

3.12 WILDLIFE; THREATENED, ENDANGERED, AND CANDIDATE SPECIES; UTAH STATE SPECIES OF CONCERN

This section describes the wildlife resources, threatened and endangered species and special-status species that have the potential to occur in the project study area.

Threatened and endangered species and other special-status species include those recognized under state or federal authority as being of concern with regard to their long-term viability in the region. The regulatory setting and status classifications of these species are described in the following section.

3.12.1 Regulations and Methodology

The following federal and state laws guide regulatory authority over special-status plant and wildlife species that are known to occur or could potentially occur in the project study area and the regional study area.

3.12.1.1 Federal Regulations

Endangered Species Act (16 USC 1531 et seq.)

A 1973 federal law, the Endangered Species Act (ESA), amended in 1978 and 1982, was enacted to protect plant and animal species from extinction. The Endangered Species Act (16 USC 1531) for Federally Listed Species provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found.

Section 9 of the ESA makes it unlawful for a person to take a listed species, where *take* is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 USC 1532). *Harass* is defined as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50 Code of Federal Regulations [CFR] 17.3). *Harm* is an act that either kills or injures a listed species. Such an act may include habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 217.12). Habitat degradation can constitute a take, harassment or harm. Acceptable levels of incidental take may be allowed under the authorities of Sections 4(d), 7(b) and 10(a) of the ESA. US Fish and Wildlife Service (USFWS) is one of the federal agencies that administers the ESA and has primary responsibility for terrestrial and freshwater species.

Migratory Bird Treaty Act (16 USC 703–711)

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 701-715s) establishes protection for migratory birds and their parts (including eggs, nests, and feathers) from hunting, capture, or sale. A complete list of protected species is found in 50 CFR 10.13. Executive Order 13186, signed on January 10, 2001, directs federal actions that are likely to have a measurable negative effect on migratory birds to undertake a number of actions in support of the MBTA. One of these actions entails that federal agencies ensure that environmental analyses required by NEPA evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern.

Bald and Golden Eagle Protection Act (16 USC 668–668d)

The federal Bald and Golden Eagle Protection Act (BGEPA) provides for the protection of the Bald Eagle and the Golden Eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds, alive or dead, including any part, nest, or egg. The term "take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." The BGEPA is administered by the U.S. Department of the Interior.

Fish and Wildlife Conservation Act (16 USC 2901–2911)

The Fish and Wildlife Conservation Act, as amended, mandates that the USFWS identify migratory and non-migratory birds of the United States and its territories that, without additional conservation actions, are likely to become candidates for listing under the ESA. These species include ESA candidate, proposed endangered or threatened and recently de-listed species (U.S. Fish and Wildlife Service, 2002).

Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandated the USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conversation actions, are likely to become candidate species for listing under the Endangered Species Act of 1973. The USFWS recommends particular emphasis be given to species on the USFWS 2008 list of Birds of Conservation Concern (BCC).

3.12.1.2 State of Utah Regulations

The Utah Department of Natural Resources, Division of Wildlife Resources (UDWR) maintains a list of wildlife Conservation Agreement Species and Species of Concern (Utah Administrative Rule R657-48). Wildlife species that are federally listed, candidates for listing, or for which a conservation agreement is in place automatically qualify for the Utah Sensitive Species List (Utah Division of Wildlife Resources, 2006). The restricted distributions, specialized habitat requirements, and population pressures (human induced and natural) of wildlife are contributing factors in their potential for federal listing. Sensitive species designations are intended to promote conservation actions that would ultimately prevent the species from being listed as threatened or endangered under the ESA.

3.12.1.3 Methodology

A Wildlife Technical Report was prepared by Intermountain Ecosystems to inventory and document wildlife and their habitat within the project study area. To identify wildlife species and their habitat, Intermountain Ecosystems conducted literature reviews, consulted with jurisdictional agencies (USFWS and UDWR), conducted field visits and surveys, and interpreted aerial photography and map resources.

