

Upper Powder River Mule Deer Initiative Management Plan

Wyoming Game and Fish Department

Sheridan Region

2015



Version 20151207



Introduction

Mule deer are one of the most iconic species in Wyoming. Their unique ability to survive in a variety of different habitats has allowed them to exist in every corner of the state. Mule deer are found in the high plains of the east, the great basin desert of the southwest, the alpine mountains in the northwest, and everywhere in between. Mule deer are one the most popular game species in Wyoming, with the Wyoming Game and Fish Department selling (WGFD) over 75,000 deer licenses in 2014.

Although mule deer are highly adaptable to a variety of habitats in Wyoming and are extremely popular with sportsmen in Wyoming and throughout the west, population numbers have been declining. There are many different factors that have contributed to mule deer population decline in Wyoming and throughout the west. Some of the issues include decline in quality and quantity of habitat, predation, weather, and disease.

As mule deer populations continue to decline in Wyoming, the WGFD, concerned sportsmen and wildlife enthusiasts have come together to put forth a large effort to address some of the issues. This effort has evolved into the Mule Deer Initiative (MDI). The purpose of the MDI is to outline the issues affecting deer management now and in the future, identify appropriate goals and objectives to address mule deer management issues, and recommend strategies to improve mule deer management in Wyoming. The recommended strategies include a broad range of program-level actions with statewide applicability. The intent ultimately is to develop individual management plans or strategies for key herd units based on the overarching goals and objectives in this document. These herd unit plans will identify specific issues, opportunities, and management actions on a localized level. Success and implementation of these plans will depend on our ability to identify limiting factors to mule deer populations and their habitats, available funding, cooperation of Federal land management agencies and private landowners, and public support (WGFD 2009).

The first two places in Wyoming where the MDI was initiated were in the Wyoming Range and the Platte Valley. In these MDI focal areas, the public was engaged by the WGFD to help the Department identify local issues affecting mule deer and participate in developing recommendations to the Department for implementing management changes and habitat improvement projects. Both of these efforts in the Wyoming Range and the Platte Valley have to date proved to be very successful, and as a result, the WGFD decided to implement the MDI statewide. Each WGFD management region was tasked with implementing a MDI in a mule deer herd that appeared to be declining in population.

The Sheridan Region selected the Upper Powder River mule deer herd (MD 322) as their focal mule deer herd to implement the MDI. The Upper Powder River (UPR) mule deer herd is

located in the upper reaches of the Powder River, west of I-25 near Kaycee Wyoming (Figure 1). This area contains a variety of different types of habitats used by mule deer. The western portion of the herd unit contains extensive spring, summer, and fall seasonal ranges for mule deer in the upper elevations of the southern Bighorn Mountains. Towards the eastern lower slopes of the Bighorn Mountains are extensive stands of mixed mountain shrubs, including curl-leaf mountain mahogany, black sagebrush, and skunkbrush sumac. This area is used extensively by mule deer in the winter and has been identified as a crucial winter range for mule. As you move east in the herd unit, the habitat transitions into a Wyoming big sagebrush/grassland community typically found in the northern great plains of eastern Wyoming. Mule deer herds in the UPR area are basically split into two different categories. A portion of the herd migrates to the upper elevations of the southern Bighorns during the spring, summer, and fall seasons, and then migrates to the eastern slope of the Bighorns during the winter. The other portion of the mule deer herd stays yearlong in the Wyoming big sagebrush/grasslands in the eastern portion of the herd unit.

