

2024 Plan Update

Implementation of Secretarial Order 3362

Wildlife Migration Initiative



UTAH ACTION PLAN

Prepared by Utah Division of Wildlife Resources

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INTRODUCTION

In 2018, Department of Interior (DOI) Secretary Ryan Zinke signed Secretarial Order 3362 (SO 3362) at the Western Hunting and Conservation Expo in Salt Lake City (Appendix A). SO 3362 directs the bureaus within DOI to collaborate and work closely with the respective state wildlife agency to improve migration corridors and winter ranges for mule deer, pronghorn, and elk in the western United States. The states have direct responsibility and jurisdiction for the management of big game and the Order recognizes this as well as the rights of private landowners. The purpose of this action plan is to describe habitat and research needs in Utah for the species described in SO 3362.

Utah has approximately 52,696,960 total acres, 33,275,132 or 63% of which are under the management authority of the federal government (Appendix B). The Bureau of Land Management (BLM) manages 22,882,950 acres; the US Forest Service (USFS) manages 8,178,600 acres; and the National Park Service (NPS) manages 2,022,600 acres. The Department of Defense and others make up the rest of federal ownership. The State of Utah owns 3,824,800 acres, and private lands are weaved throughout these other ownerships. This ownership structure requires cooperative partnerships to work across all the habitat categories and ownerships for big game species.

Utah is currently one of the fastest growing states in the country, and the state's population is projected to nearly double in the next 50 years. Population growth is resulting in significant changes to the landscape as roads are built and expanded, housing developments are constructed, and water is diverted to accommodate growth. Without careful planning and active mitigation efforts, these changes to Utah's landscape could have real and lasting consequences for big game and other wildlife species, some of which may not easily be undone in the future. Rapid change can result in the degradation, fragmentation, and in some cases the complete loss of wildlife habitat.

Wildlife movement data are critical to the conservation of big game populations, because the data are used to define the habitats animals use and the corridors that link seasonal habitats. Movement data, however, are often missing from planning efforts, because for most species little is known about their movement patterns.

Between 2018 and 2023, SO 3362 provided funding to document the movements of mule deer in five areas (Eagle Mountain, Interstate 80 and 84 Corridor, US-89 and SR-9 Corridor, and US-6 Corridor) in Utah. This investment is already paying dividends. Data generated by these projects are used to describe migration corridors and winter range use in those populations and create a list of needs that would improve the management and health of these populations. Additionally,

one new research priority (US-40 Corridor) has been identified that will further our understanding and conservation needs of big game in this part of the state.

MIGRATION INITIATIVE BACKGROUND

The Utah Wildlife Migration Initiative's (WMI) mission is to document, preserve, and enhance wildlife movement for species throughout Utah using state-of-the art tracking and data management technologies, strong partnerships, and compelling outreach.

To achieve the critical mission, there are several goals and objectives identified for the WMI, including:

- I. Develop an unrivaled effort to document wildlife movement and habitat use
 - A. Document wildlife movement using state-of-the-art tracking technology
 - B. Map movement corridors and seasonal ranges
 - C. Inventory movement corridors for barriers
- II. Form strong partnerships
 - A. Meet with agencies, groups, and individuals to form partnerships
 - B. Develop formal agreement with partners

MIGRATION MAPPING

Brownian Bridge Movement models are run to generate migration corridors. Migration corridors for mule deer have been completed for 28 areas in Utah. Utah is working closely with the USGS Corridor Mapping Team to provide updates from Utah's deer herds for inclusion into Volume 6 of the Ungulate Migrations of the Western United States report series.

Utah Migration Corridor Mapping data from 2016-2022

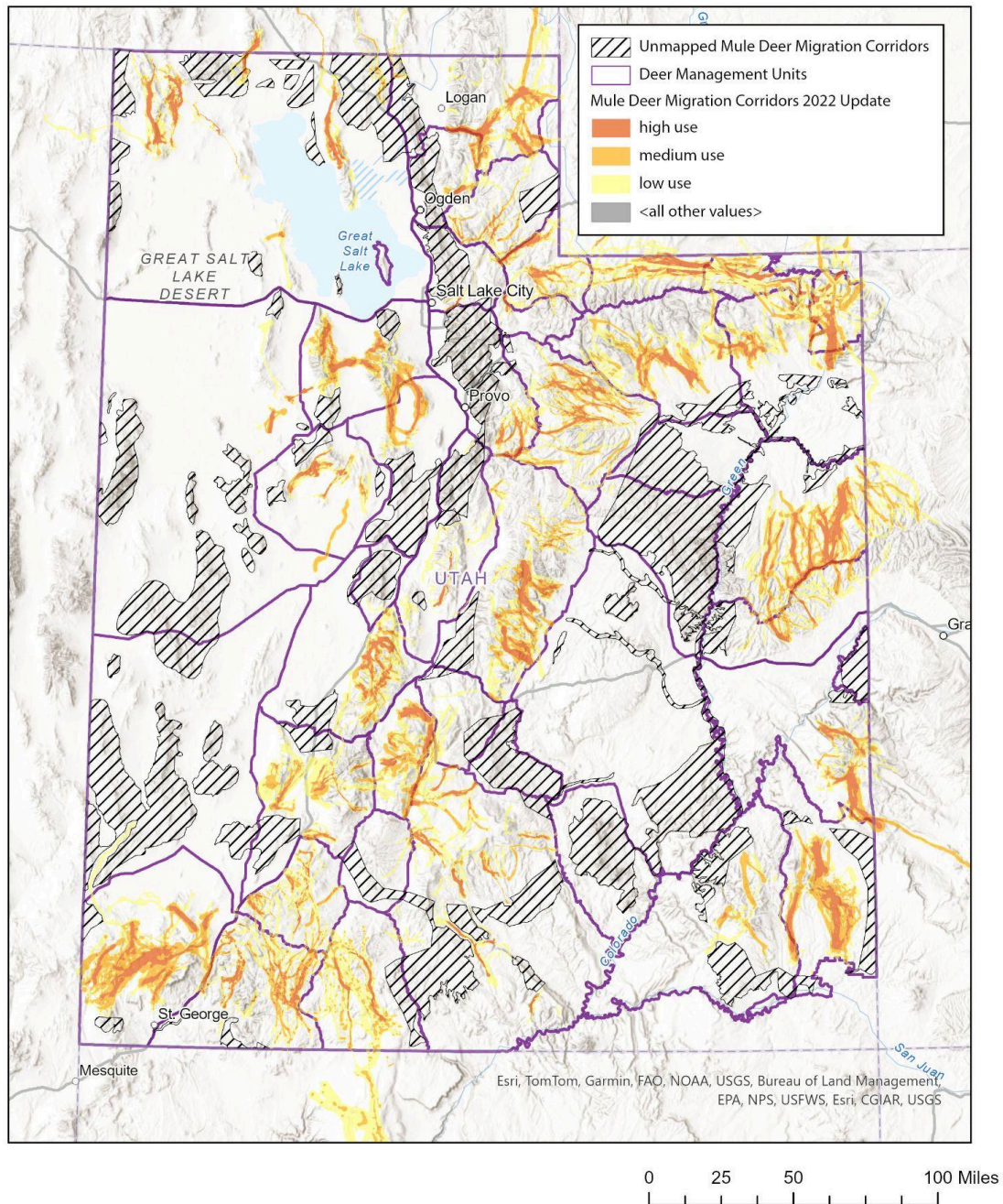


Figure 1. Mule deer mapped and unmapped migration corridors using collar data from 2016-2023

Capture Area	Herd Size	Collar Number	DateRange
West Desert	9000	29	2016 - 2019
Wasatch Manti	61400	130	2016 - 2019
Monroe	5200	79	2016 - 2019
Cache	14100	142	2016 - 2019
Uinta South Slope	8850	102	2016 - 2019
Beaver	10300	47	2016 - 2021
Oquirrh-Stansbury	10000	90	2016 - 2021
San Juan	11750	140	2016 - 2021
Pine Valley	19500	138	2016 - 2021
Fillmore	6500	21	2016 - 2021
Chalk Creek	9100	63	2016 - 2022
Paunsaugunt	4500	75	2017 - 2019
Ogden	8600	9	2017 - 2019
Book Cliffs	4550	145	2018 - 2019
Kamas	7400	8	2018 - 2019
Morgan-South Rich	10000	39	2018 - 2021
North Slope	5800	101	2018 - 2021
Nebo	14200	9	2018 - 2021
Panguitch	10100	42	2018 -2021
Zion	18000	82	2019 - 2022
Boulder	7000	84	2019 - 2022
Eagle Mountain	2900	40	2019 -2021
Dugway	9000	7	2019 -2021
La Sal	6500	68	2020 - 2021
Kaiparowits	400	12	2020 - 2021
Wasatch East	11800	90	2020 - 2022
Box Elder	10100	95	2020 - 2023
East Canyon	12800	10	2020 -2021

Table 1. Capture areas, number of collars, and years of data used to create migration corridors

Ongoing:

During the 2025 fiscal year, Utah will be updating migration corridor information for existing units as well as mapping new corridors for mule deer.