Field visits and inventories were conducted in October 2007, May 2008, and February 2009. These visits included walking and driving through the project study area. For the May 2008 field visit, Intermountain Ecosystems walked the alternatives being considered as part of the NEPA process. Intermountain Ecosystems also covered an area 100 feet outside of the potential impact lines for each of the Midvalley Highway alternatives. Data were confirmed in the field and recorded using global positioning system (GPS) receivers and these data were added to geographic information system (GIS) databases. The resource data in the

GIS databases were then used to calculate the acreage of impacts to potential habitat from the Midvalley Highway alternatives. It should be noted that other wildlife species may be present within the project study area that were not observed during the field visits. In addition, the wetland delineation report was reviewed to determine possible habitats for wildlife species.

The loss of habitat was used to determine if the Midvalley Highway alternatives would have an impact to wildlife, threatened and endangered species, and Utah Sensitive Species. Habitat was identified for each of the species known to occur within the project study area. If the Midvalley Highway impacted a specific habitat, it was quantified and was discussed as habitat loss in this section. The impact to wildlife habitat was calculated within the potential right-of-way for the Midvalley Highway alternatives. Also, a discussion on potential indirect impacts to wildlife that could be a result of habitat fragmentation, highway mortality, and roadside pollution is discussed in this section.

3.12.2 Affected Environment

3.12.2.1 Description of Wildlife Habitat

The project study area is within the Great Basin Ecosystem (see Figure 1-1 in Chapter 1 – Purpose and Need). The project study area extends from south of Tooele City to I-80 on the north; and between SR-36 on the east to one-quarter mile west of Sheep Lane on the west.

Tooele Valley supports a variety of wildlife, ranging from big game ungulates to migratory shorebirds. Larger wildlife (such as elk and deer) are mainly found along the benches and upper regions of the Oquirrh and Stansbury Mountains. Typically, these are not found within the Midvalley Highway project study area.

A variety of water birds and other wildlife use the southern shore of the Great Salt Lake for nesting and foraging (Tooele County, 2004: page IV-8). These represent the majority of wildlife found within the project study area.

Plant Community

Vegetation within Tooele Valley includes cheatgrass, sagebrush, Gamble oak, oak, sand dropseed, saltgrass, and others associated with wetlands and the Great Salt Lake (Tooele County, 2004: XI-7). The Great Basin cool desert shrub community is the native upland plant community historically represented in the project study area. Greasewood (*Sarcobatus vermiculatus*) is the main component but it is limited in the project study area, and has been replaced mainly by the disclimax big rabbitbrush (*Chrysothamnus nauseosus*) and cheatgrass (*Bromus tectorum*). Portions of this native plant community have been converted to agricultural uses. These plant communities occur on the fringe of the Great Salt Lake, south of I-80 to approximately SR-138.

The cool desert shrub plant community is represented mainly north of SR-138. Plant communities south of SR-138 are mainly irrigated and non-irrigated rangelands of alfalfa and fallow fields occupied by tall wheatgrass (*Elymus longatus*), big rabbitbrush, and invasive annuals.

Wetlands

Wetland areas were identified within the project study area. Wetlands are discussed in

section 3.11 – Wetlands and Waters of the U.S. The majority of wetland communities exist north of SR-138; although several wetland areas have been identified east of the Tooele Valley Airport. No wetlands were identified south of Erda Way.

Wildlife habitat can be found within wetlands, depending on the types of vegetation and availability of water. Wetland plant communities consist mainly of saline wet meadows, marsh, and vegetated mineral flats. Fourteen wetland communities were delineated along the Midvalley Highway alternatives including wet meadow, vegetated mineral flat, and marsh type wetlands. In addition, waters of the U.S were identified at the Ezra Taft Canal and near the Great Salt Lake (I-80 interchange area).

Vegetation within these wetlands consists mainly of saltgrass (*Distichlis spicata*) Baltic rush (*Juncus balticus*), iodine bush (*Allenrolfea occidentalis*), Utah samphire (*Salicornia utahensis*), western seepweed (*Suaeda occidentalis*) and annual samphire (*Salicornia europea*). A complete list of wetland plant species is found in the *Wetland Delineation Report for the Tooele Midvalley Highway*.