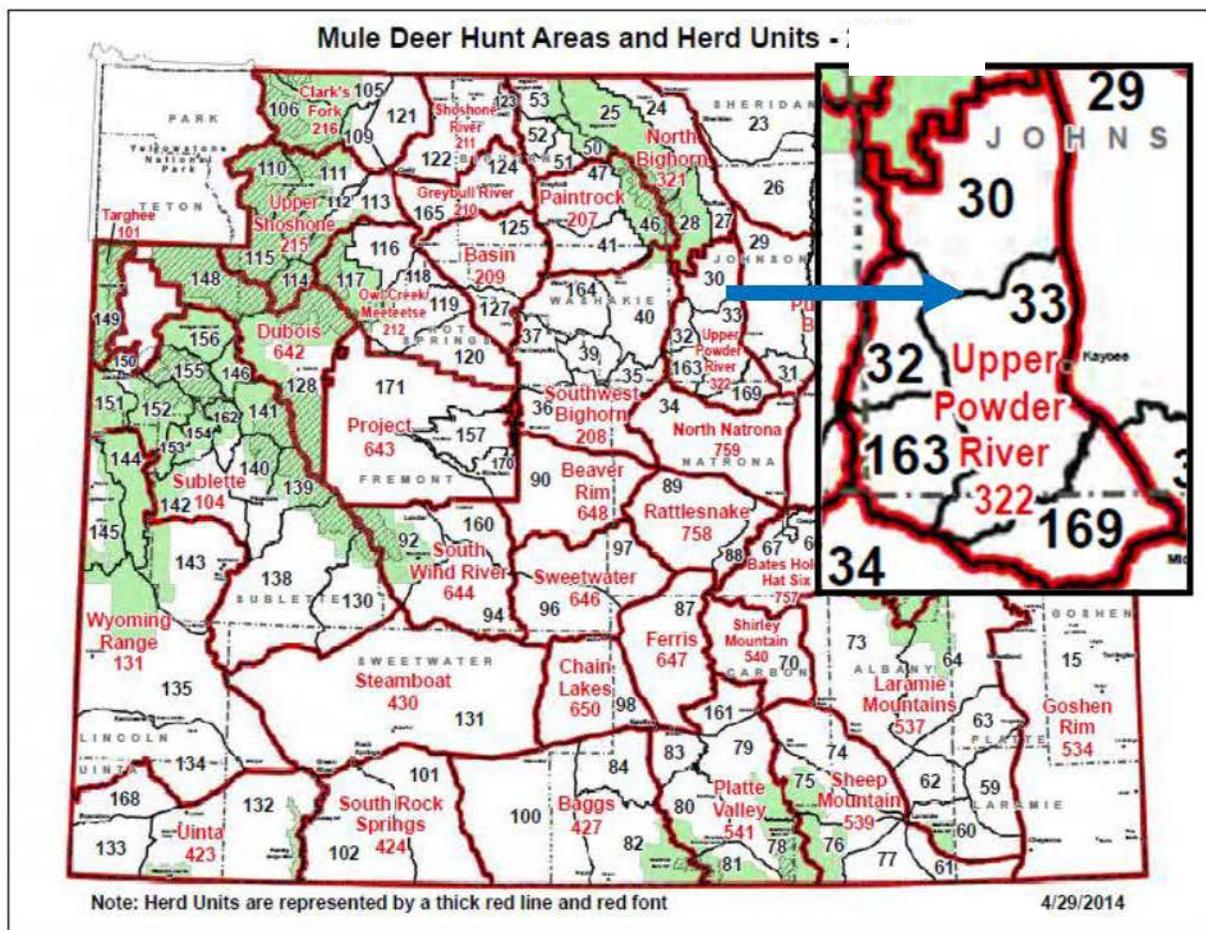


Figure 1. Upper Powder River Mule Deer Herd Unit and Hunt areas

The 2014 postseason population estimate for the UPR mule deer herd was 12,855 deer. This herd has been below objective since 2000 even with the nearly complete elimination of doe/fawn licenses and very conservative general license antlerless harvest. The herd objective and management strategy were last reviewed in 2013. No change was made to the population objective of 18,000 mule deer while the management strategy was changed to special management to account for higher postseason buck to doe ratios.

Identifying Issues

On the 28th of July, 2014, Sheridan Regional wildlife division personnel associated with the UPR mule deer herd unit met at the Rock Creek Cabin to discuss WGFD perceived issues regarding the mule deer population in the UPR herd. In addition, the group outlined the best strategy for getting the local sportsmen and private landowners involved in the initiative and produce the best results for implementing management changes in the MDI. It was decided the best approach for this initiative was to invite landowners, businessmen, outfitters, and sportsmen, and local and federal government agencies in the Kaycee area to a meeting to gather their thoughts and input on their concerns with the UPR mule deer herd unit. This initial meeting would be followed up by a survey sent out to the majority of the private landowners in the herd unit to ensure input was provided by the landowners that were unable to attend the meeting. A separate survey would be developed and mailed out to mule deer hunters who had hunted in the UPR mule deer herd unit during the fall of 2014 for input regarding their perceived issues in the UPR mule deer herd unit. It was decided by the group that a local working group format would not be effective with the UPR MDI. Due to the large percentage of private land in the UPR mule deer herd unit, the group felt that having a working group comprised of various different interest groups would be perceived negatively by the local landowners, thus inhibiting any chance of collaborating with local landowners to work on habitat improvement projects (Notes from this meeting are found in Appendix I).

On November 6th, 2014, Sheridan Region personnel held their first public meeting at the Harold Jarrard Park Community Building in Kaycee, Wyoming with 20 people attending. The meeting started off with presentations by the Buffalo Wildlife Biologist (Dan Thiele) on the current status of the UPR mule deer herd and the Sheridan Region Terrestrial Habitat Biologist (Todd Caltrider) on identified habitat concerns identified in the UPR mule deer herd unit. Following the presentations, Sheridan Regional personnel answered questions from the group and took any comments provided at the meeting. (Notes from this meeting can be found in Appendix II.)

Following the meeting, the Buffalo Wildlife Biologist created two surveys asking sportsmen and local landowners who were not able to attend the meeting on November 6th, to provide input regarding the perceived issues affecting mule deer in the UPR. Results from the landowner survey identified three major concerns: 1) predation, 2) overharvest, and 3) climate, vehicle

collision, disease. The three major concerns from the hunter attitude survey included: 1) habitat, 2) overharvest, and 3) drought. (Results of these surveys can be found in Appendix III and Appendix IV, respectively.)

A second public meeting was held in the Harold Jarrard Park Community Building on January 28th, 2015 in Kaycee with 9 people attending. Preliminary survey results and comments from the first initial public MDI meeting were compiled by the Buffalo Wildlife Biologist and presented for the public attending the meeting. A short presentation from the Sheridan Region Terrestrial Habitat Biologist was given about potential habitat projects that could be done to improve mule deer habitat in the area. Additional comments were taken from this meeting and incorporated into this report.

Identified Issues

Five major issues regarding mule deer populations and harvest in the UPR herd unit were identified by the public, local and federal government agencies, and Sheridan Regional wildlife division personnel. These issues include:

1. Predation
2. Harvest Management
3. Climate/Drought
4. Habitat
5. Transportation Infrastructure
6. Access

Predation

Predation was a major issue identified during the comment solicitation process for the UPR MDI, especially from private landowners in the area. The major predator that was identified in comments was mountain lions. The overall consensus from the received comments was that mountain lion populations were still high and are most likely having a detrimental effect to the overall productivity of the UPR mule deer herd.

