

2011

Wyoming Range Mule Deer Plan



Wyoming Game & Fish Department

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ACKNOWLEDGEMENTS

The Wyoming Game and Fish Department (WGFD) sincerely thanks all those who participated in the “town hall” meetings and/or provided input on this plan during the Wyoming Range Mule Deer Initiative. In the spirit of the North American Wildlife Conservation Model, the WGFD is committed to the continuation of this collaborative process as we all strive to sustain a healthy mule deer population in the Wyoming Range.

EXECUTIVE SUMMARY

In June 2010, the Wyoming Game and Fish Department (WGFD) began a public involvement process for the Wyoming Range Mule Deer Initiative (WRMDI). Our goal was to develop a management plan specific to this herd unit, through a collaborative process with stakeholders. The Wyoming Range plan is tiered from the statewide Mule Deer Initiative approved by the Wyoming Game and Fish Commission in July 2007.

In 2008, the WGFD surveyed members of the public who hunt mule deer in the Wyoming Range to obtain their perspectives on a variety of issues affecting management of this herd. The next step was to engage the public in face-to-face meetings through a process called “collaborative learning,” in order to share information and ideas about mule deer management. From June 2010 through February 2011, the WGFD conducted a series of workshops in Marbleton, Afton, Kemmerer, and Green River. Goals of the collaborative learning workshops were to share knowledge about the status and management of the Wyoming Range Deer Herd and work together to develop solutions.

This plan is based on management issues, objectives, strategies and actions identified through the collaborative learning process. Management issues include: Public Involvement and Outreach, Habitat Management, Population Management, Research, Predator Management, and Law Enforcement. Implementation actions considered feasible in light of WGFD resources and statutory authorities are presented in this plan. New actions are listed in the remainder of the Executive Summary and described in greater detail in the body of this plan. Existing and ongoing actions are also described in the plan. A summary of new actions considered in this plan is below:

Public Involvement and outreach

- Use brochures and public contacts to inform hunters of important deer management issues
- Stress the importance of protecting mule deer on winter ranges
- Produce a documentary on economic, cultural, and economic importance of mule deer
- Increase public awareness of the antler hunting regulation
- Schedule additional public meetings to discuss mule deer issues

Habitat Management

- Employ a full time habitat technician to work on habitat projects in the Wyoming Range
- Develop a long-term plan to implement habitat treatments in the Wyoming Range
- Implement additional habitat treatments in cooperation with federal land management agencies
- Review allotment management plans and recommend management practices to sustain/enhance mule deer habitat
- Encourage BLM and private landowners to create forage reserves and grass banks

- Become more involved with mapping/control of invasive plants
- Pursue additional funding to install highway underpasses and overpasses in migration corridors
- Pursue fencing modifications in migration and movement corridors
- Work with WY Dept. of Transportation to deploy additional variable message signs in areas of excessive vehicle/wildlife collisions
- Reduce traffic speed limits in areas of excessive vehicle/wildlife collisions
- Educate the public and political decision makers regarding the importance of preserving and restoring migration corridors
- Step up efforts to mitigate energy-related impacts by working with companies, federal land management agencies, and regional habitat initiatives
- Work with federal land management agencies to develop and implement a coordinated travel management plan in important habitats
- Educate the public regarding impacts of motorized vehicles, high road densities, and off-road vehicle use

Deer Population Management

- Seek public consensus to support a standard opening date for deer hunting seasons in the Wyoming Range
- Evaluate whether long elk hunting seasons are displacing mule deer from preferred habitats
- Implement strategies to promote youth hunting in the Wyoming Range (e.g., allow youth hunters to take antlerless deer on any license type)
- Evaluate effectiveness of antler point restrictions for achieving specific herd composition goals
- Evaluate/improve harvest and population estimation techniques
- Evaluate whether the habitat base can sustain the current population objective
- Engage the public in discussions to change the population objective
- Assess whether changes in the deer population are correlated with browse production and climatic conditions
- Reevaluate the population objective every 5 years
- Educate the public regarding the need to manage deer populations on a sustainable basis and within the population objective

Research

- Evaluate suitability of various computer models for estimating populations
- Determine if a predictable correlation exists between weather data and mortality rates
- Examine feasibility of collecting survival information to support a more accurate estimate of population trends
- Address human dimensions information needed to address concerns and interests of Wyoming Range deer hunters

- Develop better methods to obtain regular feedback from deer hunters

Predator Management

- Determine whether predator control efforts conducted by other agencies are benefiting mule deer
- Determine whether trophy game species are impacting mule deer populations; consider adjustments in management objectives for those species
- Implement Commission policy with respect to predatory animal control

Law Enforcement

- Expand the geographic area and time period covered by the winter range task force
- Use restitution money to fund additional enforcement efforts
- Request funding from energy companies to support law enforcement efforts
- Document illegal travel on public lands and coordinate with federal agencies to increase enforcement of existing travel rules
- Encourage citizen volunteers to assist with winter range surveillance and help detect/report violations.

INTRODUCTION

A statewide Mule Deer Initiative (MDI) written by the Wyoming Game and Fish Department (WGFD) was adopted by the WGFD Commission in July 2007. The MDI outlines factors believed to contribute to declining mule deer populations and identifies strategies intended to at least sustain current deer numbers.

The purpose of the Wyoming Range Mule Deer Initiative (WRMDI) is to apply the overarching strategies and objectives of the statewide MDI to address herd-specific issues. The WGFD undertook an intensive information gathering process to obtain a better understanding of the public's concerns related to this herd. A series of community workshops was held throughout western Wyoming from June 2010 through February 2011. Based on public input, the WGFD tailored this management plan to address habitat, deer population, and social issues specific to the Wyoming Range mule deer herd.

In Wyoming, management of big game species is guided by the "Management by Objective" process. Our goal is to manage mule deer populations within 10% of an approved "post-season" population size (the number of deer in the population after the hunting season). The post-season population objective is set by considering the desires of hunters and landowners, and the number of deer the habitat base can support on a sustainable basis. The current post-season population objective for the Wyoming Range Deer Herd (Figure 1) is 50,000. The population estimate was approximately 29,500 after the 2009 hunting season. Management in the Wyoming Range Deer Herd is also driven by the "special" management designation. This means the WGFD will manage the herd to maintain observed postseason buck:doe ratios at 30-45 bucks:100 does. Observed buck:doe ratios have met or exceeded 30 bucks:100 does in 26 of the past 30 years. The buck:doe ratio since 1988 has averaged 37 bucks:100 does.

Based on population trends, harvest, fawn production and recruitment, and post winter mortality surveys, there has been no sustainable growth of this deer population since the late 1990s. This stagnation is likely due to a combination of harsh winters, changes in habitat condition(s) and current land use (energy development) on core winter ranges. High mortality associated with severe winter conditions typically results in the loss of 10-20% of the deer population on the major winter range complexes. During the past 18 years (1992 – 2009), overwinter losses have been above normal on one or more winter ranges every 2-3 years. These frequent and significant losses prevent the population from increasing despite minimal harvest of antlerless deer.

Through implementation of this plan, the WGFD will focus on the following management needs:

- 1) Identify factors that limit local mule deer populations and impact the condition of their habitats;
- 2) Secure adequate funding to effectively implement management strategies;
- 3) Explore and expand partnerships with federal land management agencies, energy companies, landowners, and sportspersons; and
- 4) Continue to encourage public involvement in, and support of management actions benefiting this herd.

PUBLIC PARTICIPATION

All Wyoming wildlife is a public resource. Public involvement was vital to attain support and buy-in for a Wyoming Range mule deer plan. This was accomplished through a series of steps to obtain feedback from a broad range of constituents, including persons living near the Wyoming Range and others who hunt there but live elsewhere.

The first step was to understand the preferences and attitudes of persons who hunt mule deer in the Wyoming Range. This was accomplished through a telephone survey during winter of 2008. Participants included Wyoming residents living near the Wyoming Range and elsewhere in the state, as well as nonresidents. Survey questions were partially based on issues identified by a group of selected stakeholders (i.e., hunters, outfitters, local business owners, and etc.) and some questions also came from a similar survey conducted in 2005 that addressed attitudes of deer hunters statewide. Early involvement of identified stakeholders assured issues of greatest concern were addressed, and also enabled the department to consider responses from persons who were unable attend meetings in person.

Using results of the survey, the WGFD engaged the public through a “collaborative learning” process. Collaborative learning enables stakeholders, including the initiating agency, to discuss issues in an open forum, allowing for meaningful dialogue, and active learning. Collaborative learning does not strive to achieve a final consensus or majority vote, but emphasizes learning and mutual understanding. The goal is to allow participants to be fully engaged in the process, learn from each other about the situation, and work toward solutions. This process is effectively used when issues are complex and competing interests and values are represented. The WGFD intends to continue the collaborative learning process through annual updates and open dialog regarding status of the WMRDI.

The issues and strategies addressed by the WMRDI plan were based on results of the collaborative learning process. From June 2010 to February 2011, the WGFD conducted a series of three collaborative learning workshops in each of four communities around the Wyoming Range: Marbleton, Afton, Kemmerer, and Green River. During the first meeting, participants were provided information about collaborative learning and the public involvement process, and given some background on the Wyoming Range Herd. They were then asked to break into small groups to list and prioritize the issues affecting deer most in the Wyoming Range. Issues included: public involvement and outreach, habitat management, deer population management, research, predator management, and law enforcement. The collaborative learning process was structured around these six issues. Objectives, strategies and actions are presented in this plan as resolutions to each issue.

The second round of meetings focused on solutions to the issues identified in round 1. Participants were given more in-depth information about each topic and then separated into groups to brainstorm solutions. Their ideas were organized according to the category of issues addressed. Solutions considered feasible in light of WGFD resources and statutory authorities are presented as strategies or actions in this plan. Solutions deemed infeasible at this time are listed in Appendix A along with a brief explanation or identification of additional resources necessary for a solution to be implemented.

A draft of the plan was made available to the public during the third and final round of meetings. Highlights of planned actions were presented in each of the prioritized issue areas. Participants

had the opportunity to ask questions and make comments on each of the topic areas. After the meetings, the draft plan was made available on the WGFD website. Notice of public comment was also made on the website, giving another opportunity for comment for meeting participants as well as those who did not participate in the collaborative learning workshops. A summary of the public comments along with a brief response to comments can be found in Appendix B.

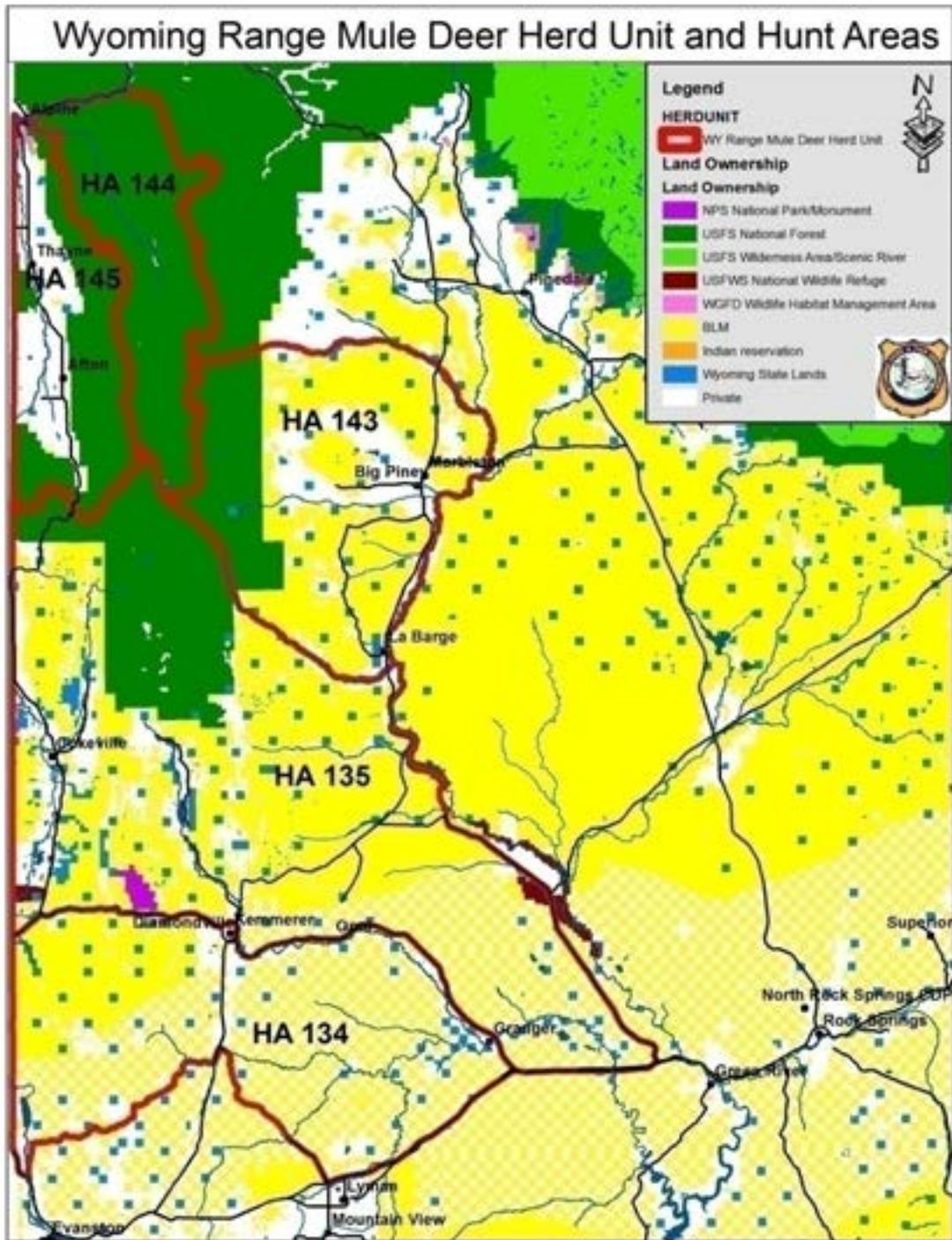


Figure 1. Wyoming Range herd unit boundary and hunt areas.

