

2019 WASHINGTON ACTION PLAN
For
Implementation of Department of the Interior Secretarial Order 3362:
“Improving Habitat Quality in Western Big-Game Winter Range and Migration
Corridors”

Introduction

Secretarial Order 3362 (Appendix A) directs appropriate bureaus (US Fish and Wildlife Service [USFWS], National Park Service [NPS], and Bureau of Land Management [BLM]) within the Department of the Interior (DOI) to work in close partnership with the State of Washington to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands under the management jurisdiction of the DOI 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.

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 (NRCS), 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.

There are nearly 43 million acres of land in Washington, of which approximately 28% (11.8 million) is either DOI or Forest Service (USFS) managed. The USFS manages almost 22% (9.3 million acres), with DOI managing the rest (4% NPS, 1% each USFWS and BLM; see map Appendix B). The landscapes necessary to maintain ungulate winter range and migration routes are becoming increasingly fragmented across the western United States due to human encroachment from agriculture (Donald and Evans 2006), residential development and urban sprawl (Johnson et. al 2018, Radeloff et. al 2005, Wyckoff et. al 2018), roadway expansion (Coe et. al 2015, Johnson 2001, Simpson et. al 2016), and natural resource extraction (Hennings and Soll 2012, Lendrum et. al 2013, Sawyer et. al 2017).

Most of the major statewide problems affecting Washington’s wildlife and biodiversity are the direct or indirect result of human influence on the state’s habitat base (WDFW 2015). Sustained human population growth, constant invasion of non-native plant and animal species across the landscape, forest conservation and management practices, conversion of shrub-steppe and grassland habitat to agriculture, disease and pathogens, inadequate data on wildlife, and climate change are all major influencing factors affecting wildlife that were identified in the Washington

Wildlife State Action Plan (WDFW 2015). Washington's population is projected to continue to rise (WSOFM 2018), and with this population growth will come more cars and roads, more demand for water, energy and developable land, and increased need for the treatment and disposal of solid waste, sewage and stormwater runoff—all of which will impact the state's wildlife and habitat resources. In the face of this projected growth, the Washington Department of Fish and Wildlife (WDFW) and its conservation partners find themselves in the difficult position of applying limited funds and staff resources to identifying, conserving and managing the remaining native species and the habitats on which they depend.

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. The DOI has a responsibility as a manager with large landholdings to be a collaborative neighbor and steward of the resources held in trust. Secretarial Order 3362 directs the DOI to work with 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.

Beyond land management responsibilities, the DOI 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 DOI 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 DOI and by the USFS with their cooperation. Consistent with the American conservation ethic, it is crucial that the DOI take action to harmonize State fish and game management and Federal land management of big-game winter range and corridors. In addition, on lands within these important areas, if private landowners are interested and willing, conservation may occur through voluntary agreements.

Washington State has prioritized mule deer (*Odocoileus hemionus*) which are common throughout Washington State east of the Cascade Crest and are managed by the Washington Department of Fish and Wildlife within seven Mule Deer Management Zones (MDMZs; Figure 1) that each represent a distinct ecoregion within the state (Omernik 1987, WDFW 2016). Mule deer habitat in Washington includes the arid but heavily cultivated shrub-steppe of the Columbia Plateau zone, the remote high alpine meadows of the East Slope Cascades and Naches zones, as well as deep canyons dominated by oak in the East Columbia Gorge zone. Mule deer management is complicated by the fact that Washington has the second highest human population density among western states, and population growth and concomitant development is occurring in many areas, including the eastern slopes of the Cascade Mountains. This shift in human density is increasing pressure for development on traditional mule deer winter range vital to sustaining healthy mule deer populations in several zones. Recent large wildfires in some of

the same areas have also reduced available forage and cover for mule deer, on both winter range as well as the more forested migratory corridors, leaving them vulnerable to invasion by weeds.

Washington's Forest Practices Act (FPA) require private, county, and state forest managers to follow environmental guidelines when managing forests. The rules adopted under the authority of the FPA attempt to maintain environmental integrity while supporting an active timber industry. The challenge for managers is to balance the needs of species reliant on clean streams without fish barriers and old growth forests with species that flourish in early-seral forests. While this may present some limitations to management of forests with respect to increasing or improving early seral habitat specific to mule deer in MDMZs with forested corridors, it also presents many opportunities for implementation of less-invasive techniques (e.g., prescribed fire, selective thinning) that would benefit a host of other native wildlife species. Increased use of these same techniques on federal lands would both improve cover and understory browse for mule deer within migration corridors while also serving to reduce the intensity and severity of wildfires that have already had large-scale effects on much of the available winter range for Washington's largest mule deer herds. In addition to the pre-wildfire treatments described above, development of post-wildfire restoration plans in collaboration with federal land management partners for specific high-priority areas would provide a path to help reduce recovery time of critical migratory and winter habitats after a large wildfire event. Proactive plans such as these would aid in successful establishment of resilient landscapes that are more likely to persist through drought, wildfires, disease, and other events exacerbated by any extreme weather conditions that might be experienced in the future.

The Washington Wildlife Habitat Connectivity Working Group (WHCWG), formed in 2007 between Washington Department of Transportation and WDFW, is an open collaborative science-based effort to produce tools and analyses that identify opportunities and priorities to provide habitat connectivity in Washington and surrounding habitats. While these efforts have not focused specifically on wildlife migration corridors and winter range, they have made structured, scientifically-based advancement on habitat connectivity questions for many species including mule deer (WHCWG 2012).

Mule deer managers with WDFW currently have large gaps in information regarding mule deer movement and habitat use for herds in many zones. Research was conducted from 2000 to 2007 to estimate survival and nutritional status of mule deer herds occurring in four of Washington's seven MDMZs, but movement data were limited due to technological and budgetary constraints and are insufficient for modern spatial analyses. In 2016, WDFW began to collect high-resolution movement data suitable for robust spatial analyses (e.g., Brownian bridge models; Sawyer et. al 2009) to identify important corridors and stopover locations for the Methow subherd in the northern most portion of the East Slope Cascades (ESC) zone near the Canadian border. The Methow project is a good first step toward bridging some of those information gaps. However, substantial work remains to delineate herd boundaries and movement patterns of other subherds in the ESC zone and other MDMZs, which requires additional funding beyond what

WDFW is able to support at present. Filling these data gaps would allow WDFW to 1) identify key land management collaborators, 2) prioritize work to develop and implement data-driven responses to current and emerging mule deer habitat conservation and restoration needs, and 3) communicate to the public and other stakeholders the importance of conserving these landscapes and ecosystems for the perpetuation and sustainable management of mule deer in Washington State.

Contained within this Washington Action Plan are three priority areas for improving habitat quality in mule deer winter range and migration corridors, as well as the top priority for future research delineating migration corridors, winter range, and stop-over areas for the East Slope Cascades MDMZ.

