Owyhee River, impacts to 0.2 acre of palustrine scrub-shrub wetlands downstream of the China Diversion, and 2.0 acres of temporary impacts to wetland vegetation. Impacts to upland vegetation would primarily be temporary, as these areas would be graded and seeded after construction of the regulating reservoir. However, approximately 65 percent of the high-quality shrub-scrub wetland habitat delineated within the China Diversion project limits (77 acres total) would be eliminated. While these actions may only have minor individual and cumulative impacts on the greater Owyhee River system, these actions would have a major, long-term adverse effect on wetlands within the project area, as the impact would be highly noticeable, and there would be a permanent change to the ecosystem directly upstream of the diversion from conversion of a riverine/riparian system to a lacustrine system.

To mitigate unavoidable wetland impacts at the China Diversion site, compensatory wetland mitigation is proposed. Under the Proposed Action Alternative, native wetland vegetation would be planted along the edges of the regulating reservoir. Natural colonization along the edges is also expected to occur. At the Boyle Creek and Drain Recovery Mitigation sites, wetlands and riparian areas would be enhanced, restored, and preserved. Based on the 2019 *China Diversion Compensatory Wetland Mitigation Plan*, over 104 Functional Credit Units would be created as part of the compensatory wetland mitigation effort (Geum 2020). Overall, the compensatory

mitigation proposed under the Proposed Action Alternative would have a long-term beneficial impact on vegetation.

In addition, to limit the extent of potential impacts to vegetation, work would be confined to the defined construction limits to the extent practicable. Temporarily disturbed areas would be seeded following construction using a desirable seed mix, and vegetation is anticipated to return after completion of the project.

Indirect impacts would be minor and permanent. Indirect impacts may occur to wetland habitat that may establish along the regulating reservoir, in terms of a potential change in dominate wetland plant species.

Invasive and Noxious Species

Under Executive Order 13112, projects requiring federal action must prevent the introduction of invasive species, detect and control populations of such species in a cost effective and environmentally sound manner, monitor invasive species populations, and provide for restoration of native species and habitat conditions in ecosystems that have been invaded.

A formal noxious weed survey of the project areas has not been completed; however, the presence of invasive species and noxious weeds is indicated by the Sho-Pai Tribes to be wide-spread throughout Duck Valley. Noxious and invasive weeds are likely present within the project areas.

Invasive and Noxious Species Impacts

No Action Alternative

Because improvement activities would not take place, and no ground disturbance would occur, the introduction of invasive species and the spread of existing invasive species, as a result of construction, would not take place. Therefore, there would be no direct or indirect invasive species impacts under the No Action Alternative.

Proposed Action Alternative

The Proposed Action Alternative would include construction-related soil disturbance. Disturbance would be primarily due to excavation of material for the construction of the regulating reservoir, the associated disturbances of spreading excess excavated materials in waste areas, and soil disturbance from construction equipment maneuvering. The use of construction equipment and movement of soils has the potential to introduce invasive species or spread invasive species within the project areas.

To prevent the introduction of invasive species seeds, the contractor would inspect all earth-moving and hauling equipment at the contractor's equipment storage facility, and all equipment would be washed prior to entering the construction site. All disturbed soils that would not be permanently stabilized by construction would be seeded using an appropriate native seed mix that is applicable to the area. To prevent invasive species seeds from being transported off site, all construction equipment would be inspected, and all attached plant/vegetation and soil/mud debris would be removed prior to leaving the construction site.

4.6 Cultural Resources – Detailed Analysis

Cultural resources are structures, properties, sites, or objects that reflect the heritage of local communities, tribes, states, and nations. These sites can be historic (over 50 years old) or prehistoric (dating from before European contact with indigenous American cultures), and they are considered important according to criteria established by the NHPA of 1966, as amended and subsequent regulations. Section 106 of the NHPA requires federal agencies to consider the potential effects of their undertakings on cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

To determine if cultural resources may be present within the identified project area of potential effect (APE), Cultural Resources Surveys, including archaeological resource surveys, were completed for the China Diversion site and both wetland mitigation sites (SWCA 2019, 2020a, and 2020b). As part of the assessment, qualified archaeologists accessed previous archaeological investigations and site records online through the Nevada Cultural Resource Information System (NVCRIS) and through a file request from the Idaho SHPO. In addition, historic General Land Office (GLO) and topographic maps were examined for additional data.

At the China Diversion site, the archival review through the NVCRIS and GLO showed 13 previous cultural resources inventories and five identified archaeological resources within 1 mile of the APE. One historic feature, an irrigation canal, was noted within the APE. An intensive-level (Class III) archaeological resource survey was then conducted on March 29 and 30, 2018, and December 26, 2018. The archaeological survey resulted in the identification of four sites. These included two archaeological sites and two architectural resources (China Diversion Dam). The two archaeological sites are recommended not eligible for inclusion in the NRHP under any criterion. The China Diversion Dam is recommended eligible under Criterion A – a property that is associated with events that have made significant contributions to patterns of history (NRHP 2020).

The NVCRIS archival review identified a total of 11 previous archaeological inventories and one urban architectural inventory within 1 mile of the Drain Recovery Mitigation APE, with no archaeological sites or architectural resources recorded. An intensive-level (Class III) archaeological resource survey was then conducted on March 17, 2020. The archaeological survey resulted in the identification of one site, a small historic vehicle dump and artifact scatter. The site is recommended not eligible for inclusion in the NRHP under any criterion.

At the Boyle Creek Mitigation site, the Idaho SHPO file request identified two previous cultural resources inventories within 1 mile of the APE, with no sites recorded. An intensive-level (Class III) archaeological resource survey was then conducted on March 17, 2020. The archaeological resources survey resulted in the identification of no archaeological sites and no isolated occurrences.

Impacts to Cultural Resources

No Action Alternative

The No Action Alternative would have no impact on cultural resources as no proposed improvements would take place.

Proposed Action Alternative

Cultural resources are located in the China Diversion project area that are eligible for the NRHP. The Proposed Action Alternative would have adverse effects on elements of the China Diversion that contribute to the site's overall NRHP eligibility. A Memorandum of Agreement has been developed in consultation with the Nevada SHPO, Advisory Council, and the Sho-Pai Tribe. This includes an in-depth recording on the dam (see Appendix D).

One site determined ineligible for inclusion in the NRHP was identified at the Drain Recovery Mitigation site. No cultural resources were identified at the Boyle Creek Mitigation site. Therefore, the Proposed Action Alternative would have no effect on historic properties at either mitigation site. Section 106 cultural consultation with Nevada SHPO and Idaho SHPO on the two wetland mitigation sites has been completed. Concurrence letters were received from the Nevada SHPO regarding the Drain Recovery Mitigation Site on September 22, 2020 and from the Idaho SHPO on the Boyle Creek Mitigation Site on September 9, 2020 (see Appendix D).

4.7 Socioeconomic Conditions – Detailed Analysis

The Duck Valley Indian Reservation covers approximately 289,819 acres in northcentral Nevada and southcentral Idaho, 90 miles north of Elko, Nevada. The reservation sits in high desert terrain typical of northern Nevada and southern Idaho. The large Owyhee River valley makes up most of the Reservation. Farming and ranching are a significant source of tribal income (Sho-Pai Tribes 2018a).

4.7.1 Employment and Income

Duck Valley Indian Reservation

According to the U.S. Census Bureau, the Duck Valley Indian Reservation population in 2018 was approximately 1,351 (+/234). This is an increase in population of 42 from 2010. Approximately 94 percent of the population identified themselves as American Indian alone (USCB 2018a).

The civilian employed population over 16 years of age was estimated at 982, with the unemployment rate at 18.4 percent. More people were employed in public administration (40 percent) and educational/health care (32 percent) than any other industry sector. The 2018 per capita income was \$18,349 and the 2018 median household income was \$35,750. Approximately 36.2 percent of the population on the reservation were below poverty levels in 2018 (USCB 2018b).

Elko & Owyhee Counties

The 2018 population of Elko County, Nevada was reported to be 52,252. This was an approximately 7.0 percent increase from 2010. Countywide, about 6.4 percent of the population self-identified as American Indian in 2018 (USCB 2018c). The 2018 population for Owyhee County, Idaho was reported to be 11,455. This was an approximately 0.6 percent decrease from 2010. Countywide, about 3.2 percent of the population self-identified as American Indian in 2018 (USCB, 2018d).

In Elko County, the 2018 unemployment rate was 4.5 percent, average per capita income in 2018 was \$33,091, and the 2018 median household income was \$77,209. Agriculture/forestry/fishing

and hunting/mining was a major employer in the county. Approximately 11.9 percent of the population in Elko County were below poverty levels in 2018 (USCB 2018c). In Owyhee County, the 2018 unemployment rate was 4.5 percent, average per capita income in 2018 was \$21,935, and the 2018 median household income was \$40,430. Agriculture/Forestry/Mining was a major employer in the county. Approximately 21.1 percent of the population in Owyhee county were below poverty levels in 2018 (USCB, 2018d).

Impacts to Employment and Income

No Action Alternative

The No Action Alternative would not provide temporary jobs or income for the Sho-Pai Tribal community. The No Action Alternative would also not improve the operation or distribution of irrigation water, which would perpetuate the inability to adequately provide irrigation water to some tracts within the DVIP. Therefore, the No Action Alternative would have potential minor short-term and long-term direct and indirect impacts on employment and income on the Reservation.

Proposed Action Alternative

The Proposed Action Alternative would have minor, short-term and long-term, beneficial effects on the local economy and income. This alternative would result in a small number of temporary job opportunities for local residents as part of the labor force necessary to complete the proposed improvements, particularly if the Sho-Pai Tribes self-perform any project tasks. However, if construction is completed by non-local companies, the potential creation of jobs may be negligible. Non-local employees of the construction contractor(s) would likely spend money in the community of Owyhee for items such as lodging, meals, and light construction supplies and materials, contributing to the local economic base over the short-term. Temporary employment opportunities for tribal members would be prescribed and coordinated through the Tribal Employment Rights Ordinance (TERO) office.

In addition, improved operation and distribution of irrigation water would likely result in increased crop production and potential economic growth in the area.

4.7.2 Community Infrastructure (Utilities and Public Infrastructure)

Utilities

Major utilities are available on the Reservation, including electricity, gas, and communication lines. Existing utility networks within the project areas include overhead power lines (Raft River Electric), underground communication lines (Century Link), and agricultural water delivery (DVIP).

Impacts to Utilities

No Action Alternative

The No Action Alternative would have no direct or indirect impacts on utilities, as construction would not take place. No power line would be installed at China Diversion, no improvements to China Diversion would be made, and deterioration of the structure would continue, impacting irrigation water delivery.

Proposed Action Alternative

Under the Proposed Action Alternative, a new power line would be installed to China Diversion. To tie into the existing electrical grid, potential interruptions to electrical service may occur. Any notification of service interruptions would be the responsibility of the appropriate utility owners. Proposed work at the two wetland mitigation sites would avoid impacts to the existing utility network. Therefore, the Proposed Action Alternative would have a minor, short-term, direct impact on utilities.

In addition, the Proposed Action Alternative would have a beneficial, permanent impact on irrigation water delivery, by providing structural modifications that improve the operation and water distribution of the system. No indirect impacts would be anticipated.

Transportation Network

Major roadways within the project areas and vicinity include Highway 11 (BIA 2) and State Highway 51/225. Secondary BIA Roads (BIA 141) and Tribal rural roads are also found within and adjacent to the project areas.

No Action Alternative

No direct or indirect impacts would occur to the transportation network under the No Action Alternative.

Proposed Action Alternative

The Proposed Action Alternative would affect local transportation. Depending on where materials and construction equipment are coming from, traffic on Highway 51/225 and/or Highway 11 (BIA 2) may be temporarily slowed down for several miles as materials and heavy equipment are transported to the various project areas. Highway 51/225 may also be restricted to one lane of traffic in order to install a new powerline to China Diversion. These impacts are anticipated to be short-term and minor. No indirect impacts are anticipated.

4.8 Resource Use Patterns – Detailed Analysis

4.8.1 Hunting, Fishing, Gathering

The China Diversion project area is comprised of the diversion dam, Agency and Highline Canals, the Owyhee River, and a large scrub-shrub wetland complex. The primary purpose of China Diversion is the distribution of water from the Owyhee River into Agency and Highline Canals, which then feeds smaller irrigation ditches throughout the DVIP. Livestock grazing also occurs in areas adjacent to the China Diversion project area. While hunting is not likely so close to the highway, fishing and gathering may occur in the project area where suitable habitat/vegetation is available, primarily along the Owyhee River. Gathering may include foraging for native edible plants and willow cuttings traditionally used for cradle boards.

The areas lying within the two wetland mitigation sites, are primarily used for livestock grazing. Some hunting and gathering may occur within these areas. Species hunted may include deer, upland game birds, and waterfowl (where suitable open water is available). Gathering may include foraging for native edible plants and willow cuttings.

Impacts to Hunting, Fishing, Gathering

No Action Alternative

Under the No Action Alternative, there would not be any impacts to hunting, fishing, and gathering, as no construction would take place and existing conditions would be perpetuated.

Proposed Action Alternative

Under the Proposed Action Alternative, over 83.4 acres of land may be permanently or temporarily impacted during the construction of the regulating reservoir and improvements at the China Diversion structure. This would include impacts to upland habitat and wetland habitat. In addition, existing open water habitat on the Owyhee River would be modified.

At China Diversion, the conversion of wetland habitat to an open-water reservoir would reduce the availability of willows in the project area used to create cradle boards and other traditional crafts. However, scrub-shrub wetland habitat may reestablish along the reservoir shore after construction, and willows are still plentiful upstream of the project area. The lacustrine habitat could increase the amount of waterfowl in the area; however, hunting at the new reservoir would likely be restricted. Additionally, converting a portion of the Owyhee River upstream of the China Diversion to a regulating reservoir may discourage any cold-water fish species from using the area, possibly reducing fishing opportunities near the diversion.

Restoring, enhancing, and expanding wetland habitat at the two mitigation sites could also increase the number and variety of waterfowl and other bird species within the area, and increase the amount of willow habitat. However, hunting and gathering would likely be restricted on these two sites as part of the overall mitigation plan.

Overall, the proposed action is expected to have a minor, permanent impact on hunting, fishing, and gathering.

4.8.2 Agriculture

Within the China Diversion project area, approximately 150 acres are designated as farmland of statewide importance, if irrigated, or prime farmland, if irrigated (NRCS 2019). The vast majority of land within the project area, however, is made up of the Owyhee River and a dense scrub-shrub wetland. Land to the south and east of this wetland / river corridor is primarily used for livestock grazing. Lands west of China Diversion are primarily used for farming (generally forage production for livestock) and grazing. Both are primary sources of income for the Sho-Pai (Sho-Pai Tribes 2018a).

The majority of the Boyle Creek project area is designated as farmland of statewide importance, if irrigated, or farmland of statewide importance, if irrigated and drained. Lands adjacent, and within the project area, are used for livestock grazing. The Drain Recovery site is entirely designated as prime farmland if irrigated, or prime farmland, if irrigated and either protected from flooding or not frequently flooded during the growing season. Lands within the project area are used for livestock grazing. Lands adjacent to the project area are primarily rural residential and agriculture.

Lands within and adjacent to the China Diversion project area and Boyle Creek Mitigation site are Tribal trust lands held in trust by the BIA for the collective benefit of the Sho-Pai Tribes. Land within and adjacent to the Drain Recovery Wetland Mitigation site are leased to tribal members by the Sho-Pai Business Council (Ordinance No. 82-SPO-08).

Impacts to Agriculture

No Action Alternative

Under the No Action Alternative, there would not be any physical impacts to agriculture lands, as no disturbance would occur. However, the China Diversion structure would continue to deteriorate. Poor operation/distribution of irrigation water would be perpetuated. Impacts to agricultural practices and production could be disrupted if adequate water is not received at the appropriate time. Therefore, the No Action Alternative would have moderate, long-term impacts to agricultural production.

Proposed Action Alternative

Moderate, long-term beneficial impacts to agricultural lands and operations are anticipated under the Proposed Action Alternative.

An agriculture lease is currently active at the Drain Recovery Mitigation site, and the site is currently used for livestock grazing. Under the compensatory wetland mitigation plan, the area would be fenced and livestock grazing at the site would no longer be allowed. Similar to the Drain Recovery site, the Boyle Creek Mitigation site has also been used for livestock grazing; however, the primary livestock use at the Boyle Creek Mitigation site is an access corridor between winter and summer pasture lands. This area would be fenced off for conservation; however, a cattle access corridor would be perpetuated across Mountain View Dam. The land lessees for the Drain Recovery Mitigation site have agreed with the proposed mitigation. Further discussions between the Sho-Pai Tribal Council and the lessees would be required regarding the loss of land for grazing.

At the China Diversion project area, active agricultural and grazing lands would not be impacted as the proposed regulating reservoir would be constructed within a densely wooded scrub-shrub wetland. Some temporary impacts would be anticipated to livestock grazing lands south of the proposed regulating reservoir, as excavated material from the new reservoir would be deposited, graded, and seeded at this location. All proposed work at China Diversion would be timed to not interfere with delivery of irrigation water.

In the long-term, the improvements to China Diversion and construction of a new regulating reservoir would allow for more effective operation and distribution of irrigation water throughout the DVIP. Improved operation and distribution have the potential to increase agricultural productivity in the area.

4.8.3 Recreation

While some fishing opportunities may be present near the China Diversion, the project area is primarily used to divert irrigation flows from the Owyhee River into the Agency and Highline Canals. Lands within the two wetland mitigation sites are primarily used for agricultural and livestock grazing purposes. Recreational activities in the vicinity of these project areas are

primarily found at Mountain View Reservoir east of the Boyle Creek site, where fishing and camping occurs, and within the community of Owyhee, where a sports field and playground are found at the Owyhee School and where a community center is located.

No Action Alternative

Recreation would not be directly or indirectly affected by the No Action Alternative, as no construction improvements would take place.

Proposed Action Alternative

Proposed concepts for the new regulating reservoir may include shoreline recreation use. Overall, the Proposed Action Alternative would have a long-term, minor, beneficial direct impact to recreation. No indirect impacts are anticipated.

4.8.4 Land Use Plans

The Sho-Pai Tribes do not have an approved comprehensive Land Use Plan. The Tribes currently have a Land Code Ordinance (Ordinance No. 82-SPO-08). The Land Code Ordinance is meant to promote the proper utilization of tribal lands. It is administered by the Tribal Land Committee. The Land Code Ordinance governs the leasing and assigning of tribal lands on the Reservation. Tribal lands may be leased to tribal members for farming or raising stock.

Impacts to Land Use Plans

No Action Alternative

Under the No Action Alternative, China Diversion would continue to deteriorate. Deficiencies in operation and distribution of irrigation water would be perpetuated. Agricultural production on leased lands could be disrupted if adequate water is not received as needed. Therefore, the Proposed Action Alternative could have moderate, long-term impacts to those leasing tribal lands for farming and raising stock.

Proposed Action Alternative

Under the Proposed Action Alternative, a permanent change in land use would occur at the China Diversion project area and at both the Boyle Creek and Drain Recovery Mitigation sites. At China Diversion, the project area would be converted from a river corridor with scrub-shrub wetland to an open-water reservoir to be used for irrigation water storage. At both Boyle Creek and Drain Recovery, livestock fencing would be installed, and wetland areas restored and enhanced, converting these areas from agricultural/grazing units to areas of wetland and ecological preservation.

In the long-term, the Proposed Action Alternative would have moderate, beneficial impacts on land use by providing more effective distribution of irrigation water and potential for increased agricultural productivity, while preserving lands for improved ecological benefits in the area, including wildlife habitat and water quality.

4.9 Other Values – Detailed Analysis

4.9.1 Visual Resources

The existing visual character of the project area at China Diversion primarily includes a narrow valley of the Owyhee River. Dominant visual features found within the project area include a steep valley wall and Highway 51/225 to the north, the Owyhee River, a densely wooded scrub-shrub wetland along the river corridor, and a more gradually sloping hillside to the south comprised of grasses and sagebrush. Background views are dominated by the Bull Run Mountains and the Bruneau Range.

Visual characteristics at the Boyle Creek site include Mountain View Lake to the east and Blue Creek to the west. The Drain Recovery site is located within agricultural lands within Duck Valley. Background views are dominated by the Bull Run Mountains and the Bruneau Range.

Impacts to Visual Resources

No Action Alternative

The No Action Alternative would have no direct or indirect impacts on visual resources, as no improvements would take place.

Proposed Action Alternative

At the two wetland mitigation sites, the Proposed Action Alternative would not alter the existing line, form, texture, and color of the visual character of the landscape.

At the China Diversion project area, the visual character would be altered through the removal of scrub-shrub wetland to construct a new regulating reservoir and by changing the landscape from a riverine system to a lacustrine system. These changes would be permanent and notable to viewers driving through or using the area. Once construction of the reservoir is complete, the banks would be seeded and planted, with wetland scrub-shrub vegetation likely reestablishing. Overall, the Proposed Action Alternative would have a long-term, moderate impact on visual resources.

4.9.2 Climate Change (Greenhouse Gases)

Climate Change refers to a significant change in long-term (decades to millennia) weather patterns as a result of changes in the concentrations of greenhouse gases within the Earth's atmosphere. This may include major changes in temperature, wind patterns, or precipitation. Greenhouse gases (water vapor, carbon dioxide, ozone, etc.) are gases in the atmosphere that absorb and emit infrared radiation, contributing to the greenhouse effect and global warming. Most greenhouse gases occur naturally in the atmosphere; however, human activities have resulted in increased concentrations of greenhouse gases.

No Action Alternative

Long-term direct impacts on climate change from the No Action Alternative would not be anticipated. However, through climate change, flooding may occur in more acute events as higher temperatures melt elevated snowpack faster, or weather patterns change increasing rain events in the area. This would result in higher flood events than historically observed. Climate change may also decrease snowpack during the winter months and increase drought conditions in the area.

Under the No Action Alternative, improvements to China Diversion would not occur and a new regulating reservoir would not be constructed. Operation of the DVIP and water distribution would continue to be inefficient. More acute events may only exacerbate these issues further.

Proposed Action Alternative

The Proposed Action Alternative would involve 51.4 acres of permanent wetland impact at the China Diversion project area. Wetlands are known to sequester and store large amounts of carbon (Kusler 2006). Excavating wetland vegetation at the China Diversion project area may release stored carbon; however, this may be mitigated by enhancing, restoring, and expanding wetlands at the two mitigation sites found within the same watershed. An increase in wetland acreage of 35 acres is anticipated at the Drain Recovery Mitigation Site. Additionally, as previously mentioned, through climate change, flooding may occur in more acute events or drought like conditions may increase in the area. Proposed improvements and construction of a regulating reservoir would help to regulate flows and distribute water more effectively and efficiently, potentially offsetting some of the future effects of climate change.

Negligible, short-term impacts to climate change would occur during the construction period. Carbon Dioxide (CO₂) emissions during construction would primarily be from equipment exhaust (from graders, backhoes, water trucks, etc.) and workers' vehicles. The resulting greenhouse gas concentrations generated from construction activities at each site would be beneath the EPA's mandatory reporting threshold of 25,000 metric tons of CO₂ equivalent greenhouse gas emissions per year. The increase in emissions would be temporary and cease once construction is complete.

Overall, impacts to climate change and greenhouse gas emissions would be long-term and minor. No indirect impacts would be anticipated.

4.9.3 Public Health and Safety

The Shoshone-Paiute Tribes Fire Department and BIA Law Enforcement have responsibilities for law enforcement and fire suppression activities in the project areas on the Reservation; however, mutual aid agreements with neighboring agencies provide for additional services when needed (BIA 2012). The Owyhee Community Health Facility provides health care on the Reservation (Sho-Pai 2018a).

Impacts to Public Health and Safety

No Action Alternative

The No Action Alternative would not pose a safety concern and would not impact public health and safety.

Proposed Action Alternative

A hazard classification analysis was performed to evaluate the downstream hazard potential of constructing a new regulating reservoir upstream of China Diversion. This analysis was completed to calculate the incremental consequences on downstream property and lives resulting from the release of water due to failure of China Diversion. The simulation indicates the breach volume would not likely have a significant impact on the downstream community. A low-hazard potential classification for the China Diversion is anticipated, indicating that there is no expected loss of

human life; and limited expected economic, environmental, or lifeline losses. With regard to fire suppression, the regulating reservoir could be seen as a benefit, providing water storage that could be used during a fire event. Proposed work at the two mitigation sites are not anticipated to have an impact on public health and safety. Therefore, impacts to public health and safety under the Proposed Action Alternative are expected to be long-term and minor.

4.9.4 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the U.S. Government for Indian tribes or individuals. Assets can be real property, physical assets, or intangible property rights. ITAs cannot be sold, leased, or otherwise encumbered without the approval of the U.S. Government. A trust relationship is established through a congressional act or Executive Order, as well as by provisions identified in historic treaties. As trustee, the DOI is legally required to fulfill treaty and statutory obligations and to manage, protect, and conserve Indian trust resources and lands.

Lands associated with a reservation, ranch, or public domain allotment are examples of an ITA. Resources located within reservations, including timber, minerals, and oil and gas, are also considered trust assets. Treaty rights and water rights, as well as hunting and fishing rights, may also be ITAs. Additional assets consist of financial assets in trust accounts.