ISSUES, OBJECTIVES, AND STRATEGIES ADDRESSED

Public Involvement and Outreach

Mule deer are among Wyoming's most valued natural resources. Nowhere is this more evident than in the Wyoming Range, inhabited by one of the West's premiere mule deer herds. Mule deer are also among the most popular big game species sought by hunters. To many, the species is an iconic symbol of the open western landscape.

All wildlife including mule deer are held in trust for the people. Therefore, it is essential to consider the perspectives and expectations of public stakeholders who are the key to future funding and support for deer management.

The outreach program described in the previous section was designed to engage persons interested in the management of this deer population in a more meaningful manner. The following objectives, strategies, and management actions resulted from that process.

Objective: Increase the public's awareness and understanding of issues and challenges affecting mule deer management in the Wyoming Range.

Strategy: Increasing Public Awareness - Utilize the WGFD's communications resources to improve public awareness of the diverse issues affecting management of the Wyoming Range Deer Herd and how the WGFD is addressing those issues. Provide meaningful opportunities for the public to become engaged and participate. This will be accomplished primarily through the WGFD's Information and Education Branch, but would also require participation of employees within the Wildlife Division. The WGFD will rely heavily on partnerships with other agencies, conservation/sportsmen's groups, and the regional media to convey pertinent information to interested publics.

Round 2 Comments Addressed:

- Educate public on how to get involved in habitat management on public lands.
- Need more education on management issues (e.g. habitat problems, migration barriers, benefits of underpasses).
- Give public presentations on habitat quality including relationship between nutritional quality and productivity, survival, and recruitment.
- Utilize media to inform the public with eye catching formats, pictures.
- Disseminate information brochures at check stations.
- Enforce antler hunting seasons and increase awareness by the general public and energy workers.
- Utilize human dimensions surveys to periodically monitor and assess stakeholder perspectives (e.g. survey hunters and outfitters).
- Educate the public about compensatory mortality – killing barren does or “inferior” doe/bucks has no impact at the population level.

Management Actions Planned

- The WGFD will prepare verbal and written information including fliers and brochures to provide updates regarding important issues affecting the Wyoming Range deer herd. These fliers and brochures will be disseminated at check stations and through field contacts beginning in 2011.
- The WGFD will identify more effective ways to underscore the importance of protecting mule deer on winter ranges.
- The WGFD, in partnership with the Western Association of Fish and Wildlife Agencies' Mule Deer Working Group, will produce a documentary chronicling the ecological, social, and economic importance of mule deer in the West and challenges we face in managing this species at a sustainable level.
- The WGFD will increase awareness of the antler hunting regulation on public lands west of the Continental Divide through timely media releases and signage along access routes into winter ranges.
- The WGFD will schedule additional public meetings on a periodic basis to focus on mule deer issues in each region. The meetings will serve as a forum to continue collaboration and discuss progress on this plan.

Management Actions in Progress

- The WGFD will continue to expand its toolbox of public outreach methods and media. For example, the WGFD has launched a Facebook page and now has a channel on YouTube. These outlets will be used to share information about many Department programs and projects including the Wyoming Range deer herd and its management.
- Current media outlets include the WGFD website, Wyoming Wildlife magazine, Wyoming Wildlife News, a monthly e-newsletter, informational videos, slideshows, and photos. The website features a page dedicated to the Wyoming Range deer herd planning process that will be maintained and updated.
- The WGFD will continue to emphasize the social and economic values of intact fish and wildlife habitat. Presenting key messages about habitat and forage issues has always been a challenge and the WGFD is continually looking for better ways, such as web-based video and slide shows, to make that connection with the public.
- The WGFD will periodically resurvey stakeholders to assess their values and perspectives related to management of the Wyoming Range mule deer herd.

HABITAT MANAGEMENT

It is not uncommon for stakeholders to advocate management of wildlife at optimal levels for aesthetic, recreation, sport harvest, and scientific purposes. These expectations can be difficult to meet because anthropogenic impacts have eliminated or otherwise negatively altered important deer habitats. The Mule Deer Working Group of the Western Association of Fish and Wildlife Agencies (WAFWA) defines habitat as those resources and conditions present in an area that allow an animal or population to live, survive and successfully reproduce (deVos et al. 2003). The basic components of habitat include food, water, cover, and open space within sufficient proximity. The maximum number of deer an area can support and sustain over time is commonly called “carrying capacity,” and is determined by the amount and quality of food, cover and water available in an area to support a given number of deer over time. When a mule deer population surpasses what the available resources can sustain, the herd has exceeded the habitat’s carrying capacity. Body condition and productivity typically decline. Chronic overuse further diminishes the capacity of the habitat to support deer and may alter vegetation composition and productivity for many years.

Forage quality and accessibility is a key factor influencing how deer use their habitat. The characteristics that most influence the kinds of plants deer select seasonally are palatability, availability, and succulence. Mule deer forage mainly on shrub leaves, buds and stem tips from late summer through fall and winter. In spring through early summer, they rely more on forbs (broad leafy plants) and grasses that are green, succulent, and high in protein at that time of year. Food resources can affect mule deer in two primary ways, one arising from quantity and the other from quality. Mule deer require a sufficient amount of forage to survive, however large volumes of low quality forage may be inadequate. Deer must obtain sufficient energy, protein, and nutrients such as calcium and phosphorus from the plants they eat to maintain body condition and reproduce successfully. Nutrition influences overall body condition, ovulation, conception, gestation, lactation, survival, and home range size on a seasonal and annual basis. Nutrition also affects winter survival, size at birth, timing of birth, survival of fawns, and even sex composition of fawns. For example, does in good condition bear healthier fawns, more twins, and a higher proportion of females (Tollefson, 2010).

Does under nutritional stress give birth to smaller fawns, often later in the season, predisposing them to increased mortality. Nutritional status also affects a deer’s vulnerability to predation, as well as its ability to compete for food and survive when severe weather persists for extended periods. Finally, mule deer have a relatively small rumen and digestive tract with a specific microbial composition that decreases their ability to withstand rapid changes in diet composition. However, the primary cause for winter starvation is habitat in poor condition often exacerbated by too many deer and other herbivores competing for the same forage. Significant mortality can also take place in reasonably good habitat under extremely harsh winter conditions.

Water is another critical component of mule deer habitat. Intake varies depending on temperature, humidity, water content of forage, rate of forage consumption, and other factors. Deer generally obtain much of the water they need from succulent forage; however, free water is important when deer consume large amounts of cured vegetation and when does are lactating. In winter, deer normally obtain sufficient water by consuming snow. Optimally, water sources should be spaced no more than 2.5 to 3 miles apart.

Cover is the other major physical component of deer habitat. Types include thermal cover used to minimize exposure and conserve energy, and security or escape cover used to avoid detection, evade predators, and limit harvest by hunters. Mule deer are adept at using trees and shrubs as security cover. Topographic features such as canyons, rocks, and river breaks also provide cover. Cryptic coloration greatly enhances the ability of mule deer to hide, making them difficult to detect even when they are standing in the open. Most features that enable a mule deer to hide also afford thermal protection from wind and cold weather.

Many factors have contributed to loss and fragmentation of mule deer habitats in the Wyoming Range. Some of the more obvious are: energy exploration and extraction; urban growth and rural subdivision development; natural events such as drought, severe winters, and wildfires; fences and other impediments to migration; and increased recreation activities such as snowmobiling and off-highway vehicle use. Global climate change may be exacerbating several of these effects (deVos and McKinney 2007). These disturbances reduce the effectiveness of seasonally important habitats, leading to increased mortality and susceptibility to predation, reduced reproductive success, and displacement of mule deer into less suitable areas.

Mule deer habitats are also altered by many land management practices, including fire suppression, grazing by livestock, shrub eradication projects, and activities that increase spread of cheatgrass and other invasive plants. Ungulate browsing (both by wild and domestic animals) and loss of natural fire cycles have led to a decline in the quantity and condition of important habitats, particularly aspen and mixed-mountain shrub communities. Shrub eradication projects designed primarily to increase grass production have reduced availability of shrubs that provide essential food and cover, especially on winter ranges. Invasive plants such as cheatgrass, knapweed, and thistle are increasingly outcompeting native shrubs, forbs and grasses on important deer ranges. Some invasive weeds, such as cheatgrass, ignite easily and increase the frequency and intensity of wildfires that eliminate native shrubs and other plants, and permanently alter the ecology of the landscape. Juniper and conifer stands can provide important deer cover, but at higher densities, they reduce sunlight and moisture reaching the more important understory vegetation. When junipers and conifers expand into important shrub-dominated habitats, they often outcompete and eliminate important forage plants.

In recent years, recurring drought has reduced the amount and quality of forage produced on many deer ranges, resulting in greater competition for the remaining food supply. Higher survival of deer during mild winters exacerbates this competition and has contributed to declining habitat conditions. In recent history, significant mortality events have impacted the Wyoming Range mule deer herd every two to three winters due in large part to declining forage conditions on winter ranges. Dry conditions have increased the frequency of wildfires that damage native plant communities and favor spread of invasive plants such as cheatgrass.

A number of appropriately planned treatments can be applied to enhance mule deer habitat. Since 1970, more than 150,000 acres have been treated within the Wyoming Range (See Appendix C). Habitat enhancement practices have included mechanical treatment of shrubs, prescribed burning of shrubs or aspen, timber harvest, chemical (Spike) treatment of shrubs, legume seeding and livestock forage reserves or “grass banks.” Specific agricultural practices and progressive livestock management plans can improve shrub productivity and vigor, as well as enhance the herbaceous (forb and grass) component in the understory. Several of these

practices and plans have been completed with willing landowners and federal land grazing permittees to benefit mule deer.

It is essential to detect ecological trends through vegetation monitoring to effectively protect and manage deer habitats at risk. Within the Wyoming Range, 15 shrub transects have been established and monitored by WGFD biologists and wardens on deer winter ranges since 2005 (See Appendix D). These transects are monitored in Wyoming big sagebrush, mountain big sagebrush, black sagebrush, antelope bitterbrush and true mountain mahogany community types in this herd unit. Readings are taken in fall to measure annual leader production and in spring to determine the percent of leaders browsed over winter. This type of monitoring program can be very costly and labor intensive to implement on a meaningful scale. However, it is essential to evaluate habitat conditions in order to manage for adequate amounts of high quality habitat needed to sustain healthy mule deer herds. Managers continue to explore and refine techniques for estimating carrying capacity and evaluating habitat conditions.

The following management objectives and strategies are recommended to sustain and improve habitat needed to support abundant mule deer populations in the Wyoming.

Objective: Restore and improve all seasonal mule deer habitats throughout the Wyoming Range.

Strategy: Habitat Treatments - WGFD will work with land management agencies and private landowners to restore and improve all seasonal habitats including winter, transitional, and summer ranges. Managers will implement treatments and management strategies to enhance the quantity and quality of sagebrush, mixed mountain shrubs, aspen, conifer, riparian and herbaceous communities. A suite of tools such as mowing, aeration, pitting, prescribed fire, chemical application (i.e. Spike), seeding, and grazing management will be applied. Mule deer winter ranges are generally in poor condition and will be a high priority for restoration efforts. Tollefson, 2010 indicates forage quality on summer and fall mule deer ranges also has significant influence on productivity (i.e. pregnancy rates). Therefore, habitat enhancement projects should be planned on a landscape scale. Pre- and post-treatment monitoring is critical to assess and adjust treatments.

Round 2 Comments Addressed:

- Focus on winter range.
- Restore crucial winter range– for example apply spike treatments on sagebrush while considering sage grouse needs, also burning, mowing and seeding.
- Plan larger and more habitat treatments.
- Increase emphasis on summer/fall range.
- Increase aspen stands & suppress conifers – manage for early succession communities.
- Support wildland fires & prescribed burns where appropriate (*e.g. when there is low risk of cheatgrass and if compatible with sage-grouse needs*).
- Forest thinning –combine with timber sales for vegetative treatment.
- Spike treatments.