Utah has contributed herd information for Volumes 2, 3, and 4 of the Ungulate Migrations of the Western United States report series. Utah is planning to update Volume 6 with the following areas: Beaver, Box Elder, Cache, Chalk Creek, La Sal, Monroe, Oquirrh Stansbury, Panguitch, Pine Valley, South Slope.

Future:

The following future activities surrounding migration mapping will occur in Utah over the next 5 years:

- Identify data gaps and prioritize areas for future collaring efforts
- Identify priorities for mapping corridors for additional wildlife species in Utah

CAPTURE AND COLLARING EFFORTS

Collars are deployed on wildlife management units throughout Utah for the purposes of identifying migration corridors, movement barriers, and important habitat use areas. Additionally, collars are deployed to understand survival rates and monitor wildlife health and disease.

Completed 2024:

In order to improve the understanding of the movement patterns of big game in Utah, during the 2023-2024 winter, the Wildlife Migration Initiative completed capture and collaring efforts for deer, elk, and pronghorn in the following areas:

1. Oquirrh (Eagle Mountain)- 10 deer collars were put out on this portion of the unit in order to understand movement of deer for city planning purposes and to understand the effects of at-grade crossings structures on SR-73 designed to facilitate the movement of deer through the migration corridor.
2. Pahvant/Beaver-60 deer. It is believed that there is significant emigration and immigration occurring in multiple areas of the unit, especially the southern end of the unit near I-70. Interstate 70 is a fairly permeable barrier due to multiple large crossing structures. This data will inform us about movement across that barrier. This project will allow us to map migration corridors for mule deer on the Pahvant range, document migrations between the Pahvant and Beaver unit, and understand how mule deer use the Baker Canyon and I-70 crossings.
3. Wasatch-47 deer- The Heber Valley in the Wasatch Unit is experiencing significant human growth in recent years. Little is known about the deer using the Heber Valley and what areas are most important for winter range. Capture and collaring efforts this year were the second phase of a two-phase effort. Data from this project will allow us to

identify mule deer migration corridors and help reduce impacts of developments on mule deer.

4. Anthro-30 deer/51 pronghorn- Sparse data existed in the Anthro unit. Due to high traffic volumes and wildlife-vehicle collisions on Highway 40, collars were deployed to help understand migration corridors to prioritize wildlife crossing locations. Additionally, the proposed Uintah Basin Railway could be constructed on this unit. Pre-development data will help us understand animal movement pre-and-post development.
5. Elk- Southern Region (92), Manti (71), Hardware Ranch (91)- Objectives were the same for all elk collaring efforts completed in this grant period. The second year of a two-year capture project was completed this year in order to assess elk movements. Significant immigration/emigration events are occurring each year, but little is known about what units elk are coming from or going to. This project will help us understand where elk are moving and how their movements are influenced by hunting pressure.

Ongoing:

The following project areas were proposed for captures during the winter of 2024-2025.

Mule Deer

1. Wasatch- The Heber Valley in the Wasatch Unit is experiencing significant growth in recent years. Little is known about mule deer using the Heber Valley and what areas are most important for winter range. This project will allow us to identify mule deer migration corridors in this area and provide us with data that can potentially help reduce impacts of development on mule deer.
2. Fillmore, Pahvant, and Beaver- It is believed that there is significant emigration and immigration occurring in multiple areas of the unit, especially the southern end of the unit near I-70. Interstate 70 is a fairly permeable barrier due to multiple large crossing structures, but we currently don't have any GPS data informing us about movement across that barrier. This project will allow us to map migration corridors for mule deer on the Pahvant range, document migrations between the Pahvant and Beaver unit, and understand how mule deer use the Baker Canyon and I-70 crossings.
3. Anthro-including pronghorn. The West Tavaputs has sparse collar data for project planning. The proposed Uintah Basin Railway will have impacts on multiple wildlife species, if it occurs. This project will give us a working knowledge of migration corridors prior to the implementation of the railway, and will help us to evaluate impacts on wildlife populations in the area. In addition, documenting migration around Highway 40 will help us to prioritize wildlife crossing installations in the future and map migration corridors.
4. Southwest Desert-Very little is known about the movement patterns of mule deer in the southwest desert. This project will begin the process of mapping movements across this unit.
5. North Slope-Some captures have been conducted on the North Slope, primarily in the summer. There are still unknown movements of deer on the West Daggett and Three Corners units. This capture will fill in the remaining movement gaps.

Elk

1. Anthro, Cache, East Canyon, and Box Elder units. Significant immigration/emigration events are occurring each year, but little is known about what units elk are coming from or going to each year. This project will help us better identify where and when elk are moving between units, and how hunting pressure is influencing elk movements.

Moose

1. Raft River and Grouse Creek- Moose are moving into these areas but little is known about them. This project will help provide information on their movements and survival rates.

STATEWIDE PRIORITY PROJECT AREAS

Statewide priorities for implementation of Secretarial Order 3362 remain the same from fiscal year 2024, although project names have been updated to reflect the management herds prioritized. In fiscal year 2025, Utah will develop a process to determine priorities at a statewide level through the evaluation of numerous factors influencing wildlife migration and connectivity.

1. OQUIRRH-STANSBURY/WEST DESERT

Eagle Mountain



Location:

Eagle Mountain is located in central Utah on the west side of Utah Lake. The area was relatively undeveloped in the early 1990s. Now there are approximately 35,000 residents, and the population is projected to triple by the year 2040. There are few businesses in this area, so most residents commute to work, which creates heavy traffic volumes, especially on SR-73. The Utah Department of Transportation (UDOT) is planning to expand SR-73 to accommodate increased traffic. Currently over 30,000 vehicles travel this road each day.

Prior to 2018, the Utah Division of Wildlife Resources (DWR) had a small amount of data showing that mule deer migrated from the Oquirrh Mountains to the Lake Mountains to spend the winter. The migration crosses SR-73, which connects the City of Eagle Mountain with the Salt Lake City and Provo areas. Deer-vehicle collisions have been a problem in this area for many years and over 100 mule deer are picked up in this area annually. The migration corridor is at risk due to rapid development and deer-vehicle collisions that are occurring in the area.

With financial support from SO 3362 and other partners, DWR began a project to map deer migration corridors on this unit. Between December 2018 and December 2022, 46 mule deer were captured and fitted with GPS tracking collars. Data indicates that there are two major migration routes in this area, one eastern route and one western route (Figure 1). The western route crosses SR-73 at Five Mile Pass in an area with substantial recreational use but is not at risk for development. The eastern migration route passes through the City of Eagle Mountain in an area that will likely be developed in the near future.

DWR is working with many partners to preserve migration corridors in response to the rapid changes occurring in the region. Fencing has been erected along SR-73 in areas with the highest numbers of deer crossing. A gap was placed in the fence to still allow animals to cross. A radar animal detection and warning system has been installed at this gap location that detects approaching animals and warns drivers that an animal is approaching the highway. The City of Eagle Mountain is also planning to include a migration corridor in its Master Plan to prevent development from eliminating wildlife movements through the corridor. The corridor will be fenced and have multiple above and below ground crossing structures. Habitat projects will also be done throughout the corridor.