Impacts to Indian Trust Assets

No Action Alternative

Under the No Action Alternative, the water rights ratified and confirmed to the Sho-Pai Tribes by Congress would not be put to full beneficial use, in that no project improvements would occur, and the Development Trust Fund would not be expended. The Tribes would still be entitled to divert and use up to 111,476 acre-feet/year of surface water, but improvements at China Diversion would not be made, and a regulating reservoir would not be constructed. Poor distribution of irrigation water to irrigators would be perpetuated. There are no treaty rights associated with the Reservation, and no mineral rights, oil and gas, etc., that would be impacted. Crop production on Tribal trust land on the reservation could be reduced if water delivery is disrupted. The No Action Alternative could have long-term adverse effects on the Tribal water and land resources.

Proposed Action Alternative

Under the Proposed Action, the water rights ratified and confirmed to the Tribes by Congress would be protected for the long-term beneficial use through improvements to China Diversion, part of the DVIP, and potential increased crop production on trust lands on the Reservation. Overall, the Proposed Action Alternative would allow for more effective distribution of irrigation water to users, allow for more area to be effectively irrigated, and a potential increase in agricultural productivity. The Proposed Action Alternative would have a direct, beneficial impact on the Reservation's land and water ITAs.

4.10 Cumulative Effects

Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonable foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). The cumulative effects of an action

may be undetectable when viewed in the individual context of direct and indirect actions, but could add to a measurable environmental change. Guidance for implementing NEPA requires that federal agencies identify the temporal and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. Unless otherwise stated, the temporal boundary of analysis is from approximately the construction dates of the original China Diversion (80 years ago) to approximately 4 to 5 years from the current date (the timeframe needed to complete the China Diversion improvements and implement the wetland mitigation plan). This boundary encompasses a range within which data are reasonably available and forecasts can be reasonably made. The geographic boundaries of analyses vary depending on the resource and potential effects, but they are generally considered to be the project areas and vicinity. The at-risk resources identified in the project areas are soils, wetlands, surface waters, water quality, wildlife, vegetation, and cultural resources.

Direct and indirect impacts associated with construction of the Proposed Action Alternative would contribute to past and current effects on wetlands, surface waters, water quality, and cultural resources within the project areas and vicinity from the improvements at China Diversion, construction of a new regulating reservoir, and enhancing and restoring wetlands and two wetland mitigation sites. The Proposed Action Alternative would permanently impact 51.4 acres of wetland, approximately 65 percent of the total delineated shrub-scrub wetland in the project area. This would permanently transform a riverine corridor system (the Owyhee River) into a lacustrine system within the project area. These impacts, along with past alterations and the approximate 32 acres of current/future wetland impact under the Duck Valley Irrigation project downstream of China Diversion, would have a major impact on wetland communities in the area, as the impact would be highly noticeable, and there would be a permanent change to the ecosystem directly upstream of the diversion. To offset these wetland impacts, compensatory wetland mitigation is proposed as part of the Proposed Action Alternative. Based on the 2019 *China Diversion Compensatory Wetland Mitigation Plan*, over 104 Functional Credit Units would be created as part of the compensatory wetland mitigation effort (Geum, 2020).

Past projects, particularly agriculture and livestock grazing, have contributed chemicals, nutrients, and bacteria into surface waters. This has had an effect on water quality. Under the Proposed Action Alternative, new sluiceways at China Diversion would help improve the transport of fine sediment downstream into the DVIP, and the new regulating reservoir would collect sediment from the river before it reaches the diversion. Livestock fencing would also be installed at the two mitigation sites. Restricting livestock from these areas would help reduce bacteria and nutrients associated with livestock from entering wetlands and adjacent waters. Restored wetlands at Boyle Creek and an increase of wetlands at the Drain Recovery site would allow for more efficient capture and filtration of surface water that flows through the sites. These Proposed Action improvements, along with proposed improvements under the current/future Duck Valley Irrigation project, which would convert open ditches to pipelines, would have a moderate, beneficial impact on water quality by reducing turbidity, nutrients, and bacteria in the system.

Improvements under the Proposed Action Alternative would have an adverse effect on the China Diversion Dam, which has been determined eligible for inclusion in the National Register of Historic places. To address these adverse impacts, a Memorandum of Agreement and an associated

Historic Properties Treatment Plan has been developed. The Nevada SHPO will be a signatory and reviewer of all mitigation requirements.

Overall, when considering the Proposed Action Alternative, along with other past, present, and reasonably foreseeable future actions, along with proposed mitigation, the Proposed Action Alternative would likely result in moderate cumulative impacts on wetlands, surface waters, water quality, and cultural resources.

5.0 RECOMMENDED MITIGATION MEASURES

The following mitigation measures are recommended to avoid or reduce adverse impacts under the Proposed Action Alternative, if it is selected.

- To mitigate for the permanent removal of wetland vegetation, compensatory wetland mitigation shall be implemented at two sites: Boyle Creek and Drain Recovery.
- For the Regulating Reservoir and Drain Recovery Mitigation projects, the construction contractor shall prepare and submit the NPDES Permit Notice of Intent, SWPPP, and Notice of Termination to the EPA.
- BMPs to control erosion from the construction site shall be implemented to prevent sediment from leaving the construction sites.
- Water shall be applied, as needed, to control dust on haul roads.
- To reduce potential impacts to wildlife and vegetation, work shall be confined to the proposed construction limits to the extent practicable. This would ensure that ground-disturbing activities are limited, which would reduce the amount of potential dust created, as well as lower potential for noxious weeds or other undesirable plants to establish.
- The contractor shall not cause injury or death to migratory birds, including eggs and nestlings. If trees or shrubs must be removed, tree and shrub removal shall occur before or after the migratory bird breeding season (remove before March 1 or after July 31 of any calendar year). If tree/shrub removal must take place during the breeding season, the contractor shall hire a qualified biologist to survey trees/shrubs for active nests before vegetation removal takes place. If an active nest is discovered, the nest shall be left in place and protected until young hatch and depart.
- Facilitate construction of the two mitigation sites when wetland areas are less likely to be inundated (generally late summer through winter).
- Disturbed upland soils that would not be permanently stabilized by construction would be seeded using species specific to the project vicinity.
- In compliance with Executive Order 13112 regarding noxious weeds, the contractor shall inspect all earth-moving and hauling equipment at the contractor's equipment storage facility, and all equipment shall be washed prior to entering the construction site to prevent the introduction of noxious weed seed.
- In compliance with Executive Order 13112 regarding invasive and noxious weeds, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.
- To mitigate potential adverse effects to the China Diversion Dam, a Memorandum of Agreement, which outlines the appropriate treatment, shall be implemented.

Any archaeological or historical artifacts discovered during construction shall be left intact and undisturbed, all work in the area shall cease immediately, and the BIA Western Region Archaeologist (602.379.6750) shall be notified immediately pursuant to 36 CFR 800.13. Commencement of operations shall be allowed upon notification by the BIA Western Regional Office.

If during construction operations, any human remains, funerary objects, sacred objects, or objects of cultural patrimony, as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; Stat. 3048; 25 U.S.C. 3001), are discovered, the contractor shall cease operations in the immediate area of discovery, protect the remains and objects, and shall immediately notify the BIA Western Region Archaeologist (602.379.6750) of the discovery by telephone with written confirmation. The contractor shall continue to protect the immediate area of the discovery until notified by the BIA Regional Office that operations may continue.

5.1 Adaptive Management

The DOI has recently adopted an operational definition of adaptive management for the purposes of managing operational systems in the context of ecosystem management. Adaptive management is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies and operations as part of an iterative learning process. Adaptive management recognizes the importance of natural variability and emphasizes the idea of learning while doing. It provides resource managers with an active strategy for dealing with the uncertainties that characterize management of large natural ecosystems.

The project specific actions related to the proposed improvements to the China Diversion, construction of a regulating reservoir, and restoration of two mitigation sites are not considered operational programs with ecosystem management implications. Therefore, adaptive management strategies are not applicable.

6.0 CONSULTATION AND COORDINATION

6.1 Consultation

Consultation requirements with the BIA, Nevada SHPO, Idaho SHPO, and Advisory Council on Historic Preservation were completed in accordance with Section 106 of the National Historic Preservation Act of 1966. Concurrence letters for the China Diversion, dated September 18, 2020; Boyle Creek Wetland Mitigation Site, dated September 9, 2020; and the Drain Recovery Wetland Mitigation Site, dated September 22, 2020 are included in Appendix D.

The proposed project would have no effect on threatened and endangered species and coordination with the USFWS in accordance with Section 7 of the Endangered Species Act, was not completed.

7.0 LIST OF PREPARERS

The following individuals contributed to the interdisciplinary analysis and/or review of the EA.

| Contributor | Title / Office | Role |
|--------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOWL | | |
| Emily Peterson | Environmental Manager Helena, MT | QA/QC and senior environmental oversight |
| Lauren Templeton | Environmental Specialist Helena, MT | Alternatives, purpose and need, land resources, water resources, cumulative effects, public involvement, air quality, socioeconomic, resource use patterns and other values |
| Jessica Simkins | Water Resources Engineer Helena, MT | GIS figures |
| Gayle Sitter | Senior Biologist Billings, MT | Biological resources and threatened and endangered species |
| Jeff Olsson | Senior Water Resources Project Manager Helena, MT | Project background, purpose and need, alternatives, impact analysis, and QA/QC |
| SWCA | | |
| Matt Edwards | Cultural Resources Manager Salt Lake City, UT | Cultural resources |
| Geum Environmental Consulting, Inc. | | |
| Tom Parker | Principal Ecologist Hamilton, MT | Vegetation, wetlands, and surface water resources |
| BIA | | |
| Chip Lewis | Regional Environmental Protection Officer Phoenix, AZ | BIA NEPA compliance review and biological resources review |
| Catherine Wilson | Supervisory Water Rights Specialist Phoenix, AZ | NEPA review |

| Contributor | Title / Office | Role |
|--------------------|---------------------------------------------|-----------------------------|
| Jonathan Cody | Regional Irrigation Engineer Phoenix, AZ | NEPA review |
| Garry Cantley | Regional Archaeologist, Phoenix, AZ | NHPA Section 106 compliance |

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Appendix A: Public and Agency Involvement Summary
(PENDING)



December 19, 2018

Duck Valley Irrigation Improvements – China Diversion Project

Contact:

Joseph McDade, Supervisor
Bureau of Indian Affairs Eastern Nevada Agency
Joseph.mcdade@bia.gov
775.738.0569

Why:

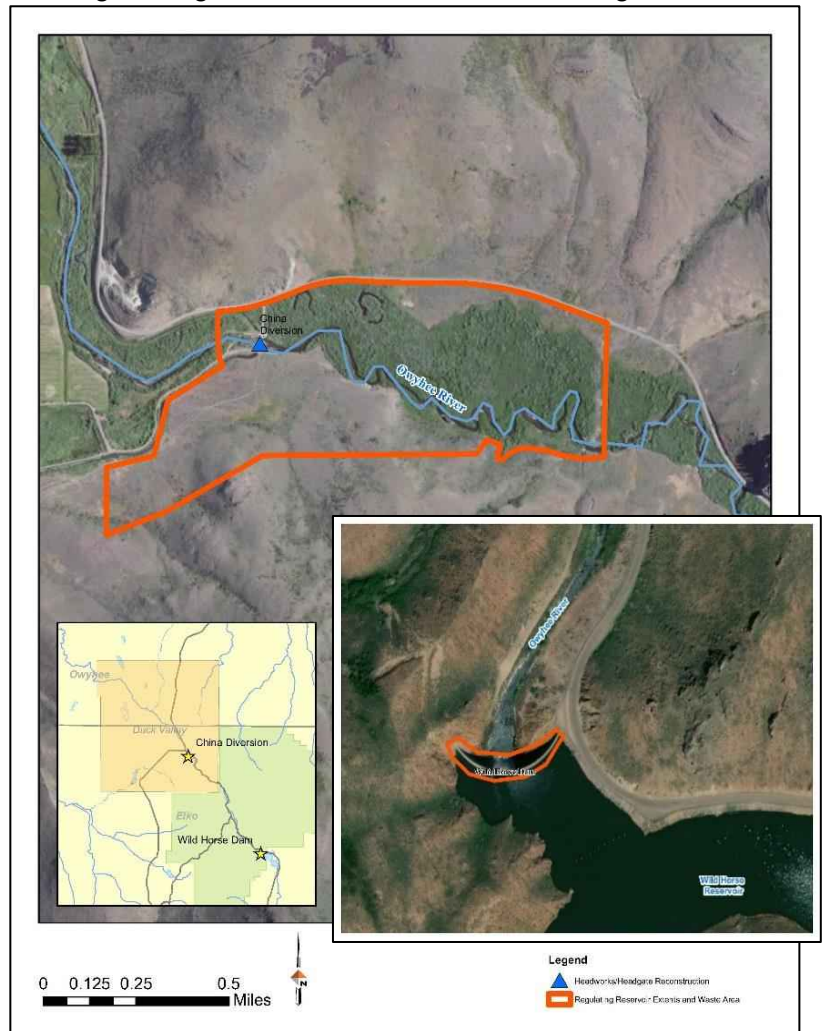
The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are proposing irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). Proposed improvements include reconstructing the China Diversion and upgrades to Wildhorse Dam. The project is needed to improve water conservation, drought mitigation, flood control, and management of the Owyhee River. The China Diversion reconstruction would include new headworks, sluiceways, conduits, gates, outlet transitions, crest raise, and a structural overlay of the exiting spillway. The construction would also accommodate seasonal upstream fish passage for salmonid species when flow is high during the spring. A new regulating reservoir would be constructed upstream of the diversion and will necessitate clearing vegetation within the floodplain/riparian corridor, excavation to produce the required regulating reservoir volume, an access route into the regulating reservoir for periodic maintenance, and a waste area for disposal of excavated materials.

Proposed improvements at Wildhorse Dam would consist of upgrades to water measurement equipment, gate rehabilitation, and civil improvements.

Project improvements are anticipated to start in late 2019 or early 2020. An Environmental Assessment will be prepared for the project as part of the BIA National Environmental Policy Act (NEPA) requirements.

How to Comment:

Written opinions, comments, or concerns regarding the project may be sent to: Joseph McDade, BIA Eastern Nevada Agency 2719-4 Argent Ave., Elko, NV 89801 or joseph.mcdade@bia.gov



Please indicate your comments are for the Duck Valley Irrigation Improvements – China Diversion Project. Comments are due by December 20, 2018.

Distribution List – Scoping Letter for China Diversion Project – Duck Valley Irrigation Project

Theodore Howard
Chairman, Shoshone-Paiute Business Council
P.O. Box 219
Owyhee, NV 89832

Tina Nino, Director
Shoshone-Paiute Tribes Land and Natural Resources Department
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Jinwon Seo, Director
Shoshone-Paiute Tribes Fish, Wildlife, and Parks Department
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Jason King, Nevada State Engineer
Division of Water Resources
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Carson City, Nevada 89701

Jeremy Evans, Acting Deputy District Ranger
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660 South 12th Street, Suite 108
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United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
EASTERN NEVADA AGENCY
2719-4 ARGENT AVENUE
ELKO, NEVADA 89801



NOV 16 2018

Honorable Theodore Howard
Chairman, Shoshone-Paiute Business Council
P.O. Box 219
Owyhee, NV 89832

Re: China Diversion Project – Duck Valley Irrigation Project

Dear Mr. Howard:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

The proposed project will reconstruct the China Diversion at its current location. Reconstruction will include new headworks, sluiceways, conduits, gates, outlet transitions, crest raise, and a structural overlay of the existing spillway. The construction will accommodate seasonal upstream fish passage for salmonid species when flow is high during the spring. A new regulating reservoir will be constructed upstream of the diversion, which will require raising the spillway, clearing vegetation within the floodplain/riparian corridor, excavation to produce the required regulating reservoir volume, an access route into the regulating reservoir for periodic maintenance, and a waste area for disposal of excavated materials. Proposed improvements at Wildhorse Dam would consist of: upgrades to water measurement equipment; gate rehabilitation; civil improvements such as site security and access improvements, a new gate house, and a new power supply; motorized actuators; new supervisory control and data acquisition (SCADA) equipment to allow remote, manual actuation of the outlet gates. The new equipment and controls will allow improved management of Owyhee River flows between Wildhorse Dam and a rehabilitated and modernized China Diversion to improve water conservation, drought mitigation, and flood control.

Project improvements are anticipated to start in late 2019 or early 2020.

Funding for this project was authorized by the U.S. Congress in 2009 through the Shoshone-Paiute Tribes water rights settlement, which is Title X, Subtitle C of the Omnibus Public Land Management Act of 2009 (Pub. L. 111-11) (Settlement Act). As part of the BIA National Environmental Policy Act (NEPA) requirements, an Environmental Assessment (EA) is currently being prepared for this proposed project. A separate Draft EA was published on August

8, 2018, to address proposed rehabilitation of the canals and pipelines downstream of the China Diversion.

If you or others in your organization have specific concerns, suggestions, or recommendations regarding this project, please let us know.

Please identify any issues or concerns that you have regarding this project by December 20, 2018. Comments can be provided via e-mail to joseph.mcdade@bia.gov; by phone at 775.738.0569; or by mailing them to:

Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

Thank you for your time and assistance.

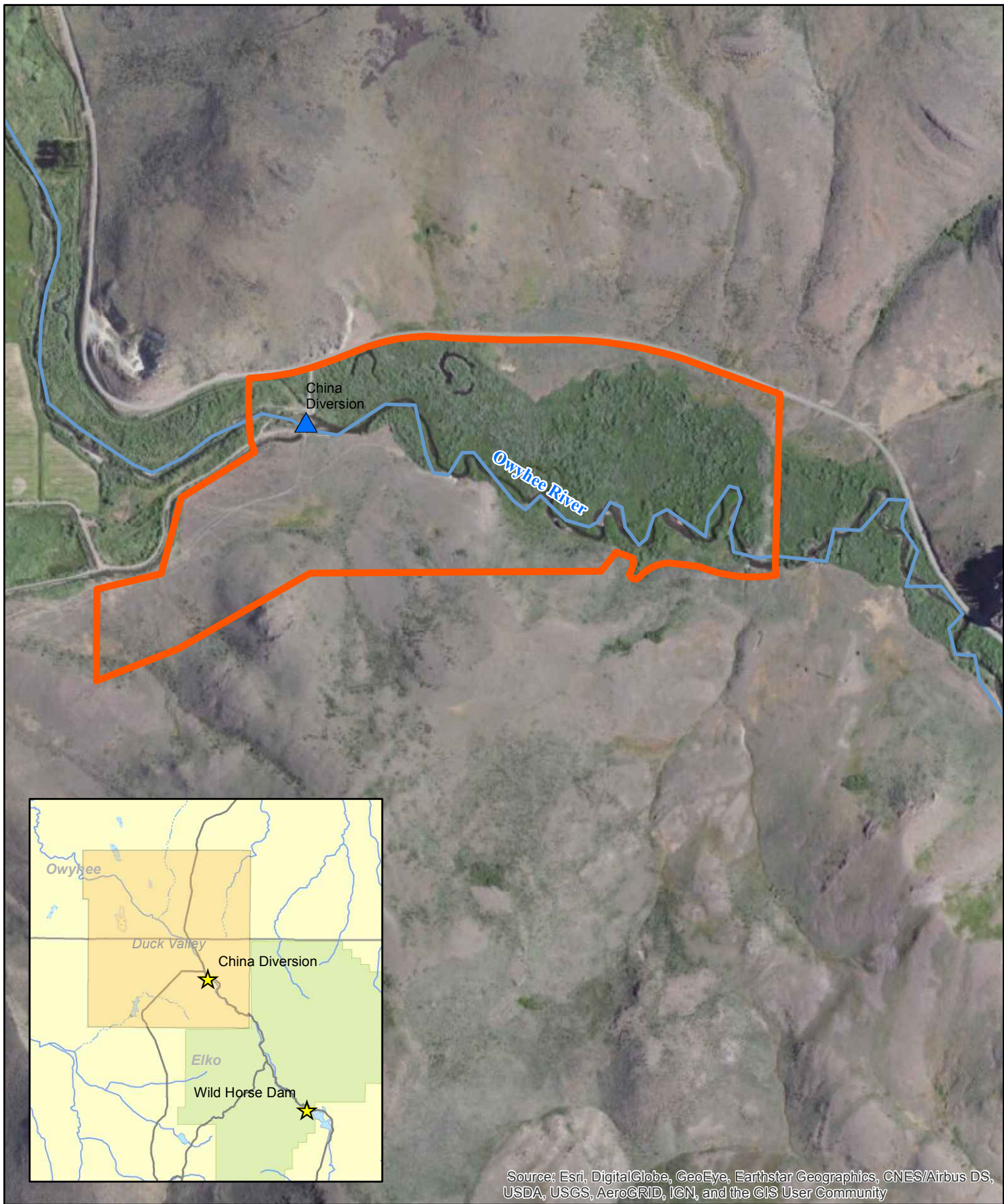
Sincerely,

/s/ JOSEPH G. MCDADE



Superintendent

Enclosures

cc: Distribution List



Legend

-  Headworks/Headgate Reconstruction
-  Regulating Reservoir Extents and Waste Area



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Eastern Nevada Agency

2719-4 Argent Ave.

Elko, NV 89801



November 16, 2018

Jeremy Evans, Acting Deputy District Ranger
United States Forest Service
Humboldt National Forest – Elko, Nevada Office
660 South 12th Street, Suite 108
Elko, Nevada 89801

Re: China Diversion and Related Infrastructure – Duck Valley Irrigation Project

Dear Mr. Evans:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

The proposed project will reconstruct the China Diversion at its current location. Reconstruction will include new headworks, sluiceways, conduits, gates, outlet transitions, crest raise, and a structural overlay of the existing spillway. The construction will accommodate seasonal upstream fish passage for salmonid species when flow is high during the spring. A new regulating reservoir will be constructed upstream of the diversion, which will require raising the spillway, clearing vegetation within the floodplain/riparian corridor, excavation to produce the required regulating reservoir volume, an access route into the regulating reservoir for periodic maintenance, and a waste area for disposal of excavated materials. Proposed improvements at Wildhorse Dam would consist of: upgrades to water measurement equipment; gate rehabilitation; civil improvements such as site security and access improvements, a new gate house, and a new power supply; motorized actuators; new supervisory control and data acquisition (SCADA) equipment to allow remote, manual actuation of the outlet gates. The new equipment and controls will allow improved management of Owyhee River flows between Wildhorse Dam and a rehabilitated and modernized China Diversion to improve water conservation, drought mitigation, and flood control.

Project improvements are anticipated to start in late 2019 or early 2020.

Funding for this project was authorized by the U.S. Congress in 2009 through the Shoshone-Paiute Tribes water rights settlement, which is Title X, Subtitle C of the Omnibus Public Land Management Act of 2009 (Pub. L. 111-11) (Settlement Act). As part of the BIA National Environmental Policy Act (NEPA) requirements, an Environmental Assessment (EA) is currently being prepared for this proposed project. A separate Draft EA was published on August 8, 2018, to address proposed rehabilitation of the canals and pipelines downstream of the China Diversion.

If you or others in your organization have specific concerns, suggestions, or recommendations regarding this project, please let us know.

Please identify any issues or concerns that you have regarding this project by December 20, 2018. Comments can be provided via e-mail to joseph.mcdade@bia.gov; by phone at 775.738.0569; or by mailing them to:

Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

Thank you for your time and assistance.

Sincerely,

Superintendent

Enclosures

cc: Distribution List



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
EASTERN NEVADA AGENCY
2719-4 ARGENT AVENUE
ELKO, NEVADA 89801



November 16, 2018

Jinwon Seo, Director
Shoshone-Paiute Tribes Fish, Wildlife, and Parks Department
P.O. Box 219
Owyhee, NV 89832

Re: China Diversion Project – Duck Valley Irrigation Project

Dear Mr. Seo:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

The proposed project will reconstruct the China Diversion at its current location. Reconstruction will include new headworks, sluiceways, conduits, gates, outlet transitions, crest raise, and a structural overlay of the existing spillway. The construction will accommodate seasonal upstream fish passage for salmonid species when flow is high during the spring. A new regulating reservoir will be constructed upstream of the diversion, which will require raising the spillway, clearing vegetation within the floodplain/riparian corridor, excavation to produce the required regulating reservoir volume, an access route into the regulating reservoir for periodic maintenance, and a waste area for disposal of excavated materials. Proposed improvements at Wildhorse Dam would consist of: upgrades to water measurement equipment; gate rehabilitation; civil improvements such as site security and access improvements, a new gate house, and a new power supply; motorized actuators; new supervisory control and data acquisition (SCADA) equipment to allow remote, manual actuation of the outlet gates. The new equipment and controls will allow improved management of Owyhee River flows between Wildhorse Dam and a rehabilitated and modernized China Diversion to improve water conservation, drought mitigation, and flood control.

Project improvements are anticipated to start in late 2019 or early 2020.

Funding for this project was authorized by the U.S. Congress in 2009 through the Shoshone-Paiute Tribes water rights settlement, which is Title X, Subtitle C of the Omnibus Public Land Management Act of 2009 (Pub. L. 111-11) (Settlement Act). As part of the BIA National Environmental Policy Act (NEPA) requirements, an Environmental Assessment (EA) is currently being prepared for this proposed project. A separate Draft EA was published on August

8, 2018, to address proposed rehabilitation of the canals and pipelines downstream of the China Diversion.

If you or others in your organization have specific concerns, suggestions, or recommendations regarding this project, please let us know.

Please identify any issues or concerns that you have regarding this project by December 20, 2018. Comments can be provided via e-mail to joseph.mcdade@bia.gov; by phone at 775.738.0569; or by mailing them to:

Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

Thank you for your time and assistance.