- Consider cyclical nature of growth and seasons in management decisions.
- Focus on historic winter range – review historical data to understand and describe optimum conditions for deer – e.g. review BLM and USFS data.
- Re-establish key vegetation species through planting and other means to enhance habitat.

Management Actions Planned

- The WGFD will work with the BLM to implement the Muddy Creek Spike treatment to enhance sagebrush and mixed mountain shrub communities on mule deer winter range.
- The WGFD will develop the Star Valley Front project with Bridger Teton National Forest (BTNF) to enhance mixed mountain shrub communities.
- The WGFD will pursue development of a Piney Creek aspen enhancement project on BTNF lands to enhance parturition and fall transitional habitats used by mule deer.
- The WGFD will emphasize habitat work underway on the BTNF to enhance forage quality in tall forb communities on summer range.
- The WGFD will employ a full-time habitat technician to address habitat issues related to the Wyoming Range Mule Deer Plan.
- The WGFD will develop a long-term operational plan for habitat treatments in the Wyoming Range.

Management Actions in Progress

- The WGFD will meet annually with BLM, BTNF, Natural Resource Conservation Service (NRCS), other land management agencies, and private landowners. Habitat conditions, and vegetation treatment projects will be discussed and future management activities recommended.
- The WGFD will continue to partner with BTNF to implement treatments on the Cottonwood II aspen enhancement units that are mechanically prepared for prescribed burning, or identified for treatment implementation in 2011.
- The WGFD will continue to coordinate with the Rocky Mountain Elk Foundation (RMEF) and the Bureau of Land Management to implement the Miller Mountain phase of The Wyoming Front Aspen Restoration Project in 2011.
- The WGFD will continue to monitor utilization and production of key shrubs on important mule deer ranges each spring and fall. Additional shrub monitoring will be emphasized within the southern portion of the Wyoming Range mule deer herd unit where an additional 10 to 15 habitat transects will be established in core winter habitats.
- In 2008, the WGFD initiated a program to improve mule deer forage by cost sharing legume seeding with private landowners. Four projects were completed in the Wyoming Range through fall 2010 and additional projects are planned in the future.
- BTNF and WGFD managers are developing long-term plans to restore aspen age class diversity (i.e. quality mule deer summer/transitional range) using prescribed treatments and wildfires.

Management Actions Completed

- In 2008-2010 the WGFD contracted the Teton Science School to assess the condition of priority mule deer habitats on more than 850,000 acres in the Wyoming Range (Appendix E). Current vegetation conditions were estimated from transects and field observations and habitat management actions were recommended. Habitat projects will be developed from this assessment.
- An inventory and assessment of aspen stands throughout the entire Greys River Ranger District (484,000 acres) was completed in 2009. Most of the aspen stands are in advanced or declining successional stages.
- Over the past 40 years, more than 150,000 acres of habitat treatments were completed on federal and private lands (see Appendix C).

Strategy: Grazing Partnerships - The WGFD will encourage federal land management agencies and private landowners to adopt livestock management practices that complement and improve mule deer habitat. The WGFD has no management authority over federal grazing permits, but addresses wildlife concerns through recommendations to federal agencies. WGFD also partners with livestock owners to balance multiple uses and objectives such that important habitat can be maintained for mule deer within viable livestock operations.

The WGFD will work to prevent overuse of mule deer habitat and competition between ungulates by monitoring important habitats and prescribing sufficient harvest to manage big game populations within herd objectives.

Round 2 Comments Addressed:

- Rest depleted rangeland and habitat treatment areas from livestock grazing for 2-5 yrs, reduce overgrazing, reduce competition between livestock & deer
- Reduce livestock grazing on winter ranges (-AUMS); obtain historic data on stocking rates. What are the side effects?
- WGFD should work with BLM to address management issues and better management of livestock
- Restore riparian areas by improving grazing management and controlling invasive plants
- Make sure habitat projects don't lead to increased livestock stocking rates
- Coordinate with other WGFD folks to reduce competition between wild ungulates, cattle, and deer
- Work with grazing associations to rest habitat treatments from livestock grazing
- Issue: domestic livestock over grazing, deer WRs (e.g. Hams Fork, Sage JCT), CRP (BLM lands), rest all treatments on BLM/FS, move livestock to private land (CRP) (Focusing on resting)
- Season of use/annual operating plan (AOP): Federal enforcement of AOP; ID season of use in allotment management plan

Management Actions Planned

- The WGFD will review Allotment Management Plans (AMPs) and recommend practices to sustain and enhance mule deer habitats. Several AMPs are currently being evaluated and updated on the BTNF and on BLM lands. The WGFD encourages the public to participate and comment during this federally-led planning process.

Management Actions in Progress

- WGFD personnel will continue to meet annually with BLM, USFS, NRCS, and other land management agencies to discuss habitat conditions, vegetation treatments, and recommend future management activities.
- WGFD will continue to work with federal and private partners to influence grazing management plans on federal allotments to improve mule deer habitat. This will be accomplished through field visits with federal range conservation employees, meetings with permittees, and vegetation monitoring.
- WGFD biologists will continue to encourage the BLM to adjust livestock management to include rest-rotation grazing systems and incorporate utilization standards in critical habitats for mule deer.
- WGFD will continue to require all prescribed fire projects funded with wildlife dollars must include two growing seasons of rest post-treatment. In addition, projects utilizing WGFD equipment to mechanically treat a site will require a minimum of one season rest post-treatment.
- WGFD biologists will continue monitoring shrub transects and livestock utilization before wildlife occupy winter ranges in the fall. This information will be shared with the public and federal agencies and appropriate management adjustments recommended.
- Elk hunting seasons have been liberalized over the past decade in an attempt to stabilize increasing elk populations and reduce populations that are over objective.
- Several conservation easements (i.e. Diamond H, Cross Lazy 2, Cottonwood I-III) and associated conservation plans are being pursued and developed to improve or maintain critical mule deer habitats.

Management Actions Completed

- A 10-year private land lease that reserves AUMs for wildlife is in place on the Thoman property west of Kemmerer and will benefit mule deer.

Strategy: Forage Reserves and Grass Banks -WGFD will partner with livestock owners and land management agencies where opportunities to create forage reserves or grass banks can increase flexibility in managing both livestock and wildlife . Conservation easements are pursued with landowners who have an interest in this management option. Wildlife objectives can be incorporated into the language of easements as opportunity allows.

Round 2 Comments Addressed:

- Local personnel should work with permittees to explore interest in creating forage reserves
- Expand conservation easements to buy grazing leases/permits on federal lands

Management Actions Planned

- WGFD will meet with the BLM State Office to discuss modification of BLM policy and/or regulation allowing for creation of forage reserves and enlist support for the idea.
- WGFD will work with private landowners to explore potential for setting aside forage reserves and grass banks where these options fit into their current management operations.

Management Actions in Progress

- Potential forage reserves or grass banks will be pursued in cooperation with grazing permittees or private landowners as opportunities arise.
- Conservation easements are pursued in important habitat areas when there are opportunities.

Management Actions Completed

- Organizations including the Mule Deer Foundation, Wyoming Foundation for Wild Sheep, National Wildlife Federation, Trout Unlimited and The Rocky Mountain Elk Foundation have cooperatively purchased grazing AUMs from willing sellers to reduce livestock stocking rates and retire key allotments. See Appendix C.
- A conservation easement funded by the Jonah Interagency Office included management plans on federal allotments associated with the private lands under easement. This may provide a forage reserve in the future.

Strategy: Invasive Plants - Decrease the prevalence and distribution of invasive plant species (i.e. cheatgrass and thistle) to restore mule deer habitat. Incorporate weed management practices on all WGF Commission owned lands including use of weed-free hay and cleaning equipment to prevent seed spread. Assign WGFD field personnel to coordinate with weed and pest districts, weed management agencies, federal land managers and landowners on weed management plans, monitoring, prevention and treatment of invasive plant species. The WGFD would emphasize best management practices to address spread of invasive plants associated with energy development vegetation treatments, and wildfires, especially within critical habitats and corridors for mule deer.

Round 2 Comments Addressed:

- Decrease invasive species/cheatgrass --explore solutions
- Control thistle on disturbed sites (e.g. timber harvest/clearcuts)

Management Actions Planned

- The WGFD will cooperate with landowners and land management agencies to become more involved with mapping and controlling invasive plants.

Management Actions in Progress

- WGFD, BLM and Dupont are conducting a project to test a new chemical not yet certified for cheatgrass control on federal land. This could provide an additional tool for limiting spread of cheatgrass if the chemical proves effective.
- The WGFD Sagebrush Treatment Protocols, specify no use of prescribed fire to treat sagebrush in Sage Grouse Core Areas where annual precipitation is less than 12 inches. This recommendation is intended in part to prevent spread of cheatgrass. The Protocols also recommend that noxious and/or invasive vegetation be monitored and controlled after any treatment within Core Areas. The Sagebrush Treatment Protocols were developed in response the Governor's Executive Order 2010-4 pertaining to Sage Grouse Core Areas.
- WGFD personnel participate on the Sublette County, Lincoln County, Sweetwater County, and Uinta County weed management associations to provide input on weed management actions and priorities.
- WGFD maintains contracts with local weed and pest districts to control noxious weeds on WGFC lands.
- WGFD cooperates with BLM and energy companies to promote reclamation and best management practices that prevent spread of noxious weeds and cheatgrass. Weed control measures are required on all new energy development sites.

Objective: Improve and protect mule deer movement corridors between seasonal habitats throughout the Wyoming Range.

Strategy: Highway Crossings - Continue to work with WYDOT, federal partners, NGOs, and other wildlife interests to reduce highway related mortality through installation of crossing structures and by regulatory means such as reduced speed limits.

- Install more underpasses (specifically Big Piney-LaBarge hwy)
- Install more/better signing along problem road segments
- Enforce speed limits; promote lower speed zones (like school zones) on highway segments where specified mortality thresholds are met; institute higher speeding penalties
- Encourage letters from sportsman's groups supporting wildlife underpass projects

Management Actions Planned

- The WGFD will continue to pursue funding opportunities through the Wyoming Department of Transportation (WYDOT), Federal Highway Administration (FHA), and other sources to install additional underpasses where appropriate. A current priority includes the corridors between Big Piney and LaBarge. Preliminary locations have been identified and initial design have occurred.

- The WGFD will pursue additional fence modifications and construction of underpasses to enhance mule deer movements across Highway 189 and private land between Big Piney and LaBarge.
- The WGFD will work with national and local citizen-based groups to recognize how important these projects to wildlife conservation and the state of Wyoming. This includes working with national media and key media personnel to promote awareness of the issue.
- WGFD will cooperate with WYDOT to purchase and deploy additional variable message sign trailers during critical migration periods.
- WGFD will work with WYDOT to reduce traffic speed limits where wildlife mortality is excessive.

Management Actions in Progress

- WGFD will continue working with private landowners and Union Pacific Railroad to remove or modify fences along the right-of-way south of US Highway 30 in Nugget Canyon. This will reduce mule deer mortality associated with this rail line (Appendix F).

Management Actions Completed

- WYDOT has completed 7 underpasses and 15 miles of deer fencing along US Highway 30 in Nugget Canyon between Kemmerer and Cokeville. These modifications facilitate the safe movement of several thousand deer annually.

Strategy: Fencing - WGFD will work with private landowners and land management agencies to modify or replace fences that impede wildlife movement and construct new fences to standards that allow wildlife movement. WGFD will provide assistance to remove fences identified as unnecessary.

Round 2 Comments Addressed:

- Fences need to be more wildlife friendly
- Limit fencing erected by energy companies

Management Actions in Progress

- WGFD will continue to recommend fence designs that allow wildlife passage, wide rights-of-way (ROW), and reseeding with unpalatable plant species on highway projects. This will reduce the amount of time ungulates spend in highway right-of-ways during migration thereby reducing deer mortality.

Management Actions Completed

- Research on fence specifications, highway warning signs, detection systems, and underpasses has produced modifications that improve animal movement and reduce collisions.
- A WGFD habitat extension brochure on fence specifications was recently updated based on results of recent research and field studies.

- The WGFD has developed wildlife compatible fence designs in cooperation with the BLM and Wyoming Department of Transportation.
- In 2009, a portion of fence constituting a major barrier to mule deer movement was replaced with wildlife-compatible fence on private land in Dry Piney Creek in 2009.

Objective: Mitigate oil and gas related impacts to sustain or increase mule deer populations throughout the Wyoming Range.

Strategy: Mitigating Impacts - The Wyoming Game and Fish Commission approved “Recommendations for Development of Oil and Gas Resources within Crucial and Important Habitats: Version 6.0,” and assign WGFD field personnel to work on Federal Agency Implementation Teams (IDT) to develop mitigation/management plans for each oil and gas project in important mule deer habitat. The WGFD will emphasize best management practices to address reclamation (i.e. seeding specifications), habitat improvement projects, directional drilling, locating roads/well pads in non-sensitive areas, etc. The WGFD will also emphasize management practices that specifically benefit mule deer.

