

## **APPENDIX C5**

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### **Special-Status Species**



# **Special-Status Species Technical Memorandum**

in support of the Environmental Impact Statement

## **Logan Northern Canal Reconstruction Project**

Prepared by  
HDR Engineering, Inc.  
3949 South 700 East  
Suite 500  
Salt Lake City, UT 84107

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## Contents

|            |   |           |
|------------|---|-----------|
| <b>1.0</b> | <b>INTRODUCTION .....</b>   | <b>2</b>  |
| <b>2.0</b> | <b>THREATENED AND ENDANGERED SPECIES .....</b>                                | <b>3</b>  |
| <b>3.0</b> | <b>ESA CANDIDATE, UTAH SENSITIVE, AND CONSERVATION AGREEMENT SPECIES.....</b> | <b>4</b>  |
| <b>4.0</b> | <b>USFS SENSITIVE SPECIES.....</b>  | <b>8</b>  |
| <b>5.0</b> | <b>MANAGEMENT INDICATOR SPECIES.....</b>                                      | <b>10</b> |
| <b>6.0</b> | <b>GENERAL AND CITED REFERENCES .....</b>                                     | <b>13</b> |

## Tables

|   |    |
|---|----|
| Table 1. Summary of Special-Status Species Discussed in This Memorandum ..... | 11 |
|---|----|

## 1.0 Introduction

This memorandum describes species that have been identified by the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), and the State of Utah as special-status species. *Special-status species* described in this memorandum include species listed under the Endangered Species Act (ESA), species that are candidates for listing under the ESA, species identified as sensitive by the State of Utah, conservation agreement species, species identified as sensitive by USFS, and USFS management indicator species (MIS). This memorandum also discloses the effects of the Logan Northern Canal Reconstruction Project's alternatives on each species.

This memorandum is organized by the categories of special-status species. Some species are in more than one category, but in that case, the species are discussed in only one section of this memorandum. Table 1 on page 11 of this memorandum summarizes the status of all species and the determination of effects for each species.

The information in this memorandum is based on sources of data such as results of surveys and site visits by HDR Engineering, Inc., and the Natural Resources Conservation Service (NRCS); species lists and information from Utah Division of Wildlife Resources; species lists and information from USFS; and the professional knowledge and judgment of the project team.

The study area considered in this memorandum is roughly bounded by 3100 North on the north (near Hyde Park), the Logan River on the south (in Logan), about 600 East on the west (in Logan and North Logan), and about 2000 East on the east (in Logan and North Logan). A narrow corridor also extends into Logan Canyon along the Logan River to about Second Dam. Two of the project alternatives would require some work on land administered by USFS in the canyon.

The effects of the project alternatives were determined by examining the expected footprints of the project alternatives. The alternative footprints are roughly the existing canal(s) and point(s) of diversion (POD), a work area of about 30 feet on the downstream side of the canal(s), and a work area of about 1,000 square feet around the POD structure(s).

The following descriptions focus on several categories of special-status species:

- Species listed as threatened or endangered under the ESA
- ESA candidate species, Utah sensitive species, and conservation agreement species
- USFS sensitive species
- USFS management indicator species

## 2.0 Threatened and Endangered Species

This section describes species formally listed under the ESA. USFS also identifies two of these species (Maguire's primrose and Ute ladies'-tresses) as sensitive. Table 1 on page 11 summarizes the different status designations for all species discussed in this memorandum.

**Maguire's primrose (*Primula maguirei*): Threatened.** Maguire's primrose lives only in Logan Canyon, Cache County, Utah. This plant lives only on steep cliff faces or rock overhangs. It typically lives on slopes that are north-facing but occasionally is found on south-facing slopes near the canyon bottom (about 5,100 to 6,600 feet in elevation) that are shaded, mossy, and damp.

Maguire's primrose was first collected in Logan Canyon in 1911 (Williams 1936; CH2M Hill 2007). Fourteen populations of this species are known to be present along 11.8 miles of Logan Canyon (CH2M Hill 2007).