Sincerely,

Superintendent

Enclosures

cc: Distribution List



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
EASTERN NEVADA AGENCY
2719-4 ARGENT AVENUE
ELKO, NEVADA 89801



November 16, 2018

Tina Nino, Director
Shoshone-Paiute Tribes Land and Natural Resources Department
P.O. Box 219
Owyhee, NV 89832

Re: China Diversion Project – Duck Valley Irrigation Project

Dear Ms. Nino:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

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Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

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Sincerely,

Superintendent

Enclosures

cc: Distribution List



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Eastern Nevada Agency

2719-4 Argent Ave.

Elko, NV 89801



November 16, 2018

Jason King, Nevada State Engineer
Division of Water Resources
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701

Re: China Diversion Project – Duck Valley Irrigation Project

Dear Mr. King:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

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Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

Thank you for your time and assistance.

Sincerely,

Superintendent

Enclosures

cc: Distribution List



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Eastern Nevada Agency

2719-4 Argent Ave.

Elko, NV 89801



November 16, 2018

David Berger, Center Director
USGS Nevada Water Science Center
2730 North Deer Run Road
Carson City, Nevada 89701

Re: China Diversion Project – Duck Valley Irrigation Project

Dear Mr. Berger:

The Shoshone-Paiute Tribes (Tribes) of the Duck Valley Indian Reservation, in cooperation with the Bureau of Indian Affairs (BIA), are planning to implement irrigation improvements to rehabilitate the Duck Valley Irrigation Project (DVIP). The proposed project addresses facilities at two distinct locations on the Owyhee River (see enclosed figures) within Elko County, Nevada---the site and area surrounding the existing China Diversion and the Wildhorse Dam. The China Diversion is located on the Duck Valley Reservation and Wildhorse Dam is located on Federal lands owned by the BIA about 30 miles south of the diversion.

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Joseph McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Ave.
Elko, NV 89801

Thank you for your time and assistance.

Sincerely,

Superintendent

Enclosures

cc: Distribution List



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
IDAHO FALLS REGULATORY OFFICE
900 NORTH SKYLINE DRIVE, SUITE A
IDAHO FALLS, IDAHO 83402-1700

September 5, 2018

Regulatory Division

SUBJECT: NWW-2018-51-I02, Duck Valley Irrigation Improvements Project

Mr. Joseph G. McDade, Superintendent
BIA Eastern Nevada Agency
2719-4 Argent Avenue
Elko, Nevada 89801

Dear Mr. McDade:

This is in response to your August 8, 2018 letter and attached Draft Environmental Assessment (EA) requesting comments on the proposed "Duck Valley Irrigation Improvements Project. Thank you for providing the Corps of Engineers (Corps) the opportunity to provide comment. According to information provided, the proposed project would improve the operation and distribution of water with the Duck Valley Irrigation System downstream of the China Diversion.

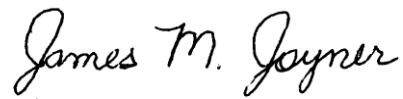
The site is located within the Duck Valley Indian Reservation, in the Owyhee River Valley, near latitude 41.972244° N and longitude -116.154961° W, in Elko County, Nevada and Owyhee County, Idaho. Your project has been assigned Department of Army (DA) File # NWW-2018-479-I02, which should be referred to in all future correspondence.

The Department of the Army exerts regulatory jurisdiction over waters of the United States (U.S.), including wetlands, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). Section 404 of the Clean Water Act requires a DA permit be obtained prior to discharging dredged or fill material into Waters of the U.S., which includes most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, irrigation and drainage canals and ditches that are tributaries to other waters, and wetlands.

Based on our review of the information in the Draft EA and available to our office, we have preliminarily determined that as currently proposed the project may involve the discharge of dredged and/or fill material into Waters of U.S., including wetlands. However, as indicated in the Draft EA, this irrigation related activity is exempt in accordance with 33 CFR 323.4(a)(3), copy enclosed. Therefore, a Department of Army (DA) authorization is not required. An authorization may be required if the method, scope, or location of the proposed work is altered. Please contact us if you make changes to your project.

Please contact me by telephone at (208) 522-1676, by mail at the address in the letterhead, or via email at james.m.joyner@usace.army.mil if you have any questions or need additional information. For informational purposes, a copy of this letter is being sent to: Mr. Devin Heaps (Shoshone-Paiute Tribes)

Sincerely,

A handwritten signature in black ink that reads "James M. Joyner". The signature is written in a cursive, flowing style.

James M. Joyner
Sr. Project Manager, Regulatory Division

Enclosures

Discharges Not Requiring Permits
Section 323.4(a)(3)

(a) General. Except as specified in paragraphs (b) and (c) of this section, any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404:

(3) Construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption.

(b) If any discharge of dredged or fill material resulting from the activities listed in paragraphs (a)(1) - (6) of this section contains any toxic pollutant listed under Section 307 of the CWA such discharge shall be subject to any applicable toxic effluent standard or prohibition, and shall require a Section 404 permit.

(c) Any discharge of dredged or fill material into waters of the United States incidental to any of the activities identified in paragraphs (a)(1) - (6) of this section must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a cypress swamp to some other use or the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches or other works or structures used to effect such conversion. A conversion of a Section 404 wetland to a non-wetland is a change in use of an area of waters of the United States. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

(d) Federal projects which qualify under the criteria contained in Section 404(r) of the CWA are exempt from Section 404 permit requirements, but may be subject to other state or Federal requirements.



Public Meeting Notice Duck Valley Irrigation Improvements Wetland Mitigation Sites

The public is invited to attend a meeting to discuss and comment on wetland mitigation improvements planned by the Shoshone-Paiute Tribes.

When: March 9, 2020

Where: [DVIP to fill in meeting location]

Why:

The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation are proposing improvements to China Diversion. The existing China Diversion was constructed in 1937 and has generally reached its service life; reconstruction of the diversion is planned to improve operator safety and ensure the ability to divert water. In addition, because it is currently almost impossible to properly match flows arriving at China Diversion with requested flows in the irrigation project, excavation of a regulating (balancing) reservoir is planned upstream of the diversion. Construction of the regulating reservoir would result in impacts to wetlands within the footprint of the reservoir. Wetland mitigation is required to offset these impacts. The Shoshone-Paiute Tribes have evaluated a variety of potential wetland mitigation sites across Duck Valley. Five potential mitigation sites were previously described at a public meeting held in 2018. Based on the public feedback received at this prior meeting, and considering the needs of the project, the Tribe has selected two mitigation sites where wetlands will be enhanced, expanded, and protected. The sites are 1) the Drain Recovery Wetland and 2) the Boyle Creek Wetland. The Tribe desires public input and feedback on these sites.

The Drain Recovery Wetland will be located primarily within Sho-Pai agricultural tracts 1240, 1205, 1183, and 1140. This site is adjacent an open drain ditch of the Duck Valley Irrigation Project. Water from this drain ditch would be rerouted into and through the wetland mitigation site, which follows the former channel alignment of the Owyhee River. Features of this site would include shallow excavation and grading to improve the flow and distribution of water within the site, structures in the channel to spread water out over a larger area, and berms to protect adjacent lands outside of the site. The existing tracts include barbwire fences which would be improved, and the fence lines adjusted to follow the boundaries of the site. Drain water which includes agricultural runoff and has been warmed by the sun is currently discharged into the Owyhee River. After construction of the mitigation site, water which passes through the Drain Recovery Wetland would be cleaned by the wetlands and flow into the West Main Canal, where it would be available for irrigation delivery and agricultural use.

The Boyle Creek Wetland is located immediately downstream of Mountain View Reservoir, adjacent Blue Creek. A riparian management zone will be developed at this site to limit livestock impacts and allow for preservation of wetland features and riparian wetland expansion. Vegetation diversity will be increased by planting native plants. This site would protect waterfowl nesting habitat and upland buffer habitat used by sage grouse. The Boyle Creek Wetland will be open to the public and include an interpretive trail and signs. It is understood that livestock are moved through this area on the way to and from summer range lands; the ability to move livestock past this site will be perpetuated using the existing dam crest and road as the livestock corridor.

How:

Written opinions, comments, or concerns regarding the project may be sent to: Joseph McDade, BIA Eastern Nevada Agency 2719-4 Argent Ave., Elko, NV 89801 or joseph.mcdade@bia.gov. Comments are due by March 28th, 2020.

| | | | |
|-----------------|--------------------------------------------------------|---------------|------------------------|
| PROJECT: | Duck Valley Mitigation Sites Public Scoping Meeting | DATE: | 03/09/2020 |
| PROJECT NUMBER: | 4626.21042.03 | TIME: | 6:00 pm |
| ORGANIZER: | Jeff Olsson, DOWL | SUBJECT: | DVIP Mitigation Sites |
| ATTENDEES: | 13 | ORGANIZATION: | Shoshone-Paiute Tribes |

The following is a summary of the questions that were posed at the Wetland Mitigation Site public scoping meeting and the answers provided for each question.

China Diversion Summary

- **Q:** Why are comments to be submitted to Joe McDade?
A: NEPA is required because there is a Federal action. The BIA is the lead Federal Agency for NEPA compliance. This meeting is part of the public scoping process for the China Diversion Environmental Assessment (EA). As such, it is appropriate for the comments to be submitted to the BIA.
- **Q:** How did condition assessment help?
A: The original condition assessment (2009) completed by DOWL (formerly HKM Engineering) was funded by BIA. The focus of this assessment was deferred maintenance, but it also provides an initial list of deficiencies for each structure. A subsequent, more detailed, structural assessment was completed for the China Diversion in 2017 and builds off of the original condition assessment.
- **Q:** Is the EA for China Diversion or whole project?
A: There are two EAs. The first was for the irrigation infrastructure downstream of China Diversion. This EA has been completed and the Finding of No Significant Impact (FONSI) has been signed by the BIA. The current meeting is part of the second EA and is focused on China Diversion and Related Infrastructure. The related infrastructure is the regulating reservoir and the requisite mitigation sites.
- **Q:** Why aren't you replacing the slab upstream of the diversion spillway?
A: There is not a need to replace this slab, as it is in an area of deposition.
Q: [Follow-up Question] Do you know that equipment is driven on the floor of China Diversion during dredging operations at the diversion? There is the possibility that this slab may need to be replaced.
A: We will investigate this as we move forward with the final design. One option may be to overlay this slab with new concrete.
- **Q:** Is the burned area still a wetland? The willows are coming back with a vengeance.
A: Yes. In determining a wetland, we review the vegetation, hydrology, and soils in the investigation area. Although the fire recently impacted the vegetation, this was a short-lived impact and the vegetation is already returning. Just because it burned doesn't mean it's not a wetland.

Mitigation Sites General Comments and Questions

- **Q:** Why are we building wetlands?
A: In short, because it is a regulatory requirement that when you impact wetlands you must also mitigate this impact. We are building the China Diversion regulating

reservoir which has 50 to 60 acres of wetland impacts; we are required to mitigate these impacts. This is not optional.

- **Q:** Will these mitigation sites affect our programs?
A: We have completed an investigation to determine potential mitigation sites. Some have been ruled out as they would have greater impacts on Tribal programs, for example Skull Creek was dropped from consideration due to perceived excessive impacts to livestock production and range lands.
- **Q:** Why are mitigation sites bigger than the impact site at China Diversion?
A: This is true for a couple of reasons: 1) at a minimum we need to replace every acre of lost wetlands with at least one acre of new wetlands, so at a minimum they would be equal (this is called “no net loss of wetlands”), 2) we are not using a ratio based mitigation approach but rather a functional based approach (i.e., we are replacing the lost function with equivalent function) and not all functions are treated equally in the “scoring” process, and 3) The mitigation site boundaries do not indicate that there are existing wetlands within the sites that do not count when quantifying no net loss of wetlands, and even after mitigation development the entire boundary has not been converted to a wetland (i.e., only a percentage of the area is wetland after construction and only a portion of these wetlands are new wetlands). For these reasons the mitigation sites end up covering a larger area than the impact site.
- **Q:** Why wasn’t the Skull Creek site chosen?
A: This site was dropped from consideration for several reasons: 1) There was opposition to this site from the livestock producers, and 2) This site did not produce significant mitigation units to justify the impact and cost.
- **Q:** Wasn’t the potential Skull Creek Site opposition to this site limited to one individual?
A: No, to our knowledge this site was opposed by multiple people and the livestock producers appeared to be against this site due to impacts to range lands.
- **Q:** Are there fences? If so what type, and won’t the cows take down the fences?
A: Yes, there are fences. Fences will be livestock friendly and use a combination of smooth wire and barbed wire. Fence configurations planned are based on fencing alternatives commonly used for livestock and will hold up well to livestock.
- **Q:** Cows will be confused and may get hurt trying to find old river crossings.
A: [This question was specifically referring to the area east of the China Diversion regulating reservoir] This area will not be fenced. The only new fencing will be at the Boyle Creek Mitigation site.
- **Q:** Cattle owners don’t want to go out of their way for water access and may cut fence.
A: That is a possibility. Maintenance will need to be provided and include fence repairs. However, nobody is being restricted from water access. The Drain Recovery Site is already fenced and impacts only the tract holders on the impacted tracts. The only new fencing is at the Boyle Creek Site, and this fence does not eliminate livestock access to water, it restricts access to a portion of the Blue Creek wetland and shoreline.

Boyle Creek Wetland Mitigation Site

- **Q:** Would cattle be allowed into the Boyle Creek Wetland area?
A: No. Livestock would be excluded from this area. We understand that this is a drive corridor used when moving stock from winter range in the valley to summer pasture in the range units. The dam would be a corridor that is unfenced where livestock could pass.
- **Q:** The presenter asked whether there is concern about using the dam to drive cattle.

A: No meeting participants were concerned about this. This topic came up in a prior meeting as well and the consensus among livestock producers present was that this would not be a problem. Sherri Crutcher indicated that cattle couldn't cross in June of 2019 because of high water and were taken an alternate route to range lands.

- **Q:** How many acres is the Boyle Creek site?

A: Approximately 250.

- **Q:** The presenter asked whether the meeting participants saw value in the Boyle Creek boardwalk.

A: Participants indicated that they like it because it'll help highlight the Sho-Pai culture and provides benefit to everyone.

- **Q:** Are you aware of the research that has been done regarding bird species in the area of the Boyle Creek wetland?

A: Yes, we have these data and are using them in our reports and work products.

Drain Recovery Wetland

- **Q:** Could you explain how much water is coming out?

A: We plan to install a weir this summer in the drain to measure how much water is available in a typical year. Hopefully once initial wetland demands are satisfied the majority of this water will pass through the wetland site and be measured returning to the West Main Canal at the north end of the wetland site.

- **Q:** A lot of beavers in this area; they might take down the willows.

A: That is a possibility. There is the possibility that they may also move into the mitigation site and help expand wetland boundaries.

- **Q:** You might get more support if you educate people on mitigation and that you are repairing the land. There will also be groundwater recharge due to the drain recovery mitigation site. Educating the public on these issues could help build support for the project.

A: Good points.

- **Q:** People don't realize the drain recovery is the historic alignment of Owyhee river. If they understood this they may be more supportive of the project.

A: Good point.

- **Q:** Will this site be open to the public?

A: This will be non-public site.

Q: Is it possible to change the plan to allow this site to be open to the public, potentially by including a small parking area and walking access but no trails?

A: We will look into this through the final design.

Other General Comments Concluding the Meeting

- There is concern that complaints will come after the projects are complete.
- No one will read a letter for a public meeting. Flyers will be more effective. Do mailers.
- There is concern that impacted individuals will not be compensated for loss of land.
- Drain water return flows to the West Main canal will likely go to waste if it's getting discharged in the mid- to late summer, as nobody downstream is using water at this time.
- Emphasize that Drain Recovery is historic and that you're recharging system and special birds in the area.

Duck Valley Irrigation Improvements – Wetland Mitigation Sites

Public Meeting

Monday March 9, 2020

Owyhee, Nevada

| Name | Organization/Title | Address | City, State, ZIP Code | E-mail |
|--------------------|-----------------------------|------------|-----------------------|-----------------------------------|
| <i>[Signature]</i> | UNCE / WRB | | | <i>Premor@unce.unr.edu</i> |
| <i>[Signature]</i> | Irrigation | | | <i>ner.cody@shopai.org</i> |
| Stanley Premo | WRB | | | |
| Shawna Hicks | Tribal Member | PO BOX 369 | Owyhee, NV 89832 | WickusShi ShawnaHicks84@gmail.com |
| Christina Pyle | ShoPai News Reporter | | Owyhee NV 89832 | SPN.reporter@shopai.org |
| Media Bureau | ShoPai News | | Owyhee NV 89832 | egan.sandra@shopai.org |
| Ki Egan | Tribal member | | Owyhee NV 89832 | egan.karra@gmail.com |
| <i>[Signature]</i> | Irrigation | | Owyhee NV 89832 | |
| Chris Cleveland | WRB | | Owyhee NV 89832 | Cleveland.Chris@shopai.org |
| Shawna Cleveland | Tribal member | | Owyhee, NV 89832 | |
| Sharon Coulter | Tribal Member / Water Board | | Owyhee NV 89832 | |
| Bert Gustafson | Tribal CEO | | " " " | |



DUCK VALLEY IRRIGATION REHABILITATION

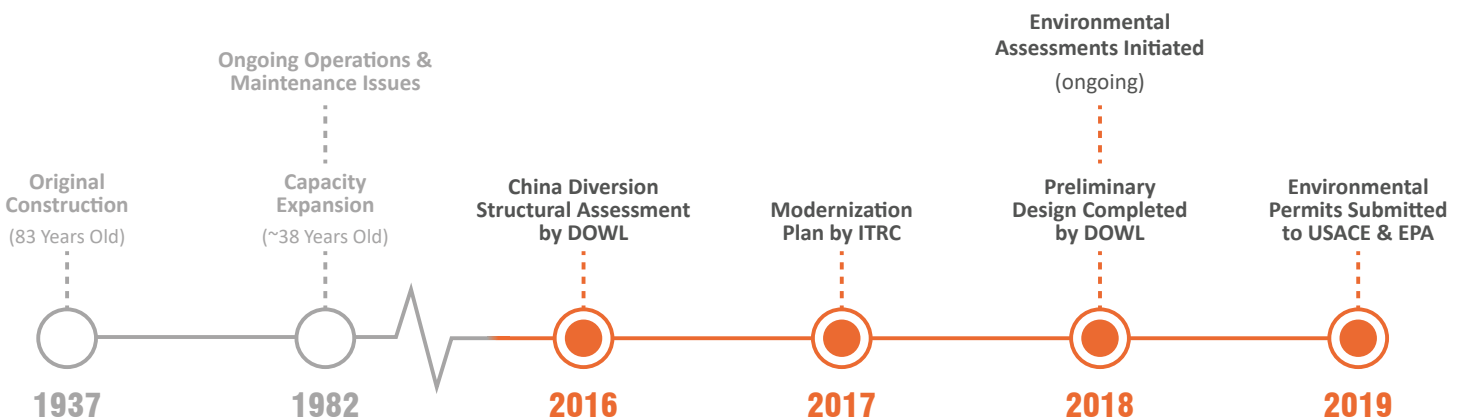
WINTER 2020 | NEWSLETTER UPDATE

CHINA DIVERSION

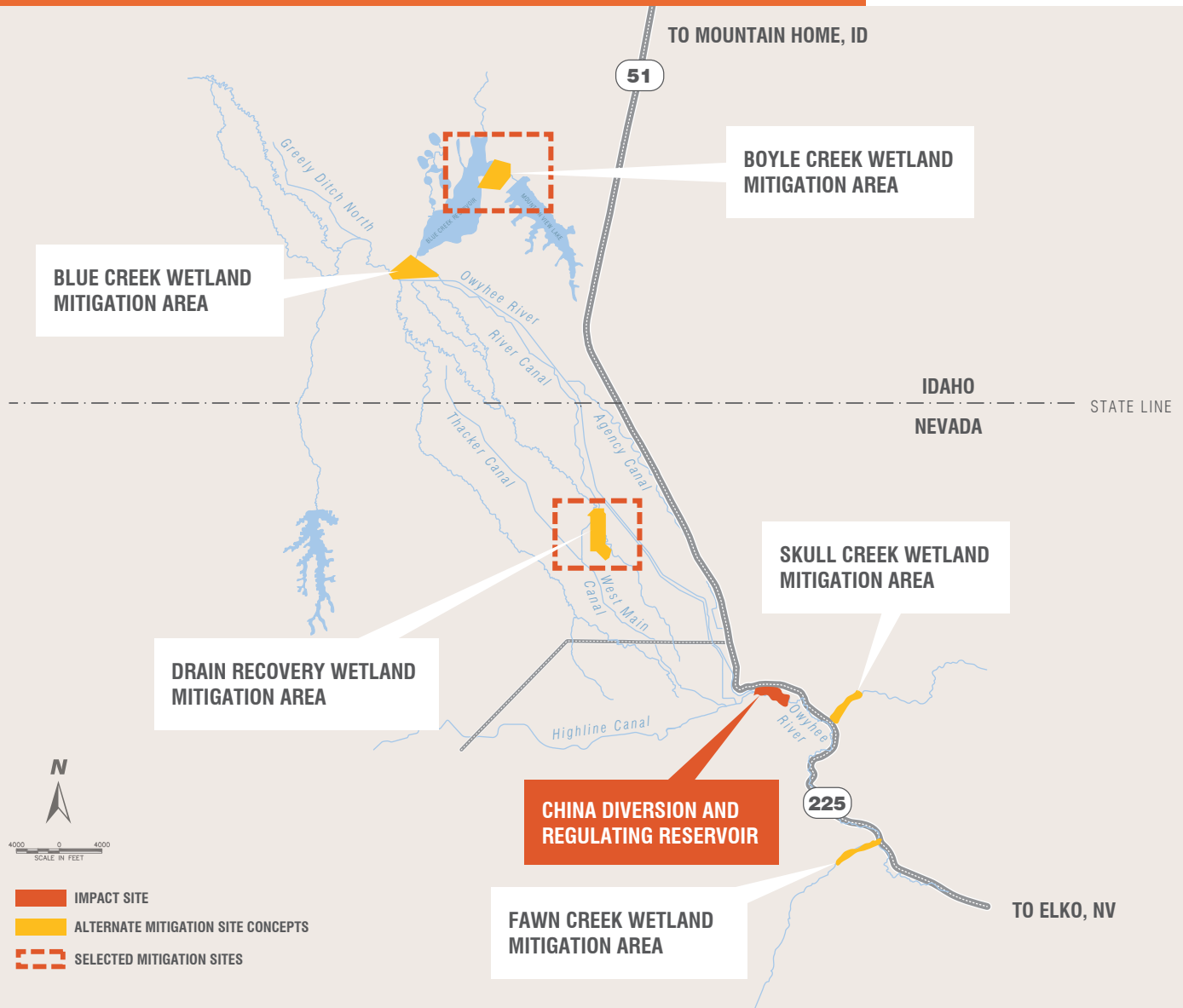
The Shoshone-Paiute Tribes are proposing improvements to China Diversion. The existing China Diversion was constructed in 1937 at the south end of Duck Valley. This structure, coupled with the completion of Wildhorse Dam, provided the first regular and reliable flow of irrigation water to Duck Valley. However, China Diversion is more than 80 years old, and, while it had a significant rehabilitation in 1982, the facility shows signs of distress and deterioration. The Tribes are now in the process of designing improvements to the China Diversion which would implement the recommendations from several studies commissioned by the Tribes, including a structural assessment completed by DOWL in 2016 and a Modernization Plan completed by the Irrigation Training and Research Center in 2017. In addition, because it is currently almost impossible to properly match flows arriving at China Diversion with requested flows in the irrigation project, excavation of a regulating (balancing) reservoir is planned upstream of the diversion. Efforts were made during the design process to avoid and minimize impacts to wetlands; however, construction of the regulating reservoir will result in impacts to wetlands within the footprint of the reservoir. Wetland mitigation is required to offset these impacts.



PROJECT HISTORY



WETLAND MITIGATION SITES



Over the summer of 2018 the Tribes worked with consultants from DOWL and Geum to identify opportunities to mitigate adverse impacts to wetlands, streams and aquatic resources. Through this process, the Tribes identified six potential mitigation sites. These sites were previously presented and described at a public meeting held in September of 2018. The general locations of these sites, including the Boyle Creek, Blue Creek, Drain Water Recovery, Skull Creek, and Fawn Creek are shown above.

There is no perfect mitigation site; some are more costly to construct, while others produce insufficient mitigation units to offset the project impacts, and some are viable but result in impacts to agricultural leases or livestock producers. The Tribes have attempted to balance the competing needs for land and water resources with the need to develop feasible

mitigation sites. Based on the public feedback received at the September 2018 meeting several sites were eliminated from further consideration. For example, development of the Skull Creek Mitigation Site would limit the ability for livestock on the Tribes' range lands to access water and shade during critical summer months. The Tribes determined that these impacts were too great to justify the development of the Skull Creek Mitigation Site. Similar discussions were conducted for each potential mitigation site to identify and select sites for inclusion in the final mitigation design. In 2019 the Tribes submitted preliminary mitigation plans for two sites where wetlands will be enhanced, expanded, and protected. These sites are the Drain Water Recovery Wetland and the Boyle Creek Wetland. The Tribes desire public input and feedback on the proposed mitigation plans at these sites.

WHERE WILL WE MITIGATE?



