2019 NEVADA ACTION PLAN

For

Implementation of Department of the Interior Secretarial Order 3362: "Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors"

*Updates to the 2018 Nevada Action Plan are noted in **BOLD** in this document

Introduction - Secretarial Order 3362 (Appendix A) was signed on February 9, 2018 (SO 3362) and it directs appropriate agencies within the Department of the Interior [U.S. Fish and Wildlife Service (USFWS), National Park Service (NPS), and Bureau of Land Management (BLM)] to work in close partnership with the State of Nevada to identify, enhance, and improve the quality of big-game winter range habitats and migration corridors in a way that recognizes state authority for conserving and managing big-game species and respects private property rights. Through research and land management actions, wildlife such as mule deer (*Odocoileus hemionus;* hereafter deer), pronghorn antelope (*Antilocapra americana*; hereafter pronghorn), Rocky Mountain elk (*Cervus canadensis*; hereafter elk) and other wildlife and their habitats may benefit.

Conditions in the broader landscape may influence the function of migration corridors and sustainability of big game populations. Such conditions may include habitat fragmentation, land use patterns, resource management, or urbanization. The United States Department of Agriculture (USDA), through the USDA Forest Service (USFS) and USDA Natural Resource Conservation Service, will collaborate with DOI, the states, and other natural resource managers across the broader landscape when developing an all-lands approach to research, planning, and management, for ecological resources, to include migration corridors in a manner that promotes the welfare and populations of elk, deer, and pronghorn, as well as the ecological integrity of terrestrial ecosystems in the plan area.

Nevada has about 70.4 million acres of total land area, and 49.5 million acres (70.3%) are managed by three DOI agencies: BLM (47.2 million acres), USFWS (1.5 million acres), and NPS (0.8 million acres) (Fig. 1). An additional 5.8 million acres are managed by the U.S Forest Service (USFS). In contrast to the 55.3 million acres (78.5%) managed by these four federal agencies, 9.2 million acres (13.0%) are privately owned and managed in Nevada. Nevada is unique in the lower 48 United States with this large proportion of public lands managed under multiple-use mandates, and this emphasizes the importance of collaborative Federal-State partnerships that recognize and appropriately work together to manage crucial winter range and movement corridors for migratory big-game wildlife.

To achieve the objectives of SO 3362, the Department of Interior asked states to identify 3-5 priority migration corridors or winter range habitats for big game species in their respective state.

Where information on specific migration corridors or winter range habitat is lacking, the DOI requested states to identify their top 2-3 research priorities to fill these data or knowledge gaps. The following summary outlines Nevada's response and justification for the selected corridors and priority research.

Nevada partnered with the United States Geological Survey (USGS) to analyze GPS collar data for our top 3 priority mule deer migration corridors using the Brownian Bridge Movement Model (BBMM) methods outlined elsewhere (Horne et al 2007 and Sawyer et al 2013). We used GPS collar data from 287 individuals over an 8-year time period (2012-2019) in 3 distinct herds to map crucial winter range, high-use migration corridors, and stopovers using the best available science. Contract work was conducted by Western EcoSystems Technology, Inc. who produced all analyses and GIS shapefiles for each corridor. A report outlining the methods used in the analysis and details of the important stopovers and migration routes will be published by USGS upon final completion of the project (expected late fall 2019 or early 2020). The mapping products and associated meta-data will be hosted on the USGS web portal. We have updated landownership maps exhibiting priority migration corridors for each herd in this document (Figs. 2-8).

Corridor/Winter Range **-** Nevada has long recognized the importance of identifying and protecting migration corridors for big game species, particularly for mule deer. Beginning in 2011, Nevada initiated a large-scale research effort to investigate potential causes for declining mule deer populations in several key herds across the state. Nevada has collected GPS tracking information on 600 adult mule deer distributed across 8 study areas in the state to delineate fine scale movements and monitor survival of deer herds. Of those study areas, 3 mule deer populations clearly stand out as meeting the need for prioritization based on SO 3362 (**Figs. 2–4**). In addition to mule deer corridors, a minimum of 2 pronghorn herds have been identified as a priority from a conservation and economic value to Nevada. The two pronghorn herds selected for this exercise occur in northwestern and northeastern Nevada (**Fig. 9**), but data and analyses are currently lacking to adequately identify corridors for these herds.

Corridor #1 – Mule Deer Migration Nevada Management Area 10

The Area 10 population is one of the largest deer herds in the state, accounting for roughly 20 percent of the statewide mule deer population. The Area 10 herd is comprised of several sub-herds that are highly migratory and exhibit long distances migrations from summer to winter ranges. Several migratory pathways in Area 10 face challenges to permeability including livestock fences, impediments to the migration path from mineral extraction, competition from wild horses, and increasing highway traffic on US Highway 50. This population is highly important to Nevada from an economic and ecological perspective.

The Area 10 deer herd is located in northeastern Nevada and spans across two counties (Elko County and White Pine County). The summer and winter ranges span a very large area occurring

from Interstate – 80 about 30 miles east of Elko, Nevada to the White Pine Range around US Highway 50 about 30 miles west of Ely, Nevada (**Figs. 2-3**). During heavy snow years, even farther migrations have been documented south of Highway 50 near Mt. Hamilton.

The habitats vary substantially depending on seasonal range distribution. The summer range is comprised of mountain sage and other shrub communities, aspen and riparian habitats and some alpine grass-forb communities. Winter ranges are comprised of mostly sagebrush steppe vegetation communities with some use of agricultural lands occurring during transition and migratory periods.

Several key stopovers occur within the migration corridor for the Area 10 deer migration. Sawyer and Brittel (2014) identified several hundred "stopover sites" based on the analysis of 30 mule deer with GPS telemetry data from winter 2012 to spring of 2013. The largest stopovers occurred: 1) north and south of Harrison Pass Rd on the west side of the Ruby Mountains, 2) west side of Pearl Peak and Sherman Mountain 3) near Little and Big Bald Mountains on the Bald Mountain Mine complex 4) south of Warm Springs Ranch near Buck Mountain and Orchard Canyon and 5) north of Little Antelope Summit on US Highway 50 in the White Pine Range.

Landownership is comprised of mostly federal lands during winter and summer. The summer range is comprised of 75% federal lands with the remaining herd occurring on private lands. The migration path and winter range are largely comprised of lands administered by the USFS and BLM, although substantial use of both private lands and Bureau of Indian Affairs (BIA) occurs during the migration periods.

Land uses include agricultural and livestock grazing on private and public lands, recreational activities including hunting and hiking activities on federal lands. About 36,000 acres of the East Humboldt range and about 90,000 acres of the Ruby Mountains are designated wilderness areas with no motorized access allowed. A large-scale gold mine operation is active on the southern portion of the migration path in northern White Pine County.

Risks or threats to this deer population include: 1) conversion of native habitat to exotic grasslands where large-scale wildfires occur in the lower elevation precipitation zones, 2) Pinyon-Juniper encroachment in open sage-steppe habitats that reduce the productivity of understory species that mule deer prefer for forage, and 3) increasing constrictions in the migration pathways where mineral extraction activities are expanding.

The Nevada Department of Wildlife (NDOW) selected this mule deer herd due to its large population size (~ 20% of the state's deer population), large-scale spatial distribution, migration distance between summer and winter ranges, and due to threats to habitat integrity and connectivity from human disturbances (e.g., residential developments, mineral extraction activities, direct habitat losses from wildfire). Important stopovers sites have been identified by analysis of existing mule deer GPS collars (~291migrations

sequences from *n* = 117 individual animals) through contracts with the USGS (Figs 3-4). Notable stopover locations include areas near Harrison Pass on each side of the crest of the Ruby Mountains (20km long), as well as several major stopovers near Bald Mountain in the south Ruby Mountains.

A series of wildfires occurring in major stopover and winter range occurred during late summer of 2019 (Corta Fire and Cherry Fire), which has the potential to greatly impact this deer herd due to the large number of migrating and wintering deer using these stopovers. Aggressive fire rehabilitation and re-seeding efforts will be required to restore these important stopover and winter range habitats (Fig 8).

Actionable Habitat Projects Completed:

- **A conservation easement was drafted by the Rocky Mountain Elk Foundation (RMEF) on a large private land parcel during 2019. This agreement is nearly complete and is estimated the final signatures should be in place by late Fall of 2019. The conservation easement protects a large portion of private land that occurs directly in the established migration corridor for the Area 10 mule deer herd.**
- **The USFWS' Partners for Fish and Wildlife (PFW) worked with a private landowner and Nevada Department of Wildlife to inventory and apply herbicide treatments to control/eradicate medusahead, an invasive annual grass, over 680 contiguous acres for a cost of $81,885. Coordination on adhjacent USFS lands similarly infested with medusahead (*Taeniatherum caput-medusae*) have been stymied by environmental review and restrictions on herbicide available for use on USFS lands. This threat has been exacerbated by the 2019 fires.**

Habitat Projects in Progress:

- **NDOW is working collaboratively with BLM and Kinross, Inc. on a 5-year mitigation and monitoring plan for mule deer in the Bald Mountain area.**
- **Currently, about 30 GPS collars are deployed on mule deer as part of the monitoring plan with Kinross and BLM.**
- **Mitigation funds for disturbed crucial winter range are currently being implemented in the Overland Pass area just north of Bald Mountain. This area has been identified as an important stopover for the Area 10 deer herd.**
- **Large-scale habitat treatment projects occurring in the Overland Pass area north of Bald Mountain Mine.**

Habitat Conservation Needs:

- **Funding for up to several million dollars will be needed to conduct reseeding and habitat restoration efforts for the recent fires in the Harrison Pass and Sherman**

Mountain areas (2019 Corta and Cherry fires), including restoration projects from USFS Toiyabe National Forest and BLM Elko Districts.