Other wetland areas are located within the project study area but were not delineated as part of this project. The Special Area Management Plan (SAMP) was initiated by Tooele County; additional wetland areas were identified as shown in Table 3.12-1.

TABLE 3.12-1, WETLAND TYPE WITHIN THE PROJECT STUDY AREA IDENTIFIED BY THE SAMP

Wetland Cover Types (acres)			
Wet Meadow	Vegetated Mineral Flat	Marsh	Open Water
2,020	3,040	15	1,200

Riparian Habitat

Riparian habitats are those areas near rivers, streams, or other water sources with a differing density, diversity, and productivity of plant and wildlife species; it is the interface between land and a flowing surface water body. The only potential for riparian habitat exists along the Ezra Taft Irrigation Canal and other springs or seeps. However, as documented in the *Special Status Species Report* prepared for this project, there are no riparian habitats located within the Midvalley Highway project study area.

Agricultural Lands

Agricultural lands include those areas actively being used for the production of crops or used as rangeland. Within the project study area, crop producing lands exist largely between Erda Way and SR-138. Some crop lands exist directly south of Erda. Rangeland lands exist throughout the project study area as well.

3.12.2.2 Threatened, Endangered, and Candidate Species

Analysis identified two threatened and endangered species, and no candidate species, with the potential to exist within the project study area. These species are the Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) and Ute Ladies'-Tresses (*Spiranthes diluvialis*).

No suitable habitat exists within the project study area for either species.

3.12.2.3 Birds of Conservation Concern

Birds of conservation concern include those species that are likely to become candidates for listing under the ESA if no conservation activities are carried out. This list is managed by the U.S. Fish and Wildlife Service. All of the bird species are protected under the Migratory Bird Treaty Act (MBTA). The following lists species whose distribution includes the project study area, as indicated by the Utah Conservation Data Center species distribution map, even if no suitable habitat occurs within the study area's boundary.

Bald Eagle (*Haliaeetus leucocephalus*)

The Bald Eagle was removed from the list of threatened and endangered species on July 9, 2007 (72 FR 37346). USFWS will continue to monitor the Bald Eagle populations for a minimum of five years after this delisting, as required by the Endangered Species Act. The Bald Eagle will continue to be protected under the MBTA and the BGEPA. Bald Eagles are opportunistic feeders that forage on carrion and prey on a variety of mammals, birds, reptiles, amphibians, and crustaceans. In Utah, eagles arrive from Canada during October and November and return in March and early April. Bald Eagles do not nest within the project study area but are known to forage during the winter months near open water.

Brewer's Sparrow (*Spizella breweri*)

This species is considered sagebrush obligate which indicates its optimal habitat is sagebrush. Sagebrush is very limited in the project study area and most sagebrush communities have been converted to rangeland. The inventory did observe the Brewer's sparrow in scattered greasewood communities.

Burrowing Owl (*Athene cunicularia*)

Habitat includes desert valleys and grasslands. No suitable habitat found within the project study area.

Ferruginous Hawk (*Buteo regalis*)

Habitats include juniper and open desert grass and shrub lands. This species' nests tend to be elevated. Possible foraging areas within the project study area.

Greater Sage grouse (*Centrocercus urophasianus*)

No suitable habitat for this species is found within the project study area.

Green-tailed Towhee (*Pipilo chlorurus*)

No suitable habitat for this species is found within the project study area.

Golden Eagle (*Aquila chrysaetos*)

This raptor occurs in the project study area as a yearlong resident. This species was viewed near SR-138 and the 1200 West Freeway Alternative (removed from consideration) perching on right-of-way fences and utility poles. Their presence in the project study area is related to hunting activity since they normally nest in precipitous areas, located east of the project study area. The golden eagle is protected by the Bald and Golden Eagle Protection Act of 1978.

Logger-head Shrike (*Lanius ludovicianus*)

The species is a common year-round resident of Utah where it prefers grasslands, rangelands and desert scrub habitats. It was observed twice during the inventory in greasewood scrub between I-80 and SR-138.