- 1** Develop riparian management zone to protect and enhance existing wetlands
- 2** Wildlife friendly fencing
- 3** Protect upland buffer habitat
- 4** Observation boardwalk and interpretative trail
- 5** Native plantings
- 6** Works with other recreational opportunities at Mountain View Dam

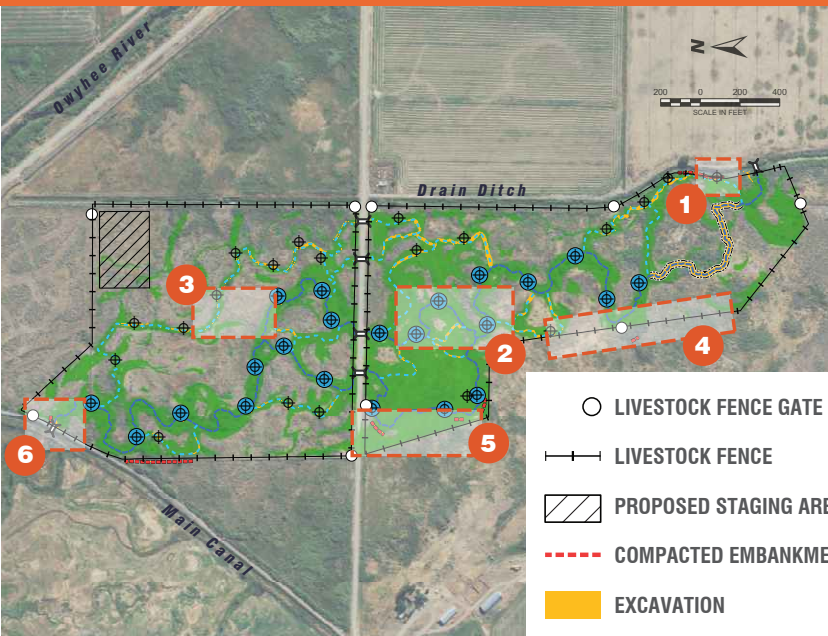
BOYLE CREEK WETLAND

The Boyle Creek Wetland is located immediately downstream of Mountain View Reservoir, adjacent Blue Creek. A riparian management zone will be developed at this site including the installation of wildlife friendly fencing to limit livestock impacts and allow for preservation of wetland features and riparian wetland expansion. Vegetation diversity will be increased by planting native plants. This site would protect and enhance existing wetland resources, waterfowl nesting habitat, and upland buffer habitat used by sage grouse. The Boyle Creek Wetland will be open to the public and include a scenic observation boardwalk and viewing platform to create an interpretive trail educating the public about the importance of wetland function and this area's unique habitat value. It is understood that livestock are moved through this area on the way to and from summer range lands; the ability to move livestock past this site will be perpetuated using the existing approximately 25-ft wide dam crest and road as the livestock corridor.



*Top: Example of intended scenic boardwalk with bench
Bottom Left: Viewing scope for visitors to observe habitat
Bottom Right: White-faced ibis*

WHERE WILL WE MITIGATE? (CONTINUED)



POTENTIAL RIPARIAN DEVELOPMENT

HISTORIC MAIN CHANNEL

SIDE CHANNEL

WATER CONTROL STRUCTURE

BEAVER DAM ANALOG

COBBLE REINFORCED BEAVER DAM ANALOG

WOODY BRUSH MATRIX BANK TREATMENT

1 Divert water from drain ditch

2 Maximize hydrologic connection through BDAs

3 Grading to maximize connectivity between channel and floodplain

4 Livestock fencing (~80 acres)

5 Berms to protect adjacent lands

6 Return "cleaned" water to Canal

DRAIN WATER RECOVERY WETLAND

The Drain Water Recovery Wetland will be located within Sho-Pai agricultural tracts 1240, 1205, 1183, and 1140. This site is adjacent an open drain ditch of the Duck Valley Irrigation Project. Water from this drain ditch would be rerouted into and through the wetland mitigation site, which follows a former channel alignment of the Owyhee River. Features of this site would include shallow excavation and grading to improve the flow and distribution of water within the site, structures in the channel to spread water out over a larger area, and berms to protect adjacent lands outside of the site. The existing tracts include barbed wire fences which would be improved, and the fence lines adjusted to follow the boundaries of the site. Drain water which includes agricultural runoff and has been warmed by the sun is currently discharged into the Owyhee River. After construction of the mitigation site, water which passes through the Drain Recovery Wetland would be cleaned by the wetlands and flow into the West Main Canal, where it would be available for irrigation delivery and agricultural use.



A beaver dam analog is a water restoration technique built to mimic the form and function of a natural beaver dam.

NEXT STEPS

The Tribe is currently proceeding with final design and an Environmental Assessment for the China Diversion, regulating reservoir, and wetland mitigation sites. The Draft Environmental Assessment is anticipated to be released for public comment in late April or early May, 2020. The focus of the current public meeting is the design of the wetland mitigation sites. A second public meeting is tentatively planned for early May, 2020 and will provide additional information on the design of the diversion and regulating reservoir and discuss issues outlined in the Draft Environmental Assessment, including alternatives considered and potentially impacted resources.

WHAT DO YOU THINK?

Written opinions, comments, or concerns regarding the project may be sent to Joseph McDade. Comments are due by March 28th, 2020.



Joseph McDade

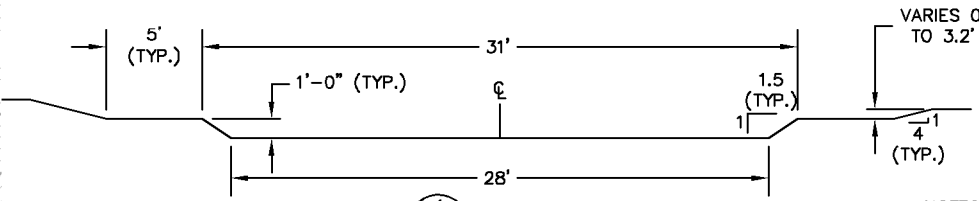
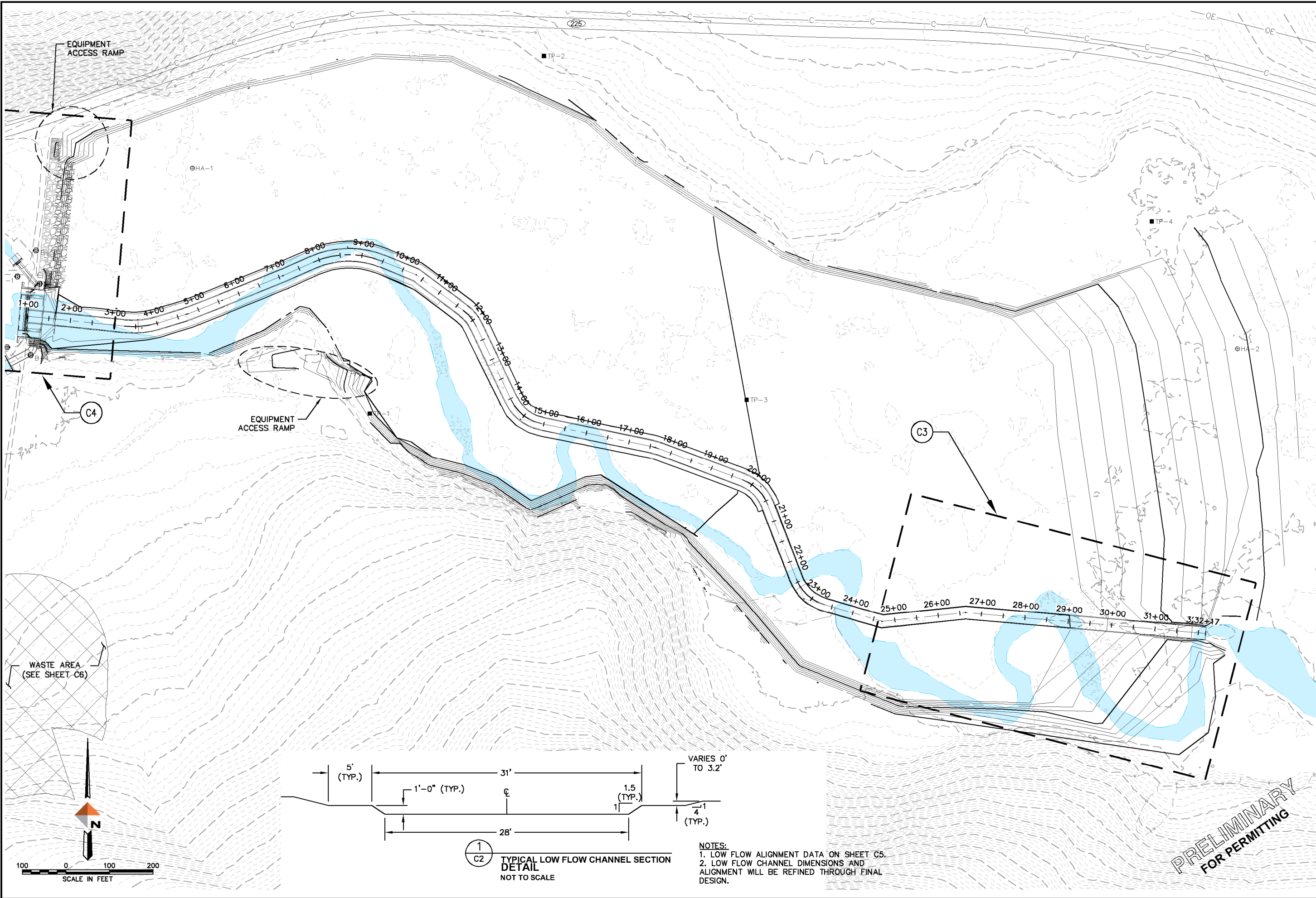
BIA Eastern Nevada Agency 2719-4 Argent Ave.
Elko, NV 89801



joseph.mcdade@bia.gov

Appendix B: China Diversion Plan Sheets

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NOTES:
1. LOW FLOW ALIGNMENT DATA ON SHEET C5.
2. LOW FLOW CHANNEL DIMENSIONS AND
ALIGNMENT WILL BE REFINED THROUGH FINAL
DESIGN.

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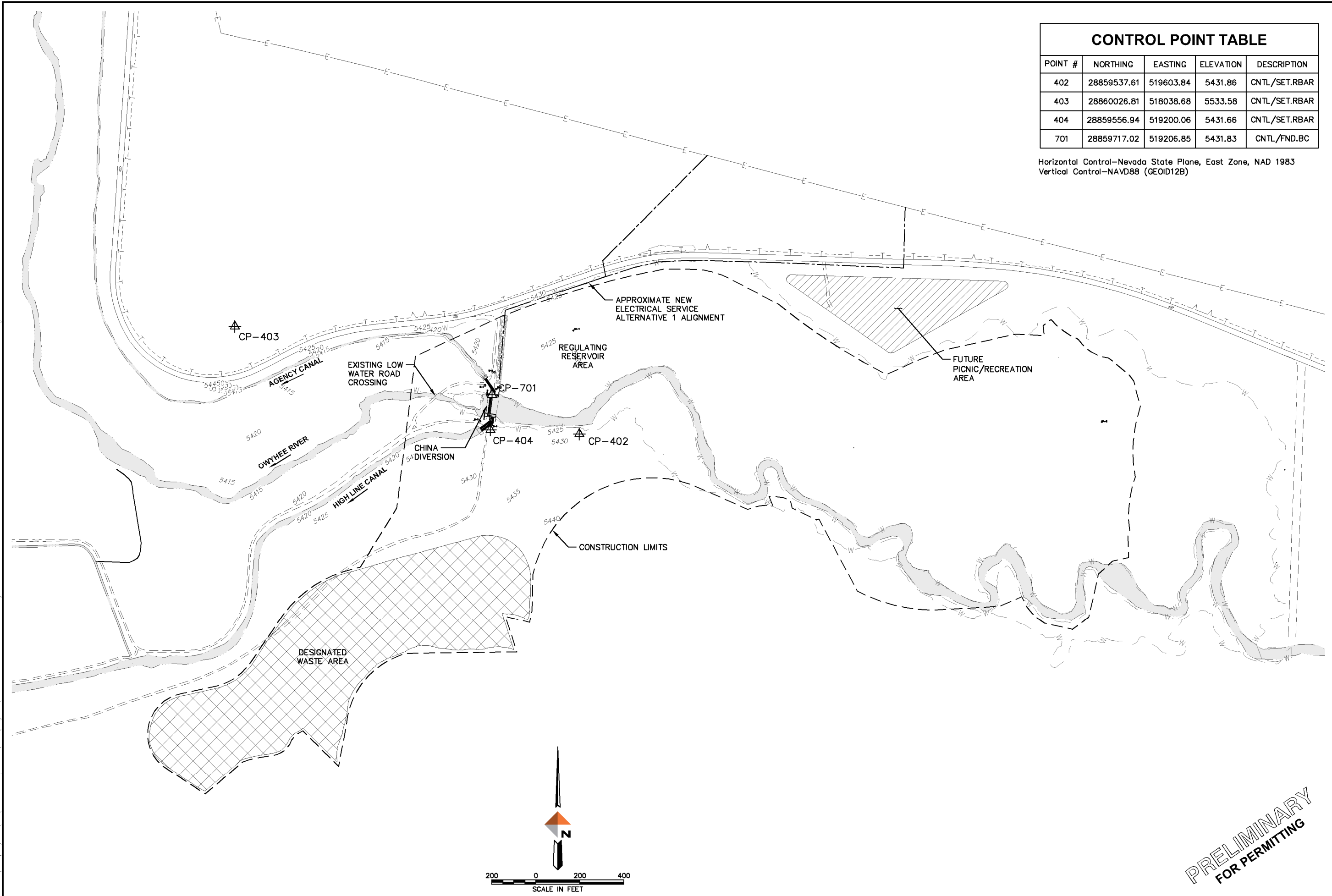
DOWL

CHINA DIVERSION, REGULATING
RESERVOIR, AND WETLAND MITIGATION
REGULATING RESERVOIR
LOW FLOW CHANNEL GRADING PLAN
DUCK VALLEY IRRIGATION PROJECT
OWYHEE, NEVADA

PROJECT 4626.21042.03
DATE FEBRUARY 2020

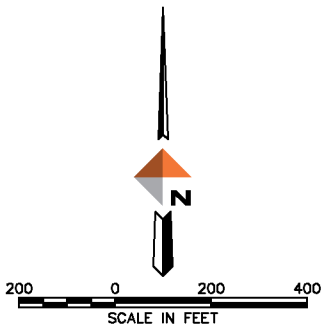
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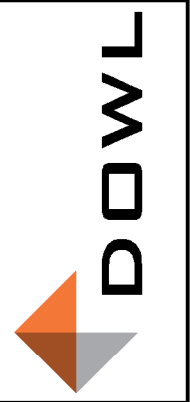
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| 403 | 28860026.81 | 518038.68 | 5533.58 | CNTL/SET.RBAR |
| 404 | 28859556.94 | 519200.06 | 5431.66 | CNTL/SET.RBAR |
| 701 | 28859717.02 | 519206.85 | 5431.83 | CNTL/FND.BC |

Horizontal Control—Nevada State Plane, East Zone, NAD 1983
Vertical Control—NAVD88 (GEOID12B)



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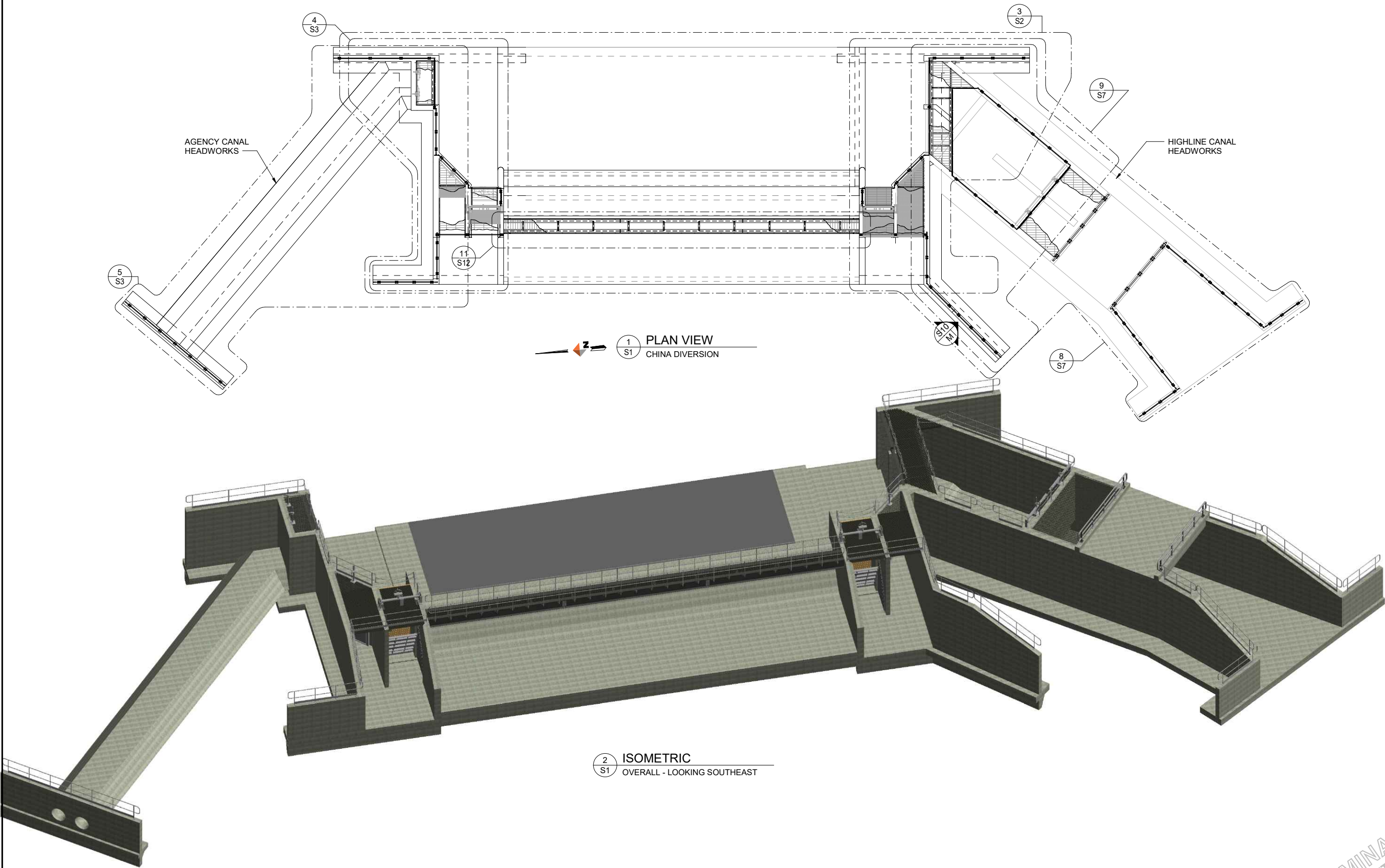


CHINA DIVERSION REGULATING RESERVOIR EXCAVATION

EXISTING CONDITIONS
AND SURVEY CONTROL
DUCK VALLEY IRRIGATION PROJECT
ELKO COUNTY, NEVADA

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CHINA DIVERSION RECONSTRUCTION

STRUCTURAL - OVERALL PLAN VIEW & ISOMETRIC

DUCK VALLEY IRRIGATION PROJECT
ELKO COUNTY, NEVADA

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PRELIMINARY
FOR PERMITTING

Appendix C: Biological Evaluation Report

Proposed Irrigation Improvements, Duck Valley Indian Reservation, Elko County, NV and Owyhee County, ID

Project: China Diversion and Related Infrastructure

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS



FINAL
BIOLOGICAL EVALUATION

March 6, 2020

FINAL BIOLOGICAL EVALUATION

Proposed Irrigation Improvements, Duck Valley Indian Reservation

Project: China Diversion and Related Infrastructure
Elko County, Nevada & Owyhee County, Idaho

PREPARED BY:



1300 Cedar Street, Helena, Montana 59601

SUBMITTED TO:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

March 6, 2020

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ATTACHMENTS

- Attachment 1. U.S. Fish and Wildlife Service Federally Listed Species in Elko & Owyhee Counties
Attachment 2. U.S. Fish and Wildlife Service IPaC Database Report

1.0 INTRODUCTION

This Biological Evaluation (BE) has been prepared at the direction of the Bureau of Indian Affairs (BIA) to support preliminary site investigations and construction of the proposed China Diversion and Related Infrastructure Project on the Duck Valley Indian Reservation in Elko County, Nevada and Owyhee County, Idaho. This report will support the BIA's review of the project under the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA). The BE will also support any required project coordination between the BIA and Tribal natural resource managers, and the United States Fish and Wildlife Service (USFWS) under Section 7(a)(2) of the ESA.

DOWL biologists reviewed existing information in the project vicinity in order to evaluate biological resources and assess habitat suitability for federally listed species and critical habitat. This report summarizes the findings of the evaluation. The BE includes a brief project description; an ecological overview of the project limits and vicinity; and a screening analysis to determine whether Threatened and Endangered Species (TES), species proposed for listing under the federal ESA, critical habitat resources, tribally sensitive species, and species protected by the Migratory Bird Treaty Act (MBTA) have the potential to occur within or near the project. Potential effects of the project on special-status species or critical habitat resources are also evaluated, and recommended conservation measures to minimize the project effects on these and other natural resources are included. The scope of work for this BE includes the following steps.

1. Review of the USFWS TES lists for Owyhee and Elko Counties and the USFWS Information, Planning, and Conservation System (IPaC) database.
2. Review of the Nevada Natural Heritage Program (NNHP) online database.
3. Review of the Idaho Natural Heritage Program (INHP) online database.
4. Request data from Shoshone-Paiute Tribes (Sho-Pai) on any tribally sensitive species within the Duck Valley Indian Reservation.
5. Field reconnaissance of the project limits and vicinity to identify dominant vegetation and habitat.
6. Conduct a screening analysis to evaluate potential for occurrence and effects on special-status species and proposed or designated critical habitat.

For the purposes of this document, the term "project limits" refers to the limits of potential improvements; whereas, "project vicinity" refers to a three-mile radius around the project limits within which specific biological resources are evaluated.

1.1 PROJECT DESCRIPTION

The Sho-Pai Tribes of the Duck Valley Indian Reservation are proposing improvements to China Diversion. The project is needed to improve the operation and distribution of water throughout the Duck Valley Irrigation Project (DVIP). To offset the proposed wetland impacts at China Diversion, a compensatory wetland mitigation plan was developed at two separate sites.

The proposed project would include implementation of the comprehensive rehabilitation alternative at China Diversion and construction of a regulating reservoir upstream of the diversion. Wetlands and riparian areas at two mitigation sites would be restored and enhanced to account for wetland loss resulting from the proposed improvements at China Diversion. The proposed project would include the following.

- China Diversion improvements.
 - Reconstruction of the China Diversion at its current location to include new headworks, sluiceways, conduits, gates, outlet transitions, safety features, overlaying the existing spillway, and raising the spillway crest elevation.
- Regulating reservoir.
 - Construction of a new regulating reservoir upstream of China Diversion, including raising the spillway crest at the diversion by approximately 3 feet and clearing and excavating an area within the Owyhee River floodplain/riparian corridor to develop new regulating reservoir storage. The footprint of the regulating reservoir excavation would be approximately 61 acres, with the final size dependent on excavation costs.
 - Excavated material from the regulating reservoir may be used to raise the height of the existing China Diversion embankment and/or processed to produce materials stockpiles (e.g. topsoil and aggregate) for use by the Sho-Pai Tribes. Excess excavation materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area.
 - Native riparian shrubs would be planted within a narrow buffer along edges of the regulating reservoir as part of the compensatory wetland mitigation plan.
 - Maintenance (e.g. periodic removal of accumulated sediment and aquatic vegetation) would be required for the regulating reservoir, and access routes into the reservoir are planned. Materials excavated as part of future, regular maintenance activities would be deposited in the designated waste area.

- Boyle Creek Wetland Mitigation Site
 - Development of a riparian management zone and construction of wildlife-friendly livestock fencing to limit livestock impacts and preserve wetland features through the expansion of riparian woody vegetation and herbaceous wetland and elimination of trampling and soil compaction.
 - Protect the upland buffer habitat important to sage grouse and waterfowl nesting through development of a riparian management zone and wildlife-friendly livestock fencing.
 - Construct a scenic observation boardwalk and viewing platform to provide an interpretive trail to educate the public about wetland function and the areas habitat. The viewing platform would include educational interpretive signage.
 - Implement a buffer of riparian revegetation along the Boyle Creek channel, including native riparian shrubs.
- Drain Recovery Wetland Mitigation Site
 - Divert hydrology from the existing drain ditch to reactivate historic Owyhee River channels and restore former floodplain wetlands.
 - Construct beaver dam analog (BDA) structures along a historic river channel alignment to maximize hydrologic connection between the channel and floodplain.
 - Excavate areas of high ground along historic channels to maximize distribution of flows and connectivity between channels and the floodplains.
 - Install wildlife-friendly livestock fencing around the mitigation site to prevent livestock impacts.
 - Install shallow perimeter berms to keep surface flows from flooding adjacent pastures and farmlands.
 - Discharge excess water routed through the wetland back into the West Main Canal.

The proposed China Diversion improvements would take place in the Fall of 2020 through the Spring of 2022, with construction generally occurring outside of the irrigation season and during a period of low flow in the Owyhee River. Construction at the two mitigation sites would be initiated within two years of the impact to wetlands at the regulating reservoir.

1.2 PROJECT LOCATION

The proposed China Diversion and Related Infrastructure project is located on Duck Valley Indian Reservation lands (*Figures 1, 2, and 3*). The Reservation is located in northeastern Nevada in Elko County and southeastern Idaho in Owyhee County, approximately 390 miles east of Reno, Nevada, and approximately 150 miles south of Boise, Idaho. The location of the China Diversion site is approximately 2 miles southeast of the town of Owyhee, Nevada, on the south side of State

Highway 225. The Boyle Creek Mitigation site is located northwest of the Mountain View Reservoir embankment in Owyhee County, Idaho, and is approximately 8 miles northwest of the town of Owyhee and 2 miles northwest of the Highway 51 and BIA 8 intersection. The Drain Recovery Mitigation site is approximately 2.5 miles northwest of the town of Owyhee and 1.35 miles west of the BIA 141 and Highway 225 intersection in Elk County, Nevada.