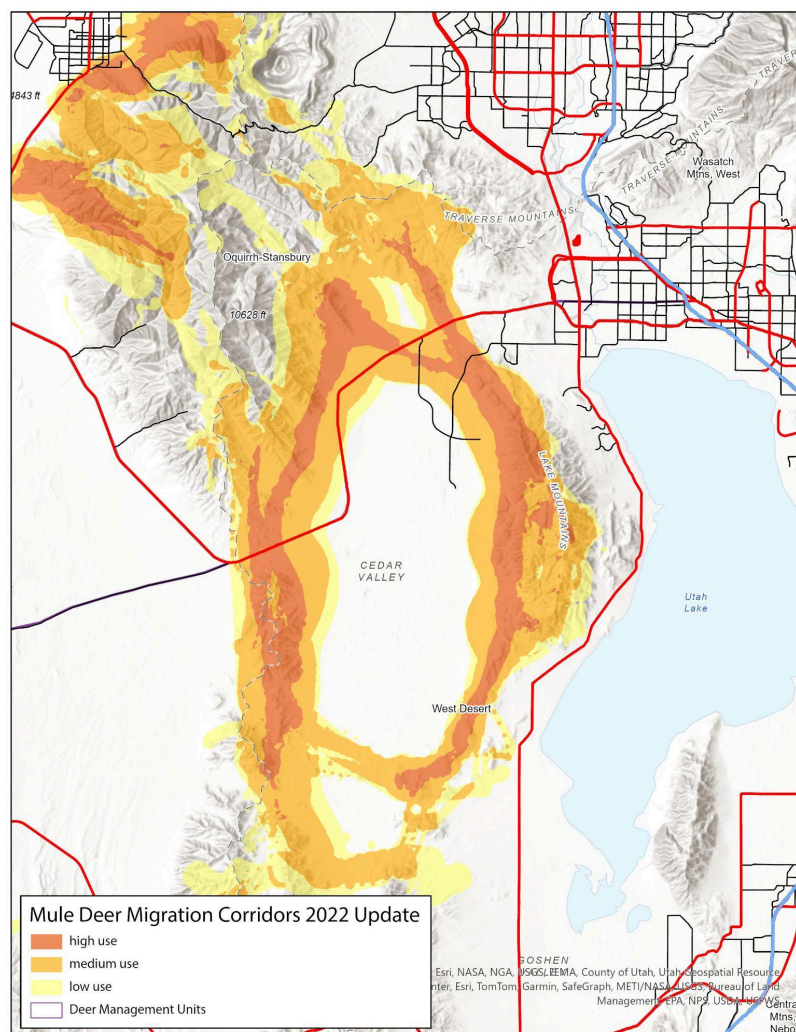


Figure 3. Mule deer migration corridors near Eagle Mountain.

Needs:

I. Wildlife Crossings- With the current and projected growth of the Eagle Mountain area, mitigation measures are necessary to offset the impacts of increasing traffic volumes and wildlife-vehicle collisions. Wildlife crossings and fencing are needed on SR-73 and through the City of Eagle Mountain to maintain the migration corridor in this area.

2024 Update:

- In partnership with the city of Eagle Mountain, Bureau of Land Management (BLM), Utah National Guard (Camp Williams and West Traverse Sentinel Landscape), UDOT, sportsmans groups, and other partners, fencing to facilitate mule deer migration throughout the corridor will be completed on over 20 miles of fence between now and 2030.
- When SR-73 expands to accommodate additional traffic, a wildlife crossing structure will be explored.
- Application for grant funds are being submitted for a wildlife crossing a four-lane divided roadway within the city of Eagle Mountain

II. Land Easements- DWR and its partners are currently working with the City of Eagle Mountain and private landowners to preserve open space within the migration corridor. Funding may be required to purchase land easements to fully preserve the corridors.

2024 Update:

- This area is included in the West Traverse Sentinel Landscape program, which was “created to assist in preserving land around Camp Williams to maintain the ability to conduct military training at Camp Williams while maintaining the safety and quality of life in surrounding communities” ([SB0002](#))

III. Corridor Inventories- Rangeland and agricultural fencing needs to be examined to determine if it can be made more wildlife friendly.

IV. Habitat Improvements - Like much of the West Desert region of Utah, rangelands in the Eagle Mountain area are subject to extensive conifer and cheatgrass encroachment. Targeted habitat treatment projects in deer winter range and stopover areas could be used to bolster deer populations and offset some of the impacts of human development.

2024 Update:

- The DWR and USDA have partnered on a shrub restoration study to discover the best methods to improve shrub seedling survival to improve restoration success on winter range habitats.

2. EAST CANYON/ MORGAN SOUTH-RICH/ OGDEN

Interstate 80 and 84 Corridor



Location:

The Interstate 80 and 84 (I-80/84) corridor is located in northern Utah, northeast of Park City and east of Ogden. The region is home to over 20,000 mule deer and over 4,000 elk. The interstates are the boundaries for four major big game management units; Chalk Creek, East Canyon, Kamas, and Morgan-South Rich. Northern Utah generally has more severe winter weather than central and southern Utah, and consequently most deer in this area are migratory. However, the amount of low-elevation winter habitat is severely limited. Additionally, the limited winter range that is in this region is being reduced due to housing development and conifer encroachment.

DWR is concerned about the effects that roads, development, and vegetation change are having on mule deer in this area. In this portion of the state, I-80/84 has over 15,000 vehicles per day and is likely a considerable barrier to the movements of big games species. Consequently, the area has hundreds of wildlife-vehicle collisions each year and is one of most the problematic areas in the state (Figure 4).

To address the problem, UDOT has installed wildlife fencing along sections of the I-80/84 corridor to prevent deer and other species from crossing the roadway, but few wildlife crossing structures have been installed to provide connectivity. The area also experiences high numbers of vehicle collisions with big game on roadways, particularly in the area around Echo Junction. This area averages over 80 deer picked up annually.

With support from SO 3362 and other partners, DWR has been able to capture ~200 mule deer in the four units and fit them with GPS tracking collars. Tracking data for deer indicates that there are several migration corridors in this area (Figure 5). The interstate appears to have shaped migratory movements for many deer in this area, as the migration corridor follows or terminates at the interstate corridor. Deer from the East Canyon, Kamas and Morgan-South Rich units rarely cross the interstate. However, deer from the Chalk Creek unit do cross I-80/84, especially at Echo Junction. This area will be the focus of crossing and fencing projects in the future.

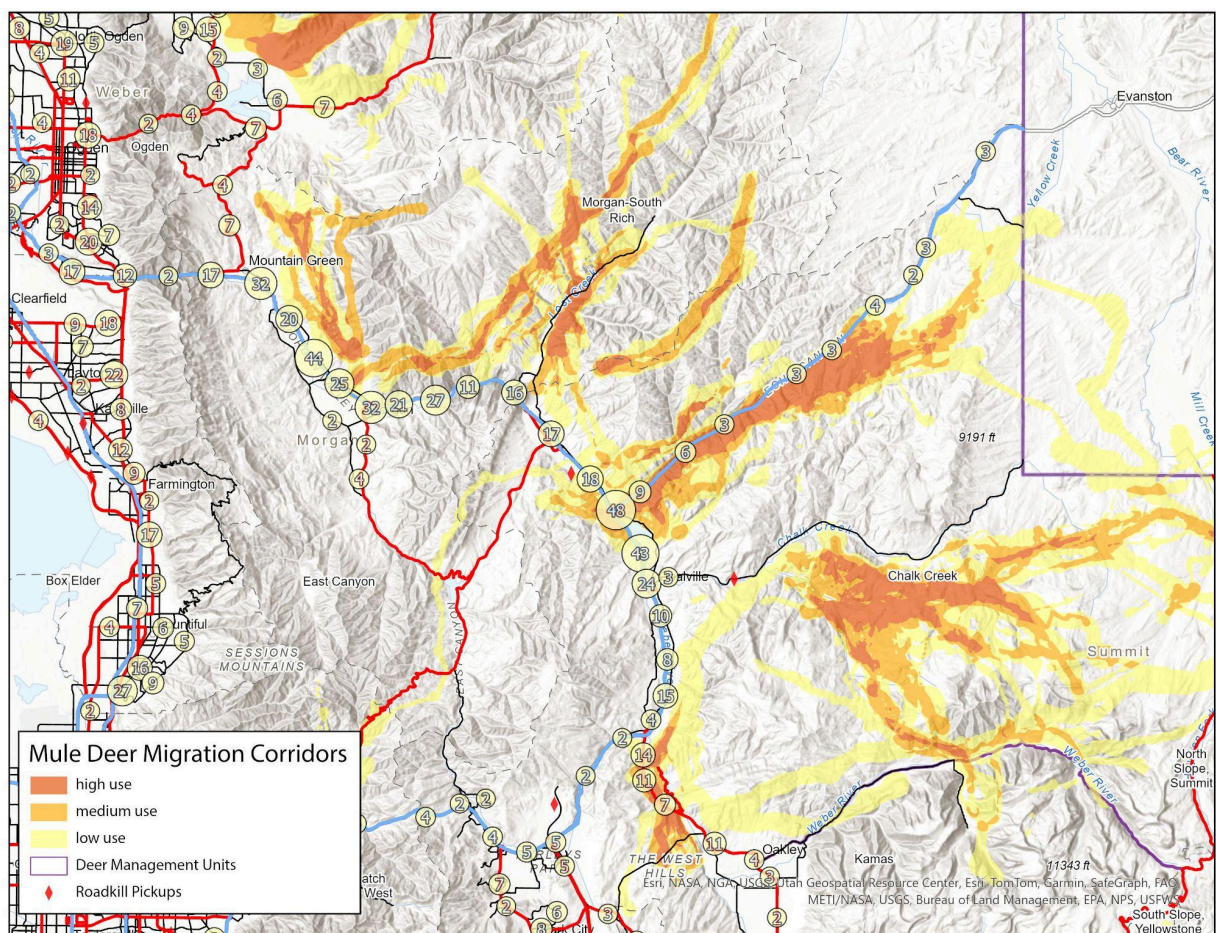


Figure 4. The locations of deer-vehicle collisions in the I-80/84 corridor between 2022 and 2024.