Round 2 Comments Addressed:

- Increase emphasis on habitat reclamation & rehabilitation
- Consolidate tank batteries, promote lateral drilling, minimize roads (BLM, State Lands, USFS)
- Develop re-vegetation procedures for pipelines, reclamation, etc. in relation to oil and gas development
- GF could develop seed mix recommendations and promote them via Dept of Ag mailings and brochures
- Issues - Work with BLM on oil/gas mitigation (e.g. don't site well pads and roads on ridge tops)

Management Actions Planned

- Local WGFD biologists are currently working with BLM to address present and future well pad densities within the LaBarge Platform Development and Exploration project located on crucial mule deer winter ranges.

Management Actions in Progress

- Local wildlife biologists currently participate on BLM ID Teams to address impacts to mule deer habitat and populations. The most current example is the LaBarge Platform Development and Exploration Environmental Impact Statement. WGFD field managers have been involved in planning efforts from the inception of this project.
- In the adjacent Sublette Mule Deer herd, a trial sagebrush fertilization project was begun in fall 2010. If this study yields positive results, the practice will also be applied on the LaBarge winter mule deer habitats.

- The WGFD continually works with industry, BLM, USFS, the Governor’s Planning Office, and special interest groups to address oil/gas impacts. These planning efforts provide recommendations on a variety of issues ranging from mitigation to road and well pad placement. Early involvement in the planning process affords the best opportunity to avoid or mitigate impacts to mule deer and their habitat.

Management Actions Completed

- The Commission-approved “Recommendations for Development of Oil and Gas Resources within Crucial and Important Habitats” specifically covers wildlife mitigation and reclamation specific to roads, well pads, and other oil and gas infrastructure. The document provides guidance on best management practices to minimize habitat disturbance and reclaim wildlife habitat. These recommendations are provided to federal agencies that lease, plan, and permit oil/gas project within mule deer habitats.
- The Pinedale WGFD field office has worked with BLM and NRCS biologists to develop reclamation seed mixes that benefit wildlife.

Strategy: Replacement of Lost Habitat - Work with appropriate state and federal agencies and energy companies to plan compensatory mitigation that will effectively offset impacts to mule deer habitat. Depending on the type of mitigation, how successful it is, and the proportion of improvement, the ratio of mitigation to impacted acreage needed to offset the impact could range from 1:1 to 10:1.

Round 2 Comments Addressed:

- Restoration is necessary to improve winter range. Perhaps an acre for acre formula for land disturbed. Or % of each barrel goes to restoration. Or use incentives. But not legislation.
- Move the acre for acre recommendation to policy through planning/ Emphasis on cooperation with industry

Management Actions Planned

- Mitigation will be planned to offset loss or impairment of habitat effectiveness throughout the areas directly and indirectly affected by energy developments.
- The WGFD will pursue the creation of a Mitigation Trust Account to address situations in which it is not feasible to avoid, minimize, or effectively mitigate impacts on site. The operator would contribute funding based on the estimated cost of off-site habitat treatments needed to offset the impact(s).

Management Actions in Progress

- In the adjacent Sublette mule deer herd, the Jonah Field and Pinedale Anticline mitigation offices have worked several years planning and implementing mitigation projects. Knowledge and experience gained from successful projects completed by these two offices will be applied to the Wyoming Range Mule Deer herd.

Management Actions Completed

- The Commission-approved “Recommendations for Development of Oil and Gas Resources within Crucial and Important Habitats,” outlines a procedure to mitigate acreage lost as functional wildlife habitat from human developments. The area (acreage) of land needed to mitigate an impact depends on the amount of benefit derived from the improvement project. For example, if a mitigation treatment produced a 10% improvement in habitat capacity, then 10 acres would need to be treated to compensate for the 1 acre of habitat lost. In this example, the mitigation ratio would be 10 acres improved:1 acre lost.

Strategy: Development of Mitigation Accounts - Ensure adequate funding is available to successfully implement mitigation projects needed to offset habitat impacts. The WGFD does not have authority to require that companies fund projects to mitigate impacts on federal lands. The WGFD will work directly with energy companies and the BLM to establish voluntary “Trust Accounts” supporting multiple projects over an extended time frame or develop site specific projects funded by energy companies on an individual basis.

Round 2 Comments Addressed:

- Apply a portion of energy revenues to improve habitat
- Require oil and gas companies to improve habitat, habitat treatments should be their responsibility, e.g., “on-site” mitigation
- Hold oil & gas companies responsible for mitigating disturbance; enforce mitigation standards; involve WGFD
- Utilize partnerships to implement sagebrush mowing treatments (Exxon)

Management Actions in Progress

- Nitrogen fertilizer will be applied to upland sagebrush communities in a 10,000-acre project area south of South Piney Creek. This project is planned to be implemented in fall 2012.

Management Actions Completed

- The Commission approved “Recommendations for Development of Oil and Gas Resources within Crucial and Important Habitats”, outlines a voluntary option titled “Mitigation Trust Account.” If approved by the federal land management agency, an energy company can contribute funding to a mitigation trust account based on the estimated cost of habitat treatments or other mitigation needed to restore habitat function and effectiveness. Federal land management agencies, in coordination with the WGFD, provide project oversight to ensure objectives are achieved. The Jonah Field and Pinedale Anticline mitigation offices are two recent examples of how the WGFD has teamed with the BLM to create Mitigation Trust Accounts.

Objective: Address ORV impacts to mule deer habitats.

Strategy: Travel Plans -Work with federal partners and the public to develop a travel plan that addresses sensitivity of mule deer and other wildlife to disturbance. The plan should focus on winter range and security habitats used at other times of year.

Round 2 Comments Addressed:

- Reduce road densities on winter range; Evaluate impact of roads; Increase closed-road enforcement and fines;
- Roads and access issue re: four wheelers and snowmobiles – need more restrictions to minimize/limit snowmobile/ORV use
- Manage ATV and motorized use
- Establish working relationships with ATV OHV users, USFS, BLM and Recreation Groups
- Increase enforcement of travel regulations to reduce erosion caused by ATV and off-road travel
- Obtain authority for WGFD to enforce federal OHV regulations and possibly create a state regulation (e.g. illegal to hunt from OHVs in Wyoming range or certain hunt areas; regulate this as a “method of take”)
- More enforcement/limits on ORVs
- Do need some areas for ATV recreation; designate areas outside mule deer habitat
- Designate more road closures during hunting seasons
- Backcountry ATV use

Management Actions Planned

- The WGFD will encourage federal partners to develop a coordinated Travel Management Plan addressing all classes of motorized vehicles, specifically to benefit mule deer and other wildlife species. The WGFD will assist with development of this plan.
- The WGFD will cooperate with the BTNF and BLM to institute road closures, primarily in portions of the herd unit with high road densities. This has proven beneficial in the Bear River Divide by temporarily increasing deer security, and can ultimately maintain or improve the proportion of mature bucks.
- The WGFD will increase education regarding impacts motorized vehicle activity has on deer survival and hunt quality. This outreach effort will include additional communication with local ORV and snow machine organizations. Information will also be provided to hunters regarding impacts high road densities and vehicle disturbance have on hunt quality and mule deer production/survival.

Management Actions in Progress

- WGFD personnel will continue to work closely with federal counterparts to increase policing of road and seasonal closures. This partnership should be encouraged and enhanced to increase enforcement presence.

Management Actions Completed

- The WGFD supports seasonal closures to maintain effective habitat conditions and security areas where impacts have been documented. To date, seasonal travel and access restrictions have focused on winter closures and some closures during the hunting season through partnerships with private landowners.
- In 2009 the BLM implemented a closure to motorized vehicle access during January 1 to April 30 in the Big Piney – LaBarge area. This closure appears to be quite successful in reducing harassment of mule deer on winter range.

Objective: Increase funding and foster partnerships to protect and enhance habitat.

Strategy: Funding For Habitat - Continue to foster partnerships that strive to protect and enhance mule deer habitat in the Wyoming Range. Increase funding to improve habitats and secure key deer habitats on public and private lands.

Round 2 Comments Addressed:

- Involve private landowners in mule deer management
- Promote “Adopt a Winter Range” for local sportsmen to raise money, formulate partnerships and plans for habitat projects
- Find alternative sources of funding (e.g., partner with other environmental groups)
- Become engaged in county zoning & planning

Management Actions in Progress

- WGFD will continue to engage new and nontraditional funding partners including industry and philanthropic groups to fund projects that benefit mule deer.
- The WGFD will continue to work with private landowners to improve and secure habitats through cooperative easement purchases and habitat enhancements.

Management Actions Completed

- More than 150,000 acres of habitat treatments have been completed on federal and private lands in cooperation with a variety of partners over the past 40 years (see Appendix C).

POPULATION MANAGEMENT

In 1981, the Sublette, Lincoln, and West Green River mule deer herds were combined to form the current Wyoming Range herd. This decision was based on documented movements among the several herd units that were combined (Lockman 1981). In 1989, Hunt Area 134 was added based on documented interchange of radio-collared deer. Boundaries of hunt areas within the Wyoming Range Herd have also been modified several times since 1989.

Population Objectives

Public interest in the Wyoming Range Deer Herd is represented by a diverse constituency including recreational and trophy hunters, outfitters, and landowners. As a result, management decisions affecting this herd are socially and biologically complex. Although it is difficult to identify strategies and solutions everyone supports, the WGFD attempts to address the diverse expectations of Wyoming's citizens.

Ultimately, the quality and condition of the habitat base determines how many deer can be sustained in a healthy herd. Some deer hunters believe present-day management should replicate the much higher deer densities they recall from the 1950s, 60s, and 70s. However, that era coincided with a stage of vegetation health and vigor that was optimal for supporting a productive and much higher mule deer population. Since then, habitat conditions have declined as a consequence of detrimental fire management (fire suppression and poorly designed prescribed burns), grazing practices, urban and industrial development, long-term drought, and in some cases, too many deer. These impacts have altered the landscape in such a way that sustained population growth is not possible and, in fact, significant population declines occur more regularly. Because the herd is less productive, predation may also be suppressing population growth.

In 1974, the population objective for the Wyoming Range herd was originally set at 30,000 deer. This objective was based on an assessment of winter habitat capacity and the best population estimates at the time. The objective remained in effect until 1985, when it was increased to 38,000 due to a combination of the West Green River, Carter Lease, Lincoln, and Sublette deer herds (Lockman 1981). The objective was raised to 50,000 in 1993 based solely on public pressure to manage for more deer (Fralick 1993).

Population Trends

Since the 1970s, the number of deer in the Wyoming Range has fluctuated dramatically. These fluctuations happened largely in response to weather patterns, land use decisions, highway mortality, and WGFD-initiated management actions intended to maintain deer numbers at levels commensurate with available forage on winter ranges.

Perhaps the single-most important factor affecting the annual population cycle has been mortality events associated with severe weather conditions on winter ranges. During severe winters, up to 10-20% of the deer population dies on major winter range complexes. Over the past 18 years (1992-2009), above normal loss has occurred every 2-3 years on one or more of this herd's winter ranges. These frequent winter losses have stagnated further population growth. It is likely depleted habitat conditions and disturbances on winter ranges predispose deer to higher mortality over the winter period. The lack of sustained annual growth is reflected in population

trends during the last 33 years. From 1976-1991, the average population size was 38,900 deer. From 1992-2008, the population averaged 33,300 deer despite minimal or no harvest of antlerless deer. We now know the population objective of 50,000 deer is far more than the habitat base can support on a sustainable basis.

Herd Composition

The Wyoming Range is designated a “special management” herd and managed to maintain 30-45 bucks per 100 does after the hunting season. Annual herd unit classifications are conducted on major winter complexes located along the Wyoming Range Front (Hunt Area 143) and near Kemmerer, Cokeville, and Evanston (Hunt Areas 134 and 135). During most years, Hunt Areas 134, 135, and 143 account for 90-95% of all deer classified. Less than 2% of the herd spends the winter in the Salt River. Buck:doe ratios typically exceed 35 bucks:100 does and, in years following high winter survival, may exceed 37 bucks:100 does.

Chronically low fawn production is often the most immediate symptom indicating deer numbers exceed what the habitat can support. Excessive deer densities can further damage the habitat base, resulting in a less productive herd more susceptible to large-scale die-offs from disease and severe winters. Alternatively, maximum fawn productivity and recruitment is achieved when the herd is held below the habitat’s capability. Responsible management seeks to protect the habitat by maintaining stable, healthy deer populations. A productive deer herd in good habitat is also more resilient and capable of recovering sooner after severe climatic events.

Over the last 21 years, severe winter conditions (extended periods of sub-zero temperatures and deep snow) have recurred frequently within the southern portion of the herd unit. The impact of these weather and snow conditions is exacerbated by a lack of significant annual browse production on key shrubs due to drought, excessive herbivory, and disruption of natural fire ecology. Depressed browse production on low elevation winter ranges around LaBarge, Kemmerer, and Evanston is reflected in the lowest production of woody biomass recorded in at least 15 years, and fawn production has declined. The frequency of these winters and the resulting high deer mortality and low fawn production has hindered this population’s ability to sustain growth.