There is potential habitat near and possibly in the study area for this rare primrose on the north-facing side of Logan Canyon below Second Dam on land administered by USFS. A 2010 survey of the Logan Hyde Park Smithfield (LHPS) Canal alignment and adjacent areas in Logan Canyon did not locate any Maguire's primrose (Fullen and Wilcox 2010).

**Effects Determination: No effect.** Some project alternatives would include construction at the LHPS Canal POD and along the LHPS Canal in Logan Canyon. No populations or habitat are present within any of the alternatives' footprints. Cliff areas within the footprints of the alternatives in Logan Canyon are too dry and exposed to be considered habitat. Potential habitat in the vicinity of the LHPS Canal POD below Second Dam is well outside the anticipated reconstructed POD footprint and construction work area.

**Ute ladies'-tresses (*Spiranthes diluvialis*): Threatened.** This orchid lives in spring-fed wet meadows, riverine wetland banks, wet oxbows, and wetlands associated with springs, seeps, and lakes. In Cache County, a new population was discovered in August 2008 in a grazed wet meadow on the west side of Cache Valley in the Bear River watershed. Prior to this finding, no populations of this species had ever been found or were historically known to be present in Logan Canyon or the Logan River watershed or in any of the canal sections recently surveyed in the study area.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints. The only wetland close to an alternative has been altered by landowners and is of too poor quality to be considered habitat.

**Canada lynx (*Lynx canadensis*): Threatened.** There is potential habitat for this species in the high-elevation coniferous forests in Cache County that are outside the study area.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints.

### 3.0 ESA Candidate, Utah Sensitive, and Conservation Agreement Species

The following paragraphs describe ESA candidate, Utah sensitive, and conservation agreement species. USFS also identifies some of these species as sensitive. Table 1 on page 11 summarizes the different status designations for all species discussed in this memorandum.

**Greater sage grouse (*Centrocercus urophasianus*): Candidate.** As a sagebrush-obligate species, this grouse is typically found in areas of light to moderate sagebrush cover with a healthy native grass and forb component. Some potential habitat could exist for this species in the foothills of the Bear Mountains, but, since developments and other disturbances have moved into these areas in the study area, it is unlikely that any greater sage grouse still breed there.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints. Any sagebrush close to any of the alternatives' footprints is too steep and rocky to be considered habitat.

**Yellow-billed cuckoo (*Coccyzus americanus*): Candidate.** This species lives in extensive, wooded riparian areas. Since the wooded riparian corridor in the study area is narrow and limited with encroaching roads and development, it is unlikely that any suitable nesting habitat still exists in the study area. No yellow-billed cuckoos have been positively identified in or near the study area; the closest and most recent sighting of a cuckoo in Cache County was near Providence in 1992. The most recent recorded sighting near Logan was in 1941 (Utah Birds 2011). The Logan River riparian corridor could offer some migration stopover habitat, but, given the recorded incidences of the species in this part of northern Utah, the cuckoo is unlikely to use riparian areas in Logan Canyon.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. The riparian vegetation surrounding the LHPS and Logan Northern (LN) Canal PODs is disturbed from adjacent roads, trails, and buildings; past habitat modification; and ongoing noise. The area around the PODs could offer some migratory stop-over habitat. However, any migrating individuals passing through these areas would be likely to simply avoid any areas of uncomfortably high noise levels, whether from POD construction or existing traffic noise, and move to quieter areas.

**Bald eagle (*Haliaeetus leucocephalus*): State species of concern.** Formerly an ESA-listed species and now protected under the Bald and Golden Eagle Protection Act, the bald eagle nests and roosts in large, mature trees or snags, usually near open water such as rivers and lakes. Only a few pairs of bald eagles nest in Utah, but the state is a migratory route and winter roosting area. Some potential winter roosting habitat could exist along the wooded riparian areas of Logan River in the study area.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. If the LHPS or LN Canal PODs are reconstructed during the

winter roosting period for the bald eagle, USFWS would be consulted at that time about whether any precautions or adjustments to the construction schedule would be necessary given the area of effect in this lower portion of Logan Canyon.

