

Lake Powell Pipeline

Draft Threatened, Endangered and Special Status Species Work Plan

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Prepared by

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Section 1 Introduction

The purpose of this work plan is to identify the procedures and methodologies for analyzing potential effects on threatened and endangered (T&E) and special status species for the Lake Powell Pipeline (LPP). The work plan is prepared to meet requirements of the T&E and Special Status Species Technical Report (TR). This work plan presents preliminary issues and concerns, defines the effect area of influence and significance criteria, describes the analysis methodology, summarizes data available and needed, outlines the T&E and Special Status Species TR, references an outline for the T&E and Special Status Species TR, identifies dependency items and relationships to other resources, and identifies potential problems and recommendations for resolving problems.

Although the issues, methodology and effect area of influence will be the same, federal threatened and endangered species effects and state and Bureau of Land Management (BLM) special status species effects will be analyzed and documented in separate technical report sections: Part 1 – T&E; Part 2 – Special Status Species.

Section 2 Issues

T&E species-related issues and concerns identified during the informal scoping process will be addressed in the analysis for the LPP alternatives. Related questions raised during the informal scoping process have been consolidated into the following issue(s).

- What effects would occur on T&E species from construction and operation of the LPP?
- What effects would occur on T&E species habitat from construction and operation of the LPP?

Additional issues that arise during the informal scoping process, or during preparation of the analysis, will be added and addressed.

Special status species-related issues and concerns identified during the informal scoping process will be addressed in the analysis for the LPP alternatives. Related questions raised during the informal scoping process have been consolidated into the following issue(s).

- What impacts would occur on special status species from construction and operation of the LPP?
- What impacts would occur on special status species habitat from construction and operation of the LPP?

Additional issues that arise during the informal scoping process, or during preparation of the analysis, will be added and addressed.

Section 3

Effect Topics

The following effect topics have been identified for T&E species:

- Wildlife species (including mammals, birds, reptiles, amphibians and terrestrial invertebrate T&E species)
- Aquatic species (including fish and aquatic invertebrate T&E species)
- Plants
- Critical Habitats

The following impact topics have been identified for special status species:

- Wildlife species (including mammals, birds, reptiles, amphibians and terrestrial invertebrate special status species)
- Aquatic species (including fish and aquatic invertebrate special status species)
- Plants
- Special Status Species Habitats

Section 4

Effect and Impact Area and Evaluation Criteria

4.1 Effect Area of Influence

The effect and impact area would include the following:

- Corridors along the area directly affected by pipelines and associated features (drains, blowoffs), access roads, pump stations, power lines, power facilities, and reservoirs
- All streams and rivers and associated riparian corridors affected by construction activities or that would have alterations in flow from baseline conditions
- Any wetlands affected by construction activities or by changes in surface or groundwater flows

4.2 Evaluation Criteria

4.2.1 Endangered Species Act (Federally Listed Species)

The Endangered Species Act of 1973 (ESA), as amended, establishes the legal criteria for determining effects on federally threatened and endangered species. The following effects would be considered violations of the ESA:

- Taking of threatened of endangered species or species of special concern (The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.)
- Adverse modification of designated critical habitat

Where no critical habitat has been designated for a federally listed species, the area of possible adverse modification of potentially occupied habitat will be estimated.

Effects of LPP project construction and operation on federally listed species will be estimated. An estimated determination of effect will be made using the following categories:

- No effect
- May affect, not likely to adversely affect
- May affect, likely to adversely affect

The formal determination of effect will be made by the U.S. Fish and Wildlife Service in a Biological Opinion, including an incidental take statement and prescription of prudent and reasonable measures, as necessary.

4.2.2 Special Status Species

As there are no regulatory guidelines for impacts on special status species or habitat, the significance criteria are based on past experience with similar projects and best professional judgment in consultation with the U.S. Fish and Wildlife Service.

The following criteria will be used to determine significant impacts on special status species:

- Activities resulting in a substantial loss of individuals, a substantial loss in breeding range or migration corridor area or a substantial loss of a pollinator population that would jeopardize the continued existence of any special status species population or subpopulation.
- Activities resulting in substantial disturbance to utilized habitat. Substantial disturbance is defined as permanent destruction or modification of a large area of potentially utilized habitat.