Hunting Seasons

Harvest of antlered deer has been emphasized over the last 19 years (1993-2009) in an effort to increase the population toward the current objective (N=50,000 deer). Since 1993, antlerless deer were harvested only one year in the southern portion of this herd (Areas 134 and 135). Beginning in 2000, limited doe harvest was allowed periodically in Hunt Area 143, though not at a level sufficient to suppress population growth.

Season Length

Over the past 35 years, season length has typically been shortest in Hunt Area 135 where deer are more vulnerable due to higher road densities. Seasons opened October 1 and 15 to focus harvest on resident deer and to accommodate permittees who want to move livestock off federal grazing leases before the hunting season begins.

Conversely, the northern hunt areas in the Jackson/Pinedale regions opened earlier in September and October and had longer hunting seasons. Opening dates in Hunt Area 143 had were

October 15 and October 1 in the 1960s through 1989. In 1990, the opening day was changed to September 20 to match hunt areas in the Greys River and Salt River. Hunting seasons in the Greys River and Salt River areas historically opened in September to provide opportunities for semi-primitive backcountry hunting experiences in high elevations. The Greys River (Area 144) opened on September 10 beginning in the 1970s until 1981 when it was changed to September 20. The September 20 opening day remained in place 18 years until it was changed to September 15 in 1998. Since then, opening dates of all general license mule deer hunt areas have since been standardized to September 15 to address dissatisfaction with hunter densities in the Jackson and Pinedale regions.

Standardized Opening Dates

Since the 1960s hunting seasons in many parts of western Wyoming have opened in September. Opening dates were commonly September 10, September 15, and September 20. Other seasons opened October 1 and October 15.

An article in the September-October 1996 issue of the Wyoming Wildlife News presented results of a hunter survey regarding the timing and structure of deer seasons and potential alternatives to the present license system. Wyoming Range hunters were asked if they preferred the following alternatives:

- A standardized opening date for deer seasons in western Wyoming;
- A region general license for resident deer hunters (similar to the nonresident regions);
- A regulation restricting deer hunters to participate in only one hunt area opening date; and,
- A limited quota draw for all deer licenses similar to the system used for antelope.

The survey was intended to determine if there was support for a strategy to disperse hunting pressure and ease the perception of crowding on opening day.

A total of 145 questionnaires were returned. Results indicated a majority favored a common opening date, but there was no consensus on a preferred date. A significant number of hunters supported the traditional opening dates in the areas they hunted. In several cases, opening dates were based on local considerations such as ability to access remote backcountry, resident versus migratory deer, landowner tolerance, presence of livestock on public lands, and weather conditions.

Jackson and Pinedale regions made the following recommendations based on the survey: 1) maintain the present licensing system that includes both general and limited quota hunting opportunities; and 2) reduce the number of opening dates from four to three – September 15 for backcountry type hunts, October 1 for areas with motorized access routes, and October 15 for limited quota migratory deer herds.

In March 1997, Wyoming Game and Commission directed the WGFD to implement a common opening date of September 15 for those hunt areas in the Jackson and Pinedale regions that historically opened on September 10 and September 20.

The following objectives and strategies are recommended to improve mule deer management in the Wyoming Range.

Objective: Evaluate use of common opening and closing dates to disperse hunting pressure by minimizing the number of differing opening days on which individuals can hunt.

Strategy: Opening and Closing Dates - Analyze standardized opening and closing dates for all hunt areas in the Wyoming Range to reduce hunter density and crowding.

Round 2 Comments Addressed:

- Open all hunt areas in Region G on the same date to disperse hunting pressure
- Move Wyoming Range opening date to October 1 – Results in shorter seasons in the north half
- Implement a common closing date
- Implement a standard opening date throughout nonresident regions G, H, K, and W
- Too many hunters, seems like there are more hunters every year -- Increase tag price

Management Actions Planned

If there is consensus supporting a standard opening date throughout the Wyoming Range, this recommendation will be made available for public review and comment during the 2012 season setting process.

Management Actions Completed

- The WGF currently opens deer season on September 15 in Areas 143, 144, and 145, and on October 1 in Areas 134 and 135.
- Areas 143, 144, and 135 have closed on the same date in 9 of the last 18 hunting seasons since 1993. Nearly all hunting seasons in Regions G and H open on September 15. The opening date in Regions K (Areas 132-134, 168), W (Areas 100-102, 131) and a portion of Region G (Area 135) is October 1.
- Hunters indicated they preferred three opening dates: September 10, September 15, and October 1. The WGF Commission directed the Department to open 16 of 18 hunt areas on September 15.

Strategy: Variable Season Dates - Assess general license hunting seasons designed to disperse hunting pressure over a longer time. Specific strategies could include multiple opening dates, split seasons, September hunting opportunities, and longer seasons. These concepts contrast with “Standardized Season Dates,” however we received comments supporting both concepts.

Round 2 Comments Addressed:

- Continue to provide opportunities to hunt multiple opening dates
- Consider a split season vs. a common opening date
- Designate a September 15 opening date as a compromise between September 10 and

- Set longer seasons to reduce hunter crowding

Management Actions in Progress

- The WGFD provides the public opportunity review and comment on proposed hunting seasons during the annual season setting cycle.
- The WGFD currently provides the opportunity to hunt multiple opening dates in the Wyoming Range. Those opening dates are September 15 in Areas 143, 144, and 145, and October 1 in Areas 134 and 135.

Management Actions Completed

- The WGFD has implemented a hunt season structure that provides maximum opportunity, minimizes hunter crowding, and spreads hunting pressure over a longer period.
- The WGFD provided opportunities to hunt split seasons in the Wyoming Range from 1977-1988. During that time frame, a split general license season was available in at least one of Hunt Areas 144-146 each year. The split hunting seasons entailed as many as six different opening dates from Sept. 10 to Oct. 29 and closed as late as Oct. 31.
- The September 15 common opening date was selected for a portion of this herd and October 1 was selected for the remainder based on recommendations from the public. The WGF Commission made the decision in 1998 to open 16 of 18 hunt areas on September 15.
- The WGFD has responded to requests to implement seasons that spread out hunting pressure by varying the number of days to hunt in each hunt area. Over the last 10 years (2000-2009) the average number of days in the hunting season was 13 days in Area 135, and 29 days in Areas 143 and 144, respectively. Most mule deer hunt areas offer 5-17 days to harvest a deer during the general or LQ Type 1 hunting seasons.

Strategy: Overlapping Deer and Elk Seasons - Review deer and elk seasons to ensure there is support for late season elk hunts that may extend onto mule deer winter ranges when mule deer are present.

Round 2 Comments Addressed:

- Late elk seasons stress mule deer – need to reduce competition with elk
- Keep deer seasons short-don't overlap deer/elk
- Do not shorten seasons (short seasons kill more deer)
- Split Region G into more hunt areas
- Reduce spotters, fairness issue
- Restrict electronics – three vehicles per tag, fairness issue
- Distribute hunters over a larger area
- Reduce hunting pressure
- Set the same hunting seasons throughout each NR region
- Split high country hunts from low elevation hunts

Management Actions Planned

- The WGFD will evaluate whether hunting elk from November-January is an effective strategy to reduce elk numbers and whether these late elk seasons may be displacing mule deer from winter ranges.

Management Actions in Progress

- The WGFD provides opportunities for the public to comment on big game hunting seasons during the annual season setting process.

Management Actions Completed

- Elk populations remain above desired levels in the Wyoming Range and competition between elk and mule deer is a concern. Accordingly, long hunting seasons are in place to reduce elk populations. In addition, cow-calf seasons open early and overlap the deer season in some areas. Since 1992, the WGFD has emphasized strategies to minimize overlap between deer and elk seasons, but it is also important to reduce elk numbers.

Objective: Evaluate the number of nonresident hunters in the Wyoming Range.

Strategy: Nonresident Licenses - Provide the public an opportunity to comment on the number of nonresident regional licenses during the annual season setting process.

Round 2 Comments Addressed:

- Support a lower nonresident quota to address hunter crowding
- Keep the existing number of nonresident hunters, but set Region G at a maximum of 500
- Cutting nonresidents has very little impact on the number of hunters since it is already low (including residents)

Management Actions in Progress

- Nonresident regional licenses are determined each year during the season setting process. At that time, the public has the opportunity to comment on the number of nonresident regional licenses proposed for the Wyoming Range. Reductions, or increases in the number of nonresident licenses are based on deer population status and whether management goals are being achieved.
- The WGFD will consider public comments and deer population status in its evaluation of the number of nonresident deer licenses to be issued.

Management Actions Completed

- Over the past 18 years, the WGFD has been responsive to residents' requests for fewer nonresident hunters. In Region G, the number nonresident region general licenses was decreased from 1800 in 2002 to 800 in 2010 (a 55% reduction). In 1991, 3,500 nonresident region general licenses were issued in the Wyoming Range.

Objective: Maintain flexible harvest strategies that encourage hunter participation and are consistent with the North American Model of Wildlife Management. Implement management strategies that accommodate diverse public interests by providing opportunities for youth, recreational, and trophy hunting.

Strategy: Youth Hunting - Implement recommendations from the final report of the WGFD Youth Hunting and Angling Opportunities working group to promote youth/family hunting and recruit additional persons into hunting.

Round 2 Comments Addressed:

- Promote opportunities for youth hunting
- Balancer trophy and recreational hunting interests. Maintain "trophy" quality, but don't eliminate recreational opportunities for young and first time hunters
- Perhaps offer doe-fawn hunting opportunities as a tool for recruitment of youth hunters on the Wyoming Range

Management Actions Planned

- A WGFD working group developed recommendations to promote recruitment of young hunters, including creation of additional youth hunting opportunities. Applicable portions of their report will be reviewed for possible implementation in the Wyoming Range.
- During the 2011 season setting meetings, the WGFD will recommend that youth hunters be allowed to take antlerless animals on any license type.

Management Actions in Progress

- The Wyoming Range is currently managed to provide opportunity for harvesting "trophy" class bucks. The results of the 2009 Wyoming Range Hunter Attitude Survey indicate the public is satisfied with the quality of bucks (i.e. those bucks with an outside antler width at least 24 inches) that are harvested annually. Current and past hunting season structures afford a variety of recreational opportunities to young and first time hunters, as well as trophy oriented hunters.
- The WGFD will continue to monitor the proportion and quality of bucks in the Wyoming Range. The public has the opportunity to review WGFD data and comment during the annual season setting process.

Strategy: Antler Point Restrictions - The WGFD will review existing literature and internal studies regarding effectiveness of antler point restrictions to determine their appropriate use in deer management.

Round 2 Comments Addressed:

- Consider point restrictions (LOOK AT ALL PT RESTRICTIONS TOGETHER)
- Implement a 4-point or better season when needed to increase the average age of bucks
- Implement hunting strategies that favor production of older age-class bucks
- Implement a 5-point or better season except youth can harvest any buck
- Implement a 3-4 point season every other year except youth can harvest any buck
- Implement a 2-point only season for 5 years, then hunt the big bucks

Management Actions Planned

- A WGFD working group is evaluating effectiveness of antler point restrictions for achieving desired objectives. This group will complete its analysis in fall 2011.

Management Actions in Process

- Hunting season structure is evaluated during the annual season setting process. At that time, the public has the opportunity to comment on license type limitations, which may emphasize harvest strategies to focus on specific age/sex classes of the population.

Objective: Obtain reliable harvest data to support mule deer management in the Wyoming Range

Strategy: Harvest Reporting - Evaluate harvest survey methodology and obtain the most accurate harvest estimates that are economically feasible .

Round 2 Comments Addressed:

- Consider mandatory harvest reporting
- Reevaluate the big game harvest survey; some hunters are misreporting their success to discourage other hunters
- Consider incentives for filling out harvest surveys and penalties for not filling them out.
- Spend time with hunters at check stations and fill out surveys – assign someone to conduct surveys at check stations.
- Mismanagement re: population estimates vs. known harvest estimates. Other states require harvest reporting via telephone.

Management Actions Planned

- The WGFD will evaluate current harvest estimation techniques. If alternative techniques are affordable and produce better data, they will be considered for implementation.

Management Actions in Progress

- The WGFD works with the harvest survey contractor on an annual basis to refine and improve the harvest survey process and harvest estimates.

Management Actions Completed

- The WGFD has conducted several audits and reviews to validate the harvest survey.

Objective: Determine whether the population objective that has been established for the Wyoming Range Mule Deer Herd is sustainable based on existing habitat conditions.

Strategy: Evaluate the Herd Unit Objective – Manage a sustainable number of deer in the Wyoming Range.