The legal description of the project locations are:

- Township (T) 46 North (N), Range (R) 52 East (E), Section 01
- T47N, R52E, Section 36
- T46 N, R53E, Section 06
- T47N, R53E, Section 31
- T16S, R2E, Sections 1, 2, 11, and 12
- T47N, R52E, Sections 16 and 21

1.3 LANDSCAPE CONTEXT AND SURROUNDING LAND USES

The proposed project is located within the upper Owyhee River Basin in northern Nevada and southern Idaho, which extends generally southeast to northwest from its headwaters in the Independence Mountains. The lower portion of the basin reaches its terminus at the Snake River, approximately 250 miles from its headwaters. Lands surrounding the proposed project are primarily managed by the Sho-Pai Tribes and are held in trust by the BIA for the benefit of the Sho-Pai Tribes.

The China Diversion is located on the Owyhee River. Land use within the project vicinity is largely ranching/grazing with some dispersed residential properties and significant irrigated agriculture within Duck Valley. The community of Owyhee is located northwest of the China Diversion project limits.

The Boyle Creek Mitigation site is located below the Mountain View Reservoir embankment. Land use within the Boyle Creek project vicinity is largely comprised of ranching/grazing, water storage/recreation at Mountain View Lake, and key wildlife habitat at the Boyle Creek and Blue Creek confluence.

The Drain Recovery Mitigation site is located within portions of non-assessable agricultural tracts that include a network of historic channels that once connected to the Owyhee River. The town of Owyhee is located approximately 2.5 miles southeast of the site. Land use within the Drain Recovery project vicinity is primarily ranching/grazing, agricultural, designated BIA roadways, and dispersed residential. The site is currently used as a winter range for livestock.

1.4 ECOLOGICAL OVERVIEW

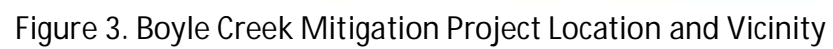
The proposed project limits are located within the upper Owyhee River Basin at elevations that range from approximately 5,400 feet above mean sea level (MSL) at China Diversion (*Figure 4*), 5,364 feet above MSL at the Drain Recovery Mitigation site (*Figure 5*), and 5,305 feet above MSL at the Boyle Creek Mitigation site (*Figure 6*). Both mitigation sites are found within the broad valleys of the upper Owyhee River and Blue Creek, while China Diversion is found further upstream within a more confined valley of the Owyhee River. Along the Owyhee River there is a dense community of riparian/wetland shrub of varying width (primarily willow). The entire river valley is surrounded by miles of sagebrush/shrubland steppe, with several small drainages and creeks that bisect the surrounding area as they flow toward the Owyhee River (United States Geological Survey [USGS] 2018a). Blue Creek is a primary tributary of the upper Owyhee River. It includes a large wetland area in a broad floodplain located just north of the Blue Creek and Owyhee River confluence. Surrounding the Blue Creek wetlands is upland sagebrush habitat that provides habitat for wildlife and grazing resources for livestock. The USFWS National Wetlands Inventory (NWI) maps several potential wetlands throughout the project vicinity (*Figure 7*). These wetlands are classified as palustrine emergent wetlands, palustrine scrub-shrub wetlands, and riverine (USFWS 2020a).



Figure 1. China Diversion Project Location and Vicinity



Figure 2. Drain Recovery Mitigation Project and Vicinity



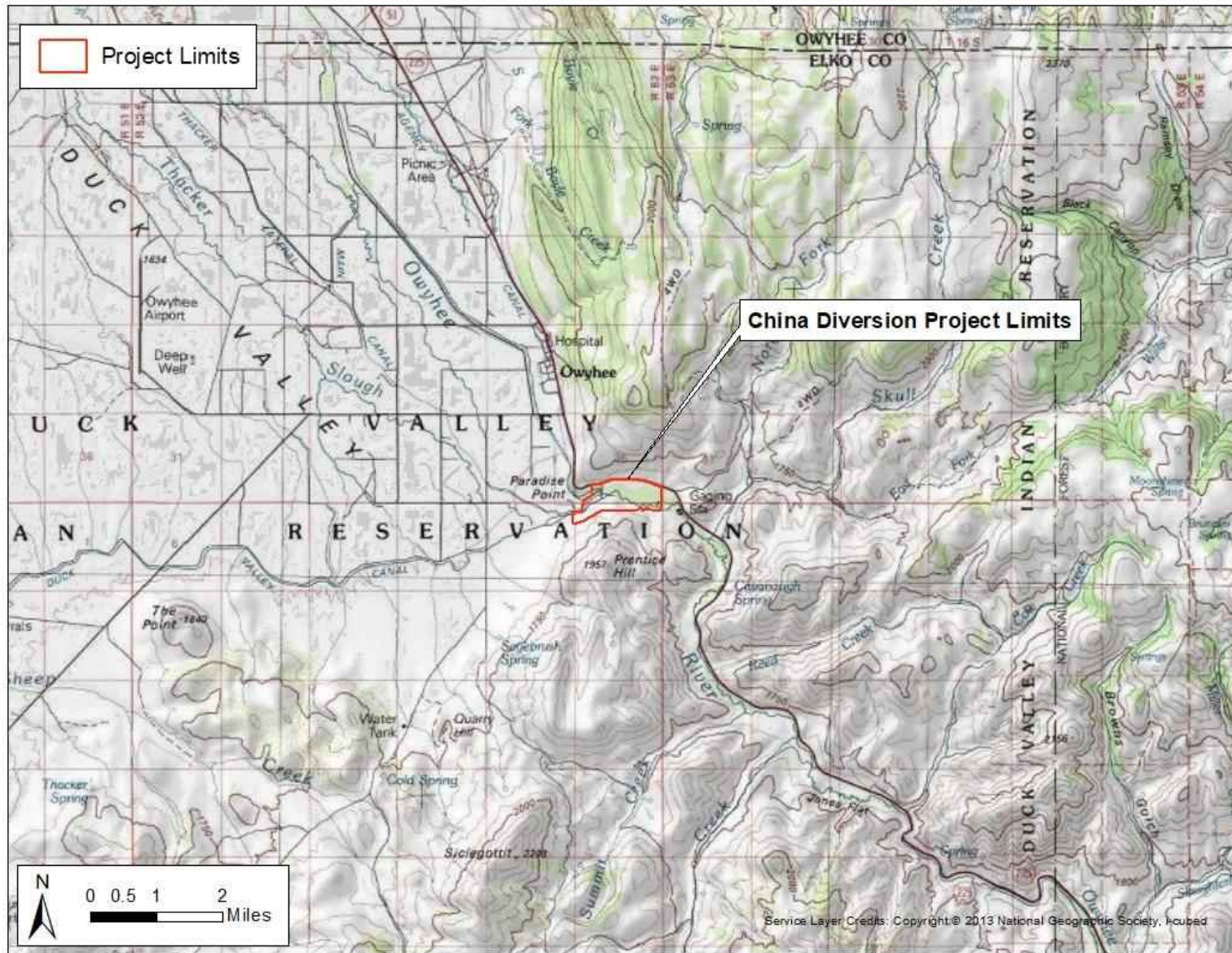


Figure 4. Topographic Overview of China Diversion Project Location

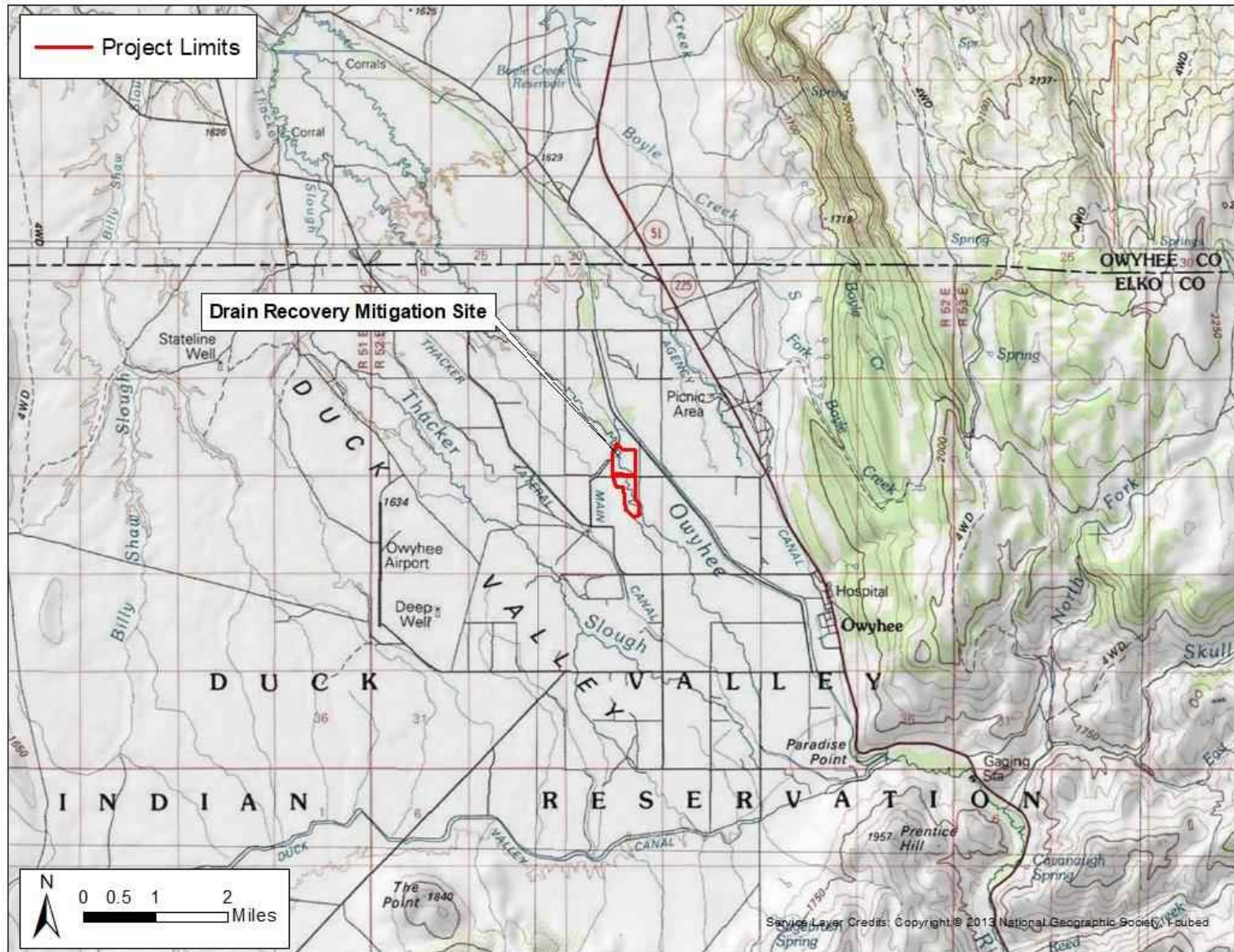


Figure 5. Topographic Overview of Drain Recovery Project Location

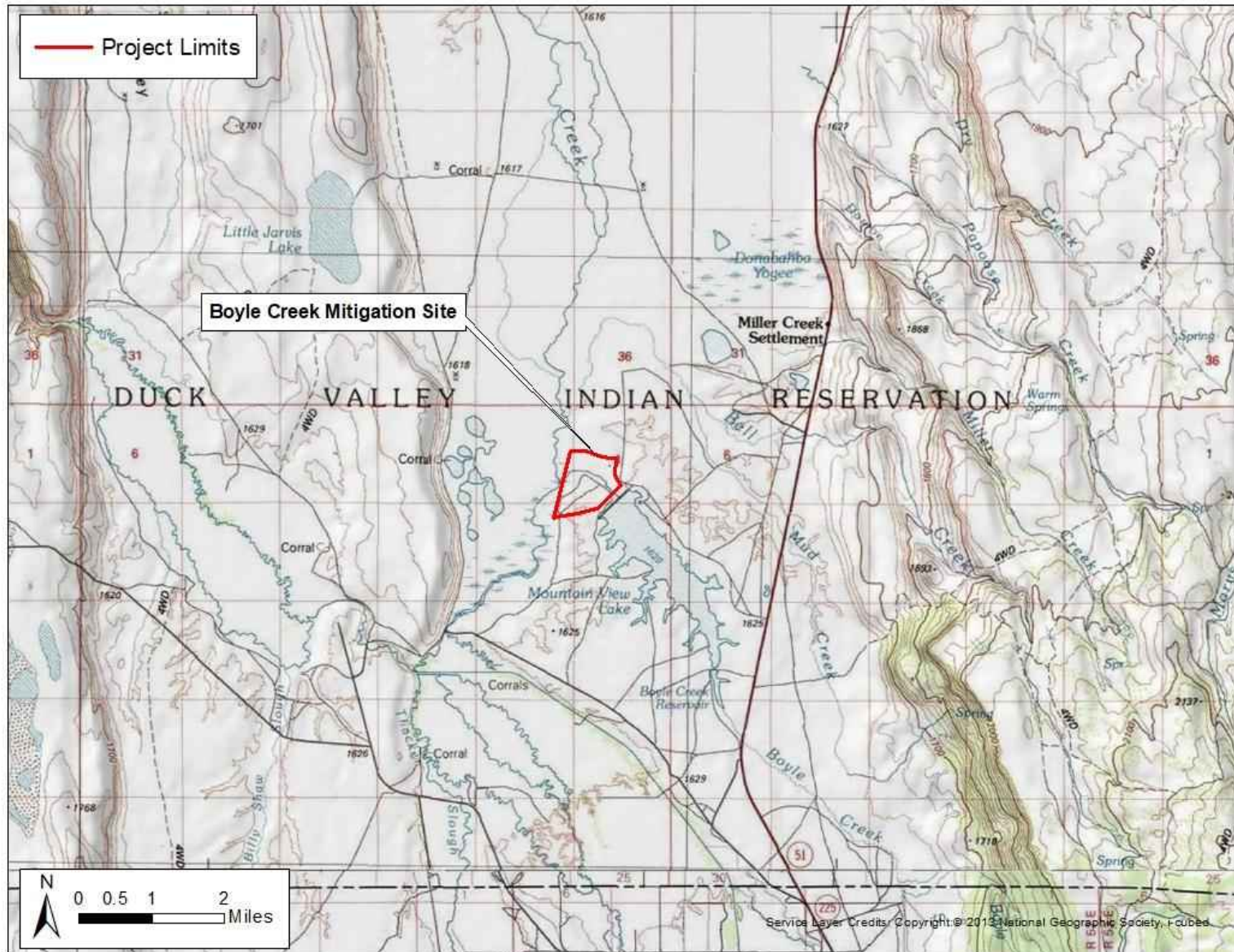


Figure 6. Topographic Overview of Boyle Creek Project Location

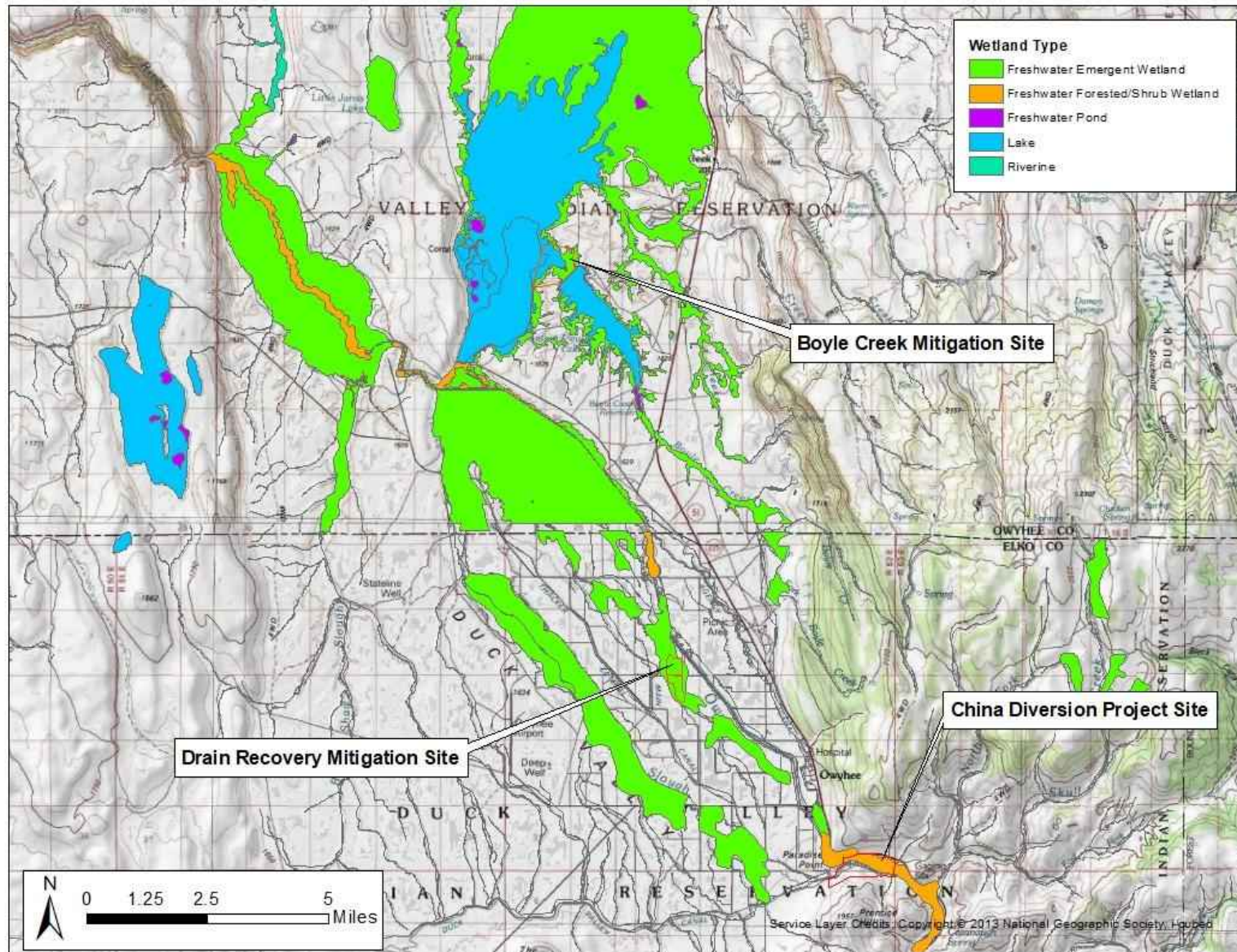


Figure 7. Overview NWI Wetland Map

2.0 STUDY METHODS

The potential for special-status species to occur within the project limits is based upon background research to identify species potentially occurring in the region and the natural history of each species, the known range and distribution for each species, and vegetation and habitat occurring within and near the project limits. Once this information is collected, a screening analysis is conducted to identify the potential for any of the special-status species to occur within or near the project limits. Critical habitat and other biotic resource components that are important in the life history of listed special-status species are also identified through the screening analysis process.

2.1 THREATENED AND ENDANGERED SPECIES RESEARCH

A list of federal TES that may occur in the three project limits and vicinity was obtained from the USFWS online IPaC database for Owyhee County, Idaho and Elko County, Nevada (USFWS 2020b and 2020c). In addition, the NNHP and INHP online databases were reviewed. The USFWS list includes specific TES that may occur in or near the project limits, while the NNHP and INHP databases list TES and other special status species that may occur within Elko and Owyhee Counties (NNHP 2020a and Idaho Department of Fish and Game [IDFG] 2020a). These tools also provide information related to species habitat requirements and known distribution ranges in Idaho and Nevada. USGS Gap Analysis Range data was also used to determine known species ranges that may overlap the project sites (USGS 2018b).

2.2 Tribal Sensitive Species Research

A list of designated tribal sensitive species was requested from the Sho-Pai Tribes Fish, Wildlife, and Parks Department (Sho-Pai communication July 2018a).

2.3 SCREENING ANALYSIS

A screening analysis was performed after collecting and reviewing natural history information for each TES listed as potentially occurring in the project vicinity by the USFWS and comparing these requirements to site-specific information gathered from background research on the project vicinity. TES were eliminated from detailed analysis in this BE if the screening analysis indicated that the project limits were located outside of the known range or distribution, or if required habitat elements for a particular species are not present. In addition, the location of designated or proposed critical habitat was reviewed for each TES in reference to the project limits. The standardized criteria used to determine the potential for occurrence of individual species and potential effects on each species are outlined below.

Potential for Occurrence Evaluation – Four occurrence categories that were applied to each TES during the screening analysis are defined as follows:

- Known to occur - The species is documented to occur in the project limits or vicinity.
- May occur - The project limits are within the species' currently known range or distribution and vegetation communities, habitat, soils, or other biotic and abiotic indicators resemble those known to support the lifecycle and/or natural history requirements of the species.
- Unlikely to occur - The project limits are within the species' currently known range or distribution, but vegetation communities, soils, and other biotic and abiotic indicators do not resemble those known to support the lifecycle and/or natural history requirements of the species.
- Does not occur - The project limits are not within the known range or distribution and other biotic and abiotic indicators do not resemble those known to support the lifecycle and/or natural history requirements of the species.

Potential Affects Evaluation – The affects evaluation conducted for the screening analysis is similar to the affects determination described in the USFWS Endangered Species Act Handbook for Section 7 consultations (USFWS 1998). The three affects categories used in this BE are defined below:

- May affect, is likely to adversely affect - The project is likely to adversely affect a species if: 1) the species is known to occur in the project limits; and 2) project activities would disturb areas or habitat elements known to be used by the species, or would directly affect an individual.
- May affect, is not likely to adversely affect - The project is not likely to adversely affect a species if: 1) the species may occur but its presence has not been documented; and 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- No effect - The project will have no effect on a species if: 1) the species is considered unlikely to occur (range, vegetation, etc., are inappropriate); and 2) the species or its sign was not observed during surveys of the project limits.

3.0 STUDY RESULTS

The following sections describe the results of the BE and TES screening analysis for the China Diversion and Wetland Compensatory Mitigation Sites. This includes the potential for TES and other sensitive species to occur within the project limits, and the potential for the project to affect TES, critical habitat resources, and other sensitive species.

3.1 THREATENED AND ENDANGERED SPECIES IDENTIFICATION

Results of the USFWS database review indicate the Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*), Clover Valley speckled dace (*Rhinichthys osculus oligoporus*), Independence Valley speckled dace (*Rhinichthys osculus lethoporus*), bull trout (*Salvelinus confluentus*), gray wolf (*Canis lupus*), and whitepark pine (*Pinus albicaulis*) are known to occur in Elko County (*Attachment 1*). Additionally, critical habitat for bull trout exists within Elko County. However, the USFWS IPaC report, which was conducted on the geo-coordinates for the proposed China Diversion project and Drain Recovery Mitigation site, only identified the gray wolf as potentially occurring in the project vicinity (*Attachment 2*). Designated or proposed critical habitat was not identified in the IPaC report as occurring in the project limits or vicinity (USFWS 2020c).

Within Owyhee County, the yellow-billed cuckoo (*Coccyzus americanus*), bull trout (*Salvelinus confluentus*), Bruneau hot springsnail (*Pyrgulopsis bruneauensis*), Snake River physa snail (*Physa natricina*), and slickspot peppergrass (*Lepidium papilliferum*) are known to occur (*Attachment 1*). Critical habitat for bull trout and proposed critical habitat for slickspot peppergrass also exists within Owyhee County. However, the USFWS IPaC report, which was conducted on the geo-coordinates for the proposed Boyle Creek Mitigation site, did not identify any TES or designated or proposed critical habitat as occurring in the project limits or general vicinity (*Attachment 2*) (USFWS 2020c).

3.2 TRIBAL SENSITIVE SPECIES IDENTIFICATION

No species have been designated as tribally sensitive by the Sho-Pai Tribes; however, the Tribal Fish, Wildlife, and Parks Department requested special consideration for redband trout (*Oncorhynchus mykiss gairdnerii*), the Columbia spotted frog (*Rana luteiventris*), and the pygmy rabbit (*Brachylagus idahoensis*). A screening analysis was conducted for these species.

3.3 VEGETATION AND HABITAT ASSESSMENT

The China Diversion project limits are found within the upper, confined valley of the Owyhee River, which includes a somewhat narrow floodplain. Vegetation within the project limits is primarily freshwater shrub-scrub wetland comprised of four dominant shrub species, including red-osier dogwood (*Cornus alba*), Woods' rose (*Rosa woodsii*), yellow willow (*Salix lutea*), and sandbar willow (*Salix exigua*). Other shrub species include golden currant (*Ribes aureum*) and gray alder (*Alnus incana*). Outside of the floodplain, vegetation shifts to drier plant species, including big sagebrush (*Artemisia tridentata*), rubber rabbitbrush (*Chrysothamnus nauseosus*), Kentucky bluegrass (*Poa pratensis*), and cheatgrass (*Bromus tectorum*). These various habitats support a wide variety of wildlife species such as deer, rabbits, and a number of different birds.