Section 5 Methods

The following subsections describe the methodology that will be used to address issues and concerns and to define existing T&E and special status species distributions and habitat use and analyze effects.

5.1 Introduction and Overall Approach

5.1.1 Wildlife

The following will be used to analyze effects on T&E and special status wildlife species:

- The area of T&E and special status wildlife species habitat, including critical habitat if designated, disturbed by construction and operation of the LPP alternatives will be estimated
- Disruption or loss of known migration routes will be estimated

- Direct mortality or disturbance of T&E and special status wildlife species from construction and operation of LPP alternatives and indirect mortality from habitat loss and changes in human population and activity will be estimated

5.1.2 Aquatic Species

The following will be used to analyze effects on T&E and special status aquatic species:

- The area of T&E and special status aquatic species habitat, including designated critical habitat, disturbed by construction and operation of the LPP alternatives will be estimated
- Direct mortality or disturbance of T&E and special status aquatic species from construction and operation of LPP alternatives and indirect mortality from habitat loss

5.1.3 Plants

The following will be used to analyze effects on T&E and special status plant species:

- The area of T&E and special status plant species habitat, including designated critical habitat, disturbed by construction and operation of the LPP alternatives will be estimated.
- Direct mortality of T&E and special status plant species from construction and operation of LPP alternatives and indirect mortality from habitat loss
- Direct and indirect loss of pollinator populations from construction and operation of LPP alternatives will be estimated.

5.2 Analysis of Effects

5.2.1 Wildlife

T&E and special status wildlife species habitat maps will be developed in geographic information systems (GIS) format for the effect area of influence for each alternative. T&E and special status wildlife species habitat will be classified by general vegetation community type (conifer forest, deciduous forest, mixed forest, sagebrush uplands, open grasslands, riparian corridors, emergent wetlands and open water areas). These maps will be used to analyze the direct effects on T&E and special status wildlife species habitat as a result of disturbance from construction and operation of the alternatives. Disturbance will include direct alteration or loss of habitat from construction or operation of LPP features and noise effects from construction or operation of LPP features that would reduce T&E and special status species habitat values or T&E and special status species habitat use. The time frame of effects – short and long-term – will be considered as part of the analysis.

T&E and special status wildlife species recorded within the effect area of influence will be analyzed by habitats utilized and the effects on those habitats by construction or operation of LPP features. Loss or fragmentation of habitat will be evaluated in terms of minimum home range requirements of species, where known. Some wildlife species may require a critical amount of contiguous forest amid a larger area of open hunting land. Where such species have been found in the study area in recent surveys, the available habitat and potential changes will be evaluated in terms of their critical habitat needs.

Direct and indirect effects will be quantified to the degree possible and an estimated effect determination as described in Section 4.2 will be made for each species.

Impacts on special status wildlife species will be made in a similar manner.

5.2.2 Aquatic Species

The following methodologies will be used to evaluate the effects of the alternatives on the fish, and aquatic invertebrate communities in the water bodies that may be affected by the project.

Species descriptions, habitat requirements and occurrence data will be analyzed to determine the probability of species occurrence within alternative disturbance footprints. Construction and operation of the LPP, from the project description, will be analyzed to determine the potential for effects on species that may occur within the project alternative footprints. Industry standard construction and operation procedures will be analyzed to determine how impacts may be mitigated by such procedures.

Direct and indirect effects will be quantified to the degree possible and an estimated effect determination as described in Section 4.2 will be made for each species.

Impacts on special status aquatic species will be made in a similar manner.

5.2.3 Plants

The following will be used to determine and analyze effects on T&E and special status plant species.

- Consultation and Literature Search. Through consultation with the US Fish and Wildlife Service (USFWS), Utah Division of Wildlife Resources, Arizona Game and Fish, BLM and Natural Heritage Programs (NHP) of Utah and Arizona, a comprehensive list of Threatened, Endangered, or State special status plants with a potential to be found within the project corridor will be compiled. A literature search will be performed to describe the habitat parameters for each T&E and special status species identified in order to further refine each species' potential to be found within the proposed corridors of influence. These areas will be mapped. A search protocol will be developed for each species and each area of potential effect based, when available, on protocols previously developed by the USFWS.
- Specific areas will be surveyed by qualified biologists for presence of T&E and special status species. Presence will be noted and quantified, located with GPS, and mapped.