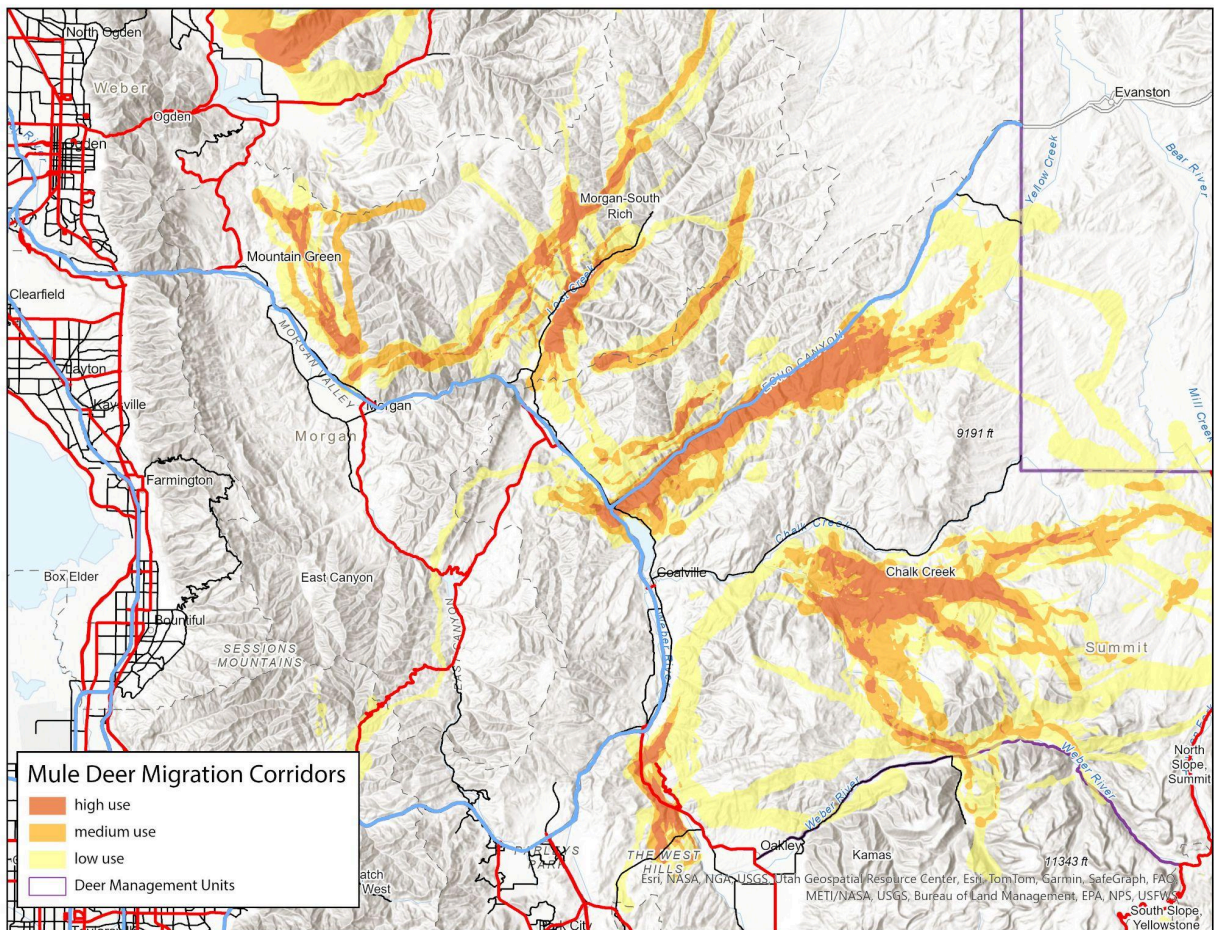


Figure 5. Mule deer migration corridors, winter ranges and stopover areas in the I-80/84 corridor.

I. **Wildlife Crossings-** Multiple deer migration corridors appear to be affected by roads in this area. Mitigation measures are necessary to offset the impacts of wildlife-vehicle collisions and restore landscape connectivity. Wildlife crossings and fencing are needed on I-84 and I-80 to improve the permeability of roads for wildlife in this area.

2024 Update:

- Phase I of exclusionary fencing to existing underpasses is in progress. Partial funding for the project has been received through the Wildlife Crossing Pilot Program (WCPP). Other funding is being sought order to install an overpass and 30 miles of exclusionary fencing.

II. **Fencing Improvements-** Rangeland and agricultural fencing needs to be examined to determine if it can be made more wildlife friendly. Mule deer have been caught in fences in this area (Figure 6), indicating there may be opportunities to work with landowners to make fencing

more wildlife friendly. Additional fencing along the interstate is also needed to keep animals off the roadway.

2024 Update:

- Netwire fence on the 14,000 acre Henefer-Echo Wildlife Management Area will be retrofitted over the next several years. There is interest from other non-governmental organizations to tour the area as part of a fence working group. Conversion of 1.5 miles of barbed and netwire exterior fencing to wildlife friendly fencing is planned for completion in FY 25.



Figure 6. Two mule deer caught in rangeland fencing on winter range in the Chalk Creek/Kamas area.

III. Habitat Improvements – Conifer encroach on winter range is a problem in this area, and is exacerbated because the amount of winter range is relatively limited. Targeted habitat treatment projects in deer winter range and stopover areas could be used to bolster populations and offset some of the impacts of conifer encroachment.

2024 Update

- On the Henefer-Echo WMA, summer range is being improved for mule deer and elk through reinvigorating shrub/oak and constructing 15-20 Zeedyk structures to slow erosion, raise the water table, and improve forage.

3. ZION/PAUNSAUGUNT

US-89 and SR-9 Corridor



Location:

The US-89 and State Route (SR)-9 corridor is located in southern Utah near Kanab, Utah. The area is in the middle of the Zion and Paunsaugunt deer units, which have a combined estimate of over 20,000 deer. Land ownership is a complex mix of BLM, NPS, USFS, and private lands. Deer in this area are migratory, with some animals moving over 70 miles between summer and winter ranges.

The area is experiencing rapid growth and development. St. George is the fastest growing metro area in the United States with a 4% annual growth rate. Washington County is projected to experience an increase in human population by 155.1% (ranked 1st in Utah) over the next 40 years (Hollingshaus et al. 2022). Recreation is another growing industry and activity within this area and has increased substantially in recent years. In 2021, Zion National Park saw an increase of 6 million visits or an increase of 25.3% from 2020 (Ziesler and Spalding 2022). This park has seen record visitation rates in recent years (5.04 million in 2021) but has been steadily increasing since 2008 when there were 2.69 million visitations (Statista 2022). The increase in visitation places a higher burden on the park to protect and maintain its resources such as the landscapes, plants, and animals (NPS 2022). The increase in recreation at Zion National Park mirrors the increase in recreation across Southern Utah which is pushing people, recreational activities and construction of new trails into wildlife habitat. Much of the new recreation in the area is occurring within crucial mule deer winter range and migration corridors, which are important to protect since mule deer can be disturbed by recreational activities.

Traffic volumes are increasing substantially in the area as a result of increased recreation and tourism. The area has several major roadways, including Interstate 15 (I-15), US-89, and SR-9. Traffic volumes on I-15 are over 29,000 vehicles per day and over 2,000 per day on US-89 and SR-9. Wildlife-vehicle collisions are a problem on both US-89 and SR-9, but the magnitude of the problem is not well understood for much of this area because wildlife-vehicle collisions have not been consistently reported.

Major efforts have been made by UDOT, DWR, and other partners to maintain the deer migration corridors in the eastern part of this area. In the 1990s and early 2000s, US-89 east of Kanab was infamous for having high numbers of deer-vehicle collisions, especially during the migration periods. Thanks to contributions from federal highways, UDOT, Kane County, Arizona Game and Fish, Grand Staircase-Escalante National Monument, Sportsmen for Fish and Wildlife and the Mule Deer Foundation, work was completed in 2013 to reduce wildlife-vehicle collisions on a portion of SR-89 that intersects a major deer migration corridor. Between mileposts 36 and 49, 12.5 miles of wildlife exclusion fencing was installed on both sides of the highway, as well as three wildlife crossings, five double cattle guards and 24 escape ramps. A camera monitoring study was initiated upon completion to monitor the effectiveness of the project from September 2013 to June 2018. The US-89 project is one of the most successful mule deer mitigation projects in all of North America based on the project's performance measures: 78,610 mule deer movements through seven structures over five years; overall annual success rates of all structures of 77 percent over five years; success rates over 90 percent at six of the seven structures in the final year; the use of five structures by several elk; the use of the structures by seven additional wildlife species; and decreases in wildlife-vehicle collisions in the study area post-construction (Cramer 2019).