WGFD has been addressing these concerns regarding high mountain lion populations for some time now, as this issue was present before the formulation of the UPR MDI. Currently, there is a very liberal hunting season on mountain lions in the area (HA 15). The current mountain lion hunting season runs year long (September 1 to August 31) and there is no mortality limit on the mountain lion harvest. Hunters are able to purchase a reduced price mountain lion license in addition to a full price license so they can harvest a second lion. WGFD continues to implement this season to address livestock damage issues and reduce predation on mule deer. To address

specific livestock depredation situations, mountain lion(s) may be removed as provided by WGF Commission regulation.

In addition to dealing with mountain lion predation on mule deer, WGFD has guidelines in place for recommending control of coyote populations when they are at levels that negatively affect fawn recruitment. Currently, WGF Commission policy stipulates that predator control may be considered under certain conditions such as when postseason fawn/doe ratios drop below 66 fawns/100 does.

Harvest Management – Population and Buck Quality

This herd is managed for a postseason population of 18,000 mule deer and a special management strategy (postseason buck ratio ≥ 30). The herd unit is comprised of five hunt areas. Hunt Areas 30, 32, and 33 are primarily private land access and support 17 day general license hunting seasons and when deemed appropriate doe/fawn seasons to address depredation issues or reduce the population. Hunt Areas 163 and 169 have significant amounts of accessible public land supporting high hunter densities and are therefore managed with conservative seven day antlered deer seasons to maintain adequate buck ratios.

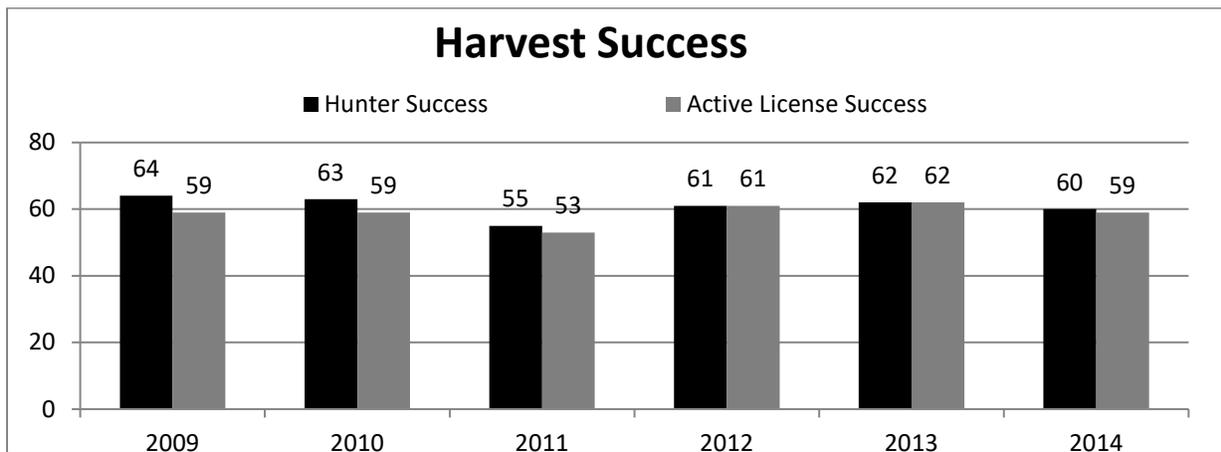


Figure 2. Upper Powder River Mule Deer Herd hunter success, 2009-2014.

Harvest has decreased substantially over the last 35 years. In 1980, 2,258 bucks and 4,032 total mule deer were harvested. Harvest subsequently decreased to 755 bucks and 929 total mule deer in 2014. Likewise, hunter numbers have shown similar declines. Nonresidents comprised 55% of the hunters in 2014 so adjusting the nonresident Region Y quota has a significant effect on hunter numbers. While harvest and hunter numbers have decreased, hunter success, hunter effort and hunter satisfaction have remained favorable. Over the last six years (2009-2014) hunter success (Figure 2) has averaged 60% while hunter effort (Figure 3) has averaged 6.7 days/harvest. Since 2012 the Department has been surveying hunters to gauge satisfaction

with their hunt. Hunters have expressed high satisfaction in this herd unit with more than 65% indicating either satisfied or very satisfied with their hunt each of the last three years.

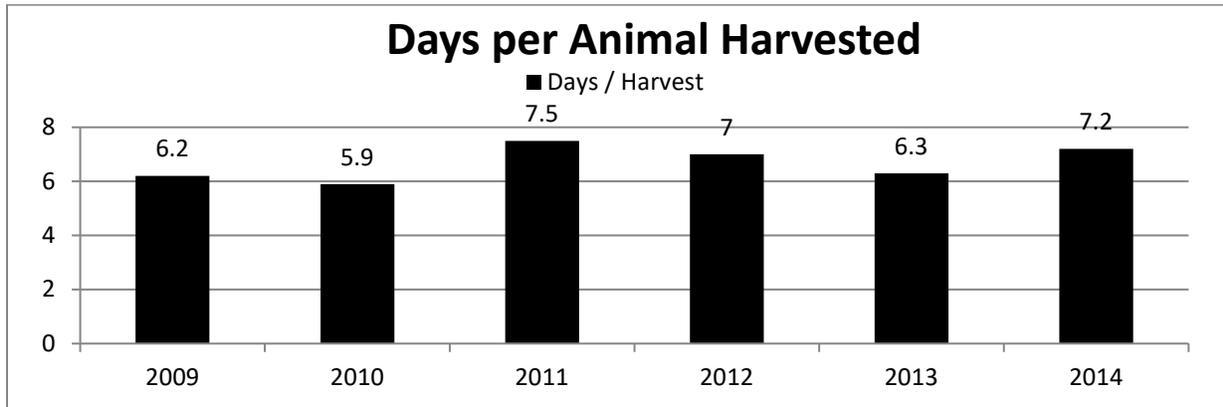


Figure 3. Upper Powder River Mule Deer Herd hunter effort, 2009-2014.