- **Small-scale and targeted medusahead herbicide treatments have occurred in the Harrison Pass area on state lands, but a much larger portion of U.S. Forest Service lands within the Corta fire perimeter remains untreated.**
- **Additional radio-collaring in the eastern portion of the corridor to incorporate additional movement pathways to areas with significant habitat restoration investments (i.e., Spruce Mountain). Although we have documented movements of Area 10 mule deer to Spruce Mountain, these movements have not been quantified with high-resolution GPS collars to date.**

Corridor #2 – Mule Deer Migration, Nevada Management Area 7

The Area 7 population is another large deer herd in the state with a population estimate of 10,000 in 2017. The population is highly important to Nevada from an economic and ecological perspective. The Area 7 mule deer herd was selected as a priority due to the long-distance migrations these mule deer embark on as well as several challenges to habitat conditions the herd faces. It is one of the longest distance migrations in the state. A sub-set of the mule deer herd crosses a major US Highway (93) and Interstate-80 during its migration from summer to winter range. Several million dollars in crossing structures have been developed to help these deer during their migration, yet they still face challenges to existing habitat. The southern extent of the winter range for this herd also has wild horse levels in excess of 1500% above AML.

The Area 7 deer herd is located in northeastern Nevada and occurs entirely within Elko County. The migration path for the Pequop herd expands over a hundred miles long and begins in the Jarbidge Mountains to the north and extends to far south end of the Pequop Mountains and northern extreme edge of Spruce Mountain (Figs. 2, 5).

The habitats vary substantially depending on seasonal range distribution. The summer range is comprised of mountain big sage and other shrub communities, aspen and riparian habitats and some alpine grass-forb communities. Winter ranges are comprised of mostly sagebrush steppe vegetation communities with large portion of Pinyon-Juniper on the southern edge of their distribution.

Several key stopovers occur within the migration corridor for the Area 7 deer migration. Blum and Stewart (2014) identified many "stopover sites" based on the analysis of 66 mule deer with GPS telemetry data from winter 2012 to spring of 2014. The largest stopovers occurred at or near: 1) Mary's River drainage and east side of Snake Mountains, 2) Highway 93 north of Wells, NV near Bishop Reservoir 3) north and south of Interstate 80 on north Pequop Range and 4) south of Long Canyon on eastside of Pequop Mountains.

Landownership comprises a variety of public and private lands with large portions of federal lands administered by the BLM on winter ranges and USFS on higher elevation summer ranges.

Land uses include agricultural and livestock grazing on private and public owned lands, recreation including hunting and hiking activities on National Forest and BLM lands. A large-scale gold mine operation is active on the southern portion of the migration path on the east side of the Pequop Mountains near Long Canyon.

Risks or threats to this deer population include: 1) conversion of native habitat to exotic grasslands where large-scale wildfires occur in the lower elevation precipitation zones, 2) Pinyon-Juniper encroachment in open sage-steppe habitats that reduces the productivity of understory species that mule deer prefer for forage, and 3) increasing expansion and development of the Long Canyon mine causing disturbance to migration corridor and winter range use.

The Nevada Department of Wildlife (NDOW) selected this mule deer herd due to its relatively large population size (~12% of the state's deer population), large-scale spatial distribution and migration distance between summer and winter ranges, several threats to habitat integrity and connectivity due to mineral extraction activities, and direct habitat losses from wildfire. The Department, in cooperation with the Nevada Department of Transportation, has invested millions of dollars to install 11 major highway crossing structures beginning in Fall 2010 and project completion of the Pequop Summit crossing structure just prior to the Spring migration in March 2019. Important stopovers sites have been identified by analysis of existing mule deer GPS collars (~218 migration sequences from n = 67 individual animals) through contracts with the USGS (Figs 5-6). Notable stopover locations include areas along the Snake Mountains directly west of Highway 93 and on each side of the Pequop Summit crossing north and south of interstate I-80 (~10km long), as well as several major stopovers adjacent to Long Canyon mine in the Six Mile Creek drainage and the south Pequop Mountains.

A few wildfires have recently burned important stopover and winter range during late summer of 2018 (Hogan Fire) and 2019 (Shafter Fire), which has the potential to greatly impact this deer herd due to the large number of migrating and wintering deer using these stopovers. Aggressive fire rehabilitation and re-seeding efforts will be required to restore these important stopover and winter range habitats.

Actionable Habitat Projects Completed:

- **Re-seeding and herbicide treatments were applied in 2018 to the Hogan Fire.**
- **Final completion of the Pequop Summit crossing structure just prior to the Spring migration during March 2019.**
- **A project was funded for $20,000 through PFW, in coordination with a willing landowner, to bring 1.7 miles of fencing to wildlife-friendly standards.**

- **Maintenance of Payne Basin Chaining (2007)**
- **Modified 8 miles of railroad ROW fences west of 10-mile Overpass (2009)**
- **Removal of 4 miles of railroad ROW fencing west of 10-mile Overpass (2010)**
- **10-mile overpass and 2 undercrossings (2010)**
- **HD overpass and 1 undercrossing (2010)**
- **Conservation Easement on Gardner Davis's property (RMEF) – 800 acres (2011)**
- **NDOW purchased 1,013 acres on HD summit on either side of crossings (2013)**
- **Modified fences on NDOW HD Summit property (2015)**
- **HD Summit 2nd undercrossing completed (2016)**
- **Fence and enhance Cricket springs in corridor (2016)**
- **Juniper Removal on Spud Patch (winter range) – 900 acres (2018)**

Habitat Projects in Progress:

- **Modification of 2 miles of range fence on Gibbs Ranch private land funded by USFWS**
- **Modification of 1.25 miles of fence on BLM funded by Mule Deer Foundation**

Habitat Conservation Needs:

- **Environmental Assessment (EA) clearances that have been in the works for several years are still not completed by BLM Wells Field Office. These clearances are required for before any on-the-ground habitat work can be completed for this deer herd.**
- **O'neil PPA EA Restoration Treatment (Deer Fire) 15,776 acres BLM.**
- **South Cricket Fire Oneil PPA EA Restoration Treatment – 5,349 acres BLM, 6,140 private lands.**
- **Payne Basin – 2,200 acres, 100% public, Juniper removal and possible seeding.**
- **Toano Range –7,800 acres, 100% public, Juniper removal only.**
- **Northeast Pequops – Oneil PPA EA.**
- **Phase 1 and 2 conifer removal treatments could include – hand thinning, mastication, broadcast and drill seeding, pile burning, greenwood fire cutting, herbicide, and/or temporary fencing. These projects will benefit sage-grouse and mule deer.**

Corridor #3 – Mule Deer Migration Nevada Management Area 6

The Area 6 mule deer herd is the third largest deer herd in the state with a population estimate of ~9,500 in 2017. This herd is highly migratory and has been impacted by major changes in habitat quality to winter range. It was once one of the largest and most productive deer herds in Nevada, but due to major large-scale wildfires over the course of several decades the winter range now only supports a faction of the historic population.

The Area 6 deer herd is located in northeastern Nevada (**Figs. 2, 7**) and spans across two counties (Elko and Humboldt County). The summer ranges span from the Independence and Tuscarora mountain ranges northwest of Elko, Nevada while stopover and winter ranges extend north about 30 miles into Idaho and south in the Sheep Creek Range and Dunphy Hills near Interstate -80.

The habitats vary substantially depending on seasonal range distribution. The summer range is comprised of mountain big sage and other shrub communities, aspen and riparian habitats. Winter ranges are comprised of sagebrush steppe vegetation communities and vast expanses of exotic annual grasslands.

Several key stopovers occur within the various migration corridors for the Area 6 mule deer herd. Although a formal analysis using Brownian Bridge Movement Models has not been conducted for this area, several transition ranges and stopover points are known to occur in the Santa Renia Mountains and along the western slope of the Tuscarora Mountains.

Landownership comprises a variety of public and private lands with large portions of federal lands administered by the BLM on winter ranges and USFS on higher elevation summer ranges.

Land uses include agricultural and livestock grazing on private and public owned lands, recreation activities including hunting and hiking activities on National Forest and BLM lands. Several permitted mining operations occur between the high elevation summer ranges and lower elevation winter ranges.

Risks or threats to this deer population include: 1) conversion of native shrubland habitat to exotic grasslands where large-scale wildfires have occurred on lower elevation winter ranges and 2) impediments to the migration pathways where several large-scale gold mines and other minerals have occurred over the past several decades.