**Bobolink (*Dolichonyx oryzivorus*): State species of concern.** This species nests in wet meadows, wet pastures, and sometimes wet, older hayfields that are part of a larger wetland system. Very little of this habitat is found in the study area; most of the larger wetland and wet meadow areas in Cache County are in the center of Cache Valley and outside the study area.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints.

**Burrowing owl (*Athene cunicularia*): State species of concern.** Burrowing owls prefer open grasslands and sparsely vegetated arid areas, typically with abandoned small mammal burrows. Very little if any of this habitat type exists in the study area.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints.

**Ferruginous hawk (*Buteo regalis*): State species of concern.** This mid-sized hawk nests in large shrubs, trees, and short cliffs in or near rolling grasslands, shrublands, and pinyon-juniper habitat. There is potential habitat in or near the study area, primarily to the east in the foothills, but nesting by this species is not likely in the study area because of human developments and activities.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. Any foraging individuals in lower Logan Canyon or the eastern foothills of Cache Valley would likely avoid the alternatives' footprints in Logan Canyon while construction operations are underway.

**Grasshopper sparrow (*Ammodramus savannarum*): State species of concern.** This species nests in bunchgrass grasslands with native grasses and a very minimal shrub component. Potential nesting habitat could be present in the study area, though some areas are disturbed by recent developments and overgrazing.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints.

**Lewis's woodpecker (*Melanerpes lewis*): State species of concern.** This woodpecker nests in dead or burned trees, preferably open stands of ponderosa pine but also other species such as cottonwoods, or in mixed conifer or riparian stands. Potential nesting habitat could be present in the study area, though it is likely very limited because of historic impacts to riparian areas.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. The limited riparian habitat in the vicinity of the PODs is close to development and roads, not open stands of ponderosa pine and other similar forest communities.

**Long-billed curlew (*Numenius americanus*): State species of concern.** Long-billed curlew nests in short-height grasslands such as grazed pastures, wet and saline meadows, and other open areas where there are some bare spots along with slight rises in the topography close to aquatic areas for foraging. Potential nesting habitat could exist in the western part of the study area if developments and agricultural practices are not already disturbing the species' nesting.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints.

**Sharp-tailed grouse (*Tympanuchus phasianellus*): State species of concern.** This grouse nests in bunchgrass grasslands with some minimal cover of shrubs and abundant invertebrate populations for forage. Potential habitat could exist along the foothills and benches on the eastern side of the study area. Some of these areas are being lost to residential development.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints.

**Short-eared owl (*Asio flammeus*): State species of concern.** The short-eared owl nests and forages in a variety of open habitats such as grasslands and shrublands of the arid West. Potential habitat could exist along the foothills and benches on the eastern side of the study area. Some of those areas are being lost to residential development.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. Any foraging individuals in lower Logan Canyon or the eastern foothills of Cache Valley would likely avoid the alternatives' footprints in Logan Canyon and in the foothills while construction operations are underway.

**Bonneville cutthroat trout (*Oncorhynchus clarkii utah*): Conservation agreement species and USFS MIS.** This subspecies of cutthroat trout is known to live and reproduce not only in many isolated areas in northern Utah but specifically in reaches of the Logan River in Logan Canyon (above Third Dam). This species has also been reported to travel in both the LN and LHPS Canals, though those records are incidental observations and are not from rigorous sampling.

McHugh and Budy (2005) found that adult brown trout (an introduced species) routinely outcompete Bonneville cutthroat trout when held together at all elevations and temperature regimes in the Logan River. The results of McHugh and Budy's research indicate that Bonneville cutthroat trout distribution is probably regulated by the presence of brown trout through predation and competition. In general, it appears that brown trout have been the key factor in displacing native Bonneville cutthroat trout in the river's lower reaches (above Third Dam).

