



MEMORANDUM

DATE: May 9, 2022

TO: Central Utah Water Conservancy District (CUWCD) and
Department of Interior—Central Utah Project Completion Act Office

FROM: Heather Boekweg, Horrocks 

CC: Chuck Easton

SUBJECT: Waters of the United States for Alpine Aqueduct Reach 1
Replacement and Resiliency Project

Introduction

In April 2022, the Central Utah Water Conservancy District (CUWCD) and the Department of Interior—Central Utah Project Completion Act Office contracted with Horrocks to provide a waters of the United States investigation of a 26.52-acre site located west of Provo Canyon in Orem, Utah County, Utah along the southern extent of Mount Timpanogos within the Wasatch Range. This memorandum includes a summary of Horrocks' findings regarding waters of the United States.

Proposed Project

The CUWCD proposes to relocate the Alpine Aqueduct Reach 1 (AA-1) pipeline to avoid an existing landslide complex and perform design and construction across the Wasatch Fault Zone to ensure AA-1 can withstand seismic events. In addition to the new pipeline alignment, two tunnel options are being considered for connection to the Alpine Tunnel.

Project Area Conditions

The project area measures 26.52 acres and is located in Utah County, Orem, Utah (see Figures 1–2) on privately-owned land and private inholdings of the Uinta National Forest in Section 1 and 12 of Township 6 South, Range 2 East; and Sections 6 and 7 of Township 6 South, Range 3 East, of the Salt Lake Meridian. Elevations within the project area range from a low of approximately 4,904 feet above sea level (1,494 meters) near Orchard North neighborhoods to a high of approximately 5,449 feet above sea level (1,660 meters) at the top of a shoulder ridge overlooking Olmsted. Soils in the area are generally disturbed by housing construction, roadways, and recreational activities. Dominant vegetation in the project area includes bunch grasses, sagebrush, rabbitbrush, mountain mahogany, cliffrose, and invasive weeds (see Figures 3–4).



Literature Search and Site Visit

As part of its wetland and water resource analysis, Horrocks performed a literature search and an examination of aerial imagery within the project area. An investigation of the project area was also conducted on April 28, 2022.

National Wetland Inventory

Horrocks performed a search of the project area using the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetland Mapper tool. One riverine habitat (R4SBC) is shown to cross the project area in a northwest to southeast direction (see Figure 5). This system is considered intermittent, as channels that contain flowing water are only present part of the year. No other wetlands, streams, rivers, lakes, or ponds were identified within the project area.

Floodplains

Using the Federal Emergency Management Agency's (FEMA) Flood Map Service Center online tool, Horrocks generated a Flood Insurance Rate Map (maps 49049C0333F and 49049C0334F) of the project area (see Figure 6). The project area is located within the FEMA-designated "area of minimal disturbance, Zone X." Zone X is defined as a "minimal risk area outside the 1-percent and 0.2-percent annual-chance floodplains."

Site Investigation

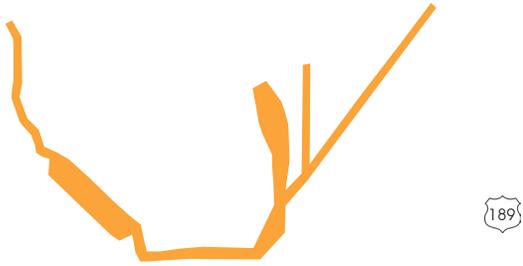
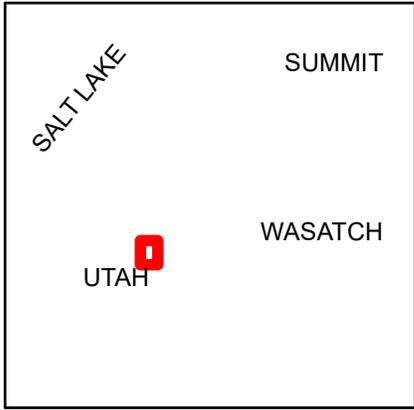
The site visit conducted on April 28, 2022 found a lack of appropriate hydrology indicators (including vegetation and soil indicators) within the project area. Small valleys, gulches, or gullies (all uplands) that collect stormwater were identified within the area (see Figure 4); these dissipate across the surface of uplands at the mouth of these features. None were found to possess an ordinary high water mark. Additionally, artificial irrigation features (hose bibs, rock-line ditches) were observed in and around the golf course. No permanent water exists within the project area.

Recommendations

Due to the lack of hydrology indicators within the project area, Horrocks recommends that the proposed project would not impact wetlands or other waters of the United States. Horrocks also recommends that the project would not result in impacts to mudflats; lakes; or perennial, intermittent, or ephemeral streams as these resources are not present within the project area.