The high satisfaction level reflects the favorable hunter statistics as well as the high postseason buck ratio. The buck ratio (Figure 4) has exceeded the special management threshold each of the last six years (2009-2014), ranging from 30 to 43 bucks per 100 does.

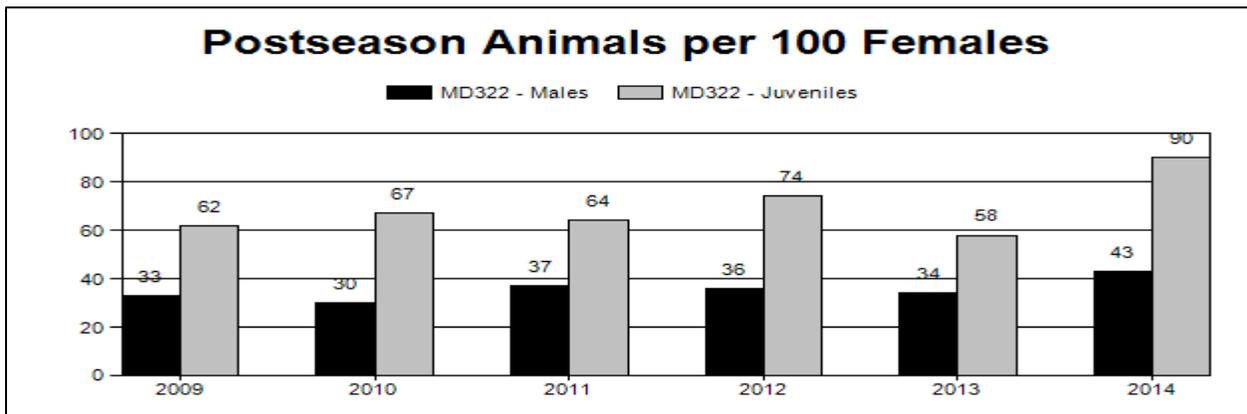


Figure 4. Upper Powder River Mule Deer Herd buck and fawn ratios, 2009-2014.

The landowner and hunter surveys revealed that both groups would like to see more deer and better quality bucks. Concern was also expressed about high white-tailed deer and elk populations and potential competition with mule deer. Based on these responses, managers adjusted general license hunting seasons for 2015 in Area 30, 32, and 33 to either limit to private lands (Areas 30 and 33) or eliminate (Area 32) antlerless mule deer harvest. Additionally, the nonresident Region Y license quota was decreased 10% to 1,800 licenses. Concurrently, liberal white-tailed deer and elk hunting seasons will continue to address high populations.

The perceived buck quality issue is interesting given the high postseason buck ratios observed in this herd unit. One would suspect that public land hunters may experience more difficulty finding quality bucks but private land hunters should find quality deer. Many hunters requested a reduction in hunter numbers and/or antler point restrictions. The Sheridan Region began recording field check antler measurements and postseason classification buck antler class in 2013. Seventy-six percent of the field checks in both years were Antler Class I bucks (≤ 19 " width) whereas less than two percent were Class III bucks (≥ 26 " width). Postseason classification surveys yielded 78% and 81% Class I bucks in 2013 and 2014, respectively. Less than 1% of the bucks classified were Class III bucks each year.

With the high herd buck ratios and private land access one would expect to find older age class deer in the population. To determine buck age structure, managers will pull teeth from field checked adult bucks for lab age determination. Pictures of bucks will be taken to show the public the antler size being produced by different age bucks.

Low fawn ratios continue to be a major concern as fawn production and recruitment is vital to sustaining mule deer populations. Since 1999, the fawn ratio has averaged 69 fawns per 100 does, but this was significantly influenced by the 2014 fawn ratio of 90 fawns per 100 does which was a 30 year high (Figure 4). Since 2000, fawn ratios have average 63 fawns per 100 does which is below the 66 fawns per 100 does necessary to maintain a stable population. Many factors influence fawn production and survival including precipitation, winter weather, habitat quality and predation. The high 2014 fawn ratio corresponded to excellent precipitation and mild winter weather. Many strategies in the MDI will focus on improving fawn ratios.

Climate / Drought

Weather affects mule deer populations both directly and indirectly. Severe winter weather with cold temperatures, deep snow or crusted snow can result in significant deer mortality. Years with adequate precipitation, especially spring rainfall, produces favorable habitat conditions which results in adequate forage production. The relationship between precipitation and habitat condition and the health of mule deer herds is extremely important to recognize. Landowners participating in the UPR Mule Deer Initiative survey responded that climate/drought was one of the top five influences on the mule deer population. Hunters responded that climate/drought and habitat condition were two of the top three influences.

Drought has been more frequent since the mid 1980's and especially since 2000. Changing climatic trends can be assessed using tools such as the Palmer Hydrologic Drought Severity Index (PHDSI), which measures the long-term cumulative effect of drought. Figure 5 shows the

long term PHDSI trend for Wyoming Climate Division 5 which covers the Powder River, Tongue River and Little Missouri River drainages.