**Effects Determination: No effect.** Existing impoundments on the Logan River prevent the free travel of fish between reaches of the river upstream of Third Dam and the reaches below Third Dam. Brown trout are well established in the reaches of the river that are in the study area; these reaches are also planted with rainbow trout and cutthroat trout by the

Utah Division of Wildlife Resources. There are no known native populations of Bonneville cutthroat trout in any of the alternatives' footprints. This species is limited to the upper reaches of the Logan River and is not known to have any established populations below Third Dam.

***Fringed myotis (Myotis thysanodes): State species of concern.*** This bat inhabits caves, mines, and old buildings during the day and forages only in the evenings and at night. Potential habitat exists in the study area, and one individual was collected close to the study area.

**Effects Determination: Not likely to affect.** No populations or reproductive habitat exist within any of the alternatives' footprints. Because this species is active only in the evenings and at night, daytime construction is not expected to affect this species.

Although bats require available open water for drinking during foraging, the Logan River is close by and likely provides the primary source of open water for foraging bats active in Logan Canyon. The loss of the open canal in Logan Canyon is unlikely to adversely affect bat species. Compared to a concrete canal, the Logan River is a more likely source of night-flying insects, since it provides aquatic and riparian habitat for such species.

***Townsend's big-eared bat (Corynorhinus townsendii): State species of concern.*** This bat inhabits caves, mines, and old buildings during the day and forages only in the evenings and at night. Potential habitat exists in Logan Canyon, but it is unknown if a population of this bat resides in the study area. One sighting has been recorded for this species in lower Logan Canyon.

**Effects Determination: Not likely to affect.** No populations or reproductive habitat exist within any of the alternatives' footprints. There is a known hibernaculum for this species close to the LHPS Canal in Logan Canyon in an abandoned pipeline. This structure is above and well outside the anticipated reconstructed canal footprint and construction work area and therefore would not be affected by any of the alternatives. Because this species is active only in the evenings and at night, daytime construction is not expected to affect this species. Although bats require available open water for drinking during foraging, the Logan River is close by and likely provides the primary source of open water for foraging bats active in Logan Canyon. The loss of the open canal in Logan Canyon is unlikely to adversely affect bat species. Compared to a concrete canal, the Logan River is a more likely source of night-flying insects, since it provides aquatic and riparian habitat for such species.

***Great Plains toad (Bufo cognatus): State species of concern.*** The Great Plains toad inhabits a variety of open habitats including deserts, grasslands, and agricultural land. The duration and timing of this species' activity outside its burrow depends on the wetness of the area it lives in; sites by water allow longer daytime and seasonal activity. Potential habitat exists in or near the study area, though the species' distribution might not extend to Cache Valley.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints. Any canal banks that are not lined with concrete or other impervious materials are highly compacted with gravel and other materials to minimize

leakage, so they are not viable burrowing areas for toads. Any construction at the PODs would not affect riparian wetlands, and heavy equipment would be staged and operated away from the existing, adjacent roadbed or other constructed surface.

**Western toad (*Bufo boreas*): State species of concern.** The western toad lives in a wide variety of habitats and elevations but primarily in native habitats closely associated with aquatic sites such as ponds, streams, lakes, and slow-moving rivers with riparian wetlands. Potential habitat exists in Logan Canyon and parts of the Logan River in the study area. There is one historic record (90 years ago) for this species in the study area.

**Effects Determination: Not likely to affect.** No populations or burrowing habitat exist within any of the alternatives' footprints. Any canal banks that are not lined with concrete or other impervious materials are highly compacted with gravel and other materials to minimize leakage, so they are not viable burrowing areas for toads. Any construction at the PODs would not affect riparian wetlands, and heavy equipment would be staged and operated away from the existing, adjacent roadbed or other constructed surface.

## 4.0 USFS Sensitive Species

This section describes USFS sensitive species. The entire list of sensitive species for the Uinta-Wasatch-Cache National Forest includes many more species than the ones described below. The project biologists investigated the entire list, but only those species with some potential to be present in or near the study area are analyzed in this memorandum.

USFS also identifies some species discussed above in Sections 2.0 and 3.0 as sensitive, but the descriptions of and potential effects on those species are not repeated here. Table 1 on page 11 summarizes the different status designations for all species discussed in this memorandum.