Long-billed curlew (*Numenius americanus*)

Suitable habitat found within the project study area in wet meadow type wetlands. This species was observed by the USFWS within the project study area.

Marbled Godwit (*Limosa fedoa*)

Suitable habitat found within the project study area includes meadows, marshes, and pastures.

Sage Sparrow (*Amphispiza belli*)

This species is considered a sagebrush obligate. Sagebrush is very limited in the project study area and most sagebrush communities have been converted to rangeland. The inventory did not observe the sage sparrow in the project study area.

Sage Thrasher (*Oreoscoptes montanus*)

Suitable habitat within the project study area includes greasewood areas.

Snowy Plover (*Charadrius alexandrines*)

The Snowy Plover is a shorebird found near the Great Salt Lake. Beaches, ponds, and shorelines are the preferred habitats of this species.

Other Birds of Conservation Concern not found within the Project Study Area

The birds of conservation concern includes other bird species whose distribution does not include the project study area, as indicated by the Utah Conservation Data Center species distribution map. These bird species include:

- Eared Grebe;
- Yellow Rail;
- Flammulated Owl;
- Black Swift;
- Calliope Hummingbird;
- Lewis's Woodpecker;
- Peregrine Falcon;
- Pinyon Jay;
- Williamson's Sapsucker;
- White-headed Woodpecker;
- Willow Flycatcher;
- Virginia's Warbler;

- Black-chinned Sparrow;
- Tricolored Blackbird; and
- Black Rosy-Finch.

3.12.2.4 Utah State Species of Concern

Wildlife species that are federally listed, candidates for listing, or for which a conservation agreement is in place automatically qualify for the Utah Sensitive Species List (Utah Division of Wildlife Resources, 2006). Other species on the Utah State Sensitive Species List are those for which there is scientific evidence to substantiate a threat to continued population viability in the state. Sensitive species designations are intended to promote conservation actions that would ultimately prevent the species from being listed as threatened or endangered under the ESA. Therefore, the species listed under Threatened and Endangered Species are not repeated here. All of the bird species are protected under the MBTA.

American White Pelican (*Pelecanus erythrorhynchos*)

Suitable habitat is found at Gunnison Island within the Great Salt Lake. This species is not within the project study area.

Grasshopper Sparrow (*Ammodramus savannarum*)

Suitable habitat is limited within the project study area.

Short-eared owl (*Asio flammeus*)

Suitable habitat found within the project study area in open rangelands and marsh type wetlands.

Columbia Spotted Frog (*Rana luteiventris*)

Limited suitable habitat found within the project study area. This species is not likely to occur within the project study area.

Kit Fox (*Vulpes macrotis*)

No kit fox dens were located in the project study area; however, there is suitable foraging habitat within the project study area in vegetated flat areas that contain greasewood shrub communities.

Pygmy rabbit (*Brachylagus idahoensis*)

No suitable habitat found within the project study area.

Townsend big-eared bat (*Corynorhinus townsendii*)

Possible foraging habitat found within the project study area; no suitable habitat for nesting.

3.12.2.5 Other Wildlife Species

Other wildlife species not discussed above are described in this section. The species described below are those that were either observed during the field visits for the wildlife survey or are known to occur within the project study area. All of the bird species are

protected under the MBTA.

American Avocet (*Rescurvirostra americana*)

This species nests and forages in wet meadow type wetlands (saline in nature) within the project study area. The inventory located nesting sites along dikes where shallow freshwater wetlands are present, just south of SR-138.

Black-necked Stilt (*Himantopus mexicanus*)

This species nests and forages in wet meadow type wetlands in the project study area. It was located within shallow water meadows (wet meadow type wetlands) and depressions along alternatives just south of I-80 (potential interchange) and both north and south of SR-138.

Northern Harrier (*Circus cyaneus*)

The “marsh hawk” was observed foraging in wetland habitats and in moist rangelands throughout the project study area. This species is common in wetland and rangelands throughout the west. Currently, it is not listed on any sensitive species lists.