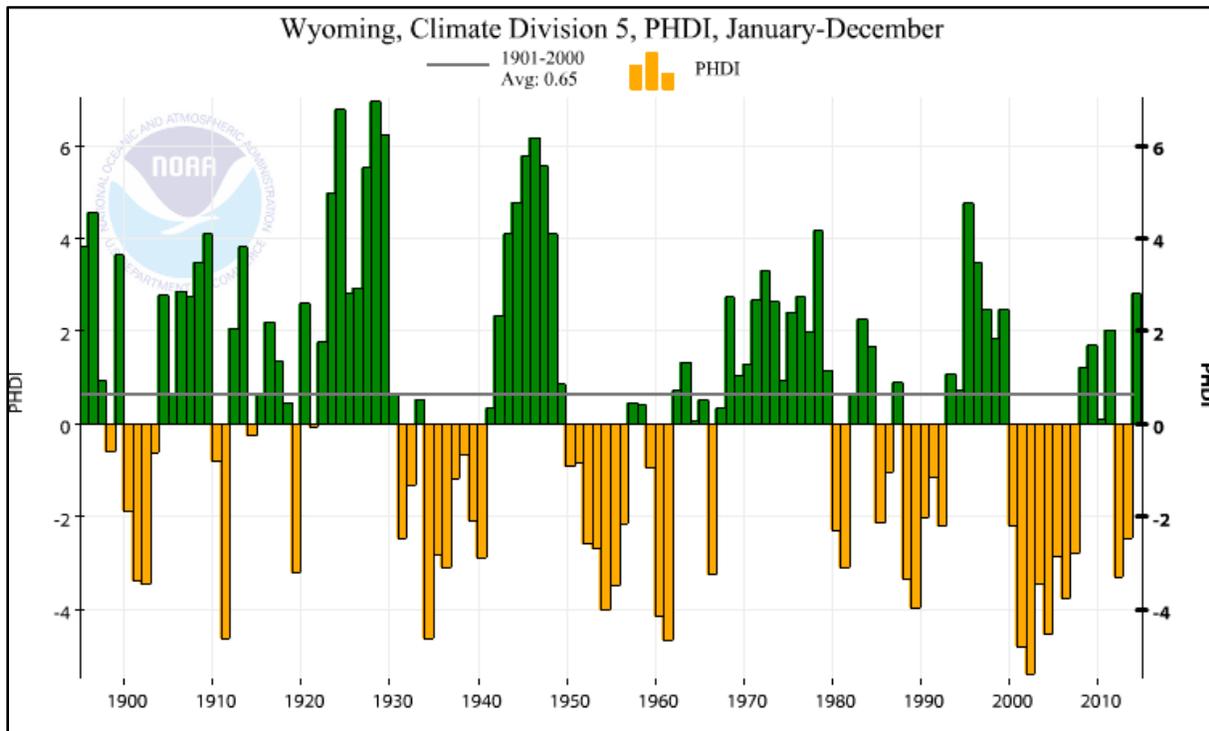


Figure 5. Palmer Hydrologic Drought Severity Index for Climate Division 5 (Powder River, Tongue River and Little Missouri River drainages).

The Department accounts for climatic influences on mule deer populations and their habitats. Population objectives are established to balance deer numbers with available habitat and management adjusts for climatic fluctuations and severe weather events. Additionally, weather data is analyzed in relation to annual shrub production and utilization collected during shrub monitoring efforts.

Habitat

Lack of quantity and quality of forage and lack of water were some major habitat issues identified in the comment solicitation process. These issues seemed to be of larger concern to hunters than private landowners.

To address these habitat concerns, WGFD plans to implement the following strategies:

1. Collaborate with BLM to implement habitat projects that will benefit mule deer
2. Work with private landowners to implement projects on their own or in cooperation with NGO's and/or government agencies.

3. Implement in-depth habitat assessments in the UPR mule deer herd unit
4. Initiate and support research that focuses on understanding seasonal movements and habitat use by mule deer in the UPR herd unit.
5. Provide private landowners with habitat “assessments” and technical advice regarding mule deer habitat improvement

Collaborate with BLM to implement habitat projects that will benefit mule deer

In 2006, a large wildfire near Outlaw Cave in Hunt Area 163 burned 11,574 acres, and that fire destroyed an estimated 815 acres of curl-leaf mountain mahogany, a crucial wintering browse species for mule deer in the UPR mule deer herd unit. Curl-leaf mountain mahogany does not carry fire very well by itself, but when additional fuels loads are added from encroaching conifers, wildfires can carry through curl-leaf mountain mahogany stands and destroy them. Following this fire, WGFD began to coordinate with BLM to develop a fuels reduction project to remove conifers (ponderosa pine, limber pine, and rocky mountain juniper) on BLM and private land. Since 2009, 2,010 acres of conifer encroachment were treated on curl-leaf mountain mahogany stands in the UPR mule deer herd unit. The BLM plans on continuing to treat conifer encroachment on curl-leaf mountain mahogany stands on all BLM lands within the UPR mule deer herd unit, with another 1,522 acres planned to be treated in the next couple of years. WGFD will continue to support these efforts logistically and monetarily when possible. In addition to supporting work on BLM land, WGFD can work with private landowners adjacent to BLM treatment areas where opportunities arise to reduce conifer encroachment on curl-leaf mountain mahogany stands. A map of acres treated for conifer encroachment from 2009-present can be found in Appendix V.

Following the Outlaw Cave fire, cheatgrass proliferated within the burn area. The BLM has begun treating cheatgrass behind the conifer removal treatments. During the fall of 2015, the BLM treated 552 acres of cheatgrass infested rangeland in the Middle Fork of the Powder River. The BLM plans on continuing to treat cheatgrass following conifer encroachment treatments. WGFD will continue to support these efforts on BLM and also try to treat cheatgrass infestations on private land adjacent to BLM treatments where opportunities arise. A map of the original planned cheatgrass treatment area in the Middle Fork of the Powder River can be found in Appendix VI.