Attachments

- Figure 1: Project Area on Aerial Imagery
- Figure 2: Project Area on Topographic Map
- Figure 3: Photo of the project area and general site conditions.
- Figure 4: Typical gully within the project area.
- Figure 5: Project Area and NWI Wetlands
- Figure 6: The Project Area on FEMA Flood Maps



800 N

1

Project Area on Aerial Imagery

Produced by
Horrocks Engineers
May 2022

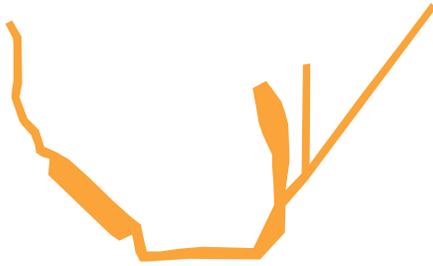
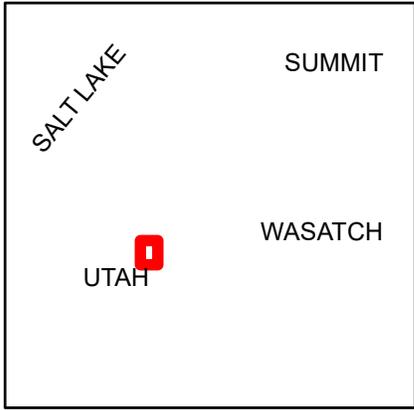
 Project Area

Google Imagery
Mapped in NAD 1983 UTM Zone 12 N

0  2,000
Feet

T6S, R2E Sections 1, 12
T6S, R3E Sections 6, 7





2 Project Area on Topographic Map

Produced by
Horrocks Engineers
May 2022

 Project Area

USGS 7.5' Topo Quad(s):
Orem, UT
Mapped in NAD 1983 UTM Zone 12 N

0  2,000
Feet

T6S, R2E Sections 1, 12
T6S, R3E Sections 6, 7





Figure 3: Photo of the project area and general site conditions.



Figure 4: Typical gully within the project area.



5



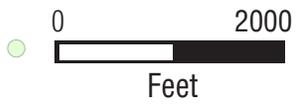
**Project Area and
NWI Wetlands**

Google Imagery
Map Date: May 2022

-  Project Area
-  Riverine Wetlands
-  Freshwater Forested/Shrub Wetlands

40

Silver Creek



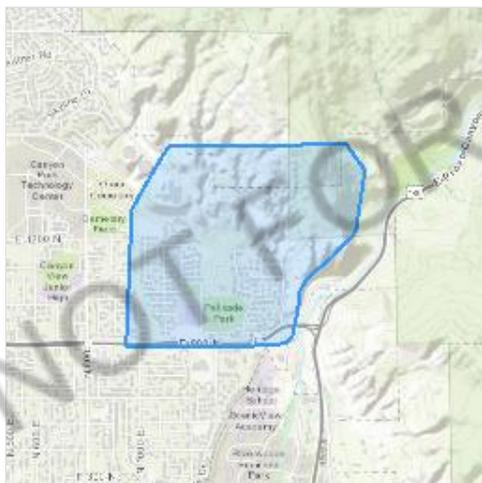
IPaC resource list

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

Utah County, Utah



Local office

Utah Ecological Services Field Office

☎ (801) 975-3330

📠 (801) 975-3331

2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603

<http://www.fws.gov>

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

Endangered species

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

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

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

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

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

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

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

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

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

Mammals

| NAME | STATUS |
|--|------------|
| Canada Lynx <i>Lynx canadensis</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3652 | Threatened |

Birds

| NAME | STATUS |
|---|------------|
| Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911 | Threatened |

Fishes

| NAME | STATUS |
|--|------------|
| June Sucker <i>Chasmistes liorus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4133 | Threatened |

Insects

| NAME | STATUS |
|---|-----------|
| Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743 | Candidate |

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

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

Additional information can be found using the following links:

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

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](#) 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

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

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

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



Utah Division of Wildlife Resources
 Utah Natural Heritage Program
 1594 W. North Temple
 PO Box 146301
 Salt Lake City, UT 84116