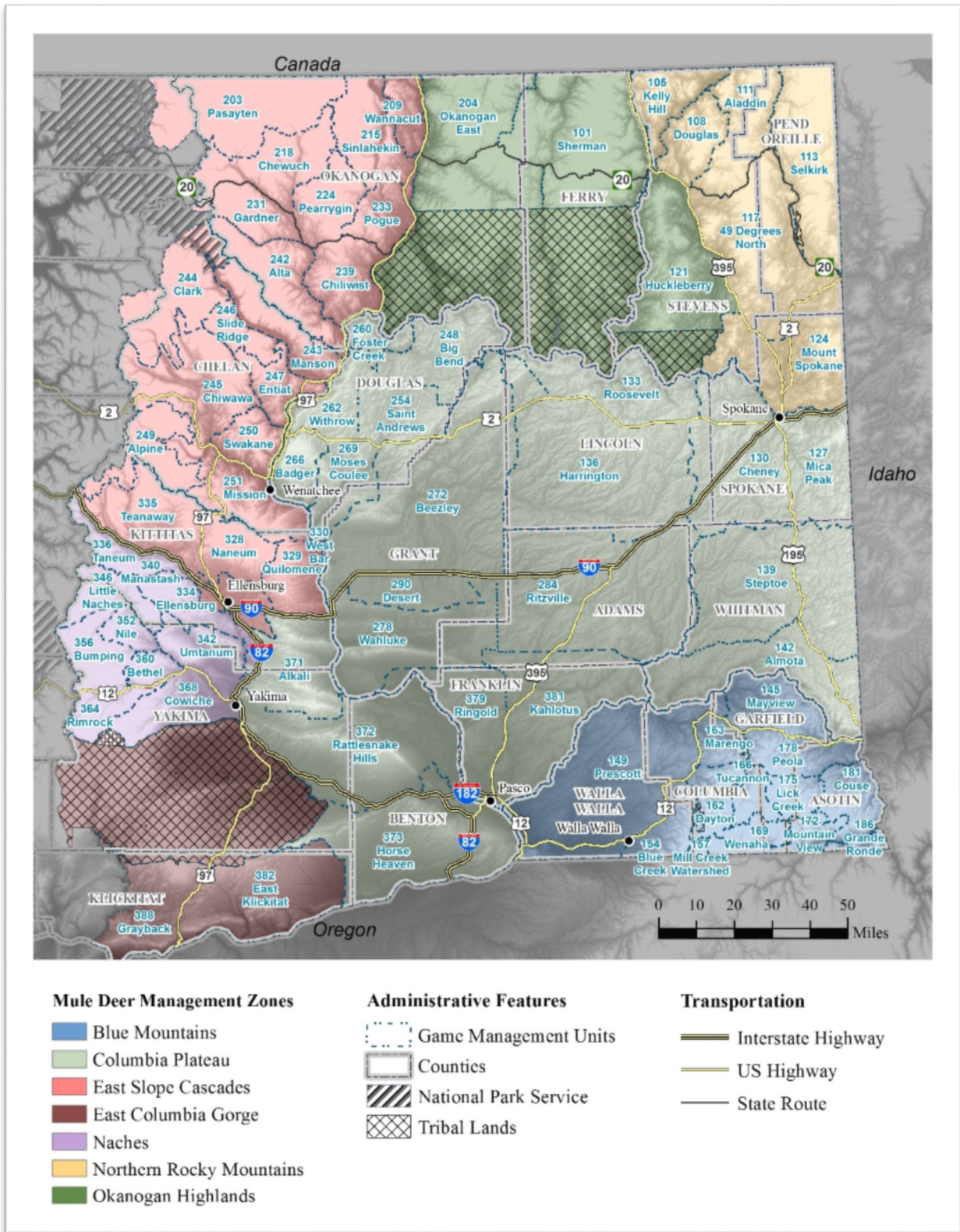


Figure 1. Ecoregion-based Mule Deer Management Zones established in 2016 as part of the [Washington State Mule Deer Management Plan](#).

Corridor/Winter Range

Washington's three highest priority corridors/winter range areas

1. East Slope Cascades Mule Deer Management Zone (MDMZ)

Rationale for prioritization

- Contains the state's largest migratory mule deer herd (an estimated 47,000 animals) which has experienced general population declines during the last two decades
- Comprised of largely public lands
- High risk for future large wildfires
- Winter and migratory habitat is under increasing pressure from residential and alternative energy development and an industrial scale mining proposal
- Movement data are currently being collected for mule deer collared in the northern portion of the zone. Complementary efforts to collar adjacent subherds in the central and southern portions of the zone (see Research Needs) would greatly increase the scale and utility of population inferences

Spatial location

- North-central WA east of the Cascade Mountains (Figure 1)

Habitat types (Figure 2)

- Shrub-steppe and shrub communities
- Forest communities with dense over-story cover dominated by either ponderosa pine or fir
- Grasslands
- Alpine meadows

Important stopover areas within the corridor

- Methow Subherd: New movement data currently being collected as part of a research collaboration between WDFW and the University of Washington will be used to identify important winter habitat and migratory corridors for this subherd
- Okanogan Subherd: Limited anecdotal information is available
- Chelan Subherd: WDFW will be deploying GPS collars on adult mule deer does in January of 2020 with research funding from the USFWS in association with SO3362 to identify important winter habitat and migratory corridors for this subherd
- Kittitas Subherd: WDFW will be deploying GPS collars on adult mule deer does in January of 2020 with research funding from the USFWS in association with SO3362 to identify important winter habitat and migratory corridors for this subherd

Landownership (Figure 3)

- Federal: Okanogan-Wenatchee National Forest, North Cascades National Park
- State: Department of Natural Resources, Washington State Parks, Washington Department of Fish and Wildlife (Sinlahekin, Methow, Scotch Creek, Chelan, Wells, Beebe Springs, L.T. Murray, and Colockum Wildlife Areas)
- Private: Timber companies, agricultural, residential, others

Land uses

- Timber harvest
- Orchards
- Livestock grazing
- Residential development
- Renewable energy development

Risks/Threats

- Immediate Threats
 - Proposed mining activity in the Methow Valley watershed within a known high-use migration corridor
 - Federal Action: Protection of the migration area through adoption of a proposed mineral withdrawal in the Methow Watershed
 - Intrusion of invasive weeds in wintering areas due to disturbance from large high-intensity wildfires within the last 3-10 years
 - Federal Action: Noxious weed control, and planting of native shrubs on federal lands
 - Growing use and distribution of motorized and non-motorized off-road vehicles and increasing disturbance on winter ranges
 - Federal Action: Support for and enforcement of regulations to prevent disturbance of mule deer while on winter range
 - High deer-vehicle collision rates along certain highways in the zone
 - State Action: Identification of important seasonal crossing areas
 - State and Federal Action: Funding and other support for installation of overpasses, underpasses, and other crossing structures in areas with the greatest need to reduce collisions and provide safe passage to mule deer and other wildlife during migration
- Long-term Threats
 - Increasing development and fragmentation of available winter and migratory habitat in the zone for residential housing (particularly in and around the Wenatchee and Ellensburg areas) and wind and solar energy (particularly in Kittitas County) in the southern portion of the zone over the next decade
 - State Action: Delineation of important movement corridors and stopover locations of subherds in the central and southern portions of the zone to support empirically-based decisions regarding prioritization of habitat conservation needs in those areas
 - Federal and State Action: Acquisition projects focusing on improving and/or preserving important winter and migration habitat
 - Federal and State Action: Development of conservation easements focusing on improving and/or preserving important winter and migration habitat on private lands
 - State Action: Monitor current and future research results from studies investigating potential influences to mule deer habitats and populations related to construction and operation of wind and solar energy farms