The Drain Recovery Mitigation site is located within portions of non-assessable agricultural tracts that include a network of historic channels that once connected to the Owyhee River. A main channel traverses south to north through the project site, collecting water from agricultural fields and discharging into the Owyhee River. At lower elevations within the site, groundwater is near the surface and supports riparian scrub-shrub and emergent vegetation, while the higher elevations are dominated by sagebrush and other non-wetland plants. Riparian vegetation within the project area is primarily comprised of American mannagrass (*Glyceria grandis*), foxtail barley (*Hordeum jubatum*), common cattail (*Phalaris arundinacea*), coyote willow (*Salix exigua*), Woods' rose, and golden current. Higher elevations include species tolerate of drier conditions, such as big sagebrush, rubber rabbitbrush, Kentucky bluegrass, and cheatgrass. The site is currently used as winter range for livestock, which is generally present from September through March.

The Boyle Creek Mitigation site is a groundwater-fed wetland complex. The site is seasonally submerged due to a high-water table and flooding associated with Blue Creek. Vegetation within the site is dominated by palustrine emergent wetland, that transitions to upland sagebrush steppe habitat. This transition zone is likely rare habitat important to sage grouse, migratory waterfowl, and nesting bird species. Small patches of scrub-shrub vegetation are dispersed through the southern limits of the site; however, consistent grazing has limited the establishment of woody vegetation. Vegetation within the project limits is primarily comprised of Baltic rush (*Juncus balticus*), spreading bentgrass (*Agrostis stolonifera*), silverweed (*Potentilla anserine*), clover species (*Trifolium spp.*), hardstem bulrush (*Schoenoplectus acutus*), willow species (*Salix spp.*), and Nebraska sedge (*Carex nebrascensis*). Adjacent upland species include cheatgrass, mustard species (*Sisymbrium spp.*), rubber rabbitbrush, and Canada thistle (*Cirsium arvense*).

3.4 SCREENING ANALYSIS SUMMARY

The USFWS IPaC report did not identify any TES listed within Owyhee County as occurring in the Boyle Creek project limits or general vicinity. Within Elko County, only one species, the gray wolf, was listed as potentially occurring in the project limits for the China Diversion and Drain Recovery sites. However, as part of the screening analysis, each TES listed in Owyhee and Elko Counties was evaluated through the screening criteria, including known range and habitat requirements, to identify whether these TES have the potential to occur in the project limits and general vicinity (*Table 1*). Species with distribution ranges that are known to be far from the project sites and/or species that occupy habitats not found within or adjacent to the project limits were eliminated from detailed evaluation. The screening analysis resulted in all ten species classified as *do not occur* in the project limits or vicinity, as these species have distribution ranges that are known to be far from the site and/or these species occupy specific habitats not found within or adjacent to the project limits.

Table 1. TES Screening Analysis

| | | | China Diversion Elko County, NV | | Drain Recovery Mitigation Site Elko County, NV | | Boyle Creek Mitigation Site Owyhee County, ID | |
|--------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|------------------|
| Common Name (Species Name) | Status* | Range or Habitat Requirements | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrences in Project Area | Potential Effect |
| FISH | | | | | | | | |
| Lahontan cutthroat trout (<i>Oncorhynchus clarkia henshawi</i>) | E | <p>Found in a wide variety of cold-water habitats, including large terminal alkaline lakes; alpine lakes; slow meandering rivers (e.g., Humboldt River); mountain rivers; and small headwater tributary streams (e.g., Donner and Prosser Creeks). Generally, occurs in cool flowing water with available cover of well-vegetated and stable stream banks, in areas where there are stream velocity breaks, and in relatively silt free, rocky riffle-run areas.</p> <p>This trout species is endemic to the Lahontan Basin of northern Nevada, eastern California, and southern Oregon. Lahontan cutthroat trout currently occupy between 123 to 129 streams within the Lahontan Basin and 32 to 34 streams outside the basin, totaling approximately 482 miles of occupied habitat.</p> | <p>Does not Occur</p> <p>The China Diversion project is not located within the Lahontan Basin, and Lahontan cutthroat trout are not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not Occur</p> <p>The Drain Recovery Mitigation site is not located within the Lahontan Basin, and Lahontan cutthroat trout are not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not Occur</p> <p>The Lahontan cutthroat trout is not listed as occurring in Owyhee County.</p> | No effect. |
| Clover Valley speckled dace (<i>Rhinichthys osculus oligoporus</i>) | E | <p>Speckled dace occur in a wide variety of habitats, ranging from cold streams and rivers with rocky substrates to small thermal springs with silt substrates. Isolation of populations has allowed genetic divergence and resulted in a number of morphologically distinct subspecies.</p> <p>The historic range of Clover Valley speckled dace was not known before European settlement, which resulted in manipulating springs for irrigation purposes. Currently, this subspecies is confined to three springs (Clover Valley Warm Springs, Wright Ranch Spring, and Bradish Spring) located on private land in the Clover Valley in Elko County.</p> | <p>Does not occur.</p> <p>The China Diversion project is not located in Clover Valley, and there is no habitat for this species within the project vicinity. This species is not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not occur.</p> <p>There is no suitable habitat for this species within the Drain Recovery Mitigation site, and the mitigation site is not located in Clover Valley. This species is not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not Occur</p> <p>The Clover Valley speckled dace is not listed as occurring in Owyhee County.</p> | No effect. |
| Independence Valley speckled dace (<i>Rhinichthys osculus lethoporus</i>) | E | <p>Speckled dace occur in a wide variety of habitats, ranging from cold streams and rivers with rocky substrates to small thermal springs with silt substrates. Isolation of populations has allowed genetic divergence and resulted in a number of morphologically distinct subspecies.</p> <p>The historic range of Independence Valley speckled dace was not known before European settlement, which resulted in manipulating springs for irrigation purposes. Currently, this subspecies is confined to a series of springs and associated deep pools and shallow marshlands in the Independence Valley in Elko County.</p> | <p>Does not occur.</p> <p>The China Diversion project is not located in Independence Valley, and there is no habitat for this species within the project vicinity. This species is not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not occur.</p> <p>There is no suitable habitat for this species within the Drain Recovery Mitigation site, and the mitigation site is not located in Independence Valley. This species is not listed as potentially occurring in the project vicinity on the IPaC database.</p> | No effect. | <p>Does not Occur</p> <p>The Independence Valley speckled dace is not listed as occurring in Owyhee County.</p> | No effect. |

| | | | China Diversion Elko County, NV | | Drain Recovery Mitigation Site Elko County, NV | | Boyle Creek Mitigation Site Owyhee County, ID | |
|-------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Common Name (Species Name) | Status* | Range or Habitat Requirements | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrences in Project Area | Potential Effect |
| Bull trout (<i>Salvelinus confluentus</i>) | T | Bull trout have specific habitat requirements that appear to influence their distribution and abundance. They need cold water to survive, so they are seldom found in waters where temperatures exceed 59 to 64 degrees (F). They also require stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and unblocked migratory corridors. Bull trout exhibit two forms: resident and migratory. Resident bull trout spend their entire lives in the same stream/creek. Migratory bull trout move to larger bodies of water to overwinter and then migrate back to smaller waters to reproduce. An anadromous form of bull trout also exists in the Coastal-Puget Sound population, which spawns in rivers and streams but rears young in the ocean. Designated bull trout critical habitat is found on the Jarbridge and Bruneau Rivers in northern Nevada and Southern Idaho. | Does not Occur. There are no resident or migratory populations of this species within or near the China Diversion project vicinity. The closest known population is in the Jarbridge River basin 35 miles to the east. This species is not listed as potentially occurring in the project area on the IPaC database. | No effect. | Does not Occur. There are no resident or migratory populations of this species within or near the Drain Recovery Mitigation site, and no suitable habitat exists within the project limits. The closest known population is in the Jarbridge River basin 35 miles to the east. This species is not listed as potentially occurring in the project area on the IPaC database. | No effect. | Does not Occur. There are no resident or migratory populations of this species within or near the Boyle Creek Mitigation site, and no suitable habitat exists within the project limits. The closest known population is in the Bruneau River basin 35+ miles to the east. This species is not listed as potentially occurring in the project area on the IPaC database. | No effect. |
| MAMMALS | | | | | | | | |
| Gray wolf (<i>Canis lupus</i>) | P | The gray wolf has extensive historic habitat ranges, occupying the majority of North America, excluding western California and the southeast. The wide range of habitat shows the species adaptability to various environments. The species is known to inhabit temperate forests, mountains, tundra, taiga, and grasslands. Current populations are primarily found in remote areas, with territories ranging from 50 to 1,000 square miles. Wolves live in packs, each with a distinctive territory. | Does not Occur. While suitable habitat does exist within the China Diversion project vicinity, the project area is likely within the historic range for gray wolves and not within the current range and distribution for this species. Additionally, no gray wolves are known to occur in Nevada (USGS 2018b). | No effect. | Does not Occur. While suitable habitat does exist within the Drain Recovery project vicinity, the project area is likely within the historic range for gray wolves and not within the current range and distribution for this species. Additionally, no gray wolves are known to occur in Nevada (USGS 2018b). | No effect. | Does not Occur The gray wolf is not listed as occurring in Owyhee County. | No effect. |
| BIRDS | | | | | | | | |
| Western yellow-billed cuckoo (<i>Coccyzus americanus</i>) | T | Yellow-billed cuckoos are neo-tropical migrants that winter in South America and breed in western North America. Cuckoos breed in large blocks of mature riparian habitat, consisting of dense cottonwood-willow or mesquite forest or woodland. The optimal size of habitat patches for the species are generally greater than 200 acres in extent and have dense canopy closure and high foliage volume of willows and cottonwoods, providing adequate space for foraging and nesting. Dense understory foliage appears to be an important factor in nest site selection, while the presence of cottonwoods is important for foraging. Nest trees range from 10 feet to 98 feet in height and average 35 feet. | Does not Occur The western yellow-billed cuckoo is not listed as occurring in Elko County. | No effect. | Does not Occur The western yellow-billed cuckoo is not listed as occurring in Elko County | No effect. | Does not Occur. Species depends upon large expanses of specific types of riparian habitat for successful nesting. The Boyle Creek site does not include such habitat. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. |

| | | | China Diversion Elko County, NV | | Drain Recovery Mitigation Site Elko County, NV | | Boyle Creek Mitigation Site Owyhee County, ID | |
|-----------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Common Name (Species Name) | Status* | Range or Habitat Requirements | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrence in Project Area | Potential Effect | Potential for Occurrences in Project Area | Potential Effect |
| SNAILS | | | | | | | | |
| Bruneau hot springsnail (<i>Pyrgulopsis bruneauensis</i>) | E | The Bruneau hot springsnail is approximately 2 millimeters in size and is only found within geothermal springs and seeps along the Bruneau River. It is found on wetted rock faces of springs and flowing water with large cobbles and boulders. Groundwater withdrawal from agriculture, resulting in the loss of geothermal habitats, is the primary threat to the species. The snail requires constant spring water temperatures. | Does not Occur The Bruneau hot springsnail is not listed as occurring in Elko County. | No effect. | Does not Occur The Bruneau hot springsnail is not listed as occurring in Elko County. | No effect. | Does not Occur. The Boyle Creek site is not located within the vicinity of the Bruneau River Basin and no geothermal seeps or springs exist within the project vicinity. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. |
| Snake River physa snail (<i>Physa natricina</i>) | E | The Snake River physa snail is a freshwater mollusk found in the middle Snake River. The snail, with an ovoid brown or amber shell, can grow to be 6.5 millimeters in size. The species is confined to the Snake River in areas with swift currents and sand to boulder substrate. The estimated range is approximately 300 miles along the river. | Does not Occur The snake river physa snail is not listed as occurring in Elko County. | No effect. | Does not Occur The snake river physa snail is not listed as occurring in Elko County. | No effect. | Does not Occur. The project area is not located on, or in the vicinity of the Snake River. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. |
| FLOWERING PLANTS / CONIFERS | | | | | | | | |
| Slickspot peppergrass (<i>Lepidium papilliferum</i>) | T | Slickspot peppergrass is a monocarpic plant with taproots, averaging 2 to 8 inches in height. The plant has numerous flowers and the leaves and stems are covered with fine, soft hairs. There is both an annual and biennial form of the species. The biennial form must survive dry summers and many rosettes die before producing seeds. The species primarily grow in "slickspots" which are small areas within larger sagebrush habitat in southwest Idaho. | Does not Occur The slickspot peppergrass is not listed as occurring in Elko County. | No effect. | Does not Occur The slickspot peppergrass is not listed as occurring in Elko County. | No effect. | Does not Occur. Sagebrush habitat does exist within the Boyle Creek project limits. However, the area is heavily grazed and is not within the current range for this species. Slickspot peppergrass was not identified during the wetland delineation field review. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. |
| Whitebark pine (<i>Pinus albicaulis</i>) | C | This species is a hardy conifer that tolerates cold, snowy climates; steep slopes; poor soils; and windy exposures. It is found at alpine treeline and subalpine elevations throughout its range. In Nevada, limber pine is codominant with whitebark pine. Whitebark pine dominates vegetation in the upper subalpine at approximately 8,550 feet. | Does not Occur. No suitable habitat exists within the China Diversion project vicinity, as this species occurs in subalpine or alpine environments. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. | Does not Occur. No suitable habitat exists within the Drain Recovery project vicinity, as this species occurs in subalpine or alpine environments. Additionally, this species is not listed as potentially occurring in the project area on the IPaC database. | No effect. | Does not Occur The whitebark pine is not listed as occurring in Owyhee County. | No effect. |

*USFWS Status Definitions:
E = Endangered. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.
T = Threatened. The ESA specifically prohibits the take of a species listed as threatened. Take is defined by the ESA as: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.
C = Candidate. Candidate species are those for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because they are precluded by other listing activity that is a higher priority. This listing category has no legal protection.
P = Proposed. Proposed species are any species of fish, wildlife, or plant that are proposed in the Federal Register to be listed under the ESA.

The Sho-Pai Fish, Wildlife, and Parks Department identified the pygmy rabbit, redband trout, and Columbia spotted frog as species to consider as part of this project.

Pygmy rabbits are typically found in areas of tall, dense sagebrush (*Artemisia spp.*) cover and are highly dependent on sagebrush to provide both food and shelter throughout the year. Their diet in the winter consists of up to 99 percent sagebrush. Pygmy rabbit burrows are typically found in relatively deep, loose soils of wind-borne or water-born origin. They occasionally make use of burrows abandoned by other species and, as a result, may occur in areas of shallower or more compact soils that support sufficient shrub cover (USFWS 2015).

No suitable habitat for the pygmy rabbit occurs within the Drain Recovery project limits, as the mitigation site is found within agricultural/grazing lands. Tall, dense sagebrush does occur south of the China Diversion and north and south of the Boyle Creek Mitigation site. During excavation of the proposed regulating reservoir, excess materials would be deposited in a designated waste area southwest of the China Diversion and in an area along the toe of the existing hillside. Topsoil from the waste area would be salvaged and spread over the waste embankment and may be supplemented with topsoil from the regulating reservoir area. Sagebrush may be uprooted or buried during this process, and some foraging habitat near the diversion may be lost or temporarily impacted. This habitat is not rare and commonly occurs in the project vicinity. If burrows are present, there is potential to be buried. This may cause the loss of individual pygmy rabbits that may be occupying their burrows at the time of construction; however, it is not anticipated to result in a downward trend for this species. At the Boyle Creek Mitigation site, no construction is currently proposed in the adjacent sagebrush habitat; however, the project would likely have beneficial impacts on pygmy rabbit, as wildlife friendly fencing, to be installed, would protect the sagebrush habitat surrounding the Boyle Creek wetlands, eliminating livestock grazing and the reduction/trampling of sagebrush associated with grazing.

Redband trout data within the Duck Valley Indian Reservation was provided by the Sho-Pai Fish, Wildlife, and Parks Department (Sho-Pai 2006 – 2018b). Primary redband trout habitat is associated with higher gradient channels, often in riffles or with substrates dominated by boulders, cobbles, and pocket water. Redband trout also occupy lower gradient streams (USFWS 2020f). Redband trout do occur in the upper Owyhee River, upstream of the China Diversion. Primary waterways near the China Diversion project limits that contain redband trout are Skull Creek, approximately 1.4 miles upstream of China Diversion, and Fawn Creek, approximately 5 miles upstream of the China Diversion. No suitable habitat exists for redband trout at the Boyle Creek and Drain Recovery Mitigation sites.

There is currently no upstream fish passage at China Diversion. This condition would be perpetuated. Construction of a regulating reservoir upstream of the diversion may deter fish

species, like redband trout, from moving through the area, as the warmer, slow moving waters may not be ideal for these cold-water species. If temperatures are suitable, juvenile redband trout may be attracted to the reservoir, where they would be more susceptible to predation. However, 2017 sampling of the Owyhee River revealed few juveniles using the main stem of the river, but these results may be skewed by sampling methodologies (Sho-Pai communication 2018b). Overall, no primary or suitable habitat for redband trout would be impacted by the proposed diversion project. The proposed Drain Recovery and Boyle Creek Mitigation projects would involve the expansion/restoration of existing wetland complexes, which do not provide suitable habitat for fish species. However, the expansion/restoration of the wetland sites would provide additional filtration of any surface water flowing through the sites, improving water quality downstream.

Columbia spotted frogs are found from Alaska and most of British Columbia to Washington east of the Cascades, Idaho, and portions of Wyoming, Nevada, and Utah. The Great Basin population range includes eastern Oregon, southwestern Idaho, and the northern drainages of Nevada. Spotted frogs are typically found at elevations from 5,600 to 8,700 and live in spring seeps, meadows, marshes, ponds, small low and foothill streams, and other areas where there is abundant vegetation, including emergent or floating vegetation (Nevada Department of Wildlife 2016). They most often occur in structurally complex wetlands with diverse pool and meadow components. This frog is found in three distinct locations in Nevada: the Toiyabe range (Nye County); the Ruby Mountain and Jarbridge-Independence Ranges (Elko County); and on the Utah border in the Deep Creek drainage (White Pine County) (Nevada Department of Wildlife 2016). In southwest Idaho, the frog is found on the east slopes of the Owyhee Mountains and in the Bruneau River drainage, both within Owyhee County. The species has also been identified in pools adjacent to the Owyhee River in Idaho (Gossett 2008).

Suitable habitat is very limited within the China Diversion project limits, as the densely vegetated shrub-scrub wetland along the Owyhee River is not preferred by Columbia spotted frog. Both the Boyle Creek and Drain Recovery Mitigation sites do contain suitable lower elevation habitat, including inundated areas, emergent vegetation, and meadow components. While the mitigation sites are outside of the distinct locations for this species, Columbia spotted frog has been recorded within the Blue Creek drainage near the Boyle Creek site (Gossett 2008). Given the suitable habitat at these two sites, and occurrence near the Boyle Creek site, temporary impacts to this frog may occur, if they are present at the sites during restoration efforts, the construction of the scenic observation boardwalk, and construction of BDA structures. Construction may cause the loss of some individuals that may be occupying their burrows at the time of construction or are unable to escape the disturbance. Overall, the compensatory mitigation sites would provide a beneficial impact to the species by expanding and enhancing suitable Columbia spotted frog habitat; protecting and diversifying riparian and wetland habitat through revegetation and

wildlife friendly fencing; and through constructed BDA structures at the Drain Recovery site, allowing ponding and pools to form.

4.0 MIGRATORY BIRDS AND OTHER SENSITIVE BIRD SPECIES

According to the MBTA, it is unlawful to pursue, hunt, take, capture, kill, or sell birds listed therein. The statute does not discriminate between live or dead birds and grants full protection to feathers, eggs, and nests. A “take” does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. Birds protected under the act include all songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, and swallows. Feathers, plumes, nests, and eggs are also protected. A complete list of protected species is found in Code of Federal Regulations Title 50, Part 10.13.

The USFWS IPaC database identified ten migratory bird species as potentially occurring at the Boyle Creek and Drain Recovery sites and eight within the China Diversion project vicinity. These bird species were determined by USFWS to be Birds of Conservation Concern (BCC) or species which warrant special attention. Bird species identified in the IPaC report are listed in *Attachment 2*. Numerous additional migratory bird species are also known to use the areas within and surrounding all three sites (Intermountain Bird Observatory [IBO] 2020 and Gossett 2008).

Boyle Creek is a small tributary that conveys flows into Blue Creek just west of the Boyle Creek Mitigation project limits. Blue Creek, and the wetlands associated with Blue Creek, are an important stopover site for migrating birds, especially waterfowl and waterbirds in the spring and fall. This area is also found to be an important greater sage-grouse (*Centrocercus urophasianus*) area on the reservation (Gossett 2008). Much of the tributary area for Boyle Creek also provides suitable riparian habitat for migratory birds. Bird surveys along the Blue Creek wetland complex have identified seven of the USFWS IPaC-listed BCC migratory bird species within the vicinity of the Boyle Creek Mitigation site at Mountain View Reservoir and Blue Creek East. Species include bald eagle (*Haliaeetus leucocephalus*), brewer’s sparrow (*Spizella breweri*), Clark’s grebe (*Aechmophorus clarkia*), golden eagle (*Aquila chrysaetos*), long-billed curlew (*Numenius americanus*), sage thrasher (*Oreoscoptes montanus*), and willet (*Tringa semipalmata*). In the project vicinity, on Blue Creek East, breeding was confirmed for the long-billed curlew (IBO 2020), and evidence of breeding was identified for the Brewer’s sparrow, Clark’s grebe, golden eagle, sage thrasher, willet, and willow flycatcher (IBO 2020 and Gossett 2008). Additionally, a white-faced ibis colony exists on Blue Creek (IBO 2020). Suitable habitat for these species in the general area includes sagebrush-steppe, lakes and reservoirs, mudflats, shallow ponds, vegetated shorelines, moist meadows, wetlands, and flooded fields.

Shrub-scrub wetland, the Owyhee River, and adjacent sagebrush-steppe provide suitable habitat within the China Diversion project limits. Habitat within and adjacent to the area is used by migratory birds for dispersal, foraging and nesting. The Drain Recovery site is currently grazed and surrounded by agricultural land. Suitable nesting habitat at this site is primarily limited to the shrub-scrub vegetation found along the historic channels.

Temporary impacts to migratory birds at all three project sites may result from activities associated with construction, such as noise, vibration, human activity, and construction equipment movement. In addition, construction of the regulating reservoir at China Diversion and overall restoration efforts at Boyle Creek and the Drain Recovery Mitigation sites have the potential to permanently impact nesting birds protected under the MBTA if vegetation (any trees, shrubs, or emergent vegetation) removal occurs during the bird-breeding season (generally March 1 through July 31 of any calendar year). The construction of the regulating reservoir would also convert a riverine system into a lacustrine system, removing suitable habitat for migratory birds that rely on the existing riverine/riparian habitat. The conversion may force these birds to find suitable habitat elsewhere. However, the regulating reservoir could provide new habitat for bird species that prefer lacustrine habitat. Overall, beneficial impacts to migratory birds and their habitat would be anticipated from the restoration efforts at the two mitigation sites. The mitigation projects would preserve and expand wetland habitat by planting native wetland and riparian species, deterring livestock grazing/access through wildlife friendly fencing, and diverting hydrology into historic channels of the Owyhee River floodplain. These activities would increase suitable foraging and nesting habitat for several bird species, and, through upland buffer habitat protection, reduce grazing impacts to critical greater sage-grouse and waterfowl nesting areas.

Bald and golden eagles are protected under both the MTBA and the Bald and Golden Eagle Protection Act, and both have been regularly observed in Owyhee and Elko Counties (IDFG 2020b and NNHP 2020b). No suitable bald eagle nesting habitat (i.e., very large trees) is found within the project limits or general vicinity of all three sites, and no bald eagle nests are known to occur on the Reservation in Owyhee County (Gossett 2008). All three project sites, however, do include suitable bald eagle foraging habitat. Approximately 93 percent of golden eagle nests in Elko County are found on cliffs (Page and Seibert 1973). Evidence of nesting golden eagles on the high cliffs near Blue Creek (Owyhee County) have also been documented (Gossett 2008). While suitable nesting habitat (i.e., cliffs) is found in the project vicinity, these areas are not adjacent to the China Diversion, Boyle Creek Mitigation site, or Drain Recovery Mitigation site. All three project sites, however, do include suitable golden eagle foraging habitat.

The proposed improvements at the China Diversion and the two mitigation sites would have no impact on bald and golden eagle nesting habitat, as none exists within the project limits. Construction noise and activity would likely deter foraging bald and golden eagles from using the

project sites. This would be temporary and cease once construction is complete. In addition, construction of a regulating reservoir may improve foraging habitat for bald eagles that may be hunting fish.

5.0 PROPOSED PROJECT CONSERVATION MEASURES

The following measures are recommended to promote the conservation of the natural habitat, TES, and other wildlife resources that occur in the project limits.

- The contractor shall not cause injury or death to migratory birds, including eggs and nestlings; therefore, tree and shrub removal shall occur only during the non-breeding season (non-breeding season is from August 1 to March 1 of any calendar year).
- Implement a Storm Water Pollution Prevention Plan during construction of the regulating reservoir.
- Facilitate construction during a period of low stream flow and when wetland areas are less likely to be inundated (generally late summer through winter).

6.0 SUMMARY AND CONCLUSIONS

Ten TES (1 Candidate, 3 Threatened, 1 Proposed Endangered, and 5 Endangered) are considered in this BE. Only one of these species, the gray wolf, was listed in the USFWS IPaC database as potentially occurring within the vicinity of the China Diversion project and the Drain Recovery Mitigation site. Based on the results of the screening analysis, no TES species are likely to occur within the project limits for all three project sites. This BE concludes that the proposed China Diversion project, and associated compensatory wetland mitigation projects, will have *no effect* on TES.