Utah Natural Heritage Program Online Species Search Report

Project Information

Project Name

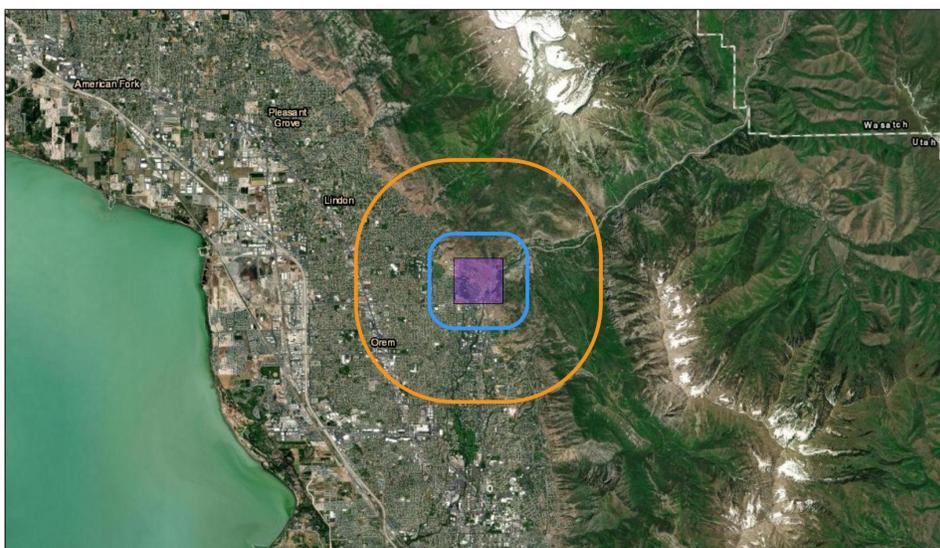
Alpine Aqueduct

Project Description

New pipeline

Location Description

Provo Canyon / Orem



March 16, 2022

1:146,780
 0 0.75 1.5 3 mi
 0 1.5 3 6 km
Esri, HERE, Garmin, Earthstar Geographics

Animals within a 1/2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|--------------------------|---------------------------------|--------------|-----------------|-----------------------|
| Columbia Spotted Frog | <i>Rana luteiventris</i> | SGCN | | 1941 |
| Least Chub | <i>Notichthys phlegethontis</i> | SGCN | | 1931 |
| Northern Leopard Frog | <i>Lithobates pipiens</i> | SGCN | | 1992 |
| Peregrine Falcon | <i>Falco peregrinus</i> | SGCN | | 2006 |
| Townsend's Big-eared Bat | <i>Corynorhinus townsendii</i> | SGCN | | 2012 |

Plants within a 1/2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|-------------------------|-----------------|--------------|-----------------|-----------------------|
| No Species Found | | | | |

Animals within a 2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|--------------------------|--------------------------|--------------|-----------------|-----------------------|
| Columbia Spotted Frog | Rana luteiventris | SGCN | | 1965 |
| Kit Fox | Vulpes macrotis | SGCN | | 1972 |
| Least Chub | Lotichthys phlegethontis | SGCN | | 1931 |
| Northern Leopard Frog | Lithobates pipiens | SGCN | | 1992 |
| Peregrine Falcon | Falco peregrinus | SGCN | | 2006 |
| Townsend's Big-eared Bat | Corynorhinus townsendii | SGCN | | 2012 |

Plants within a 2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|-------------|-----------------|--------------|-----------------|-----------------------|
|-------------|-----------------|--------------|-----------------|-----------------------|

No Species Found

Definitions

State Status

| | |
|------|---|
| SGCN | Species of greatest conservation need listed in the Utah Wildlife Action Plan |
|------|---|

U.S. Endangered Species Act

| | |
|-------|---|
| LE | A taxon that is listed by the U.S. Fish and Wildlife Service as "endangered" with the probability of worldwide extinction |
| LT | A taxon that is listed by the U.S. Fish and Wildlife Service as "threatened" with becoming endangered |
| LE;XN | An "endangered" taxon that is considered by the U.S. Fish and Wildlife Service to be "experimental and nonessential" in its designated use areas in Utah |
| C | A taxon for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threats to justify it being a "candidate" for listing as endangered or threatened |
| PT/PE | A taxon "proposed" to be listed as "endangered" or "threatened" by the U.S. Fish and Wildlife Service |

Disclaimer

The information provided in this report is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, any given response is only appropriate for its respective request.

The UDWR provides no warranty, nor accepts any liability, occurring from any incorrect, incomplete, or misleading data, or from any incorrect, incomplete, or misleading use of these data.

The results are a query of species tracked by the Utah Natural Heritage Program, which includes all species listed under the U.S. Endangered Species Act and species on the Utah Wildlife Action Plan. Other significant wildlife values might also be present on the designated site. Please [contact](#) UDWR's regional habitat manager if you have any questions.

For additional information about species listed under the Endangered Species Act and their Critical Habitats that may be affected by activities in this area or for information about Section 7 consultation under the Endangered Species Act, please visit <https://ecos.fws.gov/ipac/> or contact the [U.S. Fish and Wildlife Service Utah Ecological Services Field Office](#) at (801) 975-3330 or utahfieldoffice_esa@fws.gov.

Please contact our office at (801) 538-4759 or habitat@utah.gov if you require further assistance.

Your project is located in the following UDWR region(s): Central region

Report generated for:

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 Riverdale, UT 84405
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