- Expectation of continued severe wildfires throughout the zone due to high fuel loads from historic fire suppression efforts and drought conditions in recent years
 - Federal Action: Prescribed burning, forest thinning, noxious weed control, and planting of native shrubs with prioritization for high-use mule deer areas on federal lands
 - Federal and State Action: Develop cooperative agreements within the scope of the Good Neighbor Authority (GNA) to implement habitat projects where appropriate. Permanently authorized in the 2014 Farm Bill, the GNA allows the USFS and BLM to enter into agreements with States to conduct forest, rangeland, and watershed restoration on state and federal lands adjacent to one another.
- Mid-elevation forests used by mule deer during the spring and fall are mostly comprised of closed-canopy, over-stocked stands of mixed conifer species with little understory vegetation
 - Federal Action: Prescribed burning, forest thinning, noxious weed control, and planting of native shrubs to improve winter range and migratory corridors on federal lands
 - Federal and State Action: Develop state-federal cooperative agreements within the scope of the Good Neighbor Authority to implement habitat projects where appropriate.
- Increasing incidence of extreme weather conditions (e.g., drought, low winter snowpack) resulting in reduced overall nutritional carrying capacity of the landscape and reduced body condition of mule deer during critical seasonal transition periods
 - Federal Action: Explicit federal support for global reduction in greenhouse gas emissions
 - Federal Action: Prioritization of habitat work to protect climate refugia and buffer migratory corridor changes driven by climate (e.g., forest thinning in certain areas specifically to reduce tree mortality due to compounding effect of crowding and increased competition for water during droughts)

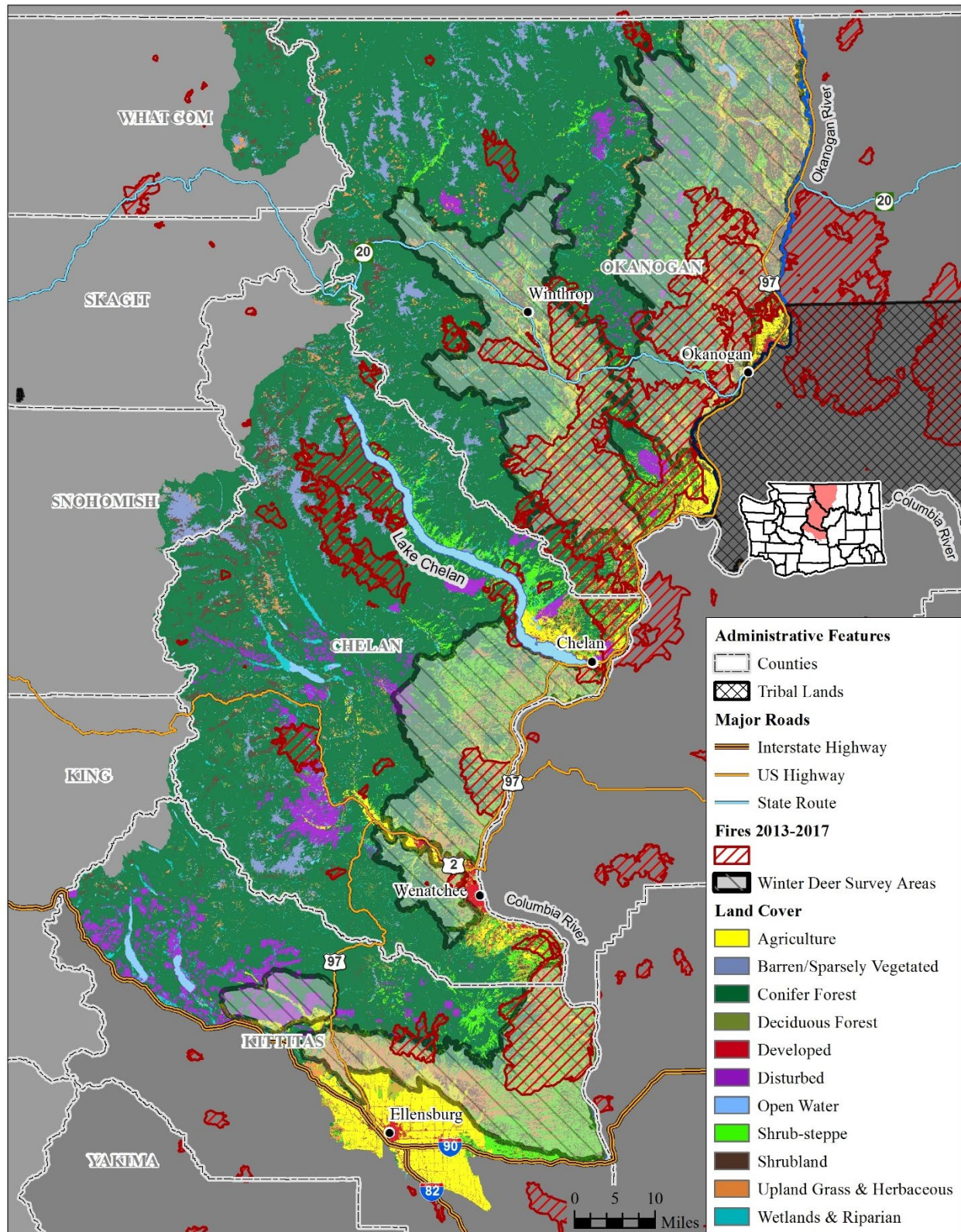


Figure 2. Vegetative cover, recent wildfire perimeters, and winter aerial mule deer survey areas in the East Slope Cascades MDMZ.