Funding provided through SO 3362, DWR, and other partners began a major project to document mule deer movements in this area in 2017. Over 350 deer have been fitted with GPS tracking collars, logging over 2 million data points. Data indicates that most deer are migratory and move north/south (Figure 7). Many of the deer cross SR-9 while migrating, creating hazards with wildlife-vehicle collisions. None of the GPS tracked deer have crossed I-15 or the northern part of US-89 during migration, which indicates that these roadways may be barriers to migration. Wildlife-vehicle collision data continues to show collisions west of the exclusionary fence. DWR and UDOT are currently seeking funding to implement Phase II of the US-89 project to extend the fence an additional 7.2 miles along HWY 89 with three wildlife crossings to reduce collisions in a high-use migration corridor near Johnson Canyon. Several groups are planning to mapping 150 miles of fence lines in the Grand Staircase Escalante National Monument within the Paunsaugunt mule deer migration corridor to identify areas that may be a barrier to movements and propose improvements to at least 10 miles of fencing in need of wildlife friendly improvements.

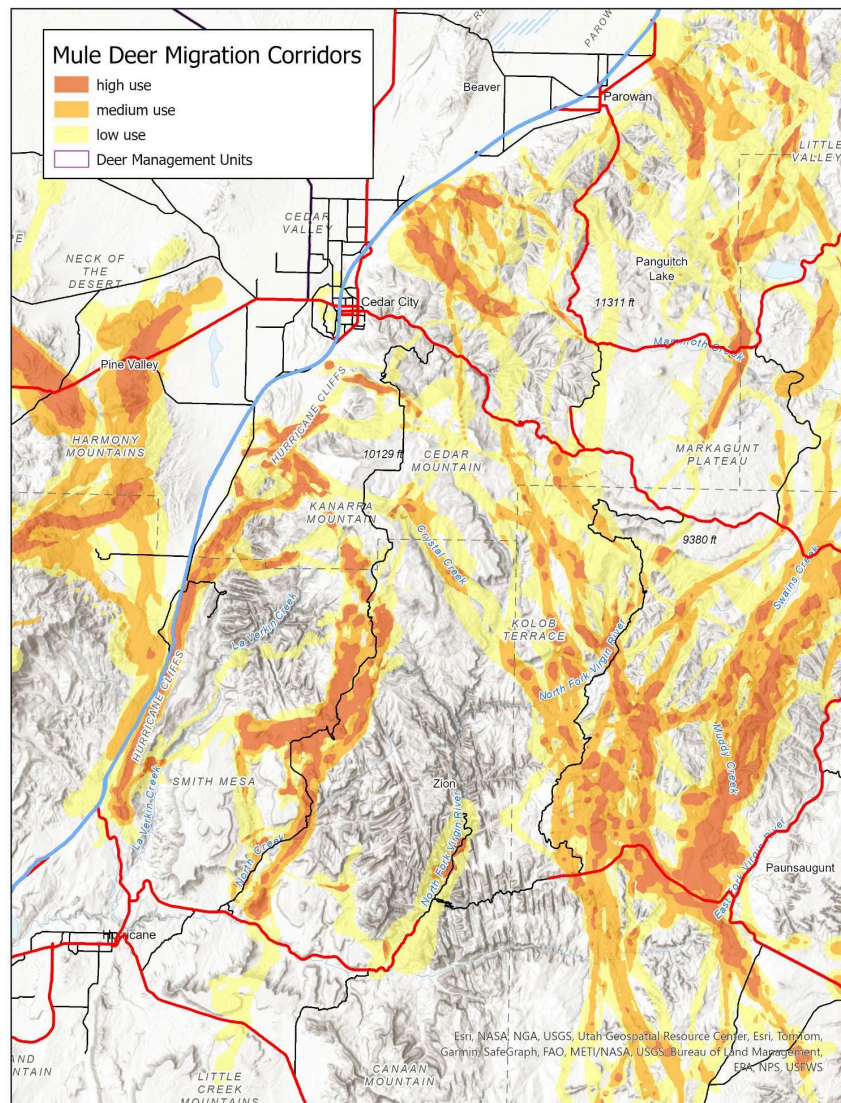


Figure 7. Mule deer migration corridors in the Zion and Paunsaugunt units.

I. Wildlife Crossings- SR-9 needs to be evaluated to determine if crossings and wildlife fencing are needed. Crossing may be necessary on I-15 and US-89 to maintain connectivity between adjacent management units and summer and winter ranges.

2024 Update:

- The annual average daily traffic reports traffic volumes calculated by Utah Dept. of Transportation continue to increase each year. On I-15 bordering the east side of the unit an estimated 33,000 vehicles travel per day and at least 2,300 per day on SR-89. State route (SR-9) also runs east/west through the middle of the unit

and estimates over 72,000 vehicles per day west of Zion National Park and 500 East of the park. Wildlife-vehicle collisions are a problem on both US-89 and SR-9 but the magnitude of the problem is not well understood. Information on wildlife vehicle collisions were not consistently reported in this area in the past, however, recently the data is being collected more consistently.

- UDOT received about \$5.4 million from the Wildlife Crossing Pilot Program, and DWR received \$300,000 from NFWF's Western Big Game Seasonal Habitat and Migration Corridors Fund grant and \$100,000 from conservation organizations from external conservation permit funds to initiate Phase II Hwy 89 Wildlife Fencing and crossings extending the wildlife exclusion fencing from Phase I by 7.5 miles with at least 3 wildlife crossings..
- Hancock road and other roads near Coral Pink Sand Dunes State Park have a high amount of WVC for a rural road, alternative solutions outside fencing and crossing could be identified to help reduce wildlife mortality.

II. Corridor Inventories- Migration corridors will be used to document current and potential barriers (roads, development, etc.). Rangeland and agricultural fencing needs to be examined to determine if it can be made more wildlife friendly. Better estimates of deer mortality in this area would also help identify potential project areas and needs.

2024 Update:

- Over 190 deer have been fitted with GPS tracking collars, logging over 1,080,000 points. Data indicates that most deer on the Zion unit are migratory and move north/south, similar to the Paunsaugunt herd
- More collars will be put out fall of 2024 for a survival study that will also contribute to migration corridor mapping.

III. Habitat Improvements - Targeted habitat treatment projects in deer winter range and stopover areas could be used to bolster deer populations and offset some of the impacts of human development.

2024 Update

- Wildlands Network received funding from NFWF's Western Big Game Seasonal Habitat and Migration Corridors Fund grant and is implementing the NFWF Paunsaugunt Fence Survey and Improvement Project. Grand Staircase Escalante Partners and Backcountry Hunters and Anglers, as well as DWR's Dedicated Hunter program participated in surveying more than 157 miles of fences covering valuable winter range on the monument, east of Kanab. Following completion of the surveys, the data was analyzed and in consultation with BLM and DWR, and

12.3 miles of fence were proposed to focus repairs on as they were adjacent to wildlife crossings on Highway 89 and within a high use migration corridor

- Recreation projects in this area include, future hiking trails on BLM in East Zion. DWR is working with partners to minimize impacts to migrating and overwintering deer by considering seasonal restrictions.
- BLM is partnering with DWR to fund and install water developments at Dalton Wash to encourage deer to water on the North side of the road, rather than cross SR-9 and reduce WVC west of Zion National Park. This will be completed in late 2024/early 2025.
- The yellowjacket Rosy Canyon project that received \$70,000 from the NFWF Western Big Game Seasonal Habitat and Migration Corridors Fund was completed in early 2024 improving at least 2,300 acres of mule deer winter range.
- The Zion Migration Corridor Habitat Improvement project is being lead by Forestry, Fire, and State Lands to improve habitat through seeding and masticating pinyon and juniper and chemically treating cheatgrass.

4. WASATCH MOUNTAINS

US-40 Corridor



The US-40 is in central Utah between the cities of Park City and Duchesne. It is a major thoroughfare between the Wasatch Front and eastern Utah. Most of US-40 falls within the Wasatch unit, but the eastern portion also takes in part of the South Slope unit and the northern portion borders the Kamas unit. This area includes high elevation summer range, transitional range, and winter range for both elk, moose and mule deer. Animals in much of this corridor are migratory and encounter these roads frequently during all times of the year.