Mule Deer (*Odocoileus hemionus*)

The mule deer is a common species within the State of Utah; its habitat ranges from open desert to high mountains and even in urban areas. Mule deer often migrate from high mountainous areas in the summer to lower elevations in the winter to avoid deep snow. They eat shrubs, grasses, and other woody material.

Red-tailed Hawk (*Buteo jamaicensis*)

The red-tailed hawk occurs statewide in Utah. Its habitat is frequently found in open areas including agricultural areas, rangeland and where trees or other elevated perches are available. The red-tailed hawk usually hunts from high perches, capturing rodents, rabbits, birds, and reptiles.

Other small animals

There are a number of smaller animals that live and forage within the project study area. These include, but are not limited to, rabbits, raccoons, porcupines, foxes, mice, and other small mammals.

3.12.3 Environmental Consequences

The Midvalley Highway project may impact potential habitat for Birds of Conservation Concern and other wildlife species. This section discusses the potential direct and indirect impacts to wildlife species and their habitats.

3.12.3.1 No Build Alternative

The No Build Alternative would not impact any identified wildlife species or their habitat. However, as the area continues to convert from agricultural uses to commercial and industrial uses, undeveloped lands or agricultural properties would be lost (see section 3.19.5.7 – Cumulative Impacts for Wildlife).

3.12.3.2 Midvalley Highway East and Midvalley Highway West Alternatives

This section discusses the effects to wildlife species resulting from either of the Midvalley Highway alternatives.

Threatened, Endangered, and Candidate Species

The determination of the project effects for federally listed threatened, endangered, or candidate species considered the anticipated impacts of the Midvalley Highway alternatives on the four species and their habitat. The USFWS commented that there are no listed Threatened or Endangered Species within the project study area (see Appendix A). The Midvalley Highway would have a 'no effect' on the two federally listed threatened, endangered, or candidate species.

Birds of Conservation Concern, Utah State Species of Concern, and Other Wildlife Species

The build alternatives have the potential to directly impact wildlife species through the loss of suitable habitat. Habitat loss is caused by the conversion of wildlife habitat to roadway uses. The Midvalley Highway alternatives would impact two potential habitat types; wetlands and uplands. For this analysis, upland habitats were defined to include vacant lands and agricultural lands (irrigated cropland, rangeland, and pastures). The potential impact to each habitat is discussed below.

Wetland Habitats

Wetland habitats are generally located between SR-138 and I-80 (see Figure 3.11-1). Some wetland areas are also found east of the Tooele Valley Airport. Several of the wildlife species within the project study area are known to use wetlands for nesting and foraging. Table 3.12-2 summarizes the anticipated wetland impacts of the two Midvalley Highway alternatives and provides a summary of the available potential wetland habitats within the project study area. Section 3.11 – Wetlands and Waters of the U.S. provides additional information regarding direct impacts to specific wetland areas.

TABLE 3.12-2, SUMMARY OF IMPACTS TO WETLANDS AND AVAILABLE WETLANDS

	Impacted Wetland Habitat by Type			TOTAL (acres)
	Wet Meadow	Vegetated Mineral Flat	Marsh	
Midvalley Highway East (both options)	15.60	7.84	0.10	23.90 impact
Midvalley Highway West Option A	0.51	11.92	0.10	12.86 impact
Midvalley Highway West Option B	0.48	11.41	0.05	11.94 impact
<i>Available Wetlands within the Project Study Area</i>	<i>2,020</i>	<i>3,040</i>	<i>15</i>	<i>5,075 available</i>

In addition to the potential wetland habitat impacts, the Midvalley Highway alternatives would also impact approximately one acre of open water (considered waters of the U.S.). This direct impact would occur at the Ezra Taft Canal which is crossed by the Midvalley

Highway alternatives at the I-80 interchange (see Figure 3.11-1).

As shown in Table 3.12-2, there are approximately 5,075 acres of existing, potential wetland habitats within the project study area. In addition, there are approximately 1,200 acres of open water. These acreages were calculated from the Special Area Management Plan (draft October 2006).

This direct wetland impact would be less than 0.5 percent of the total potential wetland habitat currently existing within the project study area (between 11.94 and 23.90 acres). These direct impacts are minor compared to the overall acreages of potential wetland habitats found within the project study area.