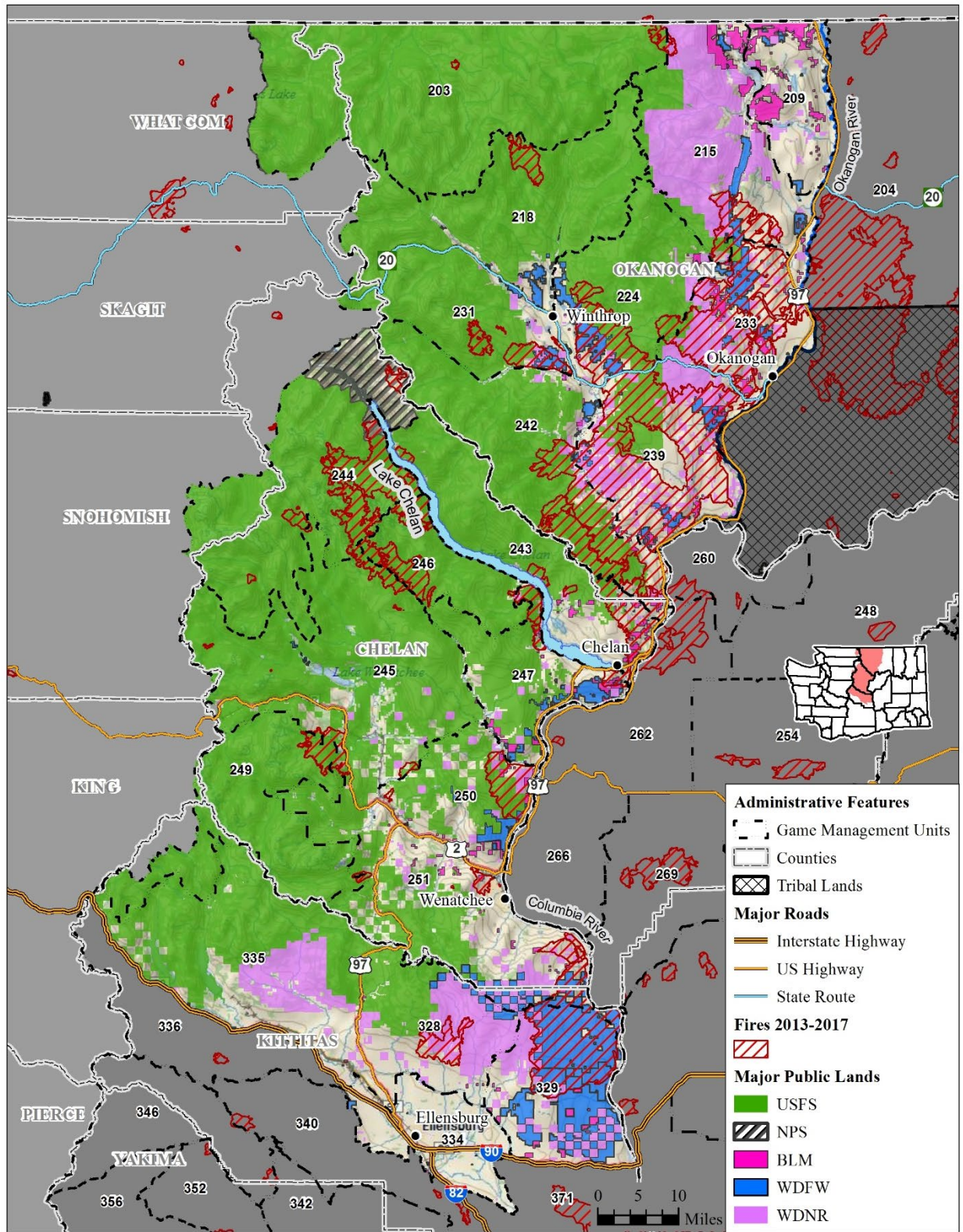


Figure 3. Major public lands and recent wildfire perimeters in the East Slope Cascades MDMZ.

2. East Columbia Gorge

Rationale for prioritization

- Unique in the state because of the transitional nature of both the habitat (Cascade Crest down to the Columbia River Gorge) and the deer (phenotypic characteristics of both mule and black-tailed deer) that inhabit the area
- Population trends based on long-term harvest estimates indicate an overall decline and managers have begun reducing harvest opportunity in response
- Forested areas are highly vulnerable to wildfire
- Winter habitat within the zone has experienced extensive alternative energy development and pressure for additional large-scale development is increasing
- Conversion of natural habitat and agricultural land to vineyards has increased substantially in recent years

Spatial location

- South-central WA (Figure 1)

Habitat types (Figure 4)

- Shrub-steppe and shrub communities comprised of bitterbrush, snowberry, *Ceanothus* spp., poison oak, and buckwheat
- Grasslands
- Forest communities with dense over-story cover dominated by either ponderosa pine or fir
- Alpine meadows
- Largest remaining oak (*Quercus garryana*) forests in Washington, home to several important sensitive species in the state

Important stopover areas within the corridor

- No information on stopovers is currently available but the Rock Creek drainage near the Simcoe Unit of the Klickitat Wildlife Area in the eastern portion of the zone has been identified as particularly important during winter. A new research project will begin in January of 2021 with funding from the USFWS in association with SO3362 that will provide information regarding movement and habitat use for mule deer.

Landownership

- Federal: USFS- Columbia River Gorge National Scenic Area, BLM
- State: Department of Natural Resources, Washington State Parks, Washington Department of Fish and Wildlife (Klickitat Wildlife Area)
- Private: Agricultural, timber companies, residential, others
- Tribal: Yakama Nation

Land uses

- Irrigated crop production and dryland farming
- Timber production
- Cattle grazing
- Rural residential development

Risks/Threats

- Immediate Threats
 - Extensive wind energy development has occurred in portions of the zone, and several more largescale wind and solar energy projects are currently being proposed, but potential impacts to mule deer associated with wind and solar energy farms are unknown
 - State Action: Identify important migratory corridors and stopover sites to identify effects of habitat conversion and areas of greatest conservation need
 - Federal and State Action: Acquisition projects focusing on improving and/or preserving important winter and migration habitat
 - Federal and State Action: Development of conservation easements and/or other incentive programs for landowners to maintain migration corridors
 - State Action: Monitor current and future research results from studies investigating potential influences to mule deer habitats and populations related to construction and operation of wind and solar energy farms
 - Feral horses inhabit the northern portion of the East Columbia Gorge MDMZ on Yakama Nation lands; as the population of feral horses has increased over time, dispersing horses have expanded their range to the south, off reservation. Increasing densities of feral horses could potentially result in competition with mule deer for forage and space, but the level of competition is unknown.
 - State Action: Monitor for any deleterious effects to mule deer associated with the presence of feral horses on mule deer ranges
 - Increased development for wind energy and conversion of native habitat for vineyards
 - State Action: Identify important migratory corridors and stopover sites to identify effects of habitat conversion and areas of greatest conservation need
 - State and Federal Action: Acquisition projects focusing on improving and/or preserving important winter and migration habitat
 - Federal and State Action: Development of conservation easements and/or other incentive programs for landowners to maintain migration corridors
- Long-term Threats
 - Most of the deer in this zone are migratory and winter in the lower elevations, typically preferring habitat with a strong oak component.
 - State and Federal Action: Conserve oak woodland habitats identified as important to wintering mule deer
 - Increasing frequency and intensity of wildfires in recent years resulting in catastrophic loss of habitat in areas directly adjacent to the zone
 - Federal Action: Prescribed burning, forest thinning, noxious weed control, and planting of native shrubs with prioritization for high-use mule deer areas on federal lands
 - Federal and State Action: Develop state-federal cooperative agreements within the scope of the Good Neighbor Authority to implement habitat projects where appropriate

- Mid-elevation forests used by mule deer during the spring and fall are mostly comprised of closed-canopy, over-stocked stands of mixed conifer species with little understory vegetation
 - Federal Action: Prescribed burning, forest thinning, noxious weed control, and planting of native shrubs to improve winter range and migratory corridors on federal lands
 - Federal and State Action: Develop state-federal cooperative agreements within the scope of the Good Neighbor Authority to implement habitat projects where appropriate
- Increasing incidence of extreme weather conditions (e.g., drought, low winter snowpack) that result in reduced overall nutritional carrying capacity of the landscape and reduced body condition of mule deer during critical seasonal transition periods
 - Federal Action: Explicit federal support for global reduction in greenhouse gas emissions
 - Federal Action: Prioritization of habitat work to protect climate refugia and buffer migratory corridor changes driven by climate (e.g., forest thinning in certain areas specifically to reduce tree mortality due to compounding effect of crowding and increased competition for water during droughts)