Minor impacts to pygmy rabbit are possible, as sagebrush may be uprooted or buried during the deposition of excess materials excavated from construction of the regulating reservoir. These impacts are not anticipated to result in a downward trend for this species. At the Boyle Creek Mitigation site, beneficial impacts on pygmy rabbit are anticipated, as wildlife friendly fencing would protect the sagebrush habitat surrounding the Boyle Creek wetlands, eliminating livestock grazing and the reduction/trampling of sagebrush associated with grazing.

Improvements to the China Diversion would perpetuate the existing condition of no upstream fish passage at the diversion. Construction of a regulating reservoir upstream of the diversion may deter fish species, like redband trout, from moving through the area, as the warmer, slow moving waters may not be ideal for these cold-water species. If temperatures are suitable, construction of the regulating reservoir may attract juvenile redband trout to the regulating reservoir where they may be more susceptible to predation.

No impacts to the Columbia spotted frog are anticipated at the China Diversion site, as the densely vegetated shrub-scrub wetland along the Owyhee River is not preferred by Columbia spotted frog. While minor impacts to Columbia spotted frog and suitable habitat would take place at the Boyle Creek Mitigation site and the Drain Recovery Mitigation site, the expansion and restoration of these sites would provide a beneficial impact to the species by expanding and enhancing suitable Columbia spotted frog habitat; protecting and diversifying riparian and wetland habitat through revegetation and wildlife friendly fencing; and through constructed BDA structures at the Drain Recovery site, allowing ponding and pools to form.

Several migratory birds, including those listed as USFWS BCC, use all three project sites for foraging and/or nesting. Bald and golden eagles may also use the project limits for foraging. Activities associated with construction, such as noise, vibration, human activity, and construction equipment movement would likely deter foraging and nesting birds from using the project sites. This would be temporary and cease once construction was complete. Through proposed seasonal restrictions on shrub and tree removal, negative impacts to nesting birds would be negligible.

7.0 REFERENCES

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ATTACHMENT 1

**U.S. FISH AND WILDLIFE SERVICE
FEDERAL SPECIES LIST IN ELKO & OWYHEE COUNTIES**

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

IPaC resource list

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

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

Location

Elko County, Nevada



Local office

Reno Fish And Wildlife Office

☎ (775) 861-6300

📅 (775) 861-6301

1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147

<http://www.fws.gov/nevada/>

Endangered species

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

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

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

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

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

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

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

Mammals

| NAME | STATUS |
|--------------------------------------------------------------------------------------------------|---------------------|
| Gray Wolf <i>Canis lupus</i> No critical habitat has been designated for this species. | Proposed Endangered |

Fishes

| NAME | STATUS |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Bull Trout <i>Salvelinus confluentus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8212 | Threatened |
| Clover Valley Speckled Dace <i>Rhinichthys osculus oligoporus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/318 | Endangered |
| Independence Valley Speckled Dace <i>Rhinichthys osculus lethoporus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1982 | Endangered |
| Lahontan Cutthroat Trout <i>Oncorhynchus clarkii henshawi</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3964 | Threatened |

Conifers and Cycads

| NAME | STATUS |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Whitebark Pine <i>Pinus albicaulis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1748 | Candidate |

Critical habitats

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

This location overlaps the critical habitat for the following species:

| NAME | TYPE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Bull Trout <i>Salvelinus confluentus</i> https://ecos.fws.gov/ecp/species/8212#crithab | Final |

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

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

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

Additional information can be found using the following links:

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

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

This location overlaps the following National Wildlife Refuge lands:

| LAND | ACRES |
|------------------------------------|----------------|
| Ruby Lake National Wildlife Refuge | 41,072.5 acres |

☎ (775) 779-2237

📅 (775) 779-2370

MAILING ADDRESS

Hc 60 Box 860

Ruby Valley, NV 89833-9802

PHYSICAL ADDRESS

305 Ruby Valley Road

Ruby Valley, NV 89833-9802

<https://www.fws.gov/refuges/profiles/index.cfm?id=84570>

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

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

IPaC resource list

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Location

Owyhee County, Idaho



Local office

Idaho Fish And Wildlife Office

☎ (208) 378-5243

📅 (208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Endangered species

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

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

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

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

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

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

Birds

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

Fishes

| NAME | STATUS |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Bull Trout <i>Salvelinus confluentus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8212 | Threatened |

Snails

| NAME | STATUS |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Bruneau Hot Springsnail <i>Pyrgulopsis bruneauensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6218 | Endangered |
| Snake River Physa Snail <i>Physa natricina</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/305 | Endangered |

Flowering Plants

| NAME | STATUS |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Slickspot Peppergrass <i>Lepidium papilliferum</i> There is proposed critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/4027 | Threatened |

Critical habitats

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

This location overlaps the critical habitat for the following species:

| NAME | TYPE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Bull Trout <i>Salvelinus confluentus</i> https://ecos.fws.gov/ecp/species/8212#crithab | Final |

Slickspot Peppergrass *Lepidium papilliferum*
<https://ecos.fws.gov/ecp/species/4027#crithab>

Proposed

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

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

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

Additional information can be found using the following links:

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

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

This location overlaps the following National Wildlife Refuge lands:

| LAND | ACRES |
|------------------------------------|--------------|
| Deer Flat National Wildlife Refuge | 816.28 acres |

☎ (208) 467-9278

📅 (208) 467-1019

13751 Upper Embankment Road
Nampa, ID 83686-8046

<https://www.fws.gov/refuges/profiles/index.cfm?id=14560>

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

ATTACHMENT 2

**U.S. FISH AND WILDLIFE SERVICE
IPaC REPORTS**

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

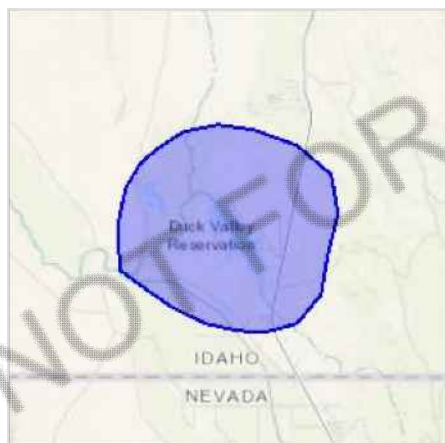
IPaC resource list

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

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

Location

Owyhee County, Idaho



Local office

Idaho Fish And Wildlife Office

☎ (208) 378-5243

📠 (208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Endangered species

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

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

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

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

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

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

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

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

Additional information can be found using the following links:

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

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

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

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME WITHIN
THE TIMEFRAME SPECIFIED,
WHICH IS A VERY LIBERAL
ESTIMATE OF THE DATES INSIDE
WHICH THE BIRD BREEDS ACROSS

ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

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

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

Breeds Dec 1 to Aug 31

Brewer's Sparrow *Spizella breweri*

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

<https://ecos.fws.gov/ecp/species/9291>

Breeds May 15 to Aug 10

Clark's Grebe *Aechmophorus clarkii*

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

Breeds Jan 1 to Dec 31

Golden Eagle *Aquila chrysaetos*

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

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lesser Yellowlegs *Tringa flavipes*

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

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Long-billed Curlew *Numenius americanus*

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

<https://ecos.fws.gov/ecp/species/5511>

Breeds Apr 1 to Jul 31

Marbled Godwit *Limosa fedoa*

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

<https://ecos.fws.gov/ecp/species/9481>

Breeds elsewhere

Sage Thrasher *Oreoscoptes montanus*

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

<https://ecos.fws.gov/ecp/species/9433>

Breeds Apr 15 to Aug 10

Willet *Tringa semipalmata*

Breeds Apr 20 to Aug 5

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

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

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

<https://ecos.fws.gov/ecp/species/3482>

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (I)

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

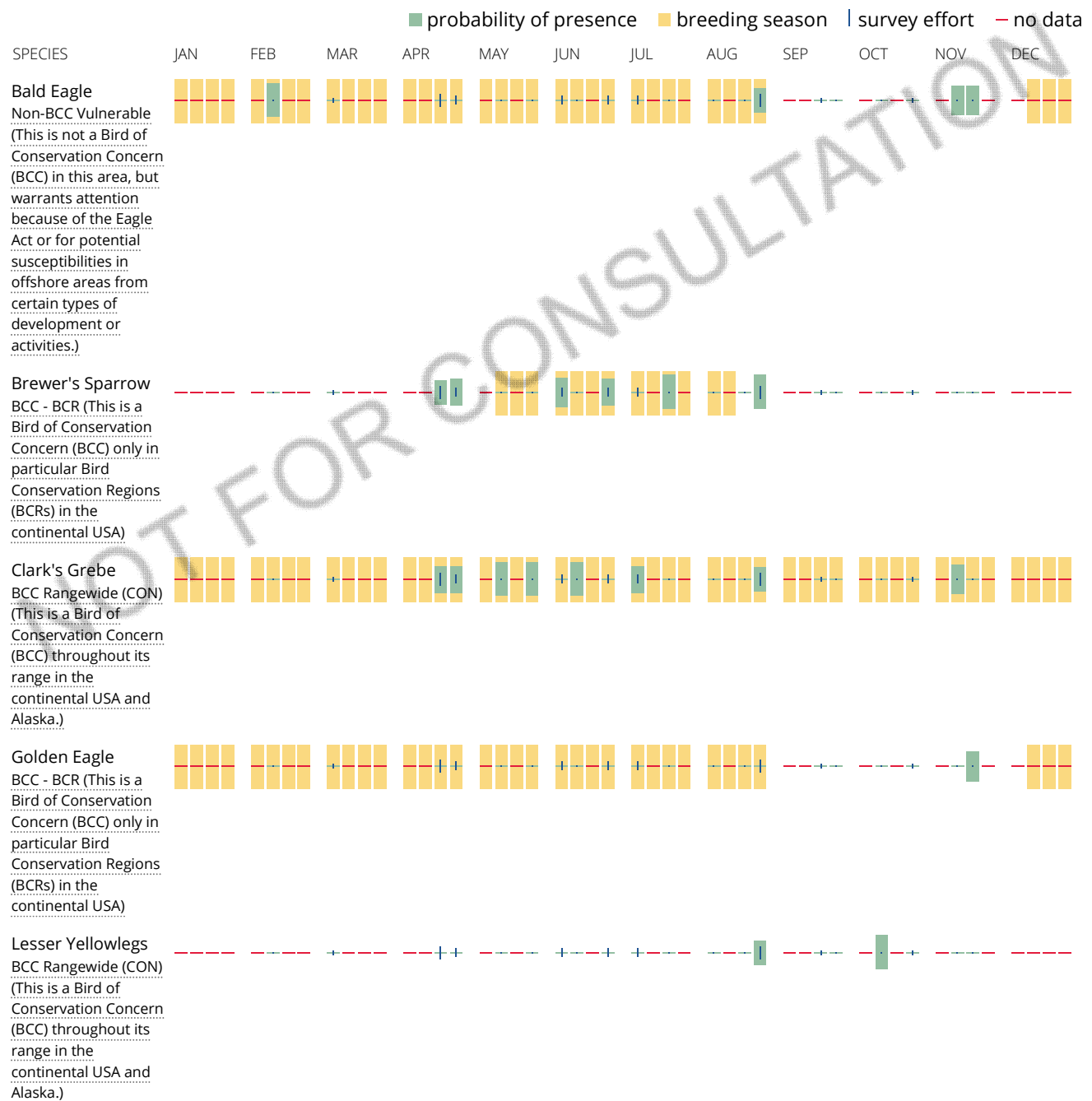
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

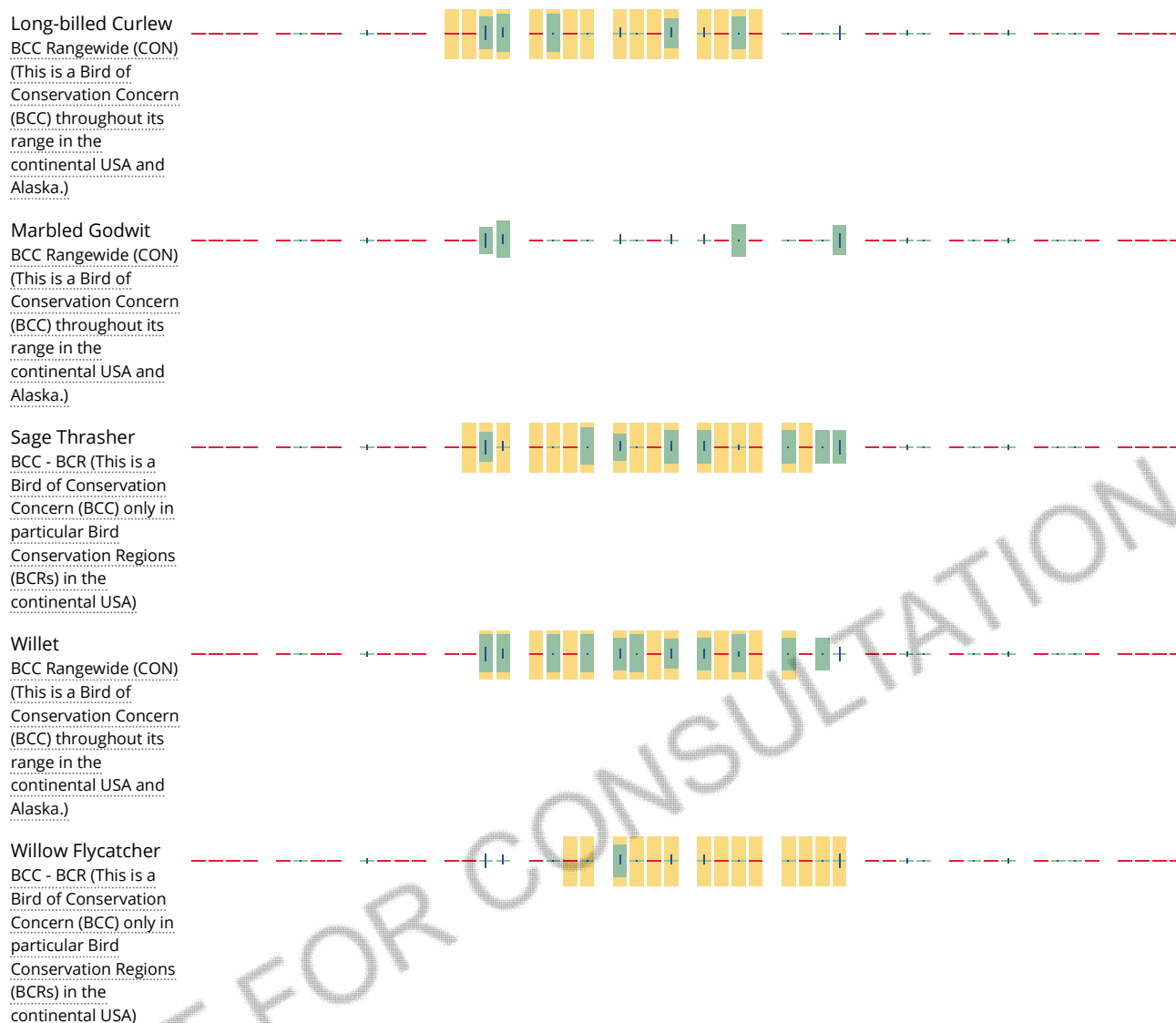
No Data (-)

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

Survey Timeframe

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





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

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Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

[PEM1F](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSSC](#)

FRESHWATER POND

[PUBF](#)

[PUSCh](#)

[PUSC](#)

LAKE

[Lh](#)

[L](#)

RIVERINE

[R3UBH](#)

[R5UBH](#)

[R4SBC](#)

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

Data limitations

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

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

Data exclusions

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

Data precautions

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

NOT FOR CONSULTATION

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

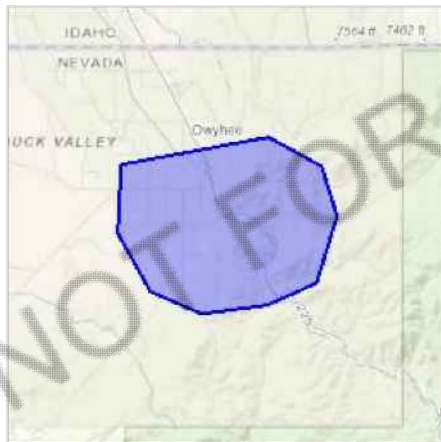
IPaC resource list

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

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

Location

Elko County, Nevada



Local office

Reno Fish And Wildlife Office

☎ (775) 861-6300

📅 (775) 861-6301

1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147

<http://www.fws.gov/nevada/>

Endangered species

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

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

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

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

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

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

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

Mammals

NAME

STATUS

Gray Wolf *Canis lupus*

Proposed Endangered

No critical habitat has been designated for this species.

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

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

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

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#).

This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your

list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

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

NAME

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

Bald Eagle *Haliaeetus leucocephalus*

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

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

Breeds Dec 1 to Aug 31

Brewer's Sparrow *Spizella breweri*

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

<https://ecos.fws.gov/ecp/species/9291>

Breeds May 15 to Aug 10

Golden Eagle *Aquila chrysaetos*

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

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Green-tailed Towhee *Pipilo chlorurus*

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

<https://ecos.fws.gov/ecp/species/9444>

Breeds May 1 to Aug 10

Lewis's Woodpecker *Melanerpes lewis*

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

<https://ecos.fws.gov/ecp/species/9408>

Breeds Apr 20 to Sep 30

Long-billed Curlew *Numenius americanus*

Breeds Apr 1 to Jul 31

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

<https://ecos.fws.gov/ecp/species/5511>

Sage Thrasher *Oreoscoptes montanus*

Breeds Apr 15 to Aug 10

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

<https://ecos.fws.gov/ecp/species/9433>

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

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

<https://ecos.fws.gov/ecp/species/3482>

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (I)

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

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

No Data (—)

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

Survey Timeframe

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





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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSSC](#)

[PFO/SSC](#)

FRESHWATER POND

[PUBF](#)

RIVERINE

[R4SBC](#)

[R5UBFx](#)

[R5UBH](#)

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

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

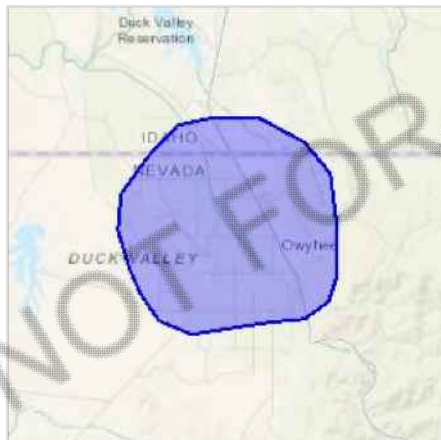
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Location

Idaho and Nevada



Local offices

Idaho Fish And Wildlife Office


☎ (208) 378-5243

📅 (208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Reno Fish And Wildlife Office

☎ (775) 861-6300

 (775) 861-6301

1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147

<http://www.fws.gov/nevada/>

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

Mammals

NAME

STATUS

Gray Wolf *Canis lupus*

Proposed Endangered

No critical habitat has been designated for this species.

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

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

1. The [Migratory Birds Treaty Act](#) of 1918.
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Additional information can be found using the following links:

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

BREEDING SEASON (IF A
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ITS ENTIRE RANGE. "BREEDS
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BIRD DOES NOT LIKELY BREED IN
YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

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

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

Breeds Dec 1 to Aug 31

Brewer's Sparrow *Spizella breweri*

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

<https://ecos.fws.gov/ecp/species/9291>

Breeds May 15 to Aug 10

Clark's Grebe *Aechmophorus clarkii*

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

Breeds Jan 1 to Dec 31

Golden Eagle *Aquila chrysaetos*

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

<https://ecos.fws.gov/ecp/species/1680>

Breeds Dec 1 to Aug 31

Lesser Yellowlegs *Tringa flavipes*

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

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Long-billed Curlew *Numenius americanus*

Breeds Apr 1 to Jul 31

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

<https://ecos.fws.gov/ecp/species/5511>

Marbled Godwit *Limosa fedoa*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9481>

Sage Thrasher *Oreoscoptes montanus*

Breeds Apr 15 to Aug 10

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

<https://ecos.fws.gov/ecp/species/9433>

Willet *Tringa semipalmata*

Breeds Apr 20 to Aug 5

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

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

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

<https://ecos.fws.gov/ecp/species/3482>

Probability of Presence Summary

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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted

Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

Breeding Season (■)

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

Survey Effort (|)

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

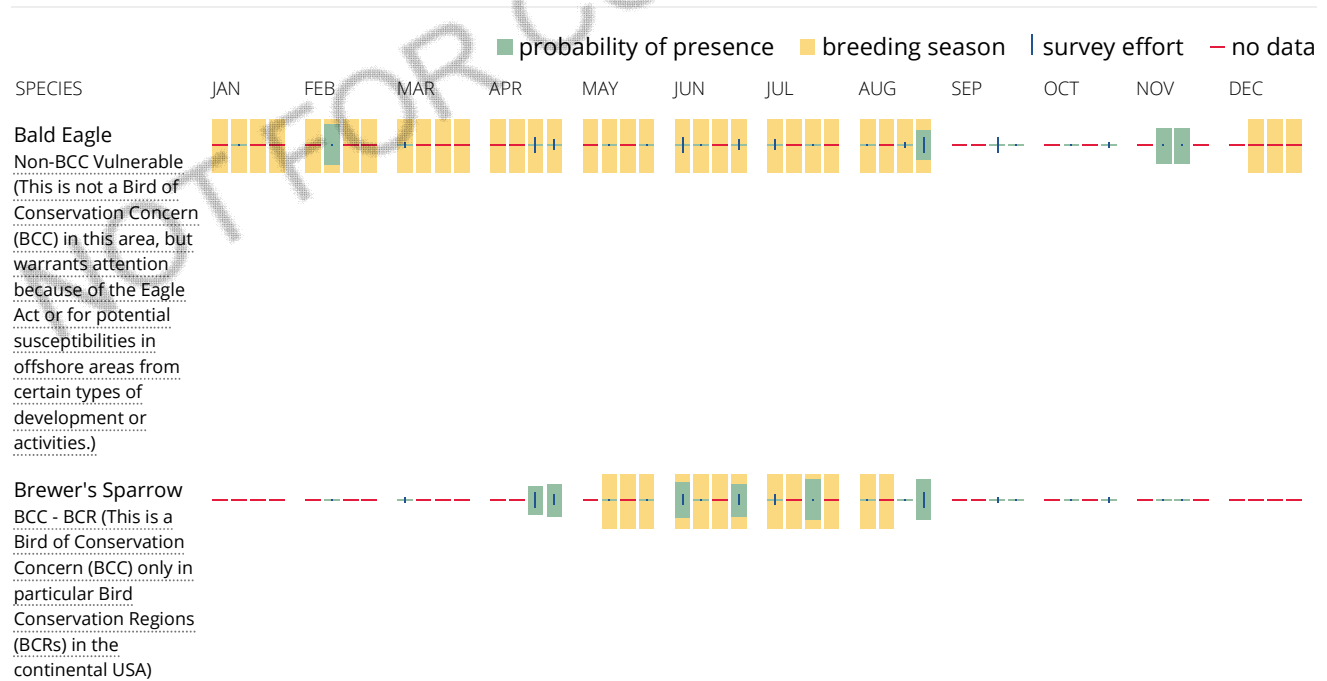
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

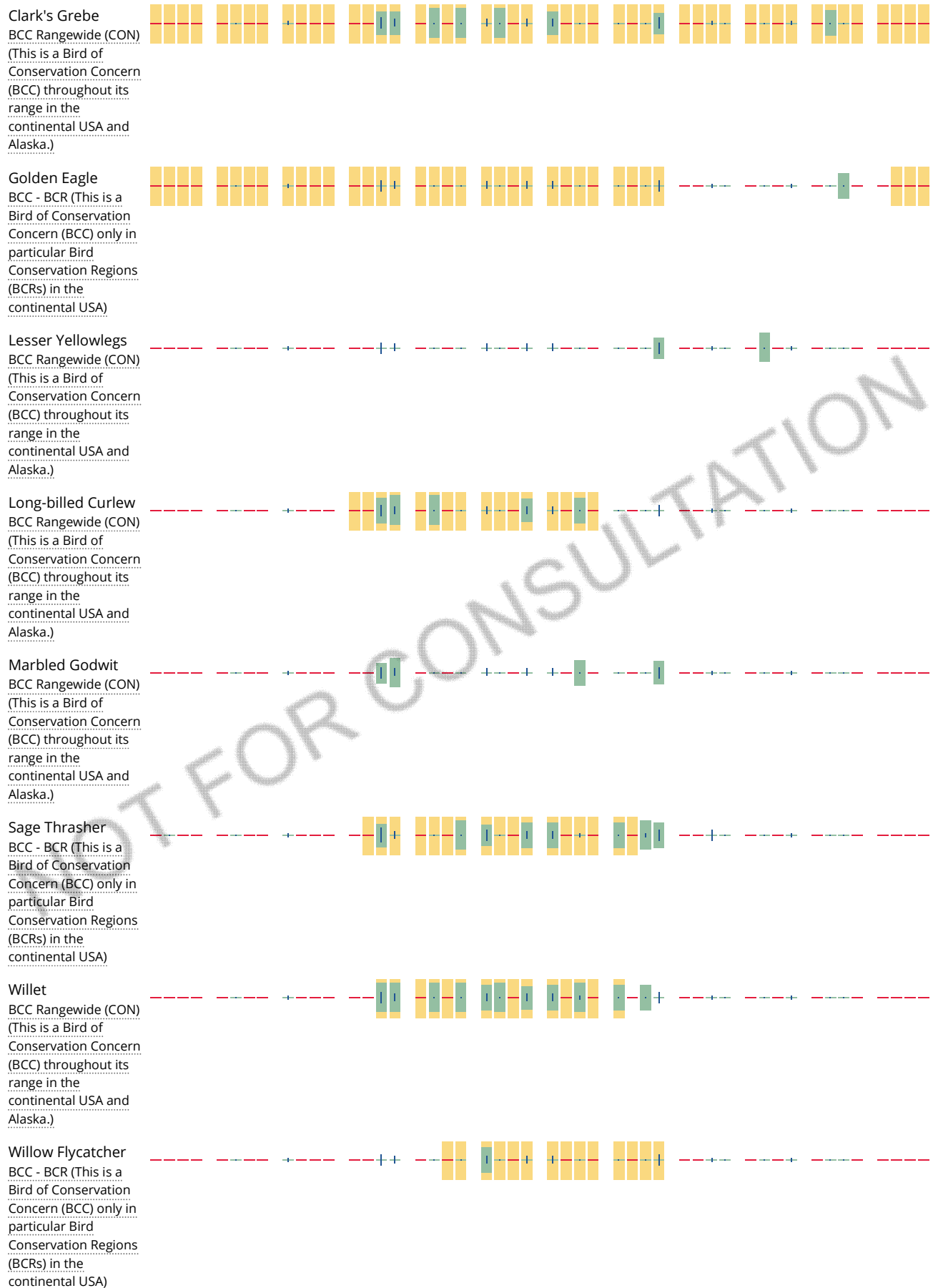
No Data (—)

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

Survey Timeframe

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





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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

[PEM1F](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSSC](#)

[PFO/SSC](#)

FRESHWATER POND

[PUBF](#)

RIVERINE

[R5UBFx](#)

[R4SBC](#)

[R3UBH](#)

[R5UBH](#)

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

Appendix D: Section 106 Consultation and Memorandum of Agreement (Unsigned Draft)



NEVADA
**STATE HISTORIC
PRESERVATION OFFICE**

Department of Conservation and Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
Rebecca L. Palmer, Administrator, SHPO

September 18, 2020

Bryan Bowker
Regional Director
Bureau of Indian Affairs
Western Regional Office
2600 North Central Ave.
Phoenix, AZ 85004-3008

RE: *Cultural Resources Survey and Documentation of the China Diversion Dam for the Shoshone-Paiute Tribes, Elko County, Nevada* (MS620-EQS, Project No. 2019-102)
(UT 2020-6384; 27201)

Dear Mr. Bowker:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received August 20, 2020 in accordance with Section 106 of the National Historic Preservation Act (NRHP) of 1966, as amended.