The Nevada Department of Wildlife (NDOW) selected this mule deer herd due to its relatively large population size (~10% of the state's deer population), large-scale spatial distribution and migration distance between summer and winter ranges, threats to habitat integrity and connectivity due to mineral extraction activities, and direct habitat losses from wildfire. Important stopovers sites have been identified by analysis of existing mule deer GPS collars (219 migration sequences from n = 103 individual animals) through contracts with the USGS (Fig. 7). Notable stopover locations include areas along the west side of the Independence Valley near Tuscarora and Rock Creek drainages directly west of Willow Creek Reservoir. Three sub-herds were delineated for this analysis (Izzenhood, Sheep Creek, and Maggie Creek) due to the unique spatial use and distinct winter range of these mule deer (Fig. 7). Additional stopover use exists in all three sub-herds and notable stopover locations were identified in the Sheep Creek range on the west side of Boulder Valley as well as a major migration corridor on the east side of the South Tuscaroa

mountains from approximately North Haskell Creek to Little Jack Creek and extending into the Dunphy Hills near Interstate 80 (I-80) to the south.

Major wildfires continue to burn important stopover habitats and winter range for this mule deer herd. Fires from late summer of 2018 have the potential to greatly impact this deer herd. Aggressive fire rehabilitation and re-seeding efforts will be required to restore these important stopover and winter range habitats. Several potential barriers to movements were noted in the updated analysis including expanding mining activities in the Carlin Trend region as well as existing barriers along I-80 including fencing and road traffic that may increase energy expenditure and result increased mortality for migrating mule deer.

Actionable Habitat Projects Completed:

- **NDOW received a National Fish and Wildlife (NFWF) grant for habitat restoration work in the Area 6 mule deer migration corridor. We are in the process of developing private contracts for the application of herbicide and native seed mixes in the high use corridor and stopover locations in the Rock Creek Ridge area between the small towns of Midas and Tuscarora. Coordination between the NDOW Habitat and Game Divisions will ensure the appropriate prescriptions and treatment sites will be targeted.**
- **NDOW spent $75,000 dollars on fire restoration efforts on the South Sugarloaf Fire (2018) that burned 86,000 acres in Area 6.**
- **Total amount of funds expended on fire rehabilitation by NDOW during 2018 was $170,000.**
- **Sagebrush restoration on ~700 acres of private lands used as a stopover area by mule deer in the Beaver Flat area was funded through PFW ($40,000).**
- **Invasive weed species management, reseeding, and sagebrush planting was funded for ~400 acres of private lands in the Boulder Valley area by PFW ($75,000).**

Habitat Projects in Progress:

- **The primary focus of this deer herd has been restoring winter ranges burned by wildfires using re-seeding, herbicide, and other methods.**
- **NDOW is currently using a combination of herbicide treatments and reseeding efforts to help restore and improve transitional and winter range habitats that were burned in several large-scale wildfires that occurred beginning in 2001 and have continued to see wildfires burn crucial winter range and stopover habitats most recently with the Izzenhood Fire (2011), Hot Pot Fire (2016), Rooster Comb Fire 2017, Sheep Creek Fire (2018).**
- **NDOW deployed an additional 45 GPS collars in this herd during the winter of 2017 to identify more migration corridors and initiate long-term monitoring for mining impacts and restoration efforts. These data continue to be used in on**

Habitat Conservation Needs:

- **Restoration of burned winter ranges has been in excess of several million dollars, with many more habitat treatments planned in the future.**
- **Habitat prescriptions on winter range, transition or "stop-over" habitats, and summer range are being considered and evaluated for future funding opportunities**
- **A major barrier to connectivity occurs in the southern portion of the corridor where migrating mule deer are forced to cross Interstate 80 near the Dunphy Hills to the adjacent Argenta Rim winter range. Challenges with fencing along the interstate right-of-way and two intersecting railway underpasses pose a significant threat to this deer herd.**

Corridor #4 – Pronghorn Migration Game Management Areas 1-3 (Northern Washoe)

The Northern Washoe pronghorn herd is one of the largest and most migratory herds in the state with a population estimate of 4,000 inhabiting 5 game management units in 2017. The Northern Washoe pronghorn herd was selected as a priority due to their high propensity for migration and potential for habitat loss. The habitat for this herd is largely intact and the large Sheldon National Wildlife Refuge (Sheldon NWR) protects habitat for a large portion of the population. However, large-scale wildfires, invasion of exotic grasses and habitat destruction from free ranging feral horses has occurred on major winter ranges surrounding the Sheldon NWR.

The Northern Washoe pronghorn herd occurs in northwest Nevada (**Fig. 9**) encompassing a large portion of Washoe County and the western edge of Humboldt County, Nevada. The current distribution of these pronghorn extend as far north as Hart Mountain in Oregon to the southern extension of the Black Rock Desert near Gerlach, Nevada.

The habitats important for pronghorn abundance are comprised of sagebrush-steppe vegetation communities with scattered ephemeral lake beds and mountain springs and seeps that provide water sources.

Collins (2016) provided an analysis of migration routes for 39 pronghorn captured on the Sheldon NWR and monitored between 2011 and 2012, although the author did not calculate "stopovers" for this analysis it is believed they do occur on some of the long distance migrations for some individuals.

Landownership occupied by this pronghorn herd is almost entirely owned by the federal government. Collins (2016) estimated the percentage of public land to be about 90% for pronghorn with substantial occupancy on Sheldon and Hart Mountain NWRs and surrounding lands managed by the BLM. A small percentage (<1%) of the herd occupies tribal lands, while the remainder of land is privately owned.

Land uses include grazing by sheep and cattle on public allotments owned by BLM, hunting, wildlife watching, and other recreational activities. Several wilderness and wilderness study areas occur in Northern Washoe and Humboldt counties totaling over 200,000 acres. The Sheldon is 560,000 acres.

Risks to this pronghorn herd include habitat type conversion from native shrub/forb communities to exotic grasslands, severe impacts from drought, and overuse and competition for forage from feral horses.

Corridor #5 – Pronghorn Migration Game Management Areas 6-7

The Area 6-7 pronghorn herd is one of the largest and most migratory herds in the state with a population estimate of over 2,000 inhabiting about 5 game management units in 2017. This pronghorn herd was selected as a priority due to the highly migratory nature as well as several challenges to habitat this herd faces. The winter range habitat for this herd has been severely impacted by large-scale wildfires over the past several decades. NDOW in partnership with BLM has aggressively treated some of these large fires with a mix of native and non-native seed mixtures. Nonetheless, several factors threaten the long-term persistence of this migration corridor.

The location of the herd occurs across a vast expanse of land and primary summer ranges are near Wild Horse Reservoir in northern Elko, County. The migration path is largely unknown at this time and has never been mapped using modern GPS telemetry data. The winter range occurs along the southern edge of Elko, County near Interstate -80 between Battle Mountain and Elko, Nevada.

Habitats are comprised of sagebrush-steppe vegetation communities with mixed native/exotic grasslands occurring on portions of the winter range. Specific stopover locations are unknown at this time but warrants further investigation. Land ownership comprises a variety of public and private lands with large portions of federal lands administered by the BLM on winter ranges and USFS on higher elevation summer ranges.

Land uses include agricultural and livestock grazing on private and public owned lands, recreation activities including hunting and hiking activities on National Forest and BLM lands. Several permitted mining operations occur between the high elevation summer ranges and lower elevation winter ranges.

Risks or threats to this pronghorn include: 1) conversion of native shrubland habitat to exotic grasslands where large-scale wildfires have occurred on lower elevation winter ranges and 2) impediments to the migration pathways where several large-scale gold mines and other minerals have occurred over the past several decades.

Corridor #4 – Pronghorn Migration Game Management Areas 1-3 (Northern Washoe)

Habitat treatments have largely consisted of re-seeding efforts to restore summer and winter ranges burned by wildfires. An effort by the BLM Surprise Field Office has been proposed to make modifications to some existing fences to make the conducive to crossing by pronghorn. It is unknown what the cost of these efforts or future habitat improvements would be.

The Sheldon NWR, managed by the USFWS, has actively restored big-game habitats including the removal of juniper encroaching into important sagebrush habitats and early detection and rapid treatment of non-native invasive weeds. Feral horses and burros have also been actively managed to near-zero levels on the Sheldon. Barriers to big-game movement have been minimized through a combination of the removal of all interior fencing and the use of wildlife-friendly fencing on the Sheldon boundary. Refuge employees plan and conduct fuels habitat treatments and provide support and assistance when requested on the lands between the Refuges. Sheldon annually monitors pronghorn and bighorn populations through comprehensive aerial surveys across the Sheldon and the nearby lands.

Corridor #5 – Pronghorn Migration Game Management Areas 6-7

No formal cost estimate has been formulated to recover the habitat, but NDOW in collaboration with BLM, USFS and the private sector have spent millions of dollars in habitat restoration efforts thus far in post-fire restoration activities. Upon results of pending research study, NDOW will work with BLM and USFS to draft a cost estimate to recover habitats in this migration corridor.

NDOW received funding in the amount of $282,975 to fulfill the research needs outlined in the 2018 State Action Plan. During late September 2019, NDOW captured and radio-collared 60 pronghorn in two study areas (Northern Washoe Co) and Owyhee Reservoir in northern Nevada. We have mapped and identified capture sites in the two study areas and obtained representative sampling units (individual animals) in those sites. NDOW is coordinating and working with a graduate student from the University of Nevada, Reno on data collection and analysis for this research project. A report to the USFWS will be prepared at the completion of year one for this project.