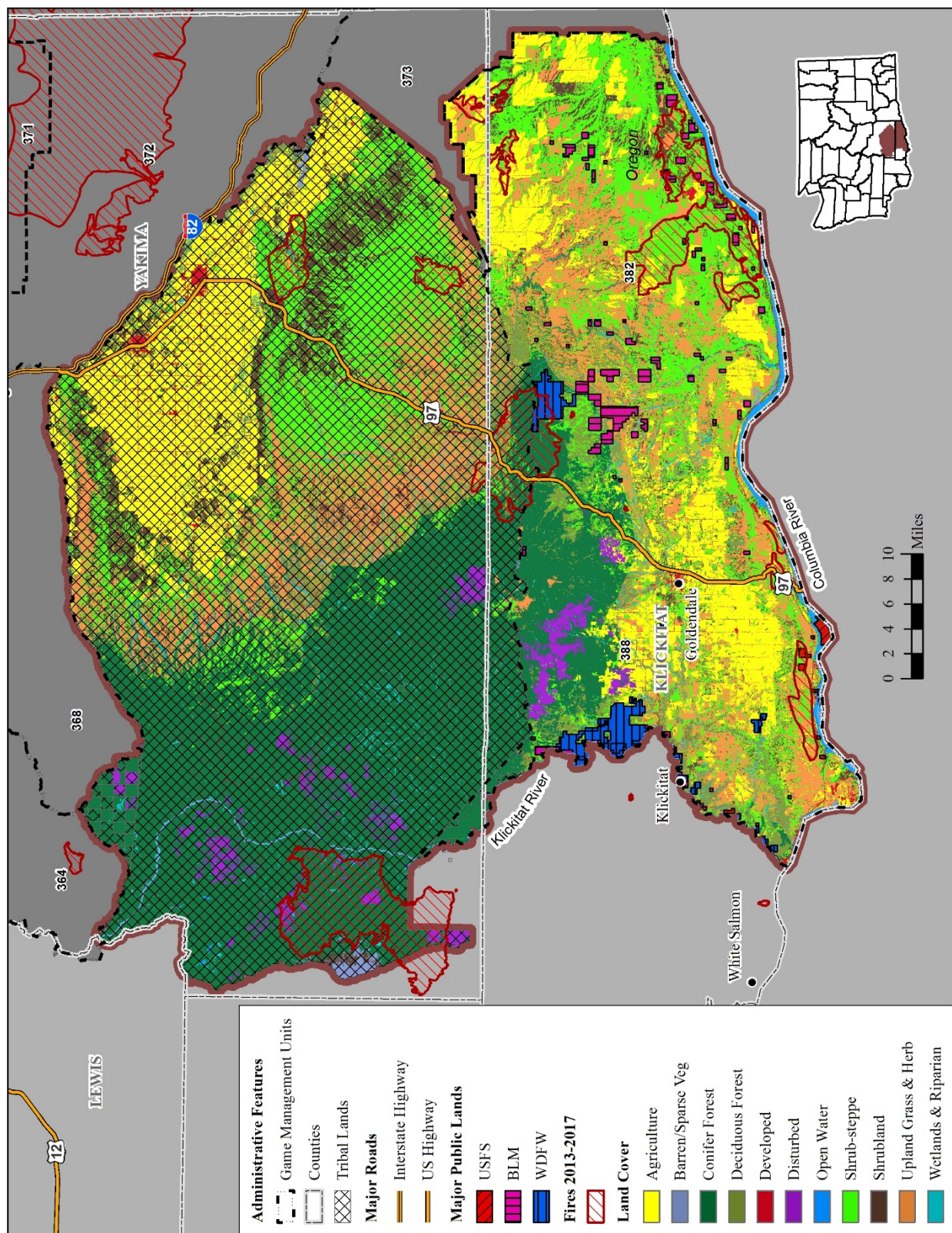


Figure 4. Major public lands, recent wildfire perimeters, and vegetative cover of the East Columbia Gorge MDMZ.

3. Columbia Plateau

Rationale for prioritization

- Largest MDMZ by landmass and home to the state's second largest mule deer herd (minimum estimate of 37,000 animals in 2013) but limited data on mule deer movement and habitat use in the zone are available
- Deer are believed to be dependent on migration corridors and forage in remnant patches of shrub-steppe habitat and most natural habitat still available in the zone is generally low quality due to conversion of the best soil for agricultural uses. WDFW considers retention, protection, and enhancement of these limited natural areas within the agricultural matrix to be a high priority
- Undeveloped lands are under increasing pressure from residential and alternative energy development

Spatial location

- East-central WA (Figure 1)

Habitat types

- The limited remaining natural habitat in the zone is typically shrub-steppe and channeled scablands with some ponderosa pines in uncultivated 'eyebrows', highly-erodible, steep areas in crop fields.
- Farmland enrolled in the Conservation Reserve Program (CRP) is a significant component of available habitat for mule deer in this zone. . As of June 2018, landowners have enrolled over 1.2 million ac. in CRP, idling cropland and planting to perennial grasses, forbs, and shrubs (roughly 16% of the state's total agricultural lands (7.3 million ac. 2017), mostly within this zone). There are also five different State Acres For Wildlife Enhancement (SAFE) projects, totaling over 112,000 acres within the Columbia Plateau MDMZ. The SAFE acres are included in the total CRP acreage.

Important stopover areas within the corridor

- Sparse movement data from mule deer collared in the early 2000s indicate portions of the mule deer population in the zone are migratory and move between spring-summer-fall and winter use areas (WDFW 2016, WHCWG 2012). Based on this information, WDFW conducts periodic post-hunt population surveys across three distinct high-use winter areas in the zone referred to as the Benge, Odessa, and Douglas Subherds.

Landownership (Figure 5)

- Federal: Bureau of Reclamation, BLM, USFWS, NPS, DOE, and DOD
- State: Department of Natural Resources, Washington State Parks, Washington Department of Fish and Wildlife (Sagebrush Flat, Big Bend, Swanson Lakes, Columbia Basin, Revere, and Sunnyside-Snake River Wildlife Areas), and Washington State Department of Transportation

- Private: Agricultural, residential, others

Land uses

- Irrigated crop production and dryland farming
- Cattle grazing
- Rural residential development
- CRP

Risks/Threats

- Immediate Threats
 - Loss of important habitat, particularly shrub-steppe, riparian, and wet meadow habitat due to land conversion for agriculture, energy development, and rural residential development
 - Federal and State Action: Acquisition of important undeveloped lands for conservation
 - Federal and State Action: Development of conservation easements focusing on improving and/or preserving important habitats in collaboration with private landowners
 - Movement barriers and mortality due to irrigation canals that provide water as a part of the Columbia Basin Irrigation Project. These are linear structures built with steep concrete or slick rubber siding that entrap deer and other wildlife and bisect large portions of habitat. Existing equipment access ramps mitigate mortality in some areas, but many canals lack such ramps and canals present a movement barrier even when dry.
 - Federal and State Action: Provide funding and other support for fencing and crossing structures to reduce movement barriers and prevent mule deer from entering and falling into canals
 - Federal and State Action: Provide funding and other support for structures to aid deer in escaping from canals
 - Decrease in availability of CRP lands due to Federal reduction in number of acres available for enrollment and incentives to enroll
 - Federal Action: Increase the national enrollment cap for CRP while maintaining incentives that make the program attractive to producers.
 - CRP lands provide mule deer with refugia, but usually offer little forage. General CRP plantings are often perennial grass cover to stabilize the soil with minimal inclusion of native plants important to mule deer. SAFE plantings in Washington require native species and a diverse mix of grasses, forbs, and shrubs.
 - Federal Action: Increase number of acres available to enroll in SAFE
 - Federal Action: Provide enrollees in Farm Bill conservation programs with additional incentives to establish native plant communities (e.g., higher ranking points, cost share, incentive payments).