Once occupied habitat is identified, located by GPS, mapped, and species presence is quantified, the following analyses will be performed:

- Estimating the numbers of individuals of a population directly affected by construction activities
- Estimating the numbers of individuals of a population directly affected by operational changes associated with the proposed project
- Estimating the area of occupied habitat directly affected by construction activities
- Estimating the area of occupied habitat directly affected by operational changes associated with the proposed project
- Estimating the area of potential habitat

- Estimating the amount of effects on associated vegetation that may support pollinators of federally listed species in occupied habitat.

Direct and indirect effects will be quantified to the degree possible and an estimated effect determination as described in Section 4.2 will be made for each species.

Impacts on special status plant species will be made in a similar manner.

5.3 Analysis of Cumulative Effects

The cumulative effect analysis will be based on other projects that have been determined to occur within the effect area of influence and the same time frame of the LPP. The projects to be considered will be those developed and described in the Project Description. To the extent possible, the same methodology and evaluation criteria used for the alternatives will be used for the cumulative effect analysis.

Section 6 Data Needs and Analysis

6.1 Data Needs

6.1.1 Wildlife

- U.S. Fish and Wildlife Service list of T&E species to be analyzed
- State and BLM special status species
- GIS maps indicating baseline habitat types (vegetation communities) of the effect area of influence and identification of unique habitat types present within the effect area.
- GIS maps of designated critical habitat
- Information on T&E and special status species distributions, life history (home ranges/migration patterns, habitat use, reproduction, etc.) and responses to project-related activities (noise and vibrations)
- GIS maps of wetlands that could be altered by surface or groundwater hydrology
- Effects of altered stream flow on riparian habitat corridors

6.1.2 Aquatic Species

- U.S. Fish and Wildlife Service list of T&E species to be analyzed
- State and BLM special status species

- Current status, distribution, habitat requirements and life history data for T&E and special status aquatic species
- Surface water quality analysis for streams and wetlands within the project area.

6.1.3 Plants

- U.S. Fish and Wildlife Service list of T&E species to be analyzed
- State and BLM special status species
- Site-specific inventory and survey data conducted for T&E and special status plant species
- Soil substrate maps for the project area
- Maps indicating baseline habitat types (vegetation communities – e.g. wetland, riparian) of the project area and identification of unique habitat types present within the project area.
- Information on T&E and special status plant species biology (habitat normally occupied, current distributions, historic occurrences, potential habitat, phenology, chronology, pollinators, etc.)
- Surface and groundwater analysis of any reach of stream within the project area that may be influenced by operational changes from the project.

6.2 Data Available and Adequacy

6.2.1 Wildlife

6.2.1.1 Available Data

- Species accounts and general distribution information for most of the commonly found wildlife species in Utah from the Utah Division of Wildlife Resources website at <http://www.utahcdc.usu.edu/ucdc/>.
- Critical and high-value range data available from the Utah Division of Wildlife Resources in Geographic Information Systems (GIS) format for a number of species including elk, mule deer, snowshoe hare, and moose available on the Worldwide Web at:
<http://www.utahcdc.usu.edu/ucdc/DownloadGIS/disclaim.hTR>.
- Arizona wildlife species accounts and general distribution for most of the commonly found wildlife species in Arizona from the Arizona Natural Heritage Program available on the Worldwide Web at:
http://www.gf.state.az.us/w_c/edits/species_concern.shtml
- BLM – Arizona, Arizona Strip Field Office: Special Status Species on the Arizona Strip, available on the Worldwide Web at: <http://www.blm.gov/az/asfo/wildlife/sstatu.htm>