Research Needs – Augmentation of GPS radio collaring for mule deer and pronghorn, analysis of wildlife crossing structures for mule deer, and competitive interactions between feral horses and burros and big games species in Nevada.

<u>Summary</u>

NDOW seeks funding in the amount of approximately $300,000 to collect information regarding migration corridors and winter use in our top 5 migratory herds using the best available science including Brownian Bridge Movement Models (BBMMs) to delineate

migration corridors. We are purposing 4 research projects that identify research needs and knowledge gaps in existing priority herds. The general objectives are to: 1) capture up to 40 mule deer and 40 pronghorn in 5 priority herds to attach GPS radio collars, and to analyze those data to understand migration patterns, stopover areas, and seasonal habitats, 2) deploy trail cameras on existing herds to quantify use of wildlife crossing structures, 3) purchase remote sensing imagery and analysis of mule deer and pronghorn GPS collars to identify conflict areas with feral equids, and 4) conduct habitat evaluation of stopover sites where prior habitat treatments have been conducted for the benefit of mule deer.

Methods

We propose to capture and collar up to 40 additional pronghorn in northern Nevada and 40 mule deer in two existing study areas that are known to have extensive migration movements. The information from the GPS collars will be used to augment existing GPS radio collar study's that were initially designed to delineate migration corridors, stop-over locations, and quantify the amount of time spent in crucial winter habitats. We will use Brownian Bridge Movement Models (Horne et al. 2007, Sawyer et al 2009) to analyze the GPS telemetry data we collect on marked animals. To accomplish this goal, NDOW will contract or use existing agreements with the University of Nevada Reno or a third party to analyze the migration movement data upon project completion. The migration corridors and winter range delineation will be used by NDOW to identify priority habitat and restoration projects. We will share these data and analyses with our federal partners and local wildlife conservation organizations to facilitate conservation efforts. For project #2, wildlife safety crossing research, we will follow the methods of Simpson et al (2016) for the appropriate placement of remote trail cameras and analysis of previously collected data for years 2018-2019. For project #3 we will collect important predictor variables such as daily NDVI and surface water and use the methods outlined by Robb et al (2019) and Stoner et al (2016) to apply statistical models for predicting animals' movements based on remote sensing data.

Budget and Justification

The overall projected budget request is $300,000 (Table 1). Line item descriptions are as follows:

GPS collars and fees

We budget for GPS radio collars for up to 80 animals to be deployed in 4 distinct herds as a one-time, up-front cost. GPS radio-collar costs per animal and associated fees were estimated based on previous collaring studies, but remain subject to negotiated state contract prices (approximately $1200 per radio collar). We anticipate some telemetry units may be redeployed in following years if an adequate amount of battery life remains on collar, or they may be refurbished and redeployed for a reduced fee. Total cost for this

project is estimated to be approximately $150,000 (see Table 1 for detailed breakdown of project costs).

Animal Capture

We budget for the capture of up to 80 animals total in the first year of the study. Our contracted price (~$375/animal) does not include capture crew costs and ferry time for helicopter capture services. We anticipate up to 20 additional animals annually may need to be captured to redeploy recovered or refurbished radio-collars, which NDOW will fund with internal or external sources such as NGO's.

Contract Services

We will contract or develop a sub-grant with a University to assist with field work involving collection of camera trapping data including downloading of camera data, and analysis of remote sensing information. We anticipate these costs to be $50,000 for the first year of the project, which does not include indirect costs for administrative overhead charges. We are assuming overhead charges of 17.5% if using a state University contract system. Additionally, we will use contract services for data acquisition and analysis of remote sensing data using best available scientific methods developed by Utah State University and other collaborators. Total project costs for all contracted services is estimated to be approximately $125,000 (see Table 1 for detailed list of project costs).

Research Projects

Project #1 – Augmentation of existing GPS radio collars in priority herds

Several research efforts and habitat improvement projects are underway to better understand movement corridors and potential impacts from wildfires and mining activity. We seek to purchase up to 80 radio collars to augment existing research NDOW has identified for mule deer and pronghorn using the Brownian Bridge Movement Model approach (Sawyer et al 2014, Horne et al 2007). Currently, about 20 GPS collars are deployed on mule deer as part of the Long Canyon Mule Deer monitoring plan in collaboration with BLM and NV Gold Mines. Several habitat improvement projects have been planned that are awaiting final NEPA clearances to enhance winter ranges for mule deer including Pinyon-Juniper thinning projects. These data will be used to monitor use of habitat treatments, use of newly constructed wildlife safety crossing structures, and for future refinements to priority corridor delineations. Total equipment and capture costs will be $150,000.

Project #2 – Monitoring of mule deer using highway crossing structures and mining mitigation using remote trail cameras

This study is designed to purchase remote trail cameras and analysis of previously collected camera data that have been in-place on or near the Pequop summit wildlife crossing structures for about 2 years. In addition this study would provide real-time data (using satellite upload trail camera images) for migrating mule deer in the Long Canyon Mine area that could be used for on-going mitigation projects such as modification of travel corridors, timing restrictions, or other measures to off-set mining activity. We budget $25,000 for camera purchase and data services to transmit remote images to website and $25,000 for contract services to hire temporary data technician to process photos and enter information into statewide database (Table 1). Thus far, at least 11 wildlife crossing structures have been completed for this deer on US Highway 93 and Interstate -80. The cost of these structures is in excess of 20 million dollars, funded by Nevada Department of Transportation and from Federal Highway and Transportation funds.

Project #3 – Competitive interactions between wildlife and feral horses

NDOW has recently initiated a study with Utah State University focusing on competitive interactions between feral equids (horses and burros) and big game species in Nevada. We are interested in using remote sensing imagery and robust statistical analyses to evaluate and prioritize conflict areas between feral equids and wildlife. A brief synopsis of the project can be found in the attached proposal titled "Prioritizing and Protecting Natural Water Sources". NDOW received partial funding for this project through the Nevada Department of Wildlife Heritage program. However, we are still seeking $50,000 to purchase and process high resolution satellite imagery that will be used to quantify daily Normalized Difference Vegetation Index (NDVI) and surface water using a modeling approach. This budget item will be used for the acquisition and analysis of several key remote sensing products used to predict conflict areas between mule deer, pronghorn and feral equids. Specifically, we will use covariates including NDVI and surface water reflectance developed by researchers (Robb et al 2019, Stoner et al 2016) to apply statistical models for predicting animals' movements based on remote sensing data.

Project #4 – Habitat evaluation and vegetation sampling in stopover sites

This project seeks to evaluate the existing vegetation communities and potential improvements in habitat treatments in identified and mapped migration corridors and stopover sites using recently mapped migration data for mule deer. The research will incorporate on the ground field samples collected by field crews to evaluate use of treatments and control sites by mule deer. Field data will consist of vegetation samples in targeted areas as well as fecal samples from mule deer in associated habitat treatment areas. We are budgeting for $50,000 in contract services to collect field data and analyze

date by third party or university contractor to examine effects of past habitat treatments on vegetation growth (plant vigor and distribution) and invasive species in relation to use of those habitat treatments by GPS collared mule deer. This work will be critical for evaluating current and future restoration projects designed to improve winter range and stopover habitats for migrating ungulates such as pronghorn, elk, and mule deer.

Literature cited

Blum, M., and K. Stewart. (2014). Migration habits of the Pequop mule deer herd – a summary to the Nevada Department of Wildlife. University of Nevada Reno, NV.

Collins, G. (2016). Seasonal distribution and routes of pronghorn in the Northern Great Basin. *Western North American Naturalist* 76(1) 101-112.

Horne, J. S., E. O. Garton, S. M. Krone, and J. S. Lewis. (2007). Analyzing animal movements using Brownian bridges. Ecology 88:2354–2363.

Robb, B, and Q. Huang, J. Sexton, D. Stoner, and P. Leimgruber. (2019) Environmental differences between migratory and resident ungulates – Predicting movement strategies in Rocky Mountain Mule Deer with remotely sensed plant phenology, snow, and land cover. *Remote Sensing 11*(17), 1980

Sawyer, H., and M. Brittell. (2014). Mule deer migration and the Bald Mountain Mine – a summary of baseline data. Western Ecosystems Technology, Inc., Laramie, WY.

Simpson, N. O., Stewart, K. M., Schroeder, C., Cox, M., Huebner, K., & Wasley, T. (2016). Overpasses and underpasses: Effectiveness of crossing structures for migratory ungulates. *The Journal of Wildlife Management*, *80*(8), 1370-1378.