- Long-term Threats
 - Increasing frequency and intensity of wildfires in recent years resulting in rapid invasion of exotic plant species with little or no nutritional value to mule deer
 - Federal and State Action: Intensive, long-term collaborative effort by state and federal agencies to reduce fuels, restore native vegetation, and control weeds in areas in the zone affected by wildfire on both Public and Private Lands
 - Federal and State Action: Develop state-federal cooperative agreements within the scope of the Good Neighbor Authority to implement habitat projects where appropriate
 - Federal and State Action: Agency collaboration to more rapidly and effectively respond to fires in ways that address areas not covered by existing fire districts, and fires crossing jurisdictional boundaries including military facilities, and promoting a general shift in mindset to increase the priority to protect shrub-steppe habitats as critically valuable resources.
 - Increasing incidence of extreme weather conditions (e.g., drought, low winter snowpack) resulting in reduced overall nutritional carrying capacity of the landscape and reduced body condition of mule deer during critical seasonal transition periods
 - Federal Action: Explicit federal support for global reduction in greenhouse gas emissions
 - Federal Action: Prioritization of habitat work to protect climate refugia and buffer migratory corridor changes driven by climate (e.g., increase efforts to protect and restore riparian and wetland habitats)

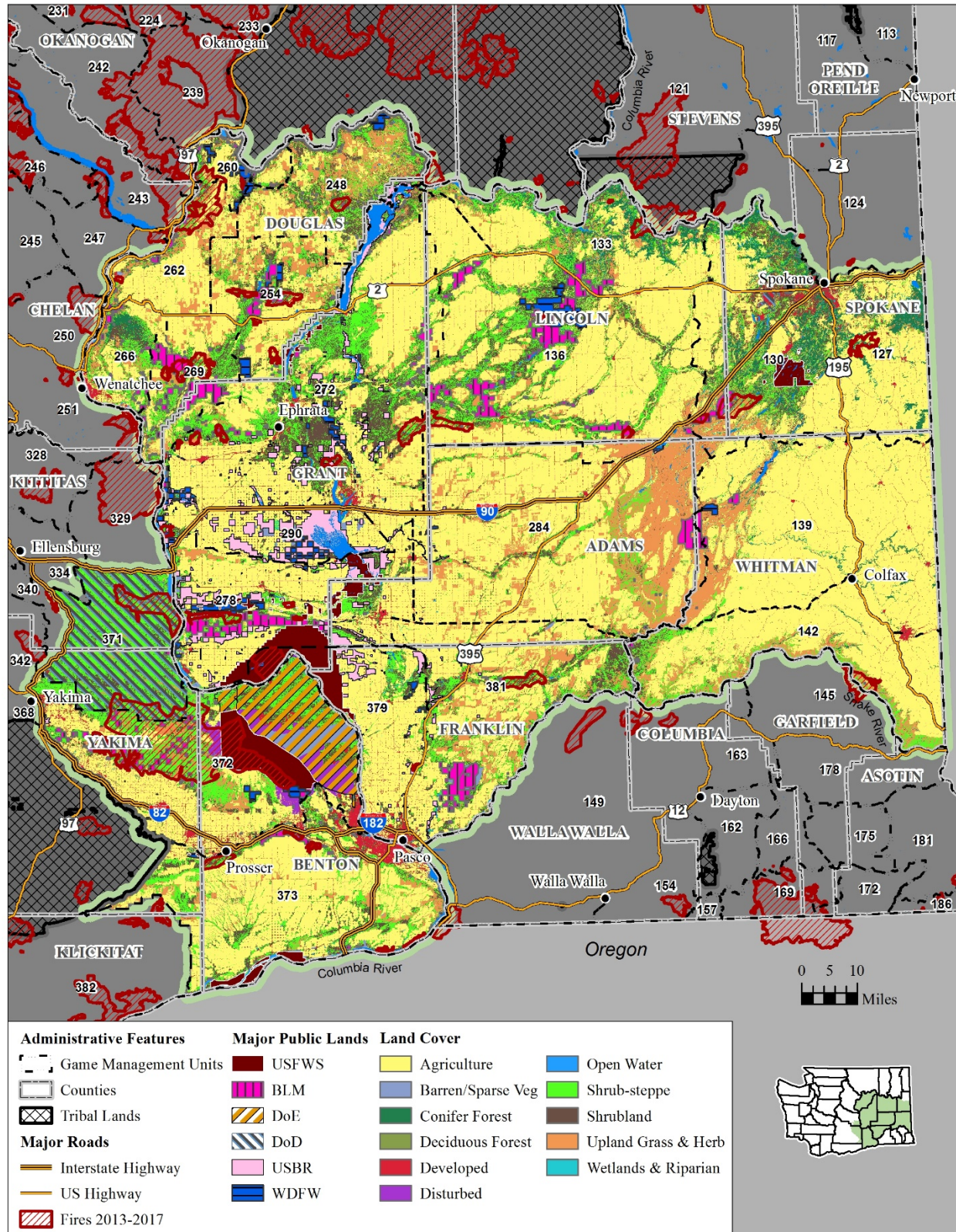


Figure 5. Major public lands, recent wildfire perimeters, and vegetative cover of the Columbia Plateau MDMZ.

Research Needs: Highest research priority for big game movement data

2018 Funding Opportunity - East Slope Cascades MDMZ

Specific need:

- High-resolution, long-term movement data for mule deer in Chelan and Kittitas counties in the East Slope Cascades MDMZ sufficient for identification of habitats and important landownerships within the highest-use corridors and stopover locations important to migratory mule deer
- Data pertaining to the long-term effect of solar, wind, and other land conversion/development activities that are increasing in this zone on the health and sustainability of mule deer, mule deer habitat quality, and mule deer habitat connectivity in this zone
- Data pertaining to the role of transportation-related barriers on movement patterns of mule deer in this zone

Details of the need:

- Budget for Chelan and Kittitas Subherds: \$300,000 total
 - 100 iridium GPS collars; 4-hr fix rate, 4+-yr collar life
 - \$200,000 requested
 - Capture and GPS-collaring of 50 adult mule deer does in each subherd via contracted aerial net gun crew (100 deer total). Collars will be deployed in December of the year projects are initiated, collars recovered from mortalities will be redeployed each December to maintain sample size each year of the project
 - \$100,000 requested

How responding to the need will result in immediate progress

- Provide means and support for essential research investigating mule deer population status, habitat quality, and habitat connectivity in this zone
- Expand scale and increase utility of mule deer movement and habitat use data available to support meaningful planning and implementation of successful habitat management activities by state and federal land managers
- Provide baseline data for delineation of mule deer migratory corridors prior to any future events that may adversely affect habitat quality or connectivity (e.g., wildfires, residential development, or energy development)
- Provide empirically-based map products in response to internal and external requests for information about mule deer habitat use
- Increase breadth and depth of information WDFW can provide to constituents about research and management activities, status of mule deer populations, and the importance of ongoing habitat conservation and restoration activities

Technical assistance:

- Need for technical assistance might include support to complete advanced spatial analyses and production of high-quality info graphics and mapping products.