During the autumn of 2015, WGFD and BLM planted 40 curl-leaf mountain mahogany plants in reclamation site in the Upper Powder Recreation area. These plants were purchased from a nursery in Washington (Plants of the Wild). Twenty of these plants were protected with an exclusionary fence, while the other 20 were left unenclosed. This planting is to serve as a test site to see if these nursery plants can be successfully established to the UPR and if so, be

planted without exclusionary structures. If successful, WGFD and the BLM plant to replant curl-leaf mahogany in places where large stands were destroyed during the Outlaw Cave fires.

Work with private landowners to implement projects on their own or in cooperation with NGO's and/or government agencies.

Working with private landowners in the UPR mule deer herd is crucial to successfully implementing large scale habitat projects that benefit mule deer. Private landowners are the majority land holder (57%) in the UPR mule deer herd unit. One of the questions asked in the landowner survey send out as part of the UPR MDI was if a landowner was interested in participating in a habitat project on their property to benefit mule deer. Of the 13 responses received, only 3 landowners said they would be interested in working with WGFD to implement mule deer habitat projects. Currently the Sheridan Region Terrestrial Habitat Biologist is following up with these landowners that wished to look at doing habitat projects.

Currently, we have one landowner who is interested in participating in a mule deer habitat project. This interested rancher's property is located on the eastern edge of the UPR herd unit. This property is lacking in deciduous browse species due to past grazing management issues by domestic sheep from the previous owner. The ranch also is lacking in hiding cover for mule deer due to lack of tree/shrub species for hiding cover. WGFD is going to work with this ranch and the Powder River Conservation District (PRCD) to reestablish woody browse species (chokecherries, silver buffaloberry, wood rose, etc..) on suitable sites on the ranch. To address the security cover issue, the WGFD and the PRCD is going to plant juniper in certain locations that provide adequate forage, but are lacking cover in hopes to increase deer use in these areas.

During early spring of 2014, WGFD offered cost share to any private landowner who was interested in planting legume seeds in the UPR mule deer herd unit. WGFD paid \$20/acre for every acre planted into legume seed. WGFD advertised this program in the local Kaycee newspaper and also in the Powder River Conservation District newsletter. We had no participation in this program.

One landowner was contacted about the possibility of planting curl-leaf mountain mahogany to help reestablish an extensive mahogany stand partially burned by the Outlaw Cave fire in 2006. The success of the trial planting on BLM will help determine the feasibility of this project.

The WGFD wishes to still engage private landowners and generate interest in doing habitat projects to benefit mule deer. WGFD will continue to attempt to reach out to landowners to educate them about mule deer habitat needs and the opportunities for funding habitat projects through the agency. One avenue that could garner more interest in developing private landowner interest in participating in habitat projects could be working with the Powder River

Conservation District to put on a mule deer habitat development workshop. After we have successfully implemented some habitat projects with the BLM and other interested landowners, WGFD will have some demonstration areas to show other landowners to hopefully get them involved in participating in future habitat projects.

Implement in depth habitat assessments in the UPR mule deer herd unit

In 1996, Jellison et. al evaluated and inventoried crucial winter ranges in the Middle Fork of the Powder River used by mule deer, elk, and pronghorn. This study provided the WGFD with important information regarding the condition of these crucial big game winter ranges, relative value of potential browse species to wildlife, and potential habitat treatments that could improve big game winter ranges in the UPR mule deer herd unit.

During the winter of 2015, the Sheridan Region Terrestrial Habitat Biologist and Kaycee Game Warden (Grant Gerharter) collected samples from some important browse species on big game winter ranges. New growth leaders were collected from three different sagebrush stands and three different curl-leaf mountain mahogany stands. Each stand where samples were collected represented a different age/hedging class typically found throughout the UPR mule deer herd unit. These samples were then sent to Colorado State University where they were analyzed to understand their forage value to mule deer. Results from the analysis revealed that crude protein, TDN (total digestible nutrients), RFV (relative forage value) and DE (digestible energy) was higher for Wyoming big sagebrush than curl-leaf mountain mahogany. The only metric in which curl-leaf mountain mahogany had a higher value than sagebrush was ADF (Acid Detergent Fiber). Interestingly, there was little difference between these nutritional metrics among age classes/hedging class of the same species. It was hypothesized that sagebrush that had been mowed would have higher protein/digestibility than mature untreated stands. Similarly, new growth curl-leaf mountain mahogany samples that were taken in the Outlaw Cave fire area showed little difference between crude protein/digestibility than mature stands of curl-leaf mountain mahogany. These results were surprising, as it was predicted the mowed sagebrush and young curl-leaf mountain mahogany plants would be more nutritious and have higher digestibility than the mature plants. One explanation for the results is that even though the physical nutritive and digestibility properties of these plants may be similar, the chemical factors that affect digestibility were not measured, and therefore be different. Plants produce many different types of chemicals that inhibit their digestibility. Chemicals such as tannins, terpenes, and alkaloids are some of the common chemicals that plants produce that reduce digestibility. As plants mature, they accumulate more of these chemicals. So even though the physical properties of these plants may be the same, the chemical digestive inhibitors may be different. It was observed during the collection of the curl-leaf mountain mahogany samples that the young plants that were regenerating in the fire appeared to be selected for over the

mature plants. In addition, although sagebrush appeared to do better in the majority of the nutritive analyses, curl-leaf mahogany appeared to be more preferred. This is most likely due to the high levels of terpenes that are present in sagebrush, and inhibit its digestibility for mule deer. Results from this forage analysis can be found in. Details of results can be found in Appendix VII.