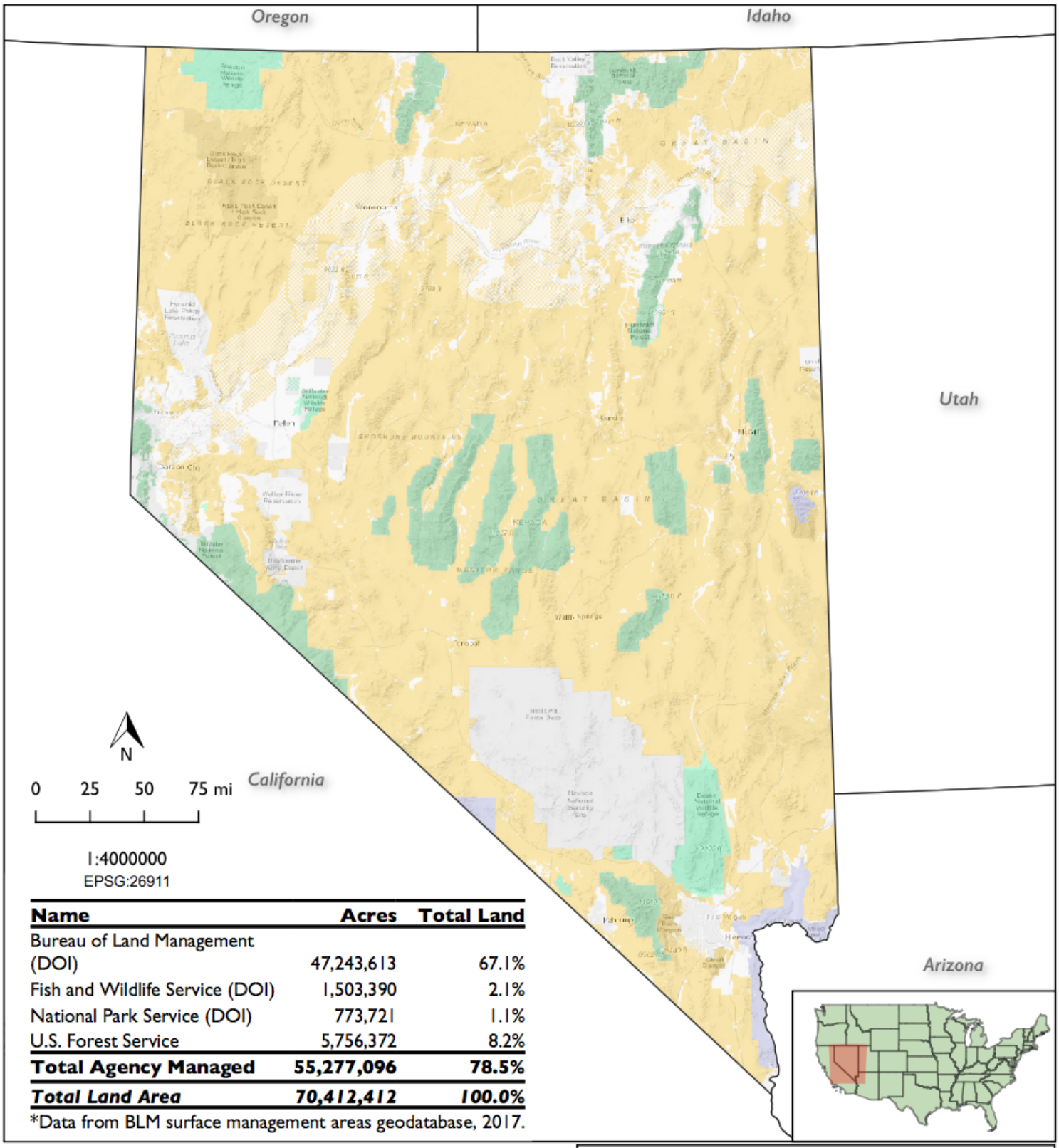
Stoner, D. C., Sexton, J. O., Nagol, J., Bernales, H. H., & Edwards Jr, T. C. (2016). Ungulate reproductive parameters track satellite observations of plant phenology across latitude and climatological regimes. *PloS one*, *11*(2), e0148780.

Table 1. Budget for research projects for September 2019 State Actions Plan for identification and analysis of migration corridors in Nevada.

	Fiscal Year			
Project #1 GPS Collars	**2020**	**2021**	**2022**	**Total**
GPS radio collars ($1200 x 80 animals)	$96,000	—	—	$96,000
GPS data fee services ($100 yr x 80 collars)	$8,000	$8,000	$8,000	$24,000
Capture services ($375 per animal)	$30,000	—	—	$30,000
Subtotal	$134,000	$8,000	$8,000	$150,000
Project #2 Remote Cameras				
Purchase Trail Cameras	$25,000			$25,000
Contract Services	$25,000			$25,000
Subtotal	$50,000			$50,000
Project #3 Satellite Imagery and Analysis				
Contract Services of imagery analysis	$50,000			$50,000
Project #3 Habitat Evaluation at Stopovers				
Contract Services University of Nevada	$50,000			$50,000
Total Project Costs	$284,000	$8,000	$8,000	$300,000

U.S. Department of the Interior

Nevada Surface Management Areas



Name	Acres	Total Land
Bureau of Land Management (DOI)	47,243,613	67.1%
Fish and Wildlife Service (DOI)	1,503,390	2.1%
National Park Service (DOI)	773,721	1.1%
U.S. Forest Service	5,756,372	8.2%
Total Agency Managed	**55,277,096**	**78.5%**
Total Land Area	***70,412,412***	***100.0%***

*Data from BLM surface management areas geodatabase, 2017.

Legend

- Bureau of Land Management
- National Park Service
- U.S. Fish & Wildlife Service
- U.S. Forest Service

No warranty is made by the U.S. Fish & Wildlife Service as to the accuracy, reliability, or completeness of these data. Orginal data were compiled from various sources. This information may not meet National Map Accuracy Standards. This project was developed through digital means and may be updated without notice.

Figure 1. Federal surface management distribution in Nevada for Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service, and U.S. Forest Service.

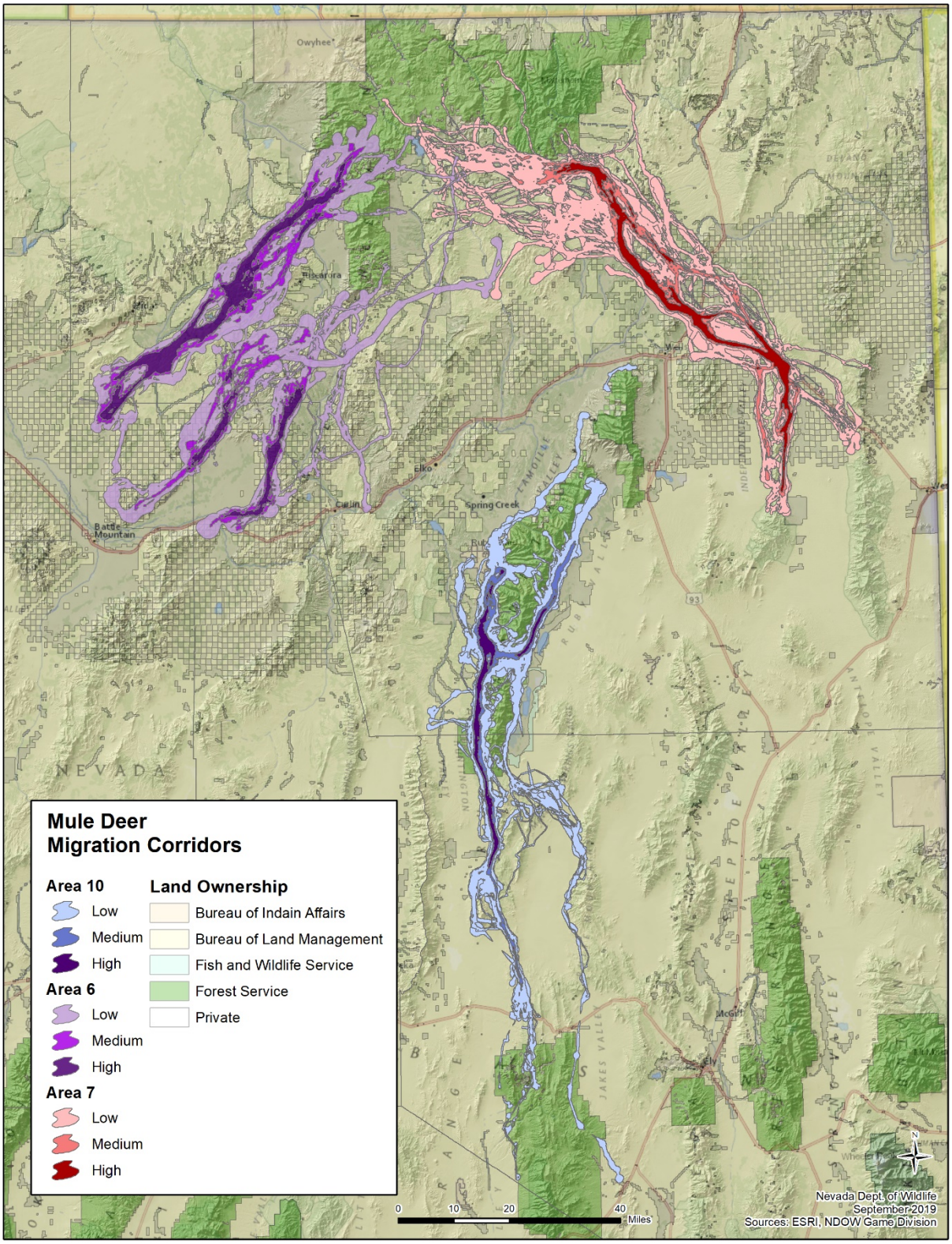


Figure 2. Top three priority mule deer migration corridors in relation to land ownership in Elko County, Nevada.