Project Update:

- East Slope Cascades Mule Deer Project: Funds from the 2018 USFWS SO3362 Research Grant have been used to purchase 100 GPS collars for deployment in Kittitas and Chelan counties in January of 2020. Analysis of movement data will begin in summer 2020.

2019 Funding Opportunity - East Columbia Gorge MDMZ

Specific need:

- High-resolution, long-term movement data for mule deer in Klickitat County in the East Columbia Gorge MDMZ sufficient for identification of habitats and important landownerships within the highest-use corridors and stopover locations important to migratory mule deer
- Data pertaining to the long-term effect of solar, wind, and other land conversion/development activities that are increasing in this zone on the health and sustainability of mule deer, mule deer habitat quality, and mule deer habitat connectivity in this zone
- Data pertaining to the role of transportation-related barriers on movement patterns of mule deer in this zone

Details of the need:

- Budget for Klickitat Subherd: \$300,000 total
 - 100 iridium GPS collars; 4-hr fix rate, 4+-yr collar life
 - \$200,000 requested
 - Capture and GPS-collaring of 100 adult mule deer does by contracted aerial net gun crew. Collars will be deployed in January of the year the project is initiated, collars recovered from mortalities will be redeployed each winter to maintain sample size each year of the project
 - \$100,000 requested

How responding to the need will result in immediate progress

- Provide means and support for essential research investigating mule deer population status, habitat quality, and habitat connectivity in this zone
- Expand scale and increase utility of mule deer movement and habitat use data available to support meaningful planning and implementation of successful habitat management activities by state and federal land managers
- Provide baseline data for delineation of mule deer migratory corridors prior to any future events that may adversely affect habitat quality or connectivity (e.g., wildfires, residential development, or energy development)

- Provide empirically-based map products in response to internal and external requests for information about mule deer habitat use
- Increase breadth and depth of information WDFW can provide to constituents about research and management activities, status of mule deer populations, and the importance of ongoing habitat conservation and restoration activities

Technical assistance:

- Need for technical assistance might include support to complete advanced spatial analyses and production of high-quality info graphics and mapping products.

Habitat Restoration and Conservation Activities: Current

East Slope Cascades MDMZ

- State Lands:
 - LT Murray Wildlife Area (Whiskey Dick Unit): WDFW and Pheasants Forever received funding through a grant from the National Fish and Wildlife Foundation (NFWF) in association with SO3362 to restore prime mule deer winter habitat for the Kittitas Subherd that has been severely impacted by 12 miles of illegal roads throughout the wildlife area.
 - \$96,000 was awarded for this project and work will begin in 2020
 - Chelan Wildlife Area: Received funding from the Chelan County PUD for habitat enhancement, restoration, and protection projects. Activities include restoration of ~1,200 acres of old agricultural fields to native grasses, forbs and shrubs, and ~15 acres of native tree and shrub plantings in riparian areas.
 - Other habitat projects on WDFW lands in the zone have involved primarily prescribed burning, forest thinning, noxious weed control, and planting of native shrubs to improve winter ranges.
 - https://wdfw.wa.gov/lands/wildlife_areas/management_plans
- Federal Lands:
 - No mule deer-specific projects are being conducted at this time but habitat improvement projects conducted on national forest lands have included forest thinning and other timber harvest, prescribed burning, planting bitterbrush and other native shrubs, and fence removal.
- Other Partnerships:
 - USFWS Partners for Wildlife – SO3362 Grant: Wenatchee Foothills Weed Management Project
 - Awarded \$44,321 in 2019, this project is a partnership between Pheasants Forever and the Chelan-Douglas Land Trust to implement invasive species management and restoration of 200 acres of high-priority mule deer winter range for the Chelan Subherd
 - Conservation easements to prevent conversion of cropland and rangeland funded by the Washington Wildlife and Recreation Program Farmland Preservation grant program and Natural Resources Conservation Service

Agricultural Conservation Easement Program (ACEP). Includes private landowners, land trusts, state and federal agencies.

- I-90 Corridor - Snoqualmie Pass East Project
 - <https://i90wildlifebridges.org/i-90-corridor/>

East Columbia Gorge MDMZ

- State Lands:
 - WDFW recently created the Simcoe Mountains Unit of the Klickitat Wildlife Area through an acquisition funded by the Washington Wildlife and Recreation Program (WWRP).that has dramatically increased the amount of winter range being protected for mule deer in the Rock Creek Watershed east of Goldendale, WA.
 - Other projects on WDFW lands (e.g., Klickitat Wildlife Area) have been relatively limited and involved prescribed burning, forest thinning, noxious weed control, and some planting of native shrubs to improve winter ranges
 - https://wdfw.wa.gov/lands/wildlife_areas/management_plans
- Federal Lands:
 - No mule deer-specific projects are being conducted at this time but habitat improvement projects conducted on national forest lands have included forest thinning and other timber harvest.
- Other Partnerships:
 - WDFW has partnered with Central and Eastern Klickitat Conservation Districts and local landowners on coordinated resource management (CRM) effort to develop management plan for the property with the goals of improving wildlife habitat, maintaining grazing, and improving forest health and water quality.
 - WDFW is supporting ongoing work to create conservation easements to prevent conversion of cropland and rangeland funded by the WWRP Farmland Preservation grant program and Natural Resources Conservation Service Agricultural Conservation Easement Program (ACEP) which includes private landowners, land trusts, state and federal agencies.