Traffic volumes on US-40 can be very heavy. It is estimated that about 6,000 vehicles travel this US-40 per day between Heber and Duchesne, and over 30,000 vehicles travel US-40 per day between Heber and Park City. In the last two years, an estimated 467 ungulates have been picked up between Heber and Duchesne, and 112 ungulates were picked up between Heber and Park City. Many of these wildlife-vehicle collision locations are in summer range around Strawberry Reservoir, and many also occur in wintering areas on the west side and east side of the mountain range near Heber and Duchesne. (Figure 8).

Little work has been done on US-40 to prevent wildlife-vehicle collisions. Approximately three miles of fencing has been erected near Strawberry Reservoir where high numbers of animals cross the road, but end-of-fence effects result in large numbers of animals being hit on the roadway. Much of US-40 has been fenced north of Heber, but animals are still being hit on the roadway. Additional work could be completed to improve keep animals off the roadway and provide safer crossing for animals in the summer and winter months.

We have collar data for most ungulate species on the eastern part of this area. But little is known about animal movements between Heber and Park City because few ungulates have

been collared in this area. Collaring efforts would greatly inform us about migration corridors and needs to facilitate movement on either side of the roadway.

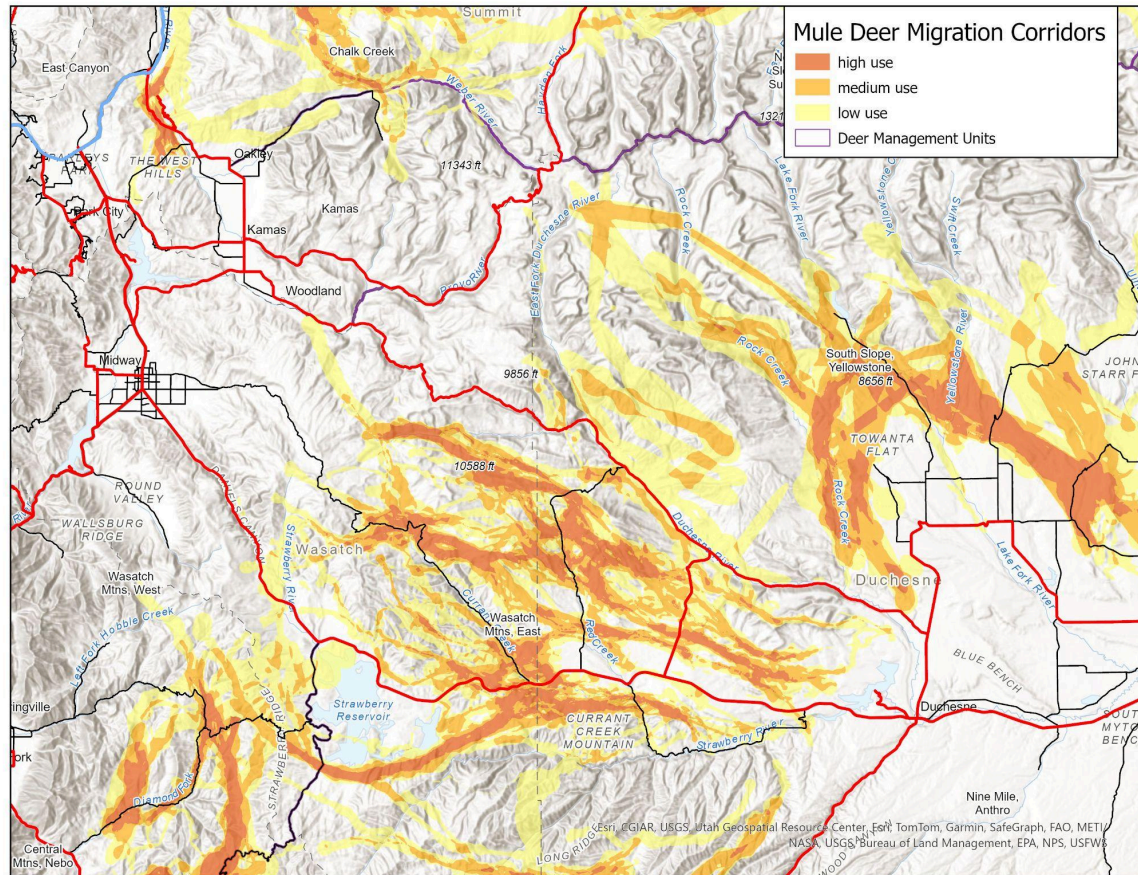


Figure 8. Mule deer migration corridors in the US-40 area.

- I. **Wildlife Crossings-** No wildlife crossing structures exist in this area. There is a high need for crossings across the entire length of US-40 in summer and winter range. Identifying areas for these crossing locations is a high priority. Better estimates of big game roadkill mortality in this area would also help identify potential project areas and needs.
- IV. **Fencing Improvements-** Rangeland and agricultural fencing needs to be examined to determine if it can be made more wildlife friendly. Additional fencing along US-40 is also needed to keep animals off the roadway.
- V. **Corridor Inventories-** Migration corridors need to be created and updated and will be used to document current and potential barriers, locations for fencing and crossing structures, habitat projects, and other projects to improve the corridor. Additional collaring efforts on the

west side of the corridor will be useful to better understand movements in the Heber Valley and the west side of the Wasatch Unit.

VI. Habitat Improvements - Targeted habitat treatment projects in deer summer, transitional, and winter range could be used to bolster deer populations and offset some of the impacts of human development and highway mortality.

5. CENTRAL MOUNTAINS/NINE MILE/WASATCH

US-6 Corridor



Location:

The US-6 corridor is located in central Utah and connects the cities of Spanish Fork and Price. It is a major thoroughfare between the Wasatch Front and southeastern Utah. US-6 is the boundary for the Central Mountains, Nine Mile and Wasatch management units, and it intersects both summer and winter range for both elk and mule deer. Deer and elk in this area are migratory. Most animals use the area during the winter, and some animals will migrate up to 45 miles to winter in this area (Figure 9).

Traffic volumes on US-6 can be very heavy. It is estimated that over 12,000 vehicles travel this road per day. Between 2020 and 2022, an estimated 184 ungulates had been picked up between Spanish Fork and Price. Some of these wildlife-vehicle collision locations are near wintering areas on the west side and east side of the mountain range. Wildlife-vehicle collisions also occur near agricultural areas on the east side of the mountain range or at higher elevations. The highest densities of vehicle collisions occur near Diamond Fork, Tucker and Spring Glen (Figure 10).

There has been some work done on US-6 to prevent wildlife-vehicle collisions. Fencing has been erected in a few areas with high densities of animals, and several crossing structures have been installed. However, even in areas without fences, the roadway acts as a barrier to animal movements, and additional work could be completed to improve permeability and safer crossing for animals in the summer and winter months.

In 2019, DWR begin documenting mule deer movements on several of the management units in this area. Approximately 100 deer have been fitted with GPS tracking collars near US-6, and many others have moved to this area for its winter range after being collared in other management units. Data show that US-6 is likely a barrier to deer movements (Figure 8). Many deer winter on the north side of US-6, but few animals travel north or south of the road during migration. Funding from SO 3362 will allow DWR and other partners to collar more animals in this area and improve documentation of big game habitat needs, locations for additional fencing and crossing structures, and locations that could be improved to increase the quality of winter range.

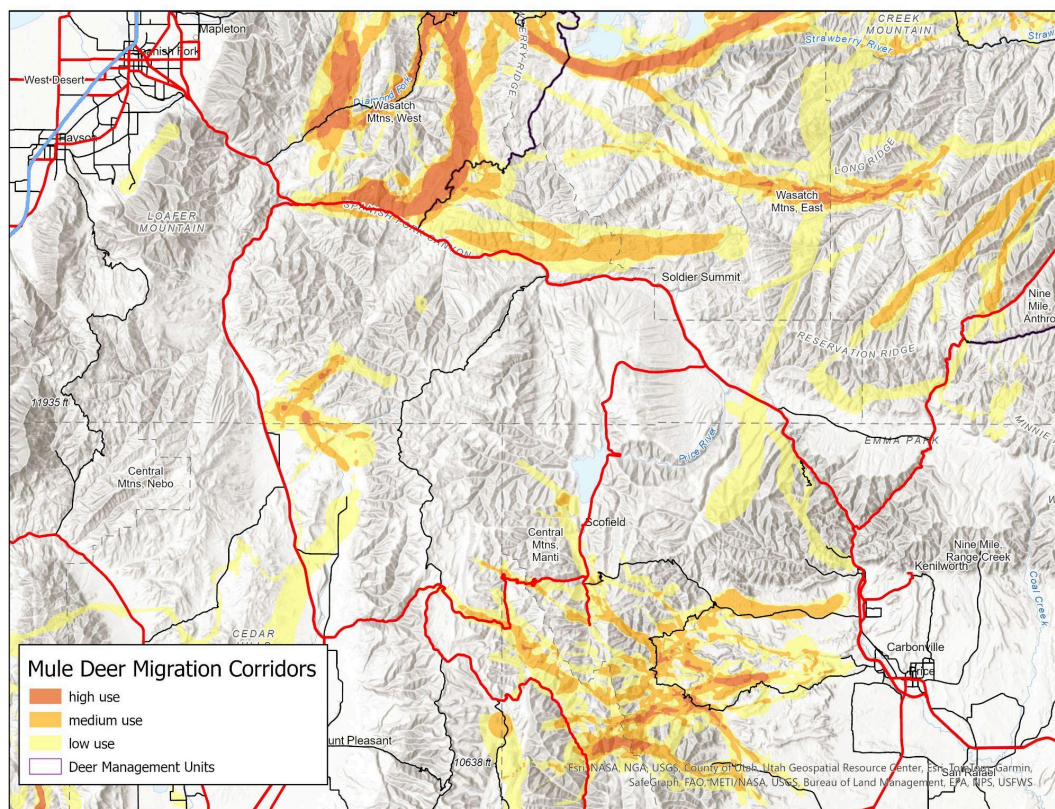


Figure 9. Mule deer migration corridors in the US-6 area.