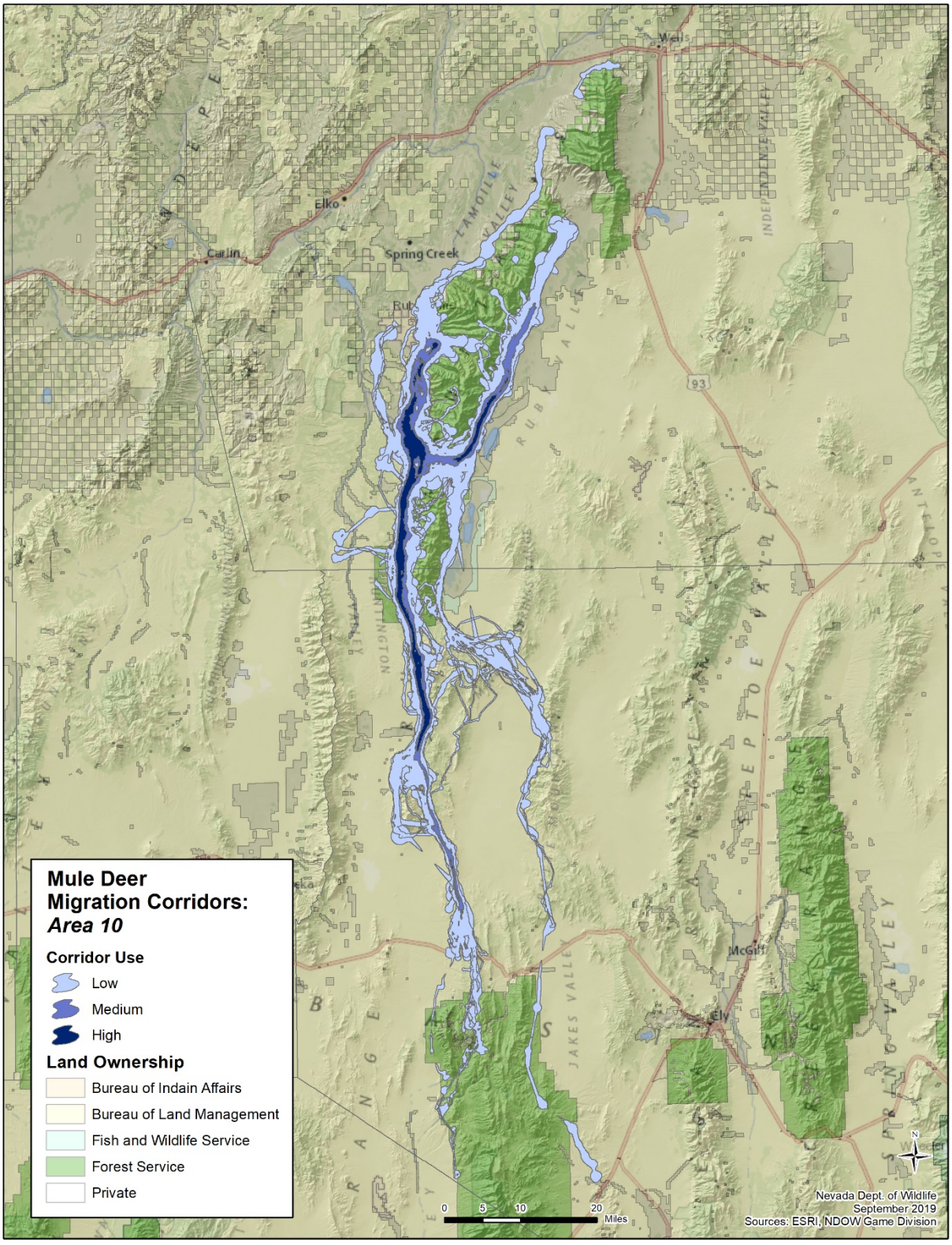


Figure 3. Area 10 mule deer migration corridor in relation to land ownership in Elko County, Nevada.

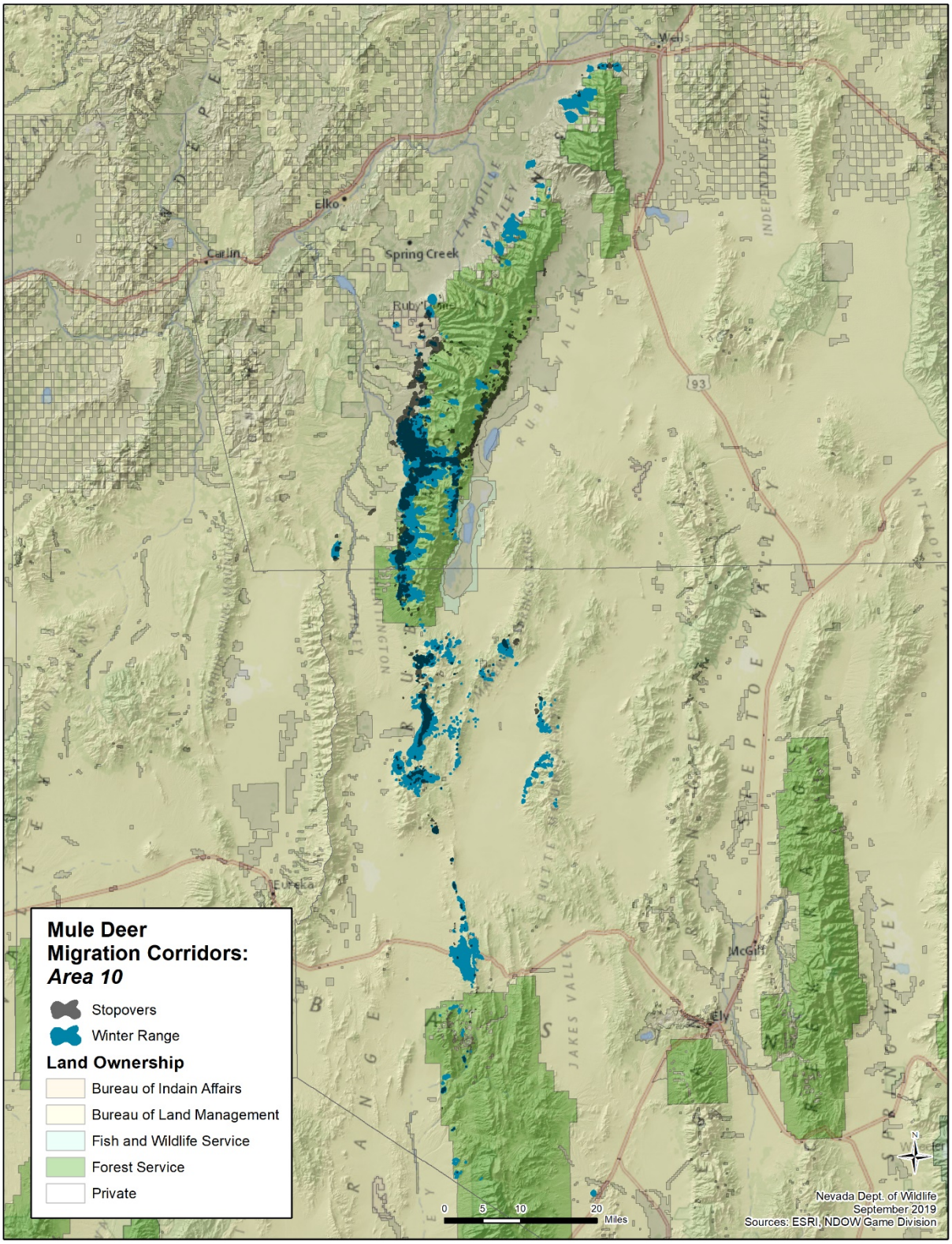


Figure 4. Area 10 mule deer stopovers and winter range polygons in relation to land ownership in Elko County, Nevada.