Columbia Plateau MDMZ

- State Lands:
 - Habitat improvement projects in the Columbia Plateau MDMZ beneficial to mule deer have been developed on WDFW Wildlife Areas but current management planning activities will likely identify additional habitat restoration and conservation needs in the zone
 - https://wdfw.wa.gov/lands/wildlife_areas/management_plans
- Federal Lands:
 - No mule deer-specific projects are being conducted at this time but some post-fire restoration work has been conducted on BLM and adjacent private lands in the zone

- Other Partnerships:
 - USFWS Partners for Wildlife – SO3362 Grant: Moses Coulee Preserve Fence Modification Project
 - Awarded \$150,480 in 2019, this project is a partnership between Pheasants Forever and The Nature Conservancy to implement improvement and modification of 10 miles of fencing currently impeding movement of mule deer in the Douglas Subherd
 - Washington Department of Fish and Wildlife and USDA have worked with private landowners to enroll over 112,000 acres in the SAFE initiative of CRP – nearly all within this zone. The SAFE program establishes quality wildlife habitat by requiring native species and high species diversity. The majority of SAFE in Washington develops shrub-steppe plant communities. While prairie grouse and shrub-steppe obligate birds are the focal species for SAFE, mule deer and other species undoubtedly benefit from these projects as well.
 - On-going improvement project funded by the Department of Ecology Office of Columbia River (DOEOCR), located in GMU 272 in Grant County, where the riparian corridor along Crab Creek between Stratford and Moses Lake is being hydrated due to increasing water flows associated with the Bureau of Reclamation’s Supplemental Feed Route Project. The DOEOCR has provided funds for WDFW to plant trees and shrubs that provide forage for mule deer and control Russian olive (*Elaeagnus angustifolia*) and the invasive common reed (*Phragmites australis*), which will likely improve habitat for mule deer.

Habitat Restoration and Conservation Activities: In Development

Projects listed below represent known habitat restoration and conservation opportunities in key winter and migratory habitat based on our current understanding of mule deer distribution and habitat use in our priority zones. Additional projects will be identified and developed in each of our three priority zones as new information about mule deer habitat use and population status becomes available.

East Slope Cascades MDMZ

- State Lands:
 - Carter Mountain Wildlife Area Unit Fence Augmentation: This project will improve overall habitat connectivity of the landscape and reduce movement barriers by improving stock fences throughout the 2,000-acre unit to make them more wildlife friendly. The unit is centered within an important east-west corridor (Kettles to Cascades) for migrating mule deer and other species. Funds will be used to replace approximately 5 miles of both top and bottom wires of existing fencing with smooth wire to increase the likelihood of deer safely crossing over, under and through the fence. The project will complement other ongoing work associated with the NFWF Working for Wildlife Initiative and funding being raised to support the Safe Passage 97 project, funded in part by the Mule Deer Foundation and Conservation Northwest. Cost: ~\$50,000

- Methow Valley Shrub-steppe Restoration: This project improves roughly 400 acres of degraded shrub-steppe mule deer winter range within the Methow Valley associated with the Golden Doe and Texas Creek Wildlife Area Units of the Methow Wildlife Area. The goal is to prepare and plant native bunchgrass and forage species using agency staff and equipment. Partners include the Methow Conservancy and Mule Deer Foundation. Cost: ~\$50,000
- Chelan Wildlife Area, Swakane Unit: Acquisition of 111 acres of orchard property at the mouth of Swakane Canyon in Chelan County. The property includes irrigated orchard and native habitat (shrub-steppe and riparian) associated with two springs and 700 feet of Swakane Creek. This acquisition would improve connectivity for one of our highest priority migratory herds, increase the availability of vital migration and winter range, and prevent further incursion of recreational development in the valley. This project would further support restoration of orchard property to native perennial cover, including high value forage shrubs for winter mule-deer range, and remove existing deer fences. Cost: ~\$600,000 for the acquisition and ~\$75,000 for restoration (restoration would be in partnership with the Chelan Public Utilities District).
- Colockum Wildlife Area Road Management: This project will improve connectivity of habitat s mule deer habitats in the Stemilt Basin area by a combination of gating, berming or ripping roads that currently receive high levels of illegal motorized vehicle use. Use of these roads leads to increases of invasive weeds, winter disturbance, and illegal take. Funds would be used to install gates or berms, or in some cases roads would be ripped and seeded with a native plant seed mix. Cost: ~\$50,000
- Other Partnerships:
 - Okanogan Wildlife Crossing Campaign on Hwy 97 (Janis Bridge Project): Conservation Northwest is spearheading development of this wildlife crossing project in collaboration with the Washington Department of Transportation and WDFW to reduce deer-vehicle collisions in an area with some of the highest collision rates in the state.
 - <https://www.conservationnw.org/highway-runs-through-it/>
 - Wenatchee Foothills Acquisitions:
 - Acquisition 1: Approximately 700 acres of prime mule deer winter range. Funds needed primarily for acquisition to match potential state grant. Additional funding would be used to restore native shrubs and other forage. Primary partners would be Chelan-Douglas Land Trust (CDLT) and City of Wenatchee, and CDLT would conduct the work. Cost: ~\$250,000 for the acquisition, and ~\$150,000 for habitat restoration activities
 - Acquisition 2: Approximately 600 acres of vital mule deer winter range that supported large wintering population prior to wildfires in

2014-2015 that substantially reduced winter forage. This acquisition would provide a significant opportunity to restore high-priority habitat in an area being heavily impacted by urban encroachment. Primary partner and project manager would be Chelan-Douglas Land Trust. Cost: ~\$250,000 for the acquisition, and ~\$150,000 for habitat restoration activities

- Lake Chelan Acquisition: This acquisition would protect approximately 2,100 acres of mule deer winter habitat. Partners would be CDLT and possibly USFS. Cost: acquisition cost is currently unknown, ~\$150,000 would be needed for management and restoration activities.

Columbia Plateau MDMZ

- State/Federal Lands:
 - Revere Wildlife Area/BLM Escure Recreation Area: This project improves forage and cover quality of riparian and upland habitat used by migratory mule deer and elk. The project site is located in Adams County along Rock Creek as it passes through Revere Wildlife Area and adjacent Escure Recreation Area. The project would be a collaboration between WDFW, BLM, and Palouse Rock Lake Conservation District (PRLCD) and would likely be conducted by staff from WDFW and PRLCD, as well as locally-sourced contractors. Cost: ~\$100,000
- Other Partnerships:
 - Irrigation Canal Mitigation: This project would reduce mule deer and other wildlife mortalities due to entrapment within irrigation canals associated with the Columbia Basin Irrigation Project. Funding would support development and installation of wildlife escapement structures throughout the area to both prevent deer from becoming trapped and assist trapped deer with escaping from the canals. Cost is currently unknown but would likely be ~\$200,000. Partners would include Bureau of Reclamation, Irrigation Districts, and local non-governmental conservation organizations, and the work would be done by WDFW and other project partners.

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Appendix A



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 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:

Past and current bureau conservation/restoration efforts on winter range and migration corridors;

(i) Whether consideration of winter range and corridors is included in appropriate bureau land (or site) management plans;

(ii) Bureau management actions used to accomplish habitat objectives in these areas;

(iii) The location of areas that have been identified as a priority for conservation and habitat treatments; and

(iv) 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

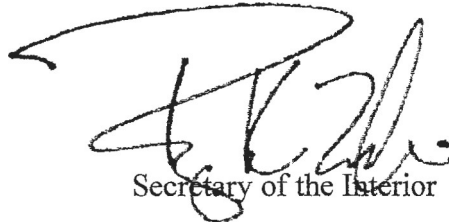
(3) Consult with State wildlife agencies and bureaus to ensure land use plans are consistent and complementary to one another along the entire wildlife corridor in common instances where winter range or migration corridors span jurisdictional boundaries.

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 09 2018

Appendix B



U.S. Department of the Interior

Distribution of Department of Interior and Department of Agriculture Lands in the State of Washington