Project Description

The Bureau of Indian Affairs (BIA) proposes to reconstruct the China Diversion Dam (S1914) in its current location. Reconstruction would include the installation of new headworks, sluiceways, conduits, gates, and outlet transitions. The spillway would be overlain and thus raise the spillway elevation. In addition, 221 acres of land upstream will be impounded.

Area of Potential Effect (APE)

The BIA previously defined the APE to include the footprint of the China Diversion Dam and the 221 acres of land upstream from the Owyhee River for impoundment. With the current submission, the BIA has defined the APE as the dam and impoundment area (Direct APE) plus a one-mile wide buffer zone around the Direct APE to account for visual, audible, atmospheric, and cumulative effects. The SHPO **concurs** with the APE as defined.

Identification and Evaluation of Historic Properties

Previous identification and evaluation of historic properties concurrence for the Direct APE can be found in SHPO letter dated July 1, 2020.

The BIA expanded their identification effort to include the entire revised APE and identified three additional, unevaluated resources within the one-mile buffer for visual, audible, atmospheric, and cumulative effects: 26EK2, 26EK3, 26EK2973. The BIA is treating the three unevaluated resources as eligible for listing in the National Register of Historic Places (NRHP) for the purposes of this undertaking.

The SHPO appreciates receipt of additional photos depicting the dam (S1914) without snow cover.

Native American Consultation

The SHPO acknowledges receipt of documentation that consultation with the affected Native American tribes has been concluded per 36 CFR §800.3(f)(2). This consultation did not result in the identification of properties of religious and/or cultural significance that could be affected by the undertaking.

Consultation with Interested Parties

The SHPO understands that public consultation will be conducted in conjunction with the NEPA scoping process. Please forward a summary of comments received to our office for the SHPO administrative record for this undertaking.

Finding of Effect

The SHPO **concurs** with the BIA's finding of **Adverse Effect** to historic properties for this undertaking. The SHPO looks forward to continued consultation with the BIA to develop a Memorandum of Agreement (MOA) for the resolution of adverse effects to S1914.

Should you have questions concerning this correspondence, please contact SHPO staff archaeologist Ashley Wiley at (775) 684-3450 or email awiley@shpo.nv.gov.

Sincerely,



Robin K. Reed
Deputy State Historic Preservation Officer



NEVADA
**STATE HISTORIC
PRESERVATION OFFICE**

Department of Conservation and Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
Rebecca L. Palmer, Administrator, SHPO

September 22, 2020

Rodney McVey
Deputy Regional Director
Bureau of Indian Affairs
Western Regional Office
2600 North Central Ave.
Phoenix, AZ 85004-3008

RE: *Archaeological Resources Survey Report for the Drain Water Recovery Wetland
Mitigation Site, Duck Valley Indian Reservation, Elko County, Nevada (BIA Project No.
2020-137); (UT 2020-6478; 27216)*

Dear Mr. McVey:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received August 24, 2020 in accordance with Section 106 of the National Historic Preservation Act (NRHP) of 1966, as amended.

Project Description

The Bureau of Indian Affairs (BIA) proposes to preserve and enhance wetlands and create additional wetlands utilizing funds from Duck Valley Reservation Water Rights Settlement Act. Activities include fencing, installation of several water control structures, excavation of small channels, shallow grading, construction of 1.5-2 ft. tall berms, and installation of a beaver dam analogue structure. Two areas have been proposed for the project. The Boyle Creek location is within Idaho and the Drain Water location within Nevada.

Area of Potential Effect (APE)

The BIA has defined the APE to include two segments. Segment 1 is the physical APE where all construction activities will occur. Segment 2 is the visual, audible, atmospheric, and cumulative APE and includes a one-mile buffer around Segment 2. Total APE acreage is 95.96 acres. The SHPO **concurs** with the adequacy of the APE as defined.

Identification and Evaluation of Historic Properties

Prior to survey efforts, an archival records review was conducted that identified eleven previous inventories within one mile of the physical APE. One of these inventories intersects the physical APE. No previously recorded sites have been recorded within one mile of the physical APE.

Survey was conducted for the 95.96-acre APE.



One newly identified site was identified and documented during survey efforts. The SHPO **concurs** with BIA's determination that 26EK17687 is **not eligible** for listing in the National Register of Historic Places (NRHP) under any of the Secretary of the Interior's Significance Criteria (A-D) inclusive.

Native American Consultation

The SHPO understands that consultation with tribes is occurring under the National Environmental Policy Act (NEPA). Please submit a narrative summary of consultation efforts to ensure the SHPO administrative record is accurate and complete.

Consultation with Interested Parties

The SHPO understands that public consultation is occurring under the NEPA process. Please provide a narrative summary with results of consultation so that the SHPO administrative record is complete for the purposes of this undertaking.

Finding of Effect

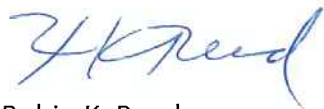
The SHPO **concurs** with BIA's finding of **No Historic Properties Affected** for the purposes of this undertaking.

Unanticipated Discovery

If any buried and/or previously unidentified resources are located during the project activities, the SHPO recommends that all work in the vicinity of the find cease and this office be contacted for additional consultation per 36 CFR §800.13(b)(3).

Should you have questions concerning this correspondence, please contact SHPO staff archaeologist Ashley Wiley at (775) 684-3450 or email awiley@shpo.nv.gov.

Sincerely,



Robin K. Reed
Deputy State Historic Preservation Officer



IDAHO STATE
**HISTORICAL
SOCIETY**

9 September 2020



Brad Little
Governor of Idaho

Janet Gallimore
Executive Director
State Historic
Preservation Officer

Administration:
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2682
Fax: 208.334.2774

Idaho State Museum:
610 Julia Davis Dr.
Boise, Idaho 83702
208.334.2120

**Idaho State Archives
and State Records
Center:**
2205 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2620

**State Historic
Preservation Office:**
210 Main St.
Boise, Idaho 83702
208.334.3861

**Old Idaho Penitentiary
and Historic Sites:**
2445 Old Penitentiary Rd.
Boise, Idaho 83712
208.334.2844

HISTORY.IDAHO.GOV

Rodney McVey
Deputy Regional Director-Trust Services
Bureau of Indian Affairs
2600 North Central Avenue
Phoenix, Arizona 85004-3008

**Re: Boyle Creek Wetland Mitigation Site, Duck Valley Indian
Reservation, Owyhee County, Idaho. BIA Project No.: 2020-138 /
SHPO Review No.: 2020-920**

Dear Mr. McVey:

Thank you for consulting with our office on the above referenced project. We understand the scope of the work will include the creation of a 253-acre mitigation wetland in response to proposed improvements to the China Creek Diversion on the Shoshone-Paiute Tribe of the Duck Valley Indian Reservation.

On 21 August 2020, our office received an inventory report prepared by SWCA Environmental Associates detailing the intensive archaeological survey of the proposed Area of Potential Effect (APE). The inventory did not identify any resources within the project APE in Idaho. It is our understanding that the Bureau of Indian Affairs has determined the project will result in no historic properties affected in accordance with the recommendations of the report. After careful consideration, our office concurs with these findings as presented.

Pursuant to 36 CFR 800.5, we have applied the criteria of effect to the proposed undertaking. Based on the information received 21 August 2020, we find that the proposed project actions will result in **no historic properties affected** (36 CFR 800.4(d)).

In the event that cultural material is inadvertently encountered during the implementation of this project, work shall be halted in the vicinity of the finds until they can be inspected and assessed by the appropriate consulting parties. If you have any questions, or the scope of the work changes, please contact me at chris.shaver@ishs.idaho.gov or (208) 488-7467.

Sincerely,

Christopher L. Shaver
Compliance Archaeologist
Idaho State Historic Preservation Office

**MEMORANDUM OF AGREEMENT
AMONG THE
BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE,
THE SHOSHONE-PAIUTE TRIBES OF THE DUCK VALLEY INDIAN RESERVATION,
AND
THE NEVADA STATE HISTORIC PRESERVATION OFFICER
REGARDING
RESOLUTION OF ADVERSE EFFECTS FOR THE
IMPROVEMENTS FOR THE CHINA DIVERSION DAM PROJECT**



**Bureau of Indian Affairs, Western Regional Office
October 5, 2021**

**MEMORANDUM OF AGREEMENT
AMONG THE
BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE,
THE SHOSHONE-PAIUTE TRIBES OF THE DUCK VALLEY INDIAN RESERVATION,
AND
THE NEVADA STATE HISTORIC PRESERVATION OFFICER
REGARDING
RESOLUTION OF ADVERSE EFFECTS FOR THE
IMPROVEMENTS FOR THE CHINA DIVERSION DAM PROJECT**

WHEREAS, the Regional Director of the Bureau of Indian Affairs, Western Regional Office (BIA/WRO), is responsible as the Agency Official for Western Region compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and codified in Subpart B of Code of Federal Regulations Title 36, Part 800 (36 CFR 800); and

WHEREAS, the undertaking before BIA/WRO is approval of reconstruction of the China Diversion Dam to include headgates, sluiceways, conduits, gates, outlet transitions, overlay of the existing spillway, and raising the spillway crest elevation (hereinafter referred to as the undertaking); and

WHEREAS, the Shoshone-Paiute Tribes of the Duck Valley Reservation (Tribe) is a federally recognized Indian tribe, organized under Section 16 of the Indian Reorganization Act of 1934, 25 U.S.C. § 476, which exercises general governmental jurisdiction over all lands of the Duck Valley Reservation; for purposes of this consultation is an Indian tribe as described at 36 CFR 800.2(c)(2)(i)(B); and as contemplated in the referenced regulation a Signatory to this Memorandum of Agreement (Agreement); and

WHEREAS, the Area of Potential Effect (APE) is the footprint of the dam and impoundment area (Direct APE) plus a one-mile wide buffer zone (Appendix A); and

WHEREAS, the Nevada State Historic Preservation Officer (SHPO) is authorized to enter into this Agreement as a Signatory in order to fulfill its role of advising and assisting federal agencies in carrying out their historic preservation responsibilities and to cooperate with these agencies under the following federal statutes: Sections 101 and 106 of the NHPA, 54 U.S.C. 306108, 36 CFR 800.2(c)(1)(i) and 800.6(b), and BIA/WRO has consulted with the SHPO pursuant to 36 CFR 800.6 in the development of this Agreement; and

WHEREAS, BIA/WRO, in consultation with the Signatories, has determined that the undertaking will cause adverse effects to the China Diversion Dam (S1914), which was determined by the BIA/WRO, in consultation with the Signatories, to be eligible for listing in the National Register of Historic Places under Criterion A; and

WHEREAS, BIA/WRO has notified the Advisory Council on Historic Preservation (ACHP) of this determination of adverse effect pursuant to 36 CFR 800.6(a)(1) and the ACHP has notified BIA/WRO by letter dated 19 February 2021 that it has declined to participate in this Agreement; and

WHEREAS, BIA/WRO is preparing an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) for the undertaking and has used the public notification process embodied in NEPA to seek public input and notify the public of the potential effects of the undertaking on historic properties as required in 36 CFR Part 800; and

WHEREAS, no provision of this Agreement shall be construed by any of the Signatories as abridging or debilitating any sovereign powers of the Tribe; affecting the trust relationship between the Secretary of the Interior and the Tribe; or interfering with the government-to-government relationship between the United States and the Tribe; and

NOW, THEREFORE, BIA/WRO, Tribe, and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS.

BIA/WRO shall ensure that the following stipulations are implemented.

I. HISTORIC PROPERTIES TREATMENT PLAN.

- A. BIA/WRO, in consultation with the Signatories, shall ensure that the Tribe retains an architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards appropriate to the historic property, develops and implements the fieldwork portion of a Historic Properties Treatment Plan (HPTP) to avoid, minimize, or otherwise mitigate adverse effects to the dam before the Tribe initiates any improvements associated with the undertaking. The HPTP will be consistent with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716-44737).
- B. The HPTP will include, but not be limited to:
 - 1. Documentation of the dam will be similar to Level II HAER documentation, consisting of an historic context; preparation of a map and drawings illustrating the dam; submission to the Library of Congress; and archival-quality large-format photographs;
 - 2. A proposed schedule for cultural resource tasks, and a schedule for the submission of draft and final reports to the Signatories;

3. A plan for the conclusion of mitigation in the event that the undertaking is suspended or terminated that stipulates the procedures to be followed;
4. Preparation of a draft Mitigation Report and review process, as well as proposed timelines;
5. Preparation of a final Mitigation Report and review process, as well as proposed timelines.

C. Review and Comment on the HPTP.

1. The Tribe, through its qualified consultant, shall submit a draft HPTP to BIA/WRO.
2. Upon receipt of the draft HPTP, BIA/WRO will review the document and provide comments within thirty (30) calendar days to the Tribe.
3. The Tribe, through its qualified consultant, shall address all BIA/WRO comments and submit any necessary draft updates to BIA/WRO.
4. BIA/WRO shall submit the draft HPTP document to the SHPO for review. The SHPO shall have thirty (30) calendar days from receipt to review and provide written comments to BIA/WRO. If the SHPO does not respond to the submission within the review period, BIA/WRO may finalize the HPTP.
5. BIA/WRO shall ensure that any timely written comments received from the Signatories are addressed during the preparation of the final draft HPTP.
6. If any comments are received that require a substantive change in the HPTP, BIA/WRO shall resubmit the final HPTP to all Signatories. The Signatories shall have thirty (30) calendar days from receipt to review the comments made by other Signatories, review the revisions, and provide comments to BIA/WRO. If a Signatory fails to respond, BIA/WRO may finalize the HPTP.
7. BIA/WRO will address any timely written comments from the SHPO on the final draft document during the preparation of the final HPTP.
8. BIA/WRO shall issue an authorization to proceed with the implementation of the HPTP to the Tribe once consultation on the HPTP is complete and prior to construction activities.
9. BIA/WRO shall ensure that copies of the final HPTP are provided to all Signatories.

II. MITIGATION REPORT.

- A. The Tribe, through its qualified consultant responsible for the work, will prepare and submit a draft Mitigation Report within nine (9) months after the completion of all fieldwork. At a minimum, this report shall contain, but not be limited to:
1. A discussion of the methods and treatments applied to each historic property or unevaluated resource, with an assessment of the degree to

which these methods and treatments followed the requirements of the HPTP along with a justification of all deviations, if any, from the approved HPTP; and

2. Site plans for the dam depicting all features and treatment areas; and
3. Discussion of further documentation and/or analyses to be conducted, including any proposed changes in the methods or levels of effort from those proposed in the HPTP.
4. Draft photographs of the resource produced in accord with the terms of the HPTP.

B. Review of the Draft Mitigation Report.

1. Upon receipt of the draft Mitigation Report, BIA/WRO will review the document and provide comments to the Tribe.
2. The Tribe shall address all BIA/WRO comments and submit any necessary draft updates to BIA/WRO.
3. BIA/WRO will distribute the revised draft Mitigation Report to the SHPO for review. The SHPO will have thirty (30) calendar days from receipt to review and provide written comments to BIA/WRO (electronic mail is acceptable). If the SHPO fails to respond to the request for review, BIA/WRO will finalize the document.
4. BIA/WRO will address any comments received from the SHPO.
5. If BIA/WRO revises the draft Mitigation Report, BIA/WRO will distribute the revised document to all Signatories. All Signatories will have thirty (30) calendar days from receipt to review the revisions and provide comments to BIA/WRO.
6. BIA/WRO shall ensure that any written comments received are addressed during the preparation of the final document.

III. PROFESSIONAL QUALIFICATIONS STANDARDS.

All cultural resources work carried out pursuant to this Agreement shall be carried out by or under the supervision of a person, or persons, meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural Historians (48 FR 44738-44739) and under the terms of the permits issued for the archaeological and/or architectural investigations.

IV. CHANGES IN THE APE.

BIA/WRO may amend the APE as needed, or as requested by any Signatory, without amending the Agreement proper. If this should occur, all Signatories will receive a formal notification of proposed amended APE. Within thirty (30) calendar days of their receipt of the proposed amendment, any Signatory may request that the Agreement

be amended in accord with the process outlined in Stipulation VI. Following BIA/WRO receipt of the request, the Signatories shall prepare an amendment document.

V. REVIEW OF PUBLIC OBJECTIONS.

At any time during implementation of the measures stipulated in this Agreement, should an objection to any such measure, or its manner of implementation, be raised by a member of the public, BIA/WRO shall take the objection into account and consult as needed with the objecting party and the Signatories to this Agreement to resolve the objection.

VI. AMENDMENT.

If any Signatory to this Agreement determines that its terms will not or cannot be carried out or that an amendment to its terms is necessary, that party shall immediately consult with the other Signatories to develop an amendment to this Agreement pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP.

VII. DISPUTE RESOLUTION.

Should any Signatory to this Agreement object to any action(s) or plan(s) pursuant to this Agreement, BIA/WRO shall consult with the objecting party within thirty (30) days to resolve the objection. The objection must be identified specifically and the reasons for objection documented in writing. If the objection cannot be resolved, BIA/WRO shall notify the Signatories to this Agreement of the objection and shall:

- A. Forward all documentation relevant to the dispute, including BIA/WRO's proposed resolution, to the ACHP in accordance with 36 CFR 800.2(b)(2). The ACHP shall provide BIA/WRO with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision regarding the dispute, BIA/WRO shall prepare a written response that takes into account any timely advice or comment provided by the ACHP, and all comments from the Signatories to this Agreement, and provide them with a copy of this written response. BIA/WRO will then proceed according to its final decision.
- B. If the ACHP does not provide any comments regarding the dispute within thirty (30) days after receipt of adequate documentation, BIA/WRO may render a decision regarding the dispute and proceed accordingly. Prior to reaching its decision, BIA/WRO shall prepare a written response that will take into account all written comments regarding the dispute from the Signatories and provide them and the ACHP with a copy of such a written response.

- C. It is the responsibility of the BIA/WRO to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute.

VIII. DURATION AND TERMINATION.

This Agreement will expire if its stipulations are not carried out within ten (5) years from execution of the last Signatory signature on the Agreement or until BIA/WRO determines that all of its terms have been satisfactorily fulfilled whichever comes first. If any Signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other Signatory to attempt to develop an amendment per Stipulation VI, above. If an amendment cannot be reached, any Signatory may terminate the Agreement upon written notification to the other Signatories. Within thirty (30) days following termination, the BIA/WRO shall notify the Signatories if it will initiate consultation to execute an Agreement with the Signatories under 36 CFR 800.6(c)(1) or request the comments of the ACHP under 36 CFR 800.7(a) and proceed accordingly.

IX. EXECUTION OF THIS AGREEMENT.

Execution and implementation of this Agreement evidences that the BIA/WRO has taken into account the effects of the undertaking on historic properties and has afforded the ACHP an opportunity to comment on the undertaking and its effects.

Counterparts: This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. The BIA/WRO will distribute copies of all signed pages to the Signatories once the Agreement is executed in full.

[Remainder of page intentionally blank]

SIGNATORY PARTIES:

APPROVED: BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE

By:_____ Date_____
Regional Director

APPROVED: SHOSHONE-PAIUTE TRIBES OF THE DUCK VALLEY RESERVATION

By:_____ Date_____
Chairman, Shoshoni-Paiute Tribes of the Duck Valley Reservation

APPROVED: NEVADA STATE HISTORIC PRESERVATION OFFICE

By:_____ Date_____
State Historic Preservation Officer

Appendix A

Affected Properties Maps

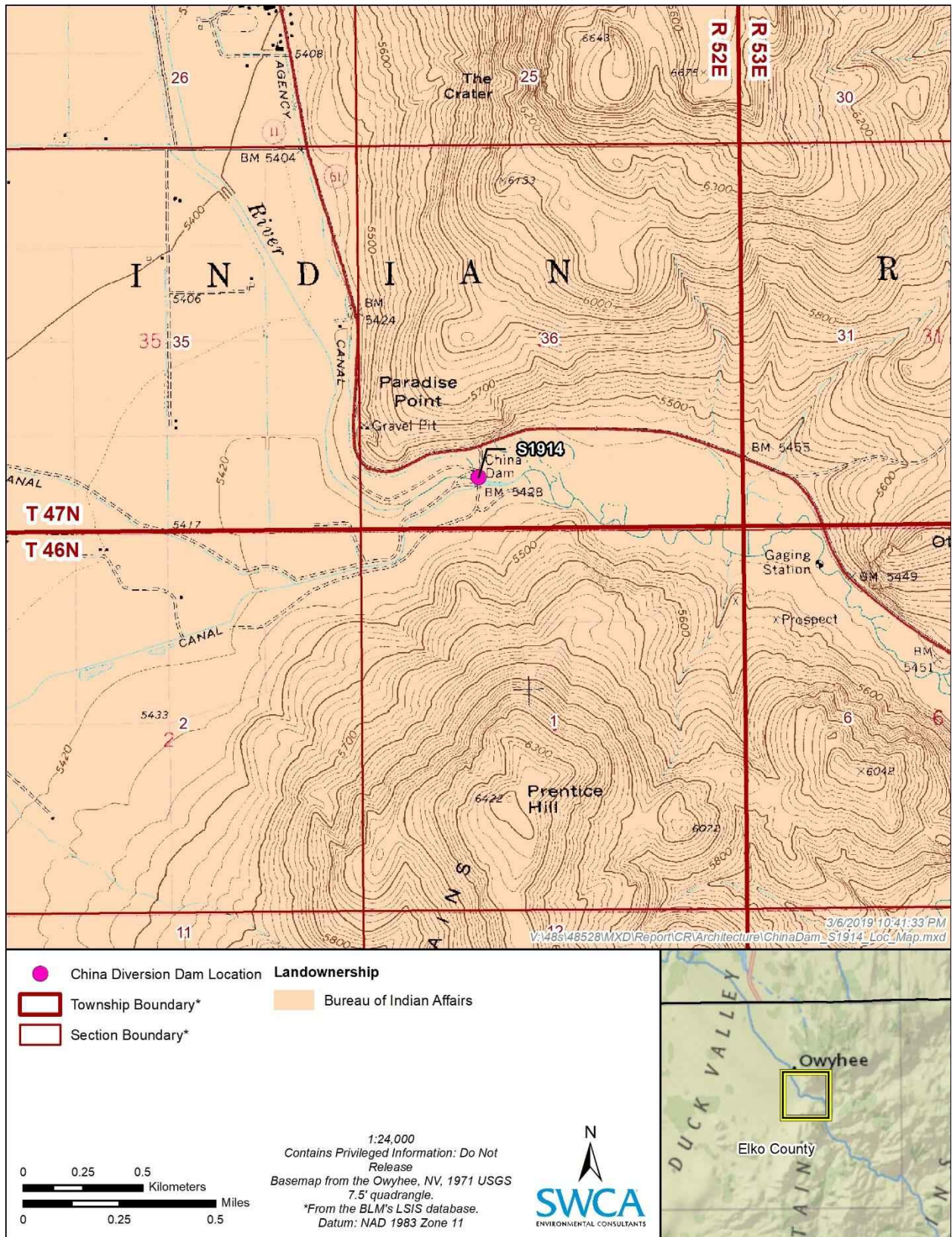


Figure A-1. China Diversion Dam location map.



Figure A-2. China Diversion Dam sketch map including 100-foot buffer.