There are over 1,200 acres of open water within the project study area. The direct impact to open water is minor with less than 0.08 percent being impacted by the Midvalley Highway alternatives.

Overall, the direct impacts to potential wetland habitat and open water would be a minor portion of the total available habitats within the project study area.

Upland Habitats

Uplands are important to several of the wildlife species found within the project study area. Table 3.12-3 summarizes the anticipated impacts of the two Midvalley Highway alternatives on upland habitats within the study area. Upland habitat extends well beyond the project study area.

TABLE 3.12-3, SUMMARY OF IMPACTS TO UPLANDS

	Impacted Upland Habitat
Midvalley Highway East Option A	308 acres
Midvalley Highway East Option B	315 acres
Midvalley Highway West Option A	233 acres
Midvalley Highway West Option B	288 acres
<i>Available Uplands within the Project Study Area</i>	<i>11,100 acres</i>

As shown in Table 3.12-3, there are approximately 11,100 acres of upland habitat within the project study area. The direct impact to upland habitat in the study area would be approximately 3 percent (between 233 and 315 acres). The direct impacts would be minor compared to the total upland habitat found within the project study area.

Table 3.12-4 lists the species likely to occur or known to occur within the project study area and the anticipated impact to each of their habitats.

TABLE 3.12-4, POTENTIAL IMPACTS TO BIRDS OF CONSERVATION CONCERN, UTAH STATE SPECIES OF CONCERN, AND OTHER WILDLIFE SPECIES WITHIN THE PROJECT STUDY AREA

Species (Scientific Name)	Proposed Action's Effects
Birds of Conservation Concern	
Golden Eagle (<i>Aquila chrysaetos</i>)	This species is likely to forage, but not nest, within the project study area. No known nesting sites would be impacted by the Midvalley Highway alternatives.
Logger-head Shrike (<i>Lanius ludovicianus</i>)	This species is likely to occur within the upland areas. As such, direct impacts would be consistent with the impacts to upland habitat described above.
Long-billed curlew (<i>Numenius americanus</i>)	Habitat includes upland meadows, wetlands, and agricultural lands found within the project study area. As such, direct impacts would be consistent with the impacts to upland and wetland habitats described above.
Utah State Species of Concern	
Short-eared owl (<i>Asio flammeus</i>)	Suitable habitat includes uplands (mainly rangelands) and marsh type wetlands. As such, direct impacts would be consistent with the impacts to upland and wetland habitats described above. No known nesting sites would be impacted by the Midvalley Highway alternatives.
Kit Fox (<i>Vulpes macrotis</i>)	Suitable habitat includes flat shrub and greasewood. As such, direct impacts would be consistent with the impacts to upland habitat described above.
Other Wildlife Species	
American Avocet (<i>Recurvirostra Americana</i>)	This species nests and forages within all types of wetlands found within the project study area. Therefore, direct impacts would be consistent with the impacts to wetland habitats described above. No known nesting sites would be impacted by the Midvalley Highway alternatives.
Black-necked Stilt (<i>Himantopus mexicanus</i>)	This species nests and forages within marsh and playa type wetlands (salt ponds, potholes, or shallow alkaline). Therefore, direct impacts would be consistent with the impacts to wetland habitats described above.
Northern Harrier (<i>Circus cyaneus</i>)	This species is likely to occur within wetlands. Therefore, direct impacts would be consistent with the impacts to wetland habitats described above.
Mule Deer (<i>Odocoileus hemionus</i>)	This species is likely to occur within upland and wetland habitats. Therefore, direct impacts would be consistent with the impacts to upland and wetland habitats described above.