- BLM Grand Staircase – Escalante National Monument GIS files, available on the Worldwide Web at: <http://www.ut.blm.gov/monument/gis-data-library.php>
- U.S. Fish and Wildlife Service Threatened and Endangered Species of Arizona, listed by county, available on the Worldwide Web at: <http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList>
- Burt, W.H. and R.P. Grossenheider. 1989. *A Field Guide to the Mammals: North America North of Mexico* (Peterson Field Guides). Houghton Mifflin Co. New York, N.Y.
- *National Geographic Field Guide to the Birds of North America*, Third Edition. National Geographic Society. Washington, D.C. 1999
- LPP project feature locations and pipeline corridors in ArcView GIS format.
- National Wetlands Inventory (NWI) data in ArcView GIS format
- Arizona riparian areas in ArcView GIS format available on the Worldwide Web at: <http://sdrsnet.snr.arizona.edu/index.php?page=datamenu&lib=0&sublib=5>
- USFS Threatened and Endangered Species for Utah available on the Worldwide Web at <http://ecos.fws.gov/servlet/T&ESWebpageUsaLists?state=UT>
- Arizona Strip Threatened and Endangered Species descriptions and distribution available from the Arizona Strip FEIS, available on the Worldwide Web at: http://www.blm.gov/az/LUP/strip/strip_plan.htm

6.2.1.2 Level of Analysis with Available Data

Available data will permit a general estimation of probability of presence/absence of federally listed and special status wildlife species and potentially occupied habitat within preliminary alternative footprints. The available data would not permit estimation of effects determinations on federally listed wildlife species or impacts on special status wildlife species.

6.2.2 Aquatic Species

6.2.2.1 Available Data

- Utah Natural Heritage Database (<http://www.utahcdc.usu.edu/ucdc/>)
- Arizona Natural Heritage Database (http://www.gf.state.az.us/w_c/edits/species_concern.shtml)
- BLM – Arizona, Arizona Strip Field Office: Special Status Species on the Arizona Strip, available on the Worldwide Web at: <http://www.blm.gov/az/asfo/wildlife/ssstatus.htm>
- BLM Grand Staircase – Escalante National Monument GIS files, available on the Worldwide Web at: <http://www.ut.blm.gov/monument/gis-data-library.php>

- U.S. Fish and Wildlife Service Threatened and Endangered Species of Arizona, listed by county, available on the Worldwide Web at:
<http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList>

6.2.2.2 Level of Analysis with Available Data

Available data will permit a general estimation of probability of presence/absence of federally listed and special status aquatic species and potentially occupied habitat within alternative footprints. The available data would not permit estimation of effects determinations on federally listed aquatic species or impacts on special status aquatic species.

6.2.3 Plants

6.2.3.1 Available Data

- Species accounts and general distribution information for T&E and special status plant species occurring in Utah from the Utah Division of Wildlife Resources website at
<http://dwr.dcnr.utah.gov/ucdc/ViewReports/plantrpt.htm>
- Species accounts and general distribution information for T&E and special status plant species occurring in Arizona from the Arizona Natural Heritage Program website at:
http://www.gf.state.az.us/w_c/edits/species_concern.shtml
- BLM – Arizona, Arizona Strip Field Office: Special Status Species on the Arizona Strip, available on the Worldwide Web at: <http://www.blm.gov/az/asfo/wildlife/ssstatus.htm>
- BLM Grand Staircase – Escalante National Monument GIS files, available on the Worldwide Web at:
<http://www.ut.blm.gov/monument/gis-data-library.php>
- BLM Arizona GIS file for T&E plants available on the Worldwide Web at:
<http://www.blm.gov/az/GIS/files.htm>.
- U.S. Fish and Wildlife Service Threatened and Endangered Species of Arizona, listed by county, available on the Worldwide Web at:
<http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList>
- Soils data for Utah and Arizona from the NRCS Soil Data Bank available at:
<http://soildatamart.nrcs.usda.gov/USDGSM.aspx>
- Soils data for Utah by county from the Utah AGRC, available at:
http://agrc.utah.gov/agrc_sgld/sgidlib/shpindex.htm

6.2.3.2 Level of Analysis with Available Data

Available data would provide a general estimation of probability of presence/absence of federally listed and special status plant species within alternative footprints and would not be sufficient to allow critical analysis of

preliminary alternatives or effects determinations on federally listed plant species or impacts on special status plant species.