**Peregrine falcon (*Falco peregrinus*): USFS sensitive species.** The peregrine falcon nests primarily on remote cliffs in a variety of habitats but also sometimes in trees or tall buildings. Potential habitat exists in Logan Canyon, and one observation was recorded in the Second Dam area of Logan Canyon.

**Effects Determination: No effect.** No populations or nesting habitat exist within any of the alternatives' footprints. Any foraging individuals in lower Logan Canyon or the eastern foothills of Cache Valley would likely avoid the alternatives' footprints in Logan Canyon while construction operations are underway.

**Cache beardtongue (*Penstemon compactus*): USFS sensitive species.** This small penstemon, which is endemic to the Bear River Range in Utah and Idaho, grows in mixed mountain shrub and coniferous communities in areas of limestone and dolomite parent material at higher elevations (7,000 to 9,800 feet). There is one historic record (over 70 years ago) for this species in the study area by Second Dam along with potential habitat in other areas of Logan Canyon, mostly above 7,000 feet in elevation.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints. Limestone extends into the alternatives' footprint in Logan Canyon, but the elevation is too low and the plant community is not appropriate for the area to be Cache beardtongue habitat.

***Cronquist daisy (Erigeron cronquistii): USFS sensitive species.*** This rare daisy grows on limestone cliffs and talus slopes between about 5,700 and nearly 10,000 feet in elevation. There is potential habitat in the Logan Canyon part of the study area.

**Effects Determination: Not likely to affect.** No populations exist within any of the alternatives' footprints. Although there are limestone areas close to the alternatives' footprints, the elevation and exposure of these areas makes them borderline habitat for this species.

***Frank Smith violet (Viola frank-smithii): USFS sensitive species.*** The recently discovered and described Frank Smith violet has been found only in cracks and crevices in limestone and dolomite outcrops in cool, moist, and shaded areas in Logan Canyon and its side canyons. The closest documented location is over a mile up-canyon from the study area, but there is some limited potential habitat closer to the study area.

**Effects Determination: No effect.** No populations or habitat exist within any of the alternatives' footprints. All rock outcrops close to the LHPS Canal in Logan Canyon are too exposed, dry, and south-facing for this species.

***Logan buckwheat (Eriogonum loganum): USFS sensitive species.*** Logan buckwheat is a Utah endemic species found in mountainous areas of Cache, Rich, and Morgan Counties. This species grows in limestone outcrops and sagebrush-bunchgrass communities between about 4,800 and 7,800 feet in elevation. There are at least two populations in the study area on the north side of the mouth of Logan Canyon and a third, historic population (over 25 years ago) south of Utah State University (USU) on the university bench slope. Other potential habitat also exists in the study area in Logan Canyon.

**Effects Determination: Not likely to adversely affect.** Known populations and habitat exist close to both the Purple and Orange Alternatives' footprints. Before any construction operations could begin on either of these alternatives and before machinery is moved into the area surrounding the LHPS Canal in Logan Canyon, the locations of the existing populations of this species would need to be located, flagged, and fenced off if they are within or immediately adjacent to the construction zone. If protection measures are provided as part of the project or as mitigation for potential effects and are adopted as part of the preferred alternative, there should be no adverse effect to Logan buckwheat.

## 5.0 Management Indicator Species

The study area supports two MIS: Bonneville cutthroat trout and American beaver. The Bonneville cutthroat trout is discussed above in Section 3.0, Candidate, State Sensitive, and Conservation Agreement Species.

*American beaver (Castor canadensis): USFS MIS.* The American beaver lives in ponds, lakes, rivers, and streams and the riparian habitats associated with them. Healthy riparian communities with willows and cottonwoods are essential for providing food and lodge-building materials for the beaver. Because the channel of the Logan River through the study area is narrow and constrained where developments are not located, there is very little potential habitat for the American beaver.

**Effects Determination: No effect.** No populations, lodges, or adequate habitat exist within any of the alternatives' footprints. Any individuals traveling near the POD areas during construction activities would likely avoid the area while daytime operations are underway.