TABLE 3.12-4, POTENTIAL IMPACTS TO BIRDS OF CONSERVATION CONCERN, UTAH STATE SPECIES OF CONCERN, AND OTHER WILDLIFE SPECIES WITHIN THE PROJECT STUDY AREA

Species (Scientific Name)	Proposed Action's Effects
Red-tailed Hawk (<i>Buteo jamaicensis</i>)	This species is likely to hunt in upland habitats. Therefore, direct impacts would be consistent with the upland habitats described above. One Red-tailed Hawk nest was found within the project study area located approximately 900 feet east of the Midvalley Highway East Alternative (both options). Although some trees may need to be removed as part of a build alternative, the nest would not be directly impacted by this alternative. However, the USFWS recommends that a ½ mile buffer be placed around active nests during the breeding season.
Other Small Animals	Other small animals are likely to occur throughout the project study area. Therefore, direct impacts would be consistent with the impacts to wetland and upland habitats described above.

Summary of Impacts to Wildlife

The Midvalley Highway has limited potential to directly impact wildlife. As described above, the direct impact to wetland and upland habitats are a small percentage of the existing habitats within the study area.

The Midvalley Highway would directly impact between 11.90 and 23.90 acres of wetlands depending on alternative and option (see section 3.11 – Wetlands and Waters of the U.S.). There are over 5,000 acres of wetlands within the project study area. The expected wetland impact is less than 0.5 percent of the total wetland area. Other potential habitat impacts include uplands. There are over 11,100 acres of uplands within the project study area which are considered upland habitat. The Midvalley Highway alternatives would impact less than 3% of the available uplands found within the project study area. The direct impacts to wetland or upland habitats are not anticipated to adversely affect any of the wildlife species known to occur or likely to occur within the project study area.

Other potential impacts to wildlife habitat could be indirect or cumulative in nature. An example of an indirect impact would be if, a build alternative impacted some species through influencing their normal foraging, nesting and reproductive behavior. Cumulative impacts related to the expected development of the agricultural and vacant lands are discussed in section 3.19.

3.12.3.3 Indirect Impacts

The indirect impact analysis discusses habitat fragmentation, highway mortality, higher levels of roadside pollution, and higher noise levels and their potential indirect impacts on wildlife. The potential impact of each of these indirect effects would vary by species. For the species known to occur or likely to occur in the project study area, it is unknown what, if any, indirect impacts (in the form of habitat fragmentation, highway mortality, roadside pollution or noise levels) would result from the Midvalley Highway build alternatives. Given the nature of extant data, quantifying indirect impacts is currently not possible. Therefore, this section provides a qualitative discussion of the potential for indirect impacts to wildlife.

Habitat Fragmentation

Habitat fragmentation is the process by which wildlife habitats are subdivided into smaller units, resulting in their increased insularity as well as losses of total habitat area. For the Midvalley Highway, some species may be indirectly impacted by habitat fragmentation that would result if the highway separates suitable wildlife habitats. Habitat fragmentation can have potential adverse effects to wildlife by reducing connectivity between habitats and reducing the carrying capacity for species whose habitat is impacted by the highway. Also, habitat fragmentation has the potential to reduce animal migrations and could affect the dispersal of plants and non-mobile animals.

The Midvalley Highway would most likely fragment some wildlife habitat. As each species' have different habitats and respond differently to disturbances, the extent of this habitat fragmentation impact is difficult to quantify. Additionally, since the wildlife habitats extend well beyond the limits of the project study area, any habitat fragmentation impact would be different for each species known to occur or likely to occur in the project study area. The wildlife habitat within the project study area includes the different kind's wetlands (wet meadow, vegetated mineral flats, and marshes), upland areas, and pastures/rangelands.

For the Midvalley Highway, habitat fragmentation would be more likely to affect larger, terrestrial animals such as ungulates and small animals whose range includes a larger area. Birds are likely less affected by habitat fragmentation since they can fly between habitats. Due to the limited numbers of ungulates (mule deer) and smaller animals that use and live in the project area, fragmentation from the Midvalley Highway alternatives would have minimal impacts to these species. The Midvalley Highway alternatives are north-south roadways, which could make it difficult for animals that traditionally move east to west or west to east. The species that are known to exist or likely to exist in the study area are predominantly birds or small terrestrial animals. It is not known which, if any, of these species' migration patterns or existing habitats would be impacted by the Midvalley Highway build alternatives. However, with either Midvalley Highway alternative, large acreages of suitable habitat would still exist and be accessible to these species on both sides of the alternative. Therefore, it is anticipated that there would be minimal indirect affects to wildlife species from habitat fragmentation.