Round 2 Comments Addressed:

- Don't carry an unsustainable number of deer – manage habitat to support the desired deer populations – Current habitat conditions will not support 50,000 deer
- Apply better science, less politics in deer management
- It's time to publically reevaluate the population objective; manage a sustainable population of mule deer

Management Actions Planned

- The WGFD will evaluate whether existing habitat conditions can support this herd at its current population objective and will engage the public if a revision to the objective appears warranted.
- The WGFD will evaluate whether changes in the deer population are correlated with browse production and utilization and climatic conditions. Browse production will be measured each fall after the summer growing season and the following spring to assess how much utilization occurs over the winter months. This analysis may be useful to establish herd objectives that are sustainable within the existing capacity of the habitat.
- The WGFD will continue to emphasize that deer populations must be managed on a sustainable basis and within the established population objectives.
- The WGFD will reevaluate the objective every five years to assess whether an adjustment is warranted.

Management Actions Completed

- The WGFD increased information and education efforts through its season setting meetings and publications, impressing the need to manage deer populations within the habitat's capacity and the need to harvest female deer to accomplish this.
- The WGFD conducts vegetation transects annually to assess habitat condition (Appendix D)
- The Teton Science School completed a comprehensive assessment of mule deer habitat throughout the Wyoming Range (Appendix E). The WGFD will use this information to identify and prioritize future habitat management projects.

RESEARCH

Applied research is the foundation of science-based wildlife management and a cornerstone of the North American Model of Wildlife Conservation (Mahoney 2004). Research is critical to identify effective strategies and actions that will sustain mule deer and their habitats.

Additional information is needed with respect to distribution, habitat use, movement patterns of deer in the Wyoming Range, and environmental factors that limit the size and health of this herd. Managers will rely on this information to analyze the impacts of proposed developments, identify mitigation options, and prioritize habitat improvement projects.

The potential emergence of diseases such as adenovirus, chronic wasting disease, and epizootic hemorrhagic disease pose added challenges. Research on other deer populations is examining disease transmission, population impacts, and how such diseases can be controlled or eliminated. At this time, disease is not a major concern in the Wyoming Range. However knowledge derived from research will be critical if a significant disease is detected there.

More effective techniques are needed to reliably estimate population size, survival/mortality, harvest, and other vital parameters. Better survey methods will improve our ability to monitor populations and increase confidence in harvest management decisions. Ultimately, sound management decisions must be founded in science. Strategic research is an essential component of the Wyoming Range mule deer plan.

Objective: Improve our knowledge regarding the ecology and dynamics of the Wyoming Range Mule Deer Herd and apply this knowledge to improve its management.

Strategy: Research Priorities - Periodically update priorities for research that is relevant to deer management in the Wyoming Range, including methods to improve data collection and accuracy.

Round 2 Comments Addressed:

- Studies need to be improved, invest more funding in sampling process (e.g., flight time); also use hand counts to estimate populations; Collect more accurate data; fly more intensively (requires more money)
- Obtain more accurate counts of deer
- Increase funding for tooth age data and general data collection; fund radio collar studies; conduct more ground counts
- Include tooth collection envelopes with hunter surveys
- Analyze forage for nutritional quality

Management Actions Planned

- Over the next 5 years, the WGFD will evaluate the suitability of computer simulation models for estimating mule deer populations and tracking population trends.
- The WGFD will assess if weather data can be reliably used to modify annual mortality and survival indices used to estimate mule deer population size and trend. The WGFD will examine Idaho's recent model correlating winter weather conditions to projected fawn mortality rates.
- The WGFD will examine feasibility of collecting survival rate information to more accurately estimate mortality and population trends.
- Additional research is needed to assess the effect of predation on mule deer populations and herd health in the Wyoming Range.

Management Actions in Progress

- The WGFD funded research to evaluate a new technique for estimating mule deer populations in the Platte Valley. Results will be applicable to the Wyoming Range.
- The WGFD maintains a close working relationship with the University of Wyoming Cooperative Fish and Wildlife Coop Research Unit and other institutions to accomplish needed research.
- The WGFD is evaluating a spreadsheet model to estimate and track population trends. Wyoming Range managers will adopt this technique within the next two years.
- The WGFD is exploring research and funding possibilities in cooperation with outside agencies, industry, and conservation groups.
- Researchers are studying mule deer response to intensive oil/gas development on crucial winter ranges in the adjacent Sublette Herd. These results will also be applicable to the Wyoming Range deer herd.

Management Actions Completed

- The WGFD has reviewed and compared various methods used by other states to survey deer populations (quadrat sampling, herd composition surveys, sightability surveys, etc.).

Objective: Improve our understanding of the preferences of Wyoming Range mule deer hunters.

Strategy: Opinion Surveys - Opinion surveys are the best method of obtaining unbiased constituent feedback. Support adequate staffing and funding survey-based research.

Round 2 Comments Addressed:

- Survey hunters and outfitters
- Rely more on social science to obtain information about hunter preferences

Management Actions Planned

- The WGFD will identify types of information needed to address the interests of Wyoming Range deer hunters.
- The WGFD will consider better methods for obtaining regular feedback on hunting experiences and expectations. Possibilities include email surveys and sharing information via our mule deer web site.

Management Actions Completed

- The WGFD hired a Human Dimensions specialist to oversee and conduct public surveys and information gathering processes.
- Surveys have been conducted to assess attitudes and perspectives of Wyoming Range mule deer hunters. A statewide study of deer hunter attitudes and opinions was conducted in 2005, followed by a study specifically targeting Wyoming Range hunters in 2008.

PREDATOR MANAGEMENT

Relationships between predators and prey populations are dynamic and complex. The influence of predation depends to a large degree on the size of a mule deer population in relation to the habitat's carrying capacity (Ballard et al. 2001). This relationship is also impacted by changes in habitat quality and quantity, weather patterns (prolonged drought or severe winters), competition for forage, species and densities of predators, deer harvest strategies, and abundance of alternate prey (for example rodents and rabbits). Managers must consider these factors in determining whether predator management could potentially benefit a mule deer population and in prescribing effective methods of predator management.

A wide range of predators – coyotes, mountain lions, wolves, bobcats, black bears, eagles – prey on mule deer. Ballard et al. (2001) wrote a synthesis of research on deer-predator relationships, which formed the basis for a chapter in “Mule Deer Conservation: Issues and Management Strategies” (deVos et al. 2003), and the context for the discussion on predation in the “North American Mule Deer Conservation Plan” (Mule Deer Working Group 2004). This information has been used in the Wyoming Mule Deer Initiative and the Wyoming Range Mule Deer Management Plan to develop strategies and objectives for predator management.

Predator management may or may not increase a mule deer population. For example, a population near the habitat's carrying capacity will not increase, in a sustainable manner, with predator management. Habitat carrying capacity is difficult to determine and varies seasonally and from year to year. However, several indices may indirectly indicate carrying capacity has been exceeded. For example, adults in poor body condition, low birth rates, low fawn:doe ratios, high utilization of available forage, and high deer densities all suggest the population has surpassed the capacity of the habitat to support a growing deer herd. In this circumstance, predator management may not be desirable or effective.

On the other hand, a mule deer population that is chronically depressed in otherwise favorable habitat conditions may respond to predator management (Cougar Management Guidelines Working Group, 2005) especially if control actions target the predator(s) that is limiting the population. Hurley and Zager (2005) demonstrated that decreasing mountain lion predation in Idaho increased adult doe survival and allowed for a slight increase in the deer population. They also showed a decrease in the number of coyotes resulted in increased fawn survival through summer, but did not increase fawn recruitment into the population. A reduction of predator populations may be warranted in specific circumstances.

In 1999, the Wyoming Legislature created the Wyoming Animal Damage Management Program administered by a 15 member board. The Animal Damage Management Board (ADMB) was established for the purpose of mitigating damage caused to livestock, wildlife and crops by predatory animals, predacious birds and depredating animals and for the protection of human health and safety. The ADMB administers funds available to qualifying Predator Management Districts to implement predator management strategies in accordance with the ADMB's mission.

The WGFD can apply to the ADMB for funding to collect information on predator abundance, population trends, control results, and other predator-related research. This type of information can potentially be used to assess the impact of predators on mule deer populations. Although

predator control has been conducted extensively to protect livestock throughout the Wyoming Range, the impact of these actions on mule deer populations has not been quantitatively determined. Additional research is needed to assess the role of predators in the Wyoming Range ecosystem.

In 2006, the Wyoming Game and Fish Commission directed the WGFD to become actively engaged in all ADMB predator control projects designed to benefit wildlife. Many of the strategies outlined below reflect that policy, but are intended to address all predators, including trophy game animals (i.e., mountain lions, black bears), that prey on mule deer. At this time, the WGFD has no authority to manage grizzly bears or gray wolves. Black bears and mountain lions are managed under plans approved by the Game and Fish Commission. If negative impacts to mule deer populations are documented, management goals for trophy game animals can be reevaluated.

Objective: Assess whether predator management is cost-effective and would produce significantly more deer to harvest in the Wyoming Range. Coordinate with predator management agencies to maximize effectiveness of all predator control activities with respect to mule deer.

Strategy: Predator Research – Study the influence of predation on mule deer populations in the Wyoming Range. Examine all forms of predation including that by mountain lion, black bear, coyote, red fox, wolf, avian predators, and domestic dogs. Encourage funding from a variety of sources such as mitigation funds, conservation organizations, and the ADMB to support this research.

Coordinate with predator management agencies to obtain historical data on predator control efforts throughout the Wyoming Range. Obtain information on predator population trends to evaluate effectiveness of current and past predator control methods. Encourage agencies to monitor predator densities and population trends, and relative efforts expended for predator control.

Round 2 Comments Addressed:

- Initiate research to evaluate effects of predation on populations; analyze historical data
- Quantify predation rates specifically on fawn mule deer

Management Actions Planned

- Wildlife managers will compile information on activities of predator control agencies and boards to help assess whether predator control is benefiting mule deer in the Wyoming Range.
- If other carnivores are limiting mule deer productivity and/or survival, the WGFD will evaluate those species' management objectives and determine if reductions are warranted.

Strategy: Impacts from Trophy Game – Consider the effect of predation by mountain lion, black bear and other species classified as trophy game animals. Manage trophy game in appropriate balance with ungulate prey populations, considering their role in the ecosystem and value to the public.

Round 2 Comments Addressed:

- Continue liberal quotas for mountain lion harvest

Management Actions in Progress

- Mountain lion and black bear are currently managed in accordance with Commission-approved plans that have undergone public review. Strategies for managing mountain lions in the Wyoming Range are based on “stable” or “sink” population goals. Accordingly, hunting seasons are set to maintain or reduce mountain lion numbers.

Management Actions Completed

- Mountain lion season dates and harvest quotas were approved by the Wyoming Game and Fish Commission in July 2010. The mountain lion regulations (Chapter 42) are currently in place for three years.

Strategy: Coyote Control – In accordance with Wyoming Game and Fish Commission Policy VIIR (September 8, 2006), predator control (coyotes) may be considered to increase mule deer recruitment and/or survival, if post-hunting season fawn:doe ratios are less than 65:100, or after sudden population losses (winter die-off) greater than 25%. Control actions may also be considered when productivity and fawn survival data are not available, and the population is more than 15% below objective level. The need for predator management should be objectively evaluated considering whether other natural factors may also be influencing mule deer productivity and population trends. Studies are encouraged to assess the effectiveness of predator control actions.

Round 2 Comments Addressed:

- Control predators on spring transition range and in parturition habitat (predator control is most effective in early fawn-rearing habitat)
- Consider increasing predator control on winter ranges (direct efforts toward all predators, mountain lions, etc.)

Management Actions Planned

- In cases where the WGFD estimates the habitat base could support additional deer, and coyote predation is limiting population growth, the WGFD will help organize partnerships to reduce coyote numbers.

Management Actions in Progress

- In addition to potentially carrying out management actions under Game and Fish Commission Policy VIIR, W.S. 11-6-304(b)(viii) provides for coordination with the Animal Damage Management Board regarding management of predatory animals and predacious birds. If predator control is justified, the WGFD may conduct predator control or request predator control efforts in cooperation with the Animal Damage Management Board and local Predator Management District Boards.

Management Actions Completed

- The Wyoming Game and Fish Commission has contributed \$100,000 annually to the Animal Damage Management Board for predator control in areas where predation is thought to limit the desired size of wildlife populations.
- Through legislative appropriations to the ADMB, funding is made available to qualifying predator management districts to address depredation by predatory animal species. The WGFD is coordinating with the ADMB and predator management districts to guide predator management efforts that benefit mule deer.

LAW ENFORCEMENT

Wildlife laws and regulations serve three broad purposes: 1) protect the resource; 2) protect the public; and 3) assure equitable opportunity. A strong majority of the hunting and non-hunting publics support effective wildlife laws that are firmly and fairly enforced. Due to rapid evolution of outdoor technologies, growing demand, and rising values of wildlife, wildlife law enforcement remains as important today as it was during the early years of the conservation movement.

The Wyoming Range has a history of producing trophy-class bucks. This focuses interest on the herd and increases the importance of law enforcement. Hunters have identified additional law enforcement a priority to curb illegal exploitation of large bucks, especially on winter ranges.