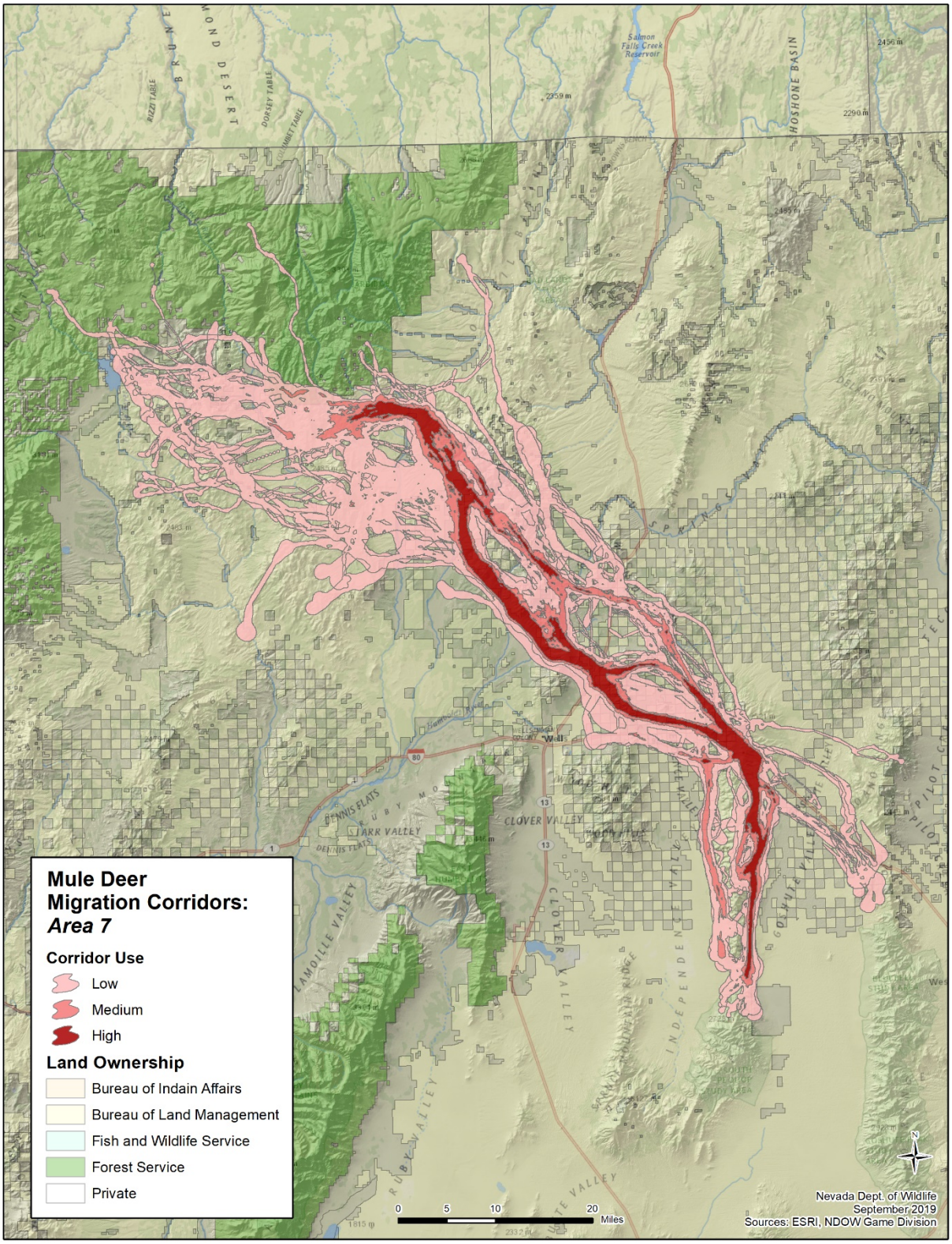


Figure 5. Area 7 mule deer migration corridor in relation to land ownership in Elko County, Nevada.

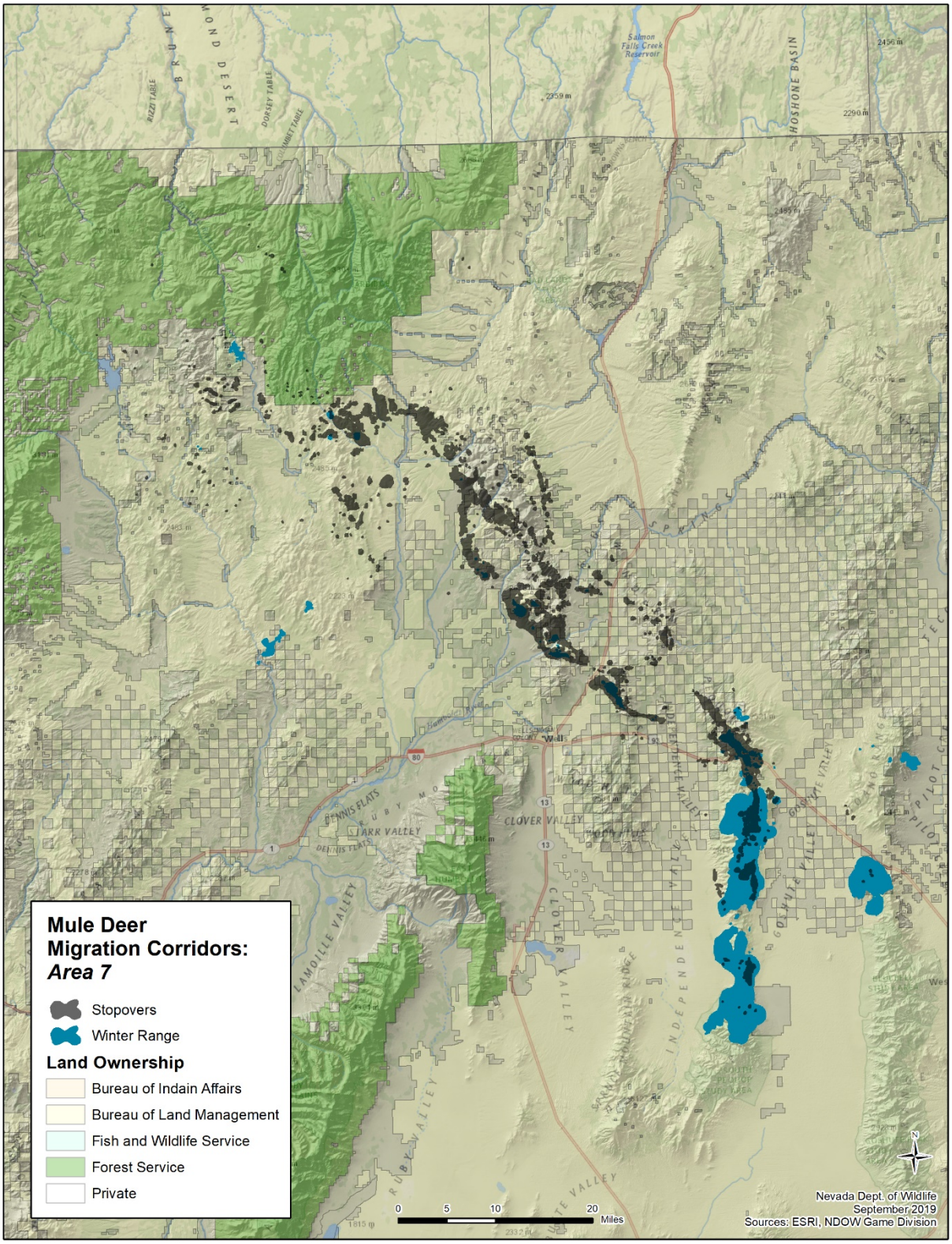


Figure 6. Area 7 mule deer stopovers and winter range polygons in relation to land ownership in Elko County, Nevada.

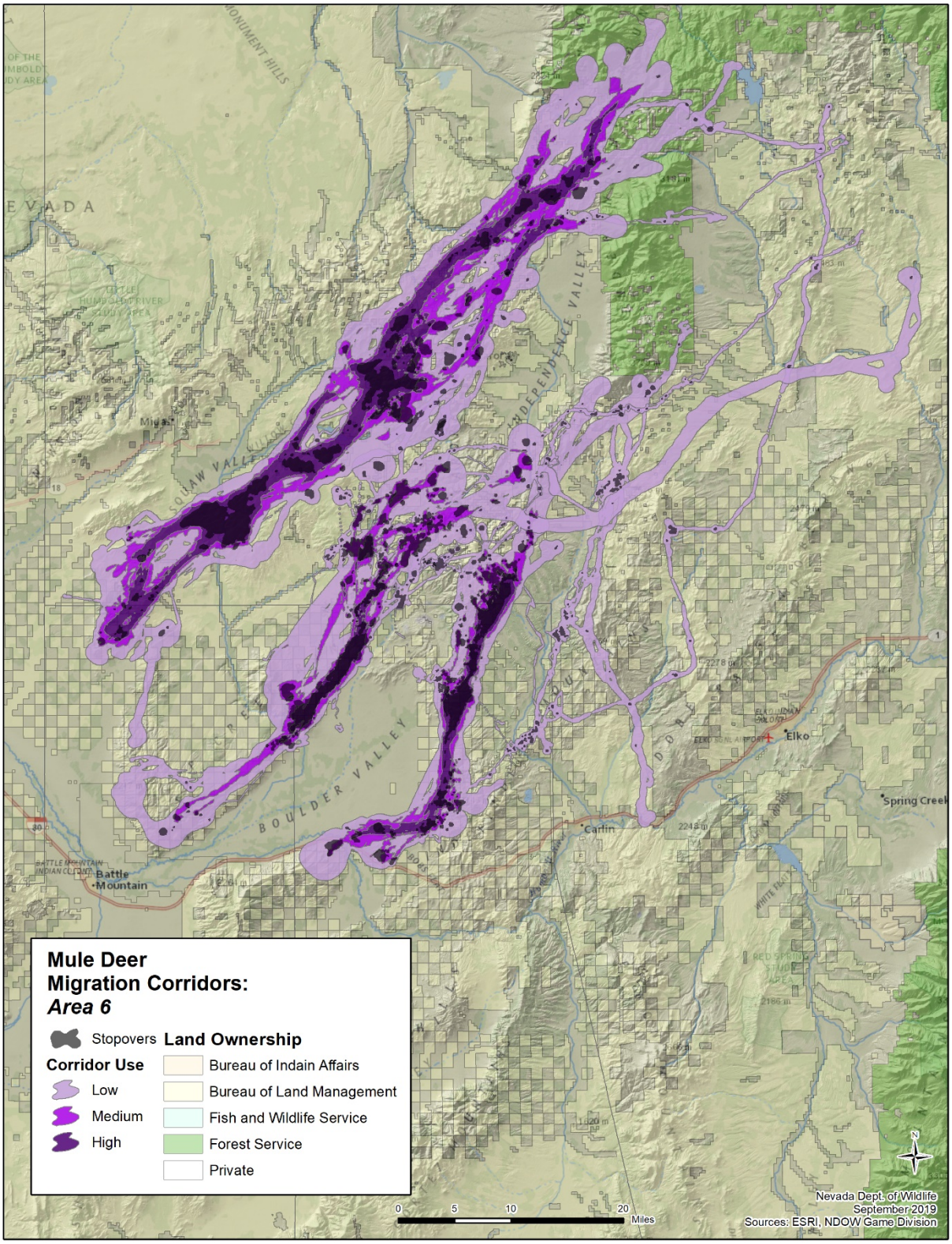


Figure 7. Area 6 mule deer migration corridors and stopovers in relation to land ownership in Elko County, Nevada.