In 1971, the WGFD collected data to perform a rangeland inventory on the Ed O. Taylor Wildlife Habitat Management Area (WHMA), and then reevaluated the rangeland trend in 1981. The results from the 1981 range trend analysis show a decline in range trend, thought to result from increased mule deer numbers in the area at that time, grasshopper infestations, and continued presence of trespass livestock on the WHMA. During June and July of 2015, the Sheridan Region Terrestrial Habitat Biologist and Gillette Wildlife Biologist (Erika Peckham) went back to the original inventory sites evaluated in 1971 and 1981 and reevaluated range condition on the Ed O. Taylor (WHMA). Since 1981, there have been some significant changes that have a large effect on habitat on Ed O Taylor WHMA. There were extensive wildfires in 2006 that burned large portions of the Ed O Taylor. In addition to wildfires, elk populations have increased dramatically in the area, while mule deer populations have declined substantially. The purpose of this survey is to understand current rangeland conditions at Ed O Taylor WHMA, and to provide direction to the Department where future rangeland improvements can be made. Results from the range evaluation will be available by early 2016.

During the summer of 2015, WGFD decided to incorporate herd unit habitat inventories as part of the herd unit review process for mule deer herds throughout Wyoming. To test the utility of this process, it was decided that each region would conduct a herd unit wide inventory on each MDI herd unit located within its boundaries. This inventory will be a qualitative assessment of key habitats important to mule deer, and will include numerous rangeland, shrub, aspen, and riparian health assessments. These assessments will be conducted throughout the herd unit in key areas used by mule deer. The UPR mule deer herd unit review is scheduled to be completed late spring 2018. These habitat inventories will be completed in the UPR mule deer herd unit between now and May 2018.

Initiate and support research that focuses on understanding seasonal movements and habitat use by mule deer in the UPR herd unit.

Mule deer habitat use during the winter is well known in the UPR mule deer herd unit (Jellison et. al 1996), but data is lacking on habitat use in the spring, summer, and fall (SSF) seasons. It is estimated that around half of the mule deer herd spends the SSF season in the low elevation habitats east of the Bighorn Mountains and west of I-25. The other half of the herd spends the SSF season in the high elevations of the southern Bighorn Mountains. Although the general areas where these deer spend the SSF season is known, detailed information about habitat

types selected in these areas is not known. Information regarding specific SSF seasonal habitats selected, desired forage species in the SSF ranges, and quality of the habitat used by mule deer in the SSF season would assist Sheridan Regional personnel identifying potential crucial SSF season habitats and potential future habitat treatment areas. Understanding mule deer movements throughout the herd unit would also be very informative. Although the herd unit is 30% below objective and overall population estimates have shown a gradual decline each year since 2008, fawn and buck ratios have stayed within acceptable parameters for the most part since 2008. The ability to document mule deer movements throughout the herd unit would assist Sheridan Region personnel in understanding seasonal mule deer movements and provide some insight to where mule deer mortality is occurring, thus providing more information regarding the overall population decline despite acceptable fawn ratios.

By collaring a number of mule deer with GPS collars and tracking their movements, we can better learn seasonal movement patterns, identify more specific seasonal habitats, and possibly get a better idea of cause-specific mortality. In addition, once mule deer seasonal home ranges are identified, detailed habitat assessments can be completed in these areas, as well as forage nutritional analyses through collection of feces and selected plant forage species.

Provide private landowners with habitat “assessments” and technical advice regarding mule deer habitat improvement.

Some landowners have expressed interest in implementing changes on their ranches to improve mule deer habitat, but are not seeking outside funding sources to implement such projects. Often these landowners seek technical advice or ask for habitat management plans to help guide their habitat improvement efforts. WGFD is willing to provide this technical assistance and provide landowners with habitat assessments and management plans to help guide habitat restoration efforts, regardless whether the landowner is directly interested in working on a project with WGFD funding or not. The Sheridan Regional Terrestrial Habitat Biologist to date has provided two different ranches with technical assistance to guide mule deer habitat restoration efforts in the UPR herd unit.

Transportation Infrastructure

One of the key concerns that came from the meetings in Kaycee and surveys was mule deer mortality along I-25. Following the first UPR MDI meeting, the Sheridan Regional Terrestrial Habitat Biologist contacted WYDOT and was able to collect highway mortality data information for the entire state of Wyoming. This data provided Sheridan Regional personnel with information regarding locations of the highest mule deer/highway mortalities in the region, and specifically allowed for identification of problem areas around Kaycee (Figure 6.). Following the compilation of this data, the Buffalo Wildlife Biologist, Kaycee Game Warden, and Sheridan

Region Terrestrial Habitat Biologist set up a meeting with the Wyoming Department of Transportation (WYDOT) in Casper to discuss our concerns about mule deer highway mortalities along I-25 near Kaycee. From this meeting, both parties agreed to look closer into the issue and hold another meeting in Kaycee to discuss options in more detail. On June 24th, 2015, a second meeting between WGFD Sheridan Regional personnel and WYDOT Casper Regional personnel occurred. From this meeting, it was decided the best option to pursue was to develop a method to retrofit existing highway fences to reduce mule deer intrusions into the interstate. The Sheridan Regional Habitat Biologist and a couple of WYDOT engineers are looking into possible methods for retrofitting highway fences, and will meet again to provide ideas of possible designs to experiment with on I-25 near Kaycee.