Some important functions of law enforcement include:

- 1) Regulate recreational activity on winter ranges. Mule deer are negatively impacted by high levels of dispersed recreation such as off road vehicle (ORV) use and antler hunting. These types of activities can displace mule deer from preferred habitats, damage resources, and result in illegal access to wilderness areas or areas seasonally closed to recreational activity. Two law enforcement priorities were identified by interested publics through the collaborative learning process. The first was minimizing human presence during critical seasons and the second was to enforce off road closures. Enforcement of antler hunting regulations was also identified.
- 2) Detect and reduce illegal harvest. Mule deer are especially vulnerable during the rut and when they congregate on traditional winter ranges. Most illegal hunting targets mature bucks, though all age and sex classes are vulnerable. Significant poaching activity can reduce population size, herd productivity, and the number and quality of bucks available for harvest by law-abiding sportsmen in subsequent years.
- 3) Maintain an effective system of deer management. Perhaps the most important role of law enforcement is to secure our ability to regulate harvest within prescribed biological and social limits. Field presence of enforcement officers assures the majority of hunters comply with statutes and regulations designed to manage harvests within sustainable levels.
- 4) Enhance public support and recognition of wildlife laws. Support for WGFD programs is developed at the local level. Through contacts and presence in local communities, enforcement personnel foster greater understanding and support of wildlife laws.

Objective: Increase law enforcement presence on winter ranges to protect mule deer from human disturbance and illegal take.

Strategy: Winter Range Task Forces - Increase law enforcement presence for longer periods on all winter ranges within the Wyoming Range Mule Deer Herd. WGFD game wardens will increase patrolling on winter ranges to reduce illegal take of trophy mule deer bucks, enforce winter range closures, and enforce the antler hunting regulation.

Round 2 Comments Addressed:

- Minimize human presence during critical seasons. For example address antler hunting, coyote hunting, etc.
- Increase enforcement on winter ranges
- Increased enforcement/public awareness of the antler season, including awareness by energy workers
- Increase law enforcement

Management Actions Planned

- The WGFD will continue the current task force effort and, as resources allow, expand it to provide surveillance of crucial winter ranges from Kemmerer to Cokeville as well as other winter ranges where a threat exists.
- The current task force effort focuses on the breeding season in November-December. The WGFD will be more flexible in scheduling its task force operations to cover all critical periods. January through April is a very stressful time for the survival of deer. This is also when the antler hunting closure is in place on mule deer winter ranges.
- Restitution from Federal court cases involving illegal take of mule deer bucks on winter ranges will go toward funding additional enforcement efforts.
- The WGFD will request funding from the oil and gas industry to support the WGFD's Stop Poaching Program and additional law enforcement needs related to oil and gas energy development.

Management Actions in Progress

- Since 1998, the WGFD has deployed a winter range task force to patrol crucial winter ranges from Daniel to LaBarge. Several Game Wardens from outside of the Pinedale Region monitor activities on crucial winter ranges during the breeding period when mule deer are most vulnerable. Prior to the task force, it was not uncommon for wardens to investigate 10 illegally taken deer in a given year. Since 2007 only three illegally taken deer have been detected and none were detected in 2009.
- New technologies and detection methods such as trail cameras, fixed wing flights, and unmanned surveillance aircraft (drones) will continue to be tested.

Management Actions Completed

- In 2009 the Wyoming Legislature gave the Wyoming Game and Fish Commission authority to regulate antler collection west of the Continental Divide. In November 2009, the Commission adopted Chapter 61 making it illegal to collect shed antlers from January 1 through April 30 on public lands west of the Continental Divide. This regulation limits stress caused by an increasingly popular activity during the most critical time of year.

Strategy: Road Closures - Work with the appropriate land management agencies, other law enforcement agencies, and the public to enforce road closures and minimize human activity on crucial winter ranges.

Round 2 Comments Addressed:

- Minimize human presence during critical seasons. For example, address antler hunting, coyote hunting, etc.
- Enforce road closures

Management Actions Planned

- WGFD personnel will document vehicular activities on public lands, including travel on closed roads and off established roads that stress mule deer and potentially decrease their survival. The WGFD will coordinate with appropriate land managers to consider additional protections including more rigorous enforcement of existing travel rules.
- The WGFD will evaluate the “Adopt a Winter Range” concept. This program enables concerned citizens or volunteers to assist law enforcement by detecting illegal activities on winter ranges such as road closure violations, antler hunting, and poaching.

Management Actions in Progress

- WGFD has no authority to enforce road closures public land, however, personnel routinely work with the BLM and county sheriff’s departments to enforce road closures on mule deer winter ranges. Most BLM closures begin January 1st and remain in effect throughout the winter. Extending task force operations into January through April would increase enforcement of road closures.
- Game Wardens are currently authorized to enforce travel restrictions to protect resources on state lands.

Management Actions Completed

- The WGFD has encouraged federal agencies to institute seasonal road closures and travel restrictions within important habitats on public lands.
- The Stop Poaching Program is a joint effort between the WGFD and the Wyoming Wildlife Protectors’ Association. The program pays a reward to persons who report information leading to the arrest and conviction of wildlife violators. The Stop Poaching enhancement program procures advertising to inform the public about the program and publishes a series called, “Poaching Stories” depicting accounts of wildlife violations from actual case files.

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Appendix A. Responses to actions identified by the public, but not currently addressed in this plan.

Limited quota hunting for residents

- The WGFD would need to consider the impact to other general license areas throughout the state.
- The WGFD would need to assess the biological, social, and economic tradeoffs. Revenue generated from general license sales in large part funds deer management throughout the state.
- The current number and quality of bucks in the Wyoming Range do not warrant more restrictive management based on limited quota licenses.
- In the 2009 survey of *Wyoming Range Hunters' Attitudes Toward Mule Deer Management in the Wyoming Range*, the majority of Wyoming hunters (60-67%) prefer general license hunting opportunities in the Wyoming Range.

Continue to hunt multiple openers

- The WGFD is currently evaluating whether the public supports a standard opening date throughout the Wyoming Range. Until there is a clear mandate for change, the present system of offering multiple opening dates will be utilized.

September 10, September 20 compromise September 15 date, September 10 - 15

Consider split season vs. a common opener

- The Department historically provided split hunting season opportunities in the Wyoming Range. Since that time, the hunting public has requested less complicated regulations. Presently, the WGFD is evaluating whether the public supports a standard opening date throughout the Wyoming Range.

Longer season; reduce hunter pressure

- Longer seasons do not necessarily reduce hunter densities. In the Wyoming Range, the average number of days required to harvest a deer is 13. Irrespective of season length, most hunters choose to hunt at the beginning of the season.

Options for general license hunt – Must pick one opener 9/15, 9/25, 10/1

- The concept of three opening dates may conflict with preferences expressed by a significant segment of the public. Before deviating from the present structure of two opening dates, the WGFD must determine if the public supports a standard opening date.

Residents pick your hunt area

- Deer management goals may not be achieved in hunt areas because hunting pressure and/or harvest may, or may not, achieve the desired management goal. Under the present system, four of five hunt areas in the Wyoming Range herd unit receive fairly uniform

hunter numbers (i.e. HA134 – 828 hunters; HA 143 – 1096 hunter; HA 144 – 1081 hunter; HA 145 – 803 hunters;).

- A resident regional license structure will have far reaching impact on resident deer hunting opportunity and requires extensive statewide public review. This type of license structure is not warranted in the Wyoming Range at this time.

Pick your hunt season (September 15 – 30 or October 1 -14)

- Some hunt areas may receive excessive hunting pressure while other areas receive very little.
- Two hunting season periods does not address the public desire for one standardized opening date.
- Specific hunt areas may have different harvest management strategies that are more or less appealing to hunters, resulting in inequitable hunter distribution (i.e. one area may offer any deer hunting opportunity while another may offer antlered only deer hunting).

Early black powder season (separate season)

- Hunters currently have the ability to hunt with any legal weapon during the regular deer season. Our current season structure provides equitable opportunity.
- An early black powder hunt season prior to the general hunt season may result in additional conflicts with archery and regular season rifle hunters.

Expand hunting area size to one large geographic area and have separate seasons for archery, rifle (no overlaps).

- The hunt areas that comprise the Wyoming Range were defined based on our knowledge of deer herd distribution and movements. To arbitrarily change the hunt area boundary without a sound biological justification would compromise the Department's ability to achieve prescribed harvest management goals within specific segments of the herd.

Choose your weapon; archery, muzzleloaders, rifles all separate seasons

- This recommendation was not identified in round 1 by the public as a priority issue for the Wyoming Range herd unit. This recommendation has statewide implications and would be more appropriate to evaluate on a statewide scale outside this planning effort.

Early opener impedes archery hunters; more archery hunting opportunity

- The WGFD provides distinct archery deer hunting seasons where there is no overlap with rifle hunters in Areas 143-145 and Areas 134-135. These archery only seasons run September 1 – 14 (Areas 143-145) and September 1 – 30 in Areas 134 and 135.
- The WGFD provides equitable opportunity for archery and rifle hunting based on input received from both groups.

Base special management criteria on average age of harvest

- The objective for mule deer herds designated as “Special Management” is to maintain a postseason buck:doe ratio within 30-45 bucks per 100 does. Current management in the Wyoming Range is meeting this criterion. The concept of maintaining a higher buck:doe ratio in “special management” herds is to assure an adequate representation of older age class bucks is present in the population. Based on tooth data collected from 1988-2001, the average age of 3,153 mule deer bucks harvested in the Wyoming Range was 3 years.

No doe hunting, including archery

- The current hunting season structure provides a variety of hunting opportunities. The length of the deer hunting seasons, September and October hunts, any deer hunting, and antlered only hunts, provides the diverse hunting experience that many youths and first time hunters desire. In the 2009 survey of *Wyoming Range Hunters' Attitudes Toward Mule Deer Management in the Wyoming Range*, the majority of Wyoming hunters (78%) agreed that antlerless deer hunting was an acceptable mule deer management tool.

No doe hunts to manage the herd at a higher population objective

- Antlerless harvest comprises less than 5% of the total annual harvest; it serves to provide additional opportunity to young and first time hunters, reduces hunting pressure on the antlered segment of the population, and offers a variety of recreational opportunities for hunters are not antlered deer.
- The WGFD has implemented a flexible and dynamic management system that allows a variety of hunting season limitations in order to achieve management goals. One aspect of this management system is the ability to allow hunters to harvest any deer, antlered deer, or doe/fawn deer.
- In the 2009 survey of *Wyoming Range Hunters' Attitudes Toward Mule Deer Management in the Wyoming Range*, the majority of Wyoming hunters (78%) agreed that antlerless deer hunting was an acceptable mule deer management tool.

Hunt area 132; 3 point or better works well

- Antler point restrictions are not needed to manage deer in the Wyoming Range because 75% of all bucks taken are at least 4-points or better. Furthermore, in any given year approximately 35%-45% of all bucks measured have an outside spread of at least 24 inches.
- In the next year, the WGFD will provide more information to the public regarding this management strategy.

Emphasis on “Quality of the Hunt”

- The public has diverse perceptions and expectations of “Hunt Quality”. In the 2009 survey of *Wyoming Range Hunters' Attitudes Toward Mule Deer Management in the Wyoming Range*, the majority of Wyoming hunters (62%) were satisfied with the overall quality of their mule deer hunting experience in the Wyoming Range.

- Many of the outcomes and solutions ultimately identified in this Mule Deer Management plan are designed to address “Quality of the Hunt” issues.

Licenses in “special management herds” should be priced higher (e.g., \$100) with additional revenue going to support research in that herd

- The License fee structure is established by the Wyoming legislature and not directly by the Game and Fish Department.
- Pricing a deer license may discourage hunter participation. The WGFD is committed to maintaining a strong base of hunters to support the public’s deer management program.

Increase penalties for poaching

- Wildlife penalties are established by the Wyoming legislature and not directly by the Game and Fish Department.
- During the 2011 Legislative session, SF00085 was passed. This legislation allowed for a third violation of W.S. 23-3-202 and W.S. 23-3-107 to constitute as a felony which increased fines and jail time.

Develop several model simulations w/ and w/out effect of predation

- Predation is dynamic and the extent to which it has an effect on overall mortality depends on many complex factors that are not readily quantifiable. Extensive studies have attempted to quantify the effects of predation on mule deer with mixed results. The WGFD refers to these studies when considering predation. Also, the WGFD continues to collect additional data on this important issue.

Don’t bring dogs

- Wyoming State Statute 23-3-109(a) already addresses this issue by making it a violation for persons to use any dog to hunt, run or harass any big game animal.
- Until we can document a serious problem with persons using dogs to take mule deer or any other big game animal, the Department feels that W.S. 23-3-109(a) is sufficient to deal with this concern.