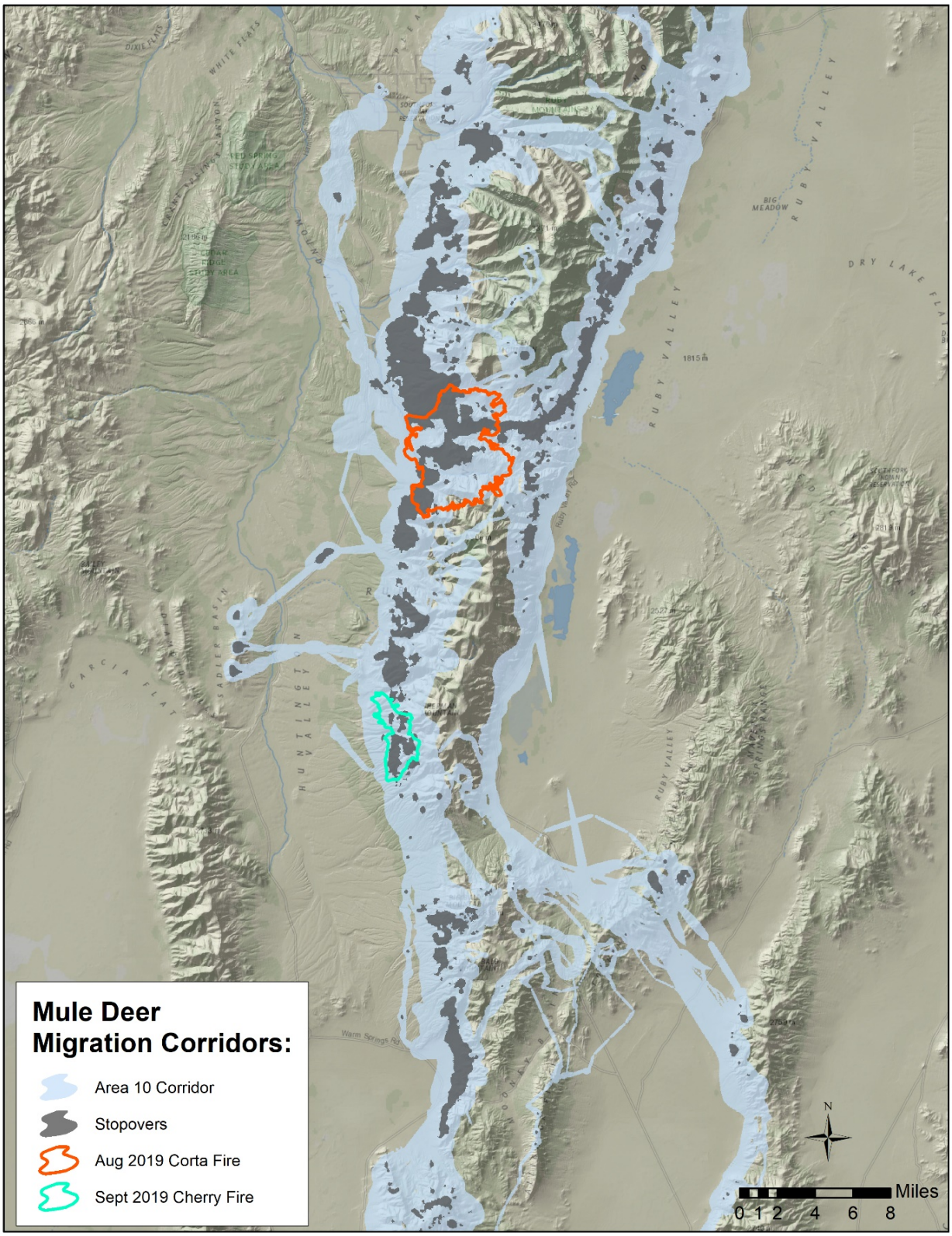


Figure 8. Map showing recent wildfires that occurred during summer 2019 in the Area 10 mule deer migration corridor and stopover habitats.

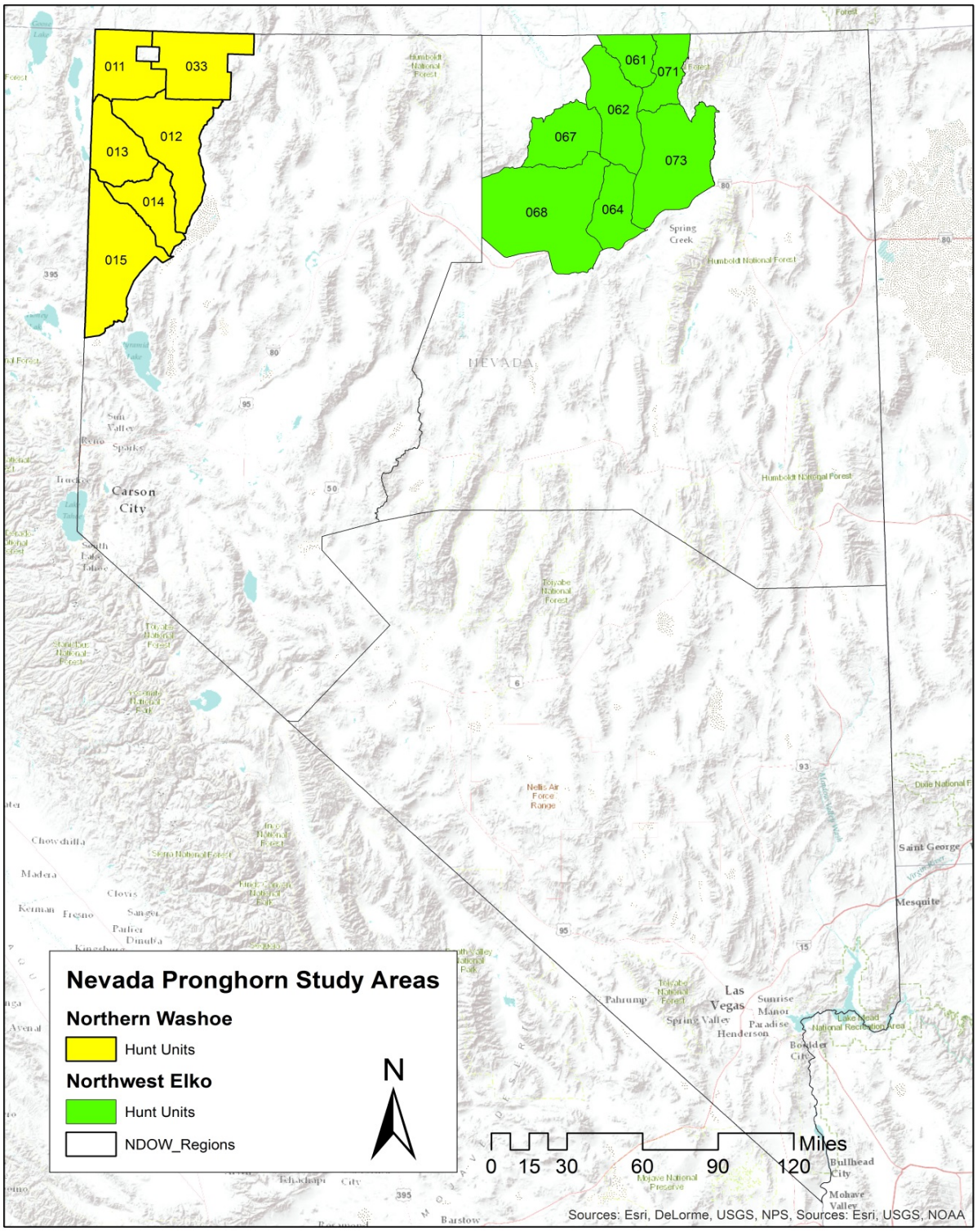


Figure 9. Map showing pronghorn capture areas in northern Nevada for pronghorn research projects in Washoe and Elko Counties.

Appendix A. Secretarial 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.

Appendix A. Secretarial Order 3362

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 (if no 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

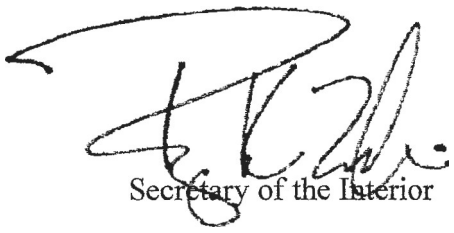
jurisdictional boundaries.

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 O 9 2018