Access

One of the overlying concerns with Sheridan Regional personnel during this initial MDI process has been the lack of participation from local sportsmen in the area. It is speculated that this poor local sportsmen turnout is due to the high percentage of private land that typically does not allow access for mule deer hunting except through an outfitter or trespass fee and the lack of public access to some federal and state land. It is important that the WGFD increases sportsmen awareness and participation in mule deer issues across the state. Securing additional public access for hunting on private and landlocked public land is key to increasing support for mule deer hunting and conservation. During the winter of 2015, the WGFD hired a Public Land Public Wildlife (PLPW) regional access coordinator in the Sheridan Region. A major duty of this position is to meet with landowners and try to negotiate public access to private and land locked public land in the Sheridan Region, including the UPR mule deer herd unit. The WGFD also continually works closely with the BLM to assist logistically and monetarily with public easements through private land to landlocked parcels of BLM land.

Budget

Attached to this report is a detailed budget outlining the costs of implementing each proposed item described in this report (Appendix VIII). This budget just outlines costs for services, materials, and funds needed to implement the actions proposed in this report, and does not take into account direct cost to the Department in terms of personnel, transportation, or logistical costs.

Kaycee Reported Wildlife Vehicle Collisions

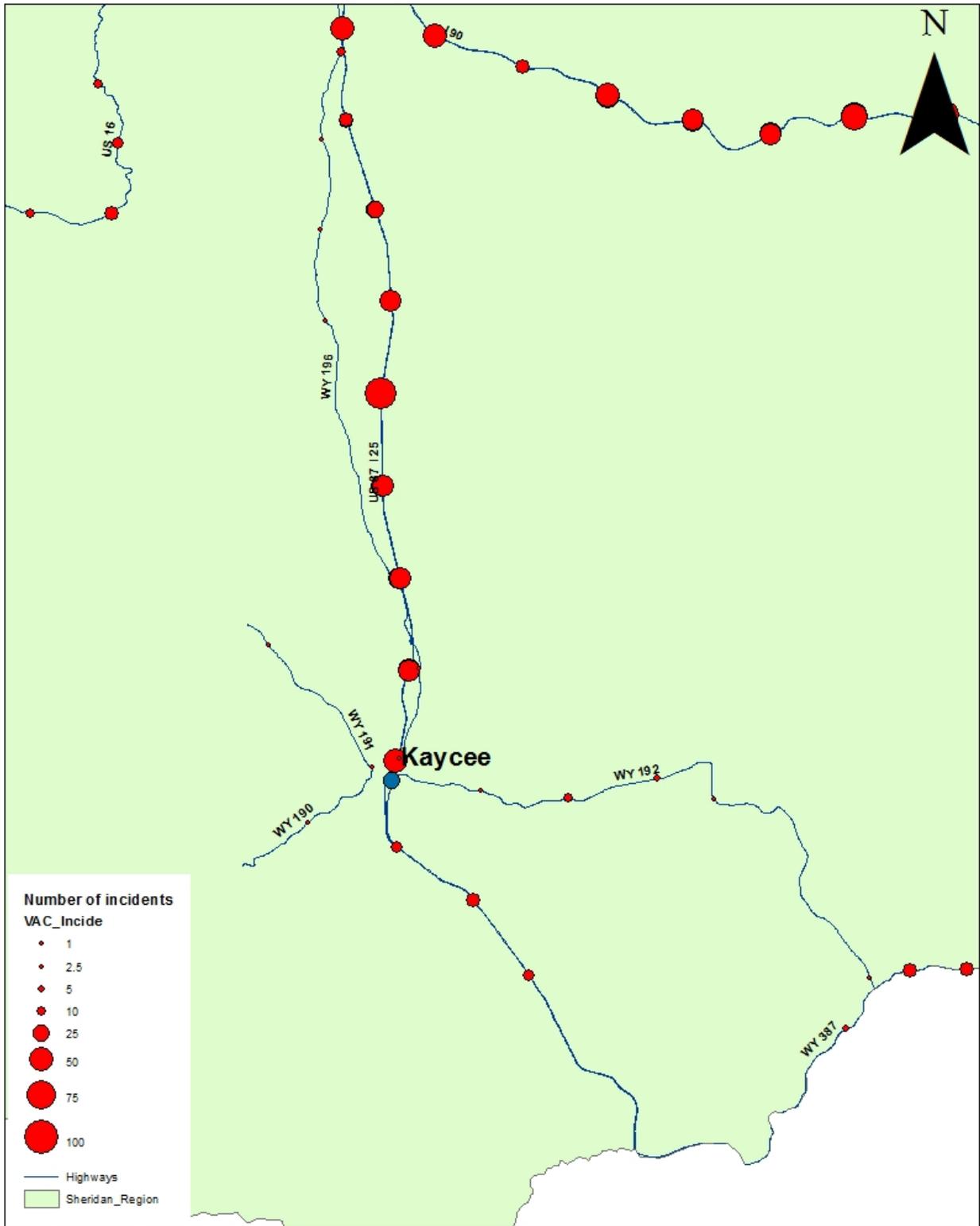


Figure 6. Vehicle caused mule deer mortality hotspots.

Summary

There are many different factors that affect the populations and harvest of mule deer in Wyoming. Although many of these factors are beyond the control of WGFD, there are many things the Department can do as managers to improve mule deer harvest and populations through management of habitat, access, and research. In addition to increasing focus on mule deer populations, WGFD must also focus its efforts on fostering interest and collaboration between private landowners, other government agencies, and sportsmen. As more citizens and government agencies become involved in the Upper Powder River MDI, more opportunities will arise to make a significant difference to mule deer populations in the Upper Powder River basin. The Sheridan Regional personnel believe that the actions outlined in this report will begin this process and provide us the foundation to better address concerns regarding population and harvest management in the UPR mule deer herd unit.