**Table 1. Summary of Special-Status Species Discussed in This Memorandum**

| Species   | Status   | Potential Effect               |
|---|--|--------------------------------|
| <b>Plants</b>   |  |                                |
| Maguire's primrose ( <i>Primula maguirei</i> )              | ESA threatened, USFS sensitive   | No effect                      |
| Ute ladies'-tresses ( <i>Spiranthes diluvialis</i> )        | ESA threatened, USFS sensitive   | No effect                      |
| Cache beardtongue ( <i>Penstemon compactus</i> )            | USFS sensitive   | No effect                      |
| Cronquist daisy ( <i>Erigeron cronquistii</i> )             | USFS sensitive   | Not likely to affect           |
| Frank Smith violet ( <i>Viola frank-smithii</i> )           | USFS sensitive   | No effect                      |
| Logan buckwheat ( <i>Eriogonum loganum</i> )                | USFS sensitive   | Not likely to adversely affect |
| <b>Mammals</b>  |  |                                |
| Canada lynx ( <i>Lynx canadensis</i> )                      | ESA threatened   | No effect                      |
| Fringed myotis ( <i>Myotis thysanodes</i> )                 | State species of concern   | Not likely to affect           |
| Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> ) | State species of concern, USFS sensitive (subspecies <i>townsendii</i> ) | Not likely to affect           |
| American beaver ( <i>Castor canadensis</i> )                | USFS MIS   | No effect                      |
| <b>Reptiles and Amphibians</b>                              |  |                                |
| Great Plains toad ( <i>Bufo cognatus</i> )                  | State species of concern   | No effect                      |
| Western toad ( <i>Bufo boreas</i> )                         | State species of concern, USFS sensitive                                 | Not likely to affect           |
| <b>Birds</b>  |  |                                |
| Greater sage grouse ( <i>Centrocercus urophasianus</i> )    | ESA candidate, USFS sensitive  | No effect                      |
| Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )         | ESA candidate, USFS sensitive  | No effect                      |
| Bald eagle ( <i>Haliaeetus leucocephalus</i> )              | State species of concern, USFS sensitive                                 | No effect                      |
| Bobolink ( <i>Dolichonyx oryzivorus</i> )                   | State species of concern   | No effect                      |
| Burrowing owl ( <i>Athene cunicularia</i> )                 | State species of concern   | No effect                      |
| Ferruginous hawk ( <i>Buteo regalis</i> )                   | State species of concern   | No effect                      |
| Grasshopper sparrow ( <i>Ammodramus savannarum</i> )        | State species of concern   | No effect                      |

**Table 1. Summary of Special-Status Species Discussed in This Memorandum**

| <b>Species</b>  | <b>Status</b>   | <b>Potential Effect</b> |
|---|---|-------------------------|
| Lewis's woodpecker ( <i>Melanerpes lewis</i> )                  | State species of concern  | No effect               |
| Long-billed curlew ( <i>Numenius americanus</i> )               | State species of concern  | No effect               |
| Sharp-tailed grouse ( <i>Tympanuchus phasianellus</i> )         | State species of concern, USFS sensitive (subspecies <i>columbianus</i> ) | No effect               |
| Short-eared owl ( <i>Asio flammeus</i> )                        | State species of concern  | No effect               |
| Peregrine falcon ( <i>Falco peregrinus</i> )                    | USFS sensitive  | No effect               |
| <b>Fish</b>   |   |                         |
| Bonneville cutthroat trout ( <i>Oncorhynchus clarkii utah</i> ) | Conservation agreement species, USFS sensitive, USFS MIS                  | No effect               |

Sources: UDWR 2010; USFS 2010a, 2010b, 2010c

## 6.0 General and Cited References

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- 2010c E-mail from Paul Chase of USFS to Michael Duncan of USFS and Sue Lee of HDR Engineering, Inc., regarding management indicator species in the Wasatch-Cache portion of the Uinta-Wasatch-Cache National Forest. October 1.

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