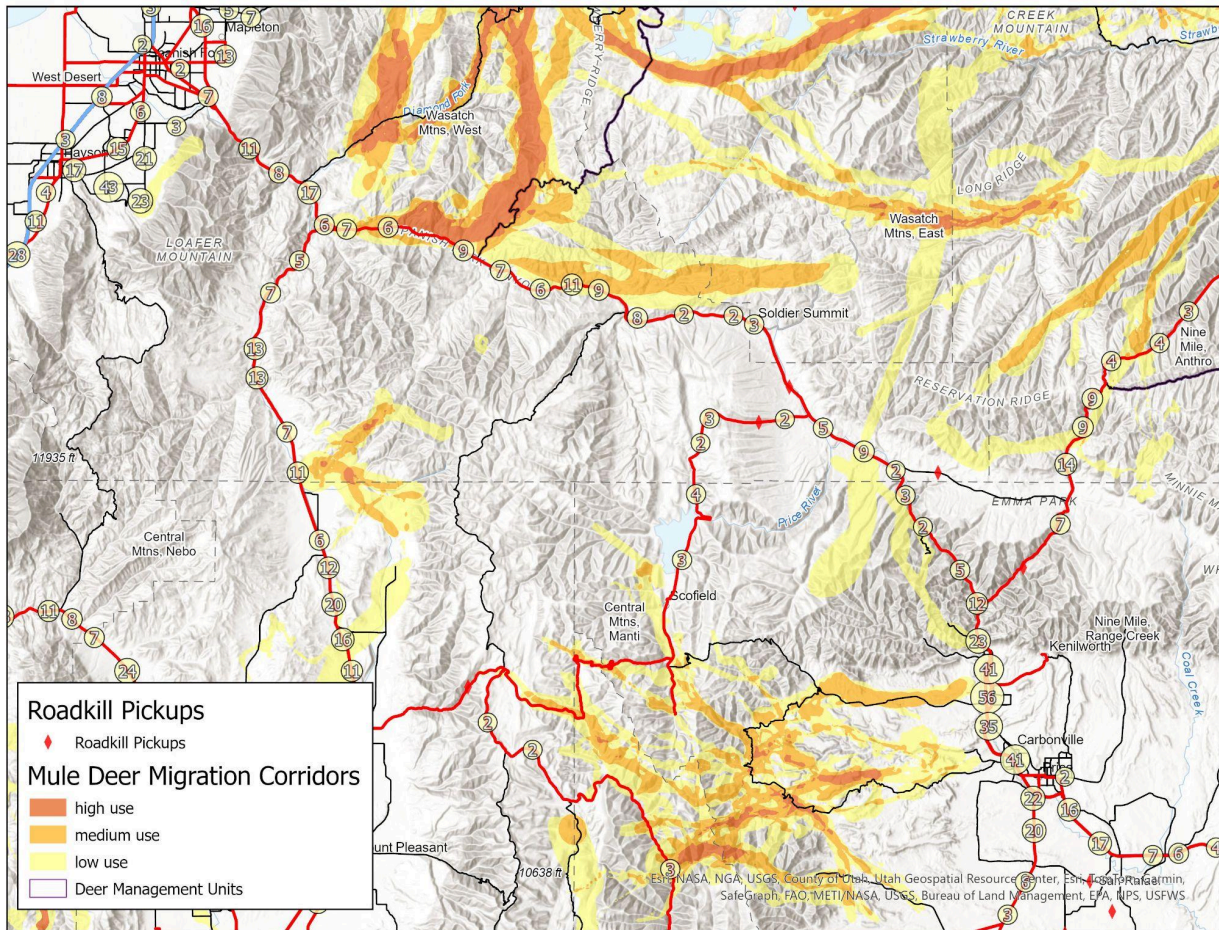


Figure 10. The locations of deer-vehicle collisions in the area between 2022 and 2024.

- I. **Wildlife Crossings-** Most migratory movements of deer in this area are north/south. US-6 needs to be evaluated to determine where crossings and wildlife fencing are needed. Crossing may be needed to maintain connectivity between adjacent management units.
- II. **Corridor Inventories-** Migration corridors need to be mapped and inventoried for the portions of the Central Mountains and Nine Mile units, and migration corridors need to be better defined in the entire area to document current and potential barriers (roads, development, etc.). Rangeland and agricultural fencing needs to be examined to determine if it can be made more wildlife friendly.
- III. **Habitat Improvements -** Targeted habitat treatment projects in deer winter range and stopover areas could be used to bolster deer populations. Additional wildlife fencing and crossing structures could be installed to provide connectivity and reduce vehicle collisions.

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Appendix A

Order 3362



THE SECRETARY OF THE INTERIOR WASHINGTON

ORDER NO. 3362

Subject: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors

Sec. 1 Purpose. This Order directs appropriate bureaus within the Department of the Interior (Department) to work in close partnership with the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands under the management jurisdiction of this Department in a way that recognizes state authority to conserve and manage big-game species and respects private property rights. Through scientific endeavors and land management actions, wildlife such as Rocky Mountain Elk (elk), Mule Deer (deer), Pronghorn Antelope (pronghorn), and a host of other species will benefit. Additionally, this Order seeks to expand opportunities for big-game hunting by improving priority habitats to assist states in their efforts to increase and maintain sustainable big game populations across western states.

Sec. 2 Authorities. This Order is issued under the authority of section 2 of Reorganization Plan No. 3 of 1950 (64 Stat. 1262), as amended, as well as the Department's land and resource management authorities, including the following:

- a. Federal Land Policy and Management Act of 1976, as amended, 43 U.S.C. 1701, ET SEQ;
- b. U.S. Geological Survey Organic Act, as amended, 43 U.S.C. 31, *et seq.*;

- c. National Wildlife Refuge System Improvement Act of 1997, as amended, 16 U.S.C. 668dd *et seq.*; and
- d. National Park Service Organic Act of 1916, as amended, 54 U.S.C. 100101, *et seq.*

Sec. 3 Background. The West was officially "settled" long ago, but land use changes continue to occur throughout the western landscape today. Human populations grow at increasing rates with population movements from east and west coast states into the interior West. In many areas, development to accommodate the expanding population has occurred in important winter habitat and migration corridors for elk, deer, and pronghorn. Additionally, changes have occurred across large swaths of land not impacted by residential development. The habitat quality and value of these areas crucial to western big-game populations are often degraded or declining.

The Bureau of Land Management (BLM) is the largest land manager in the United States (U.S.) with more than 245 million acres of public land under its purview, much of which is found in Western States. The U.S. Fish and Wildlife Service (FWS) and National Park Service (NPS) also manage a considerable amount of public land on behalf of the American people in the West. Beyond land management responsibilities, the Department has strong scientific capabilities in the U.S. Geological Survey (USGS) that can be deployed to assist State wildlife agencies and Federal land managers. Collectively, the appropriate bureaus within the Department have an opportunity to serve in a leadership role and take the initiative to work closely with Western States on their priorities and objectives as they relate to big-game winter range and migration corridors on lands managed by the Department.

Consistent with the American conservation ethic, ultimately it is crucial that the Department take action to harmonize State fish and game management and Federal land management of big-game winter range and corridors. On lands within these important areas, if landowners are interested and willing, conservation may occur through voluntary agreements.

Robust and sustainable elk, deer, and pronghorn populations contribute greatly to the economy and well-being of communities across the West. In fact, hunters and tourists travel to Western States from across our Nation and beyond to pursue and enjoy this wildlife. In doing so, they spend billions of dollars at large and small businesses that are crucial to State and local economies. We have a responsibility as a Department with large landholdings to be a collaborative neighbor and steward of the resources held in trust.