6.3 Additional Data Needs

The following data are necessary to determine specific absence/presence of federally listed species within the project alternative footprints and to make estimated effect determinations for federally listed and special status plant species.

6.3.1 Primary

6.3.1.1 Wildlife

None anticipated, unless required after consultation with resource management agencies. Available data indicates that occurrences are not likely within potential areas of construction or operation disturbance and application of Standard Construction and Operating Procedures would prevent incidental effects/impacts.

6.3.1.2 Aquatic Species

None anticipated, unless required after consultation with resource management agencies. Available data indicates that occurrences are not likely within potential areas of construction or operation disturbance and application of Standard Construction and Operating Procedures would prevent incidental effects/impacts.

6.3.1.3 Plants

- Field surveys may be required within the Preferred Alternative footprint, after it is selected.

None anticipated, unless required after consultation with resource management agencies. Available data indicates that occurrences are not likely within potential areas of construction or operation disturbance and application of Standard Construction and Operating Procedures would prevent incidental effects/impacts.

6.3.2 Secondary

6.3.2.1 Wildlife

- Utah Division of Wildlife Resources ArcView GIS files showing recorded locations of T&E and special status species within 1 mile and 5 miles of all alternative footprints, provided by Sarah Lindsey, Information Manager - (801) 538-4759; sarahlindsey@utah.gov
- Specific BLM T&E and special status wildlife occurrence data within all alternative footprints (Ron Bolander: Ron_Bolander @blm.gov)
- Specific U.S. Fish and Wildlife Service T&E (desert tortoise) and special status wildlife species surveys within all alternative footprints

6.3.2.2 Aquatic Species

- Specific data on T&E and special status aquatic invertebrate species surveys conducted within the project effect area by the BLM or other agencies (Utah Natural Heritage Program, Arizona Natural Heritage Program, U.S. Fish and Wildlife Service)

6.3.2.3 Plants

- Specific data on T&E and special status plant species surveys conducted within the project effect area by the BLM or other agencies (Utah Natural Heritage Program, Arizona Natural Heritage Program, U.S. Fish and Wildlife Service)

Section 7 Procedures for Development of Mitigation

The analysis of effects on T&E and special status species will be based on standard construction and operating procedures and measures to avoid or reduce effects. The estimated determination of effect will then be applied to determine if mitigation would be required. Potential mitigation measures to offset adverse effects would then be developed. Final mitigation for federally listed T&E species would be determined by the Fish and Wildlife Service in a future Biological Opinion.

Section 8 T&E Species Technical Report

A technical report will be necessary to document in detail baseline conditions of and potential impacts on threatened, endangered and special status species. The technical report will follow the resource technical report outline common to all resource work plans (see Resource Technical Report Outline).

The technical report for federally listed T&E and special status species will consist of two parts:

Part 1: Threatened and Endangered Species

Part 2: Special Status Species

The outline of Parts 1 and 2 will be the same except that T&E species are evaluated for “effects” and special status species are evaluated for “impacts.”

Section 9 Dependency Items from Other Resources

Information and coordination with specialists for the following resources will be necessary to complete the T&E species effect analysis. The majority of this information will be needed prior to starting the T&E species effects analysis.

- **Noise:** Information will be needed on significant short-term and long-term changes in noise levels and potential locations of blasting. This information will be used to address potential effects on T&E species as stated in the evaluation criteria.
- **Wetlands:** Information and maps will be needed indicating baseline wetland types (vegetation communities) within the effect area of influence and identification of unique wetland habitat types. Significant short-term and long-term changes, including seasonal changes (winter, spring, summer, fall) in wetland surface (wetted) area, as a result of project construction, operation and reclamation will be needed. This information will be used to address potential effects on T&E species.
- **Vegetation:** General vegetation (habitat) types occurring in alternative footprints and area of each vegetation type disturbed by project construction and operation. This information will be used to address potential effects on T&E species.

Section 10

Potential Problems and Recommendations

- **Plants:** Of the five T&E species that occur in the pipeline corridor and alternatives, four of the species bloom in April and May, and the other species blooms June through August. Study corridors for detailed analysis must be identified by the end of March 2008 so that field surveys can be scheduled and completed.