Highway Mortality

Wildlife habitats in an ecosystem provide areas for nesting, feeding, and refuge for wildlife species. Movement within ecosystems is necessary for many species. Although many of the species found in the project study area can fly to access their ranges, the freeway would likely restrict some of this movement, with the effect likely being more pronounced for terrestrial species. An increased amount of mortality, regardless of their mobility, is a potential result of the Midvalley Highway.

The potential highway mortality would likely be more pronounced on small animals such as rabbits, raccoons, hawks, geese, ducks, sparrows, and other animals and birds within the project study area. There would also potentially be some loss of ungulates (mule deer) from highway mortality. In addition, mortality of livestock and other domesticated animals could potentially increase as a result of the Midvalley Highway.

Higher Levels of Roadside Pollution

Where wildlife habitat is located adjacent to a freeway, increased levels of various airborne

and waterborne pollutants could be expected. These pollutants could potentially degrade the quality of wildlife habitat near the highway. However, waterborne pollutants will be collected in ditches and carried to detention ponds. Similarly, concentrations of airborne pollutants are generally undetectable a short distance away from highway facilities. As such, the potential indirect roadside pollution impact to wildlife habitat is anticipated to be minor and contained within the right-of-way for the Midvalley Highway.

Higher Noise Levels

Noise levels from the Midvalley Highway would increase by up to 20 dBA from existing levels, depending on the distance from the highway, topography, and other factors as described in section 3.8 – Noise. It is not known exactly how highway noise would affect the local density and reproductive capacity of individual wildlife species known to occur or likely to occur in the project study area. Noise sensitive species may leave the affected area near the highway while others could experience a reduction in reproductive success. Other species may be completely unaffected by the noise.

For noise sensitive species, noise impacts could cause an overall reduction in habitat size, reduce connectivity between habitats, and introduce barriers to dispersal. The reduction of habitat could decrease the habitat resources available to some wildlife species. These changes could reduce the ecological buffering capacity of the habitat blocks. However, noise from adjacent roads, the Tooele Valley Airport, agricultural operations, and increased human activity are expected to increase over time. Wildlife within the area would most likely adapt to higher noise levels or have to move away from the highway. The future No Build Alternative noise levels would range between 55-65 dBA depending on location. The future noise levels for the Midvalley Highway are expected to range between 55-70 dBA, with the loudest areas being located immediately adjacent to the Midvalley Highway facility. Therefore, the impact due to increased noise would be minimal.

3.12.4 Mitigation

The Midvalley Highway alternatives would possibly have a direct impact to potential wildlife habitat. In addition, the Midvalley Highway would potentially have an indirect impact to certain wildlife species through habitat fragmentation, increased highway mortality, higher levels of roadside pollution, and higher noise levels.

The Utah Department of Transportation, the Federal Highway Administration, and Tooele County will continue to coordinate with the U.S. Fish and Wildlife Service to develop reasonable, proportional mitigation to offset the potential impacts to wildlife. Coordination will continue through the National Environmental Policy Act process, design, and construction.

The Midvalley Highway will minimize impacts to wildlife by adhering to the following:

- The landscape concept for the Midvalley Highway will include low-maintenance, low-wildlife-forage-value plant materials to avoid attracting wildlife to the right-of-way;
- As practical, UDOT and Tooele County will ensure that the clearing and grubbing activities be limited during the non-nesting season of migratory bird species (approximately September 1 – April 30). If this is not possible, UDOT and Tooele County will conduct surveys to determine whether active nests are present; active nests found in the area should be left untouched until the young have fledged;

- Raptor nests within the range of disturbance of project activities (refer to the USFWS Utah *Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* [2002]) will be surveyed prior to construction activity if the construction will occur during the nesting season. If an active raptor nest is identified, UDOT and Tooele County will coordinate with the USFWS to determine appropriate buffer distances and duration given the species and nest location;
- The design and construction will minimize the removal of vegetation where possible.



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