Accordingly, the Department will work with our State partners and others to conserve and/or improve priority western big-game winter range and migration corridors in sagebrush ecosystems and in other ecotypes as necessary. This Order focuses on the Western States of:

Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah,

Washington, and Wyoming. These States generally have expansive public lands with established sagebrush landscapes along with robust big-game herds that are highly valued by hunters and tourists throughout the Nation.

The Department has broad responsibilities to manage Federal lands, waters, and resources for public benefit, including managing habitat to support fish, wildlife, and other resources. Secretary's Order 3356, "Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories," (SO 3356) was issued on September 15, 2017. SO 3356 primarily focused on physical access to lands for recreational activities, particularly hunting and fishing. This Order is focused on providing access to big game animals by providing direction regarding land management actions to improve habitat quality for big-game populations that could help ensure robust big-game populations continue to exist. Further, SO 3356 includes a number of directives related to working with States and using the best available science to inform development of guidelines, including directing relevant bureaus to:

- a. Collaborate with State, tribal, and territorial fish and wildlife agencies to attain or sustain State, tribal, and territorial wildlife population goals during the Department's land management planning and implementation, including prioritizing active habitat management projects and funding that contributes to achieving wildlife population objectives, particularly for wildlife that is hunted or fished, and identifying additional ways to include or delegate to States habitat management work on Federal lands;
- b. Work cooperatively with State, tribal, and territorial wildlife agencies to enhance State, tribe, and territorial access to the Department's lands for wildlife management actions;
- c. Within 180 days, develop a proposed categorical exclusion for proposed projects that utilize common practices solely intended to enhance or restore habitat for species such as sage grouse and/or mule deer; and
- D. Review and use the best available science to inform development of specific guidelines for the Department's lands and waters related to planning and developing energy, transmission, or other relevant projects to avoid or minimize potential negative impacts on wildlife.

This Order follows the intent and purpose of SO 3356 and expands and enhances the specific directives therein.

Sec. 4 Implementation. Consistent with governing laws, regulations, and principles of responsible public stewardship, I direct the following actions:

a. With respect to activities at the national level, I hereby direct the BLM, FWS, and NPS to:

- (1) Within 30 days, identify an individual to serve as the "Coordinator" for the Department. The Coordinator will work closely with appropriate States, Federal agencies, nongovernmental organizations, and/or associations to identify active programs focused on big- game winter range and/or migration corridors. The programs are to be organized and cataloged by region and other geographic features (such as watersheds and principles of wildlife management) as determined by the Deputy Secretary, including those principles identified in the Department's reorganization plan.
- (2) Within 45 days, provide the Coordinator information regarding:
 - (i) Past and current bureau conservation/restoration efforts on winter range and migration corridors;
 - (ii) Whether consideration of winter range and corridors is included in appropriate bureau land (or site) management plans;
 - (iii) Bureau management actions used to accomplish habitat objectives in these areas;
 - (iv) The location of areas that have been identified as a priority for conservation and habitat treatments; and
 - (v) Funding sources previously used and/or currently available to the bureau for winter range and migration corridor conservation/restoration efforts.
- (3) Within 60 days, if sufficient land use plans are already established that are consistent with this Order, work with the Coordinator and each regional Liaison (see section 4b) to discuss implementation of the plans. If land use plans are not already established, work with the Coordinator and each regional Liaison to develop an Action Plan that summarizes information collected in section 4 (a) (1) and (2), establishes a clear direction forward with each State, and includes:
 - (i) Habitat management goals and associated actions as they are associated with big game winter range and migration corridors;
 - (ii) Measurable outcomes; and
 - (iii) Budgets necessary to complete respective action(s).

b. With respect to activities at the State level, I hereby direct the BLM, FWS, and NPS to:

- (1) Within 60 days, identify one person in each appropriate unified region (see

section 4a) to serve as the Liaison for the Department for that unified region. The Liaison will coordinate at the State level with each State in their region, as well as with the Liaison for any other regions within the State. The Liaison will schedule a meeting with the respective State fish and wildlife agency to assess where and how the Department can work in close partnership with the State on priority winter range and migration corridor conservation.

- (2) Within 60 days, if this focus is not already included in respective land management plans, evaluate how land under each bureau's management responsibility can contribute to State or other efforts to improve the quality and condition of priority big-game winter and migration corridor habitat.
- (3) Provide a report on October 1, 2018, and at the end of each fiscal year thereafter, that details how respective bureau field offices, refuges, or parks cooperated and collaborated with the appropriate State wildlife agencies to further winter range and migration corridor habitat conservation.
- (4) Assess State wildlife agency data regarding wildlife migrations early in the planning process for land use plans and significant project-level actions that bureaus develop; and
- (5) Evaluate and appropriately apply site-specific management activities, as identified in State land use plans, site-specific plans, or the Action Plan (described above), that conserve or restore habitat necessary to sustain local and regional big-game populations through measures that may include one or more of the following:
 - (i) restoring degraded winter range and migration corridors by removing encroaching trees from sagebrush ecosystems, rehabilitating areas damaged by fire, or treating exotic/invasive vegetation to improve the quality and value of these areas to big game and other wildlife;
 - (ii) revising wild horse and burro-appropriate management levels (AML) or removing horses and burros exceeding established AML from winter range or migration corridors if habitat is degraded as a result of their presence;
 - (iii) working cooperatively with private landowners and State highway

departments to achieve permissive fencing measures, including potentially modifying (via smooth wire), removing (info longer necessary), or seasonally adapting (seasonal lay down) fencing if proven to impede movement of big game through migration corridors;

(iv) avoiding development in the most crucial winter range or migration corridors during sensitive seasons;

(v) minimizing development that would fragment winter range and primary migration corridors;

(vi) limiting disturbance of big game on winter range; and

(vii) utilizing other proven actions necessary to conserve and/or restore the vital big-game winter range and migration corridors across the West.

c. With respect to science, I hereby direct the USGS to:

(1) Proceed in close cooperation with the States, in particular the Western Association of Fish and Wildlife Agencies and its program manager for the Crucial Habitat Assessment Tool, prior to developing maps or mapping tools related to elk, deer, or pronghorn movement or land use; and

(2) Prioritize evaluations of the effectiveness of habitat treatments in sagebrush communities, as requested by States or land management bureaus, and identified needs related to developing a greater understanding of locations used as winter range or migration corridors.

d. I further hereby direct the responsible bureaus and offices within the Department to:

(1) Within 180 days, to update all existing regulations, orders, guidance documents, policies, instructions, manuals, directives, notices, implementing actions, and any other similar actions to be consistent with the requirements in this Order;

(2) Within 30 days, provide direction at the state or other appropriate level to revise existing Federal-State memorandums of agreement to incorporate consultation with State agencies on the location and conservation needs of winter range and migration routes; and

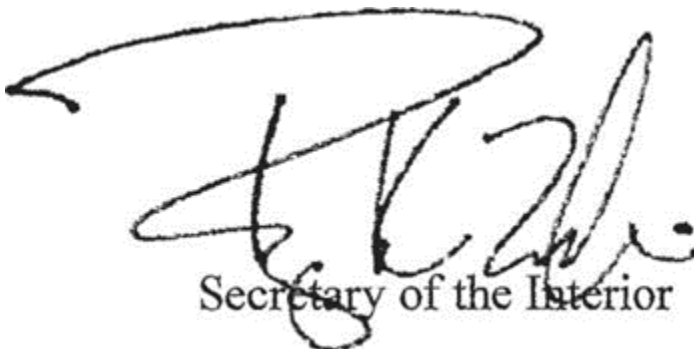
- (3) Consult with State wildlife agencies and bureaus to ensure land use plans are consistent and complementary to one another along the entire wildlife corridor in common instances where winter range or migration corridors span jurisdictional boundaries.

- e. Heads of relevant bureaus will ensure that appropriate members of the Senior Executive Service under their purview include a performance standard in their respective current or future performance plan that specifically implements the applicable actions identified in this Order.

Sec. 5 Management. I hereby direct the Deputy Secretary to take is responsible for taking all reasonably necessary steps to implement this Order.

Sec. 6 Effect of Order. This Order is intended to improve the internal management of the Department. This Order and any resulting reports or recommendations are not intended to, and do not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person. To the extent there is any inconsistency between the provision of this Order and any Federal laws or regulations, the laws or regulations will control.

Sec. 7 Expiration Date. This Order is effective immediately. It will remain in effect until its provisions are implemented and completed, or until it is amended, superseded, or revoked.



Secretary of the Interior

Date: FEB 09 2018

Appendix B

Utah Surface Ownership and Administration