Better guidelines and enforcement of outfitters (too many clients, impacts on herd, habitat & wilderness, better mgmt of outfitters)

- The Wyoming State Board of Outfitters and Professional Guides currently regulates the outfitting and guiding industry in Wyoming. Wyoming Statutes clearly delineate the powers and duties of the Board. However, the Board currently employs just two investigators to enforce outfitting and guiding regulations statewide.
- The Wyoming Game and Fish Department will continue to work with the investigators of the Board to enforce these regulations.

Coyote Bounty

- The WGFD has no statutory authority to control coyotes, which are statutorily classified as a predatory animal. Coyote bounties are normally administered by local predator control boards and other entities focused on predator management and the disbursement of predator management funds.
- Historically, these types of programs have been expensive and ineffective at increasing wildlife populations.

State control of wolves and grizzlies

- Wyoming is currently seeking authority to manage wolves and grizzly bears, however, federal action to delist them is required before the state can assume full jurisdiction.

Take stomach content samples from coyotes killed by government trappers to check for deer

- The scientific literature contains abundant documentation that coyotes are efficient scavengers as well as predators. Therefore, it is difficult to estimate the level of deer predation based on deer remains in a coyote's stomach. A much more comprehensive study would be needed to fully understand what effects coyote predation may have on mule deer.

Appendix B. Public Comments

After the completion of the draft Wyoming Range Mule Deer Plan (Plan) the public was allowed an opportunity for questions and comments at the third round of meetings, held in February, 2011. In addition, after the public meetings WGFD opened the Plan for broad public comment. The Plan was made available on the WGFD website, and comments could be made either through the mail or an online comment form. Comments were accepted from February 18 to March 15, 2011. A total of 21 comments were received.

Many comments reflected similar feedback received from the collaborative learning process, and may or may not have been addressed in the Plan. One letter received was critical of the Plan and Wyoming Range mule deer management as a whole. Through collaborative learning, WGFD tried to be responsive to the concerns voiced by the public, however, we recognize that some level of criticism will likely remain. Many of the comments received were supportive of the Plan and the public process undertaken. We appreciate receiving those comments as well, and through the planning effort and adaptive management will continue to strive for positive interactions and management for our publics.

Public comments referenced in the Wyoming Range Mule Deer Plan

Many of the public comments about the draft plan were consistent with those received through the collaborative learning process. As a result, some have already been referenced in the Plan. Below is a summary of comments received, and an indication of where a response can be found within the Plan.

Public Participation

- **More education on positive programs and actions taken by G&F personnel** (We agree. We are actively increasing our information dissemination and engaging the public more today than we ever have. See Strategy: Increasing Public Awareness; pg. 8)
- **Weekly news releases explaining current projects and successes** (We have two personnel assigned to information and education efforts in western Wyoming. While we are committed to increasing our efforts in this arena, weekly news releases may be difficult to achieve due to limited manpower. See Strategy: Increasing Public Awareness; pg. 8)
- **Distribute information compiled by WGFD Biologists on hunter success numbers and trophy quality** (We agree this is valuable information and propose to provide this type of information annually at check stations in the future. See Strategy: Increasing Public Awareness; pg. 8)
- **There should be a more detailed group of people appointed to focus on a targeted larger geographical area. This group should represent all stakeholders equally and they should consider how openers effect all hunts in that targeted area.** (The Department will continue to engage all interested publics with an annual meeting to discuss Wyoming Range deer issues and plan implementation. See Strategy: Increasing Public Awareness; pg. 8)
- **How will the Department monitor ongoing implementation of the outcomes of this process? Provide regular implementation plan updates.** (The WGFD will

- schedule additional public meetings on a periodic basis to focus on mule deer issues in each region. The meetings will serve as a forum to continue collaboration and discuss progress on this plan. See Strategy: Increasing Public Awareness; pg. 8)
- **GF should work with sportsmen targeted media outlets, magazines, web sites to better communicate management plan details.** (We have two personnel assigned to information and education efforts in western Wyoming. We will continue to work with our media sources to communicate information about the Wyoming Range herd. See Strategy: Increasing Public Awareness; pg. 8)
 - **Increased public participation, although acknowledges this is difficult** (We concur with this comment. See Strategy: Increasing Public Awareness; pg. 8)
 - **Increase winter closure signs on county roads. Educate out of state people and alert them about winter range closures.** (The WGFD will identify more effective ways to underscore the importance of protecting mule deer on winter ranges. See Strategy: Increasing Public Awareness; pg. 8)
 - **Continue to educate general public on habitat issues and importance** (We concur with this comment. See Strategy: Increasing Public Awareness; pg. 8)
 - **Notify public of release of the WRMDH documentary via email and post on Facebook** (The WGFD will continue to expand its toolbox of public outreach methods and media. We currently have a Facebook site and an email list for people who participated in the process. We will notify the public of topics of interest using as many outlets as possible. See Strategy: Increasing Public Awareness; pg. 8)

Habitat Management

- **Support vegetation treatments on winter range and transitional range, but realizes difficulty with Federal ownership** (We continue to work with Federal Land Management agencies to implement projects to improve habitat for wildlife on Federal Lands, See Strategy: Habitat Treatments; pg. 12)
- **How do we reseed with correct species after treated? See this action through the end result** (The Department has worked with Federal land managers to develop site specific reclamation seed mixes to benefit wildlife. (See Strategy: Mitigating Impacts; pg. 19)
- **Increase WGFD action regarding winter surface activity in gas fields** (We have no statutory authority regarding energy development on private or public lands. We do however make recommendations to avoid or minimize impacts to wildlife and their habitat. See Strategy: Mitigating Impacts; pg. 19)
- **Limit drilling for oil and gas** (We have no statutory authority regarding energy development on private or public lands. We do however make recommendations to avoid or minimize impacts to wildlife and their habitat. See Strategy: Mitigating Impacts; pg. 19)
- **Ban winter truck traffic on established oil and gas sites** (We have no statutory authority regarding energy development on private or public lands. We do however make recommendations to avoid or minimize impacts to wildlife and their habitat. See Strategy: Mitigating Impacts; pg. 19)
- **Moratorium on drilling to benefit mule deer and their habitat** (We have no statutory authority regarding energy development on private or public lands. We do however make recommendations to avoid or minimize impacts to wildlife and their habitat. See Strategy: Mitigating Impacts; pg. 19)

- **AUMs for livestock reduced** (We have no statutory authority regarding allocating AUMs on federal lands. We do however, meet annually with land managers to discuss habitat conditions, vegetation treatments, and recommend future management activities. See Strategy: Grazing Partnerships; pg.14)
- **WGFD continue work on conservation easements** (Conservation Easements are an important tool to help preserve open space and wildlife habitat. Presently, we are involved with several easements to preserve crucial mule deer habitat. See Strategy: Grazing Partnerships; pg. 14)
- **Manage habitat for a healthy deer herd** (We concur with this comment. See Strategy: Habitat Treatments; pg. 12)
- **Repeat photo sets showing progression of habitat condition from 1950s to current** (We were unaware of these photos from the 1950s. We will follow-up to find out the availability of those photos. This suggestion will supplement our habitat improvement activities. See Strategy: Habitat Treatments; pg. 12)
- **Build enclosure in easily accessible location to show the effects of browsing** (There a 3 enclosures planned for BLM administered lands in the LaBarge area in 2011. These will compliment WGFD permanent transects that are evaluated annually to assess browse conditions. See Strategy: Habitat Treatments; pg. 12)
- **Wants better coordination with BLM on enforcement of winter closures** (We concur with comment. See Strategy: Travel Plans; pg. 22)
- **Work with BLM/USFS on projects that benefit mule deer; less shrub eradication** (WGFD will work with land management agencies and private landowners to restore and improve all seasonal habitats including winter, transitional, and summer ranges. See Strategy: Habitat Treatments; pg. 12)
- **Against burning; burning results in invasion of cheatgrass to the area** (Burning definitely can increase cheatgrass and some cheatgrass varieties are becoming more tolerant of higher altitudes. We share the concern regarding increases in this species distribution, and use of fire will likely become more restrictive because of increased distribution of cheat. However, it is spread through multiple means, including the wheel wells of pickup trucks, etc., not just by fire. Some of the “treatments” that are infested with cheat in the southern Wyoming Range were conducted more than 4 decades ago and were conducted in a zone that was not conducive to shrub treatment (e.g. in the Wyoming Big Sagebrush zone). Some of these were done in an era when it was desirable to eradicate shrubs for livestock grazing. These types of treatments do not occur now, and shrubs are a key consideration during any habitat treatment, including which shrub species is in the area to be treated. For example, while mountain big sagebrush responds very well and quickly to fire, Wyoming big sagebrush does not, and we avoid these areas due to this concern. See Strategy: Invasive Plants; pg. 16)
- **In favor of chemical treatment of cheatgrass** (We concur with comment. We have used Plateau with some success in certain treatment areas to remove cheatgrass. See Strategy: Invasive Plants; pg. 16)
- **What are the other treatments to increase forbs? Can you reseed?** (Forbs can be reseeded in any type of habitat treatment projects. See Strategy: Habitat Treatments; pg. 12)
- **How does the application of spike change the amount of sagebrush killed? Some treatments killed all, some ½.** (Spike is a herbicide that is delivered in a pelleted

- form and requires moisture to dissolve the pellet. Application rates determine how much chemical is delivered to the plant root zone thus determining the kill rate of sagebrush. See Strategy: Habitat Treatments; pg. 12)
- **Promote aspen regeneration; burn beetle kill trees to promote aspen growth** (We will continue to partner and actively participate in projects that promote aspen regeneration and reduce conifer encroachment of aspen habitats. A recent example of this was a multi-agency effort we participated in on Pole Creek. Lands included private, BLM, and USFS lands. See Strategy: Habitat Treatments; pg. 12)
 - **Would like to see adjustment to livestock rest/rotation systems; enforce having livestock off by October 1; would like to see resting period for minimum of 3 years after treatment; Supports having organization purchase grazing AUMs from willing sellers** (The WGFD has no statutory authority to implement grazing management systems. We work annually with Federal land managers regarding grazing systems and recommend rotations occur where warranted; these are only recommendations. We require a minimum of two full growing seasons of rest on treatments before we become a partner on any habitat treatment. See Strategy: Grazing Partnerships; pg. 14)
 - **Would like to see money percent of barrels of oil or cubic feet of natural gas production go into habitat restoration; recognize companies for contributing funds to habitat improvement and reward them based on amount contributed** (This idea has merit and would provide a significant funding source for habitat protection and enhancement. We have proposed similar ideas in the past, and the Habitat Trust Fund is based in part on this model. More requirements in this realm will require legislation to be developed through the Wyoming Legislature. See Strategy: Development of Mitigation Accounts; pg. 21)
 - **What is the ratio of habitat enhancement through mitigation \$, is it 1:2? 2 acres conserved for every acre developed?** (We do not have a specific ratio requirement. The ultimate ratio depends on the type of mitigation and its success. See Strategy: Replacement of Lost Habitat; pg. 19)
 - **WGFD promote 10:1 recommendation and put into EIS at planning stages; enforce having industry contribute to a mitigation trust account** (We do not have a specific ratio requirement. The ultimate ratio depends on the type of mitigation and its success. See Strategy: Replacement of Lost Habitat; pg. 19)
 - **Look at new vegetation models that tie back to population. Use a simple model – tie in with work already done by BT.** (The Department is unaware of vegetation models that tie directly to wildlife populations in the BTNF. The Department does use the 2007 BTNF vegetation maps when planning habitat improvement projects. See Strategy: Habitat Treatments; pg. 12)
 - **Increase grassland burns** (We support the use of prescribed burns in appropriate habitats. See Strategy: Habitat Treatments; pg. 12)
 - **Habitat is a huge factor in health of deer herd** (Agree with comment. See Strategy: Habitat Treatments; pg. 12)

Population Management

- **Support early September hunts** (Suitable for the northern hunt areas, less suitable in the south end. See Strategy: Variable Season Dates; pg. 27)

- **Consider a weekday opener** (Opening dates are standardized in the Wyoming Range regardless of calendar dates. See Strategy: Opening and Closing Dates; pg. 27)
- **Not in favor of extending hunting dates past October 10** (We received a wide variety of comments during the public process regarding preference for opening and closing dates. See Strategy: Opening and Closing Dates; pg.27)
- **Reduce number of nonresident tags** (We annually evaluate the level of nonresident tags. Since the early 1990s, Region G nonresident tags have been reduced 55%. See Strategy: Nonresident Licenses; pg. 29)
- **Single opening date for Wyoming Range; extra hunting pressure from northern area hunters participating both days; flawed premise because less than 5% of hunters actually hunt both opening days** (We polled hunters and there does not seem to be consensus for a standard opening date. It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg.27)
- **Primary considerations for openers should be what is best for the herd.** (We concur with this comment. We also tried to find the best option for offering a quality hunting opportunity for hunters. It appears the majority of hunters polled regarding opening dates preferred status quo. See Strategy: Opening and Closing Dates; pg.27)
- **Open 143-145 on October 1** (We polled hunters and there does not seem to be consensus for a standard opening date. It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg.27)
- **9/15 opener keeps from going to limited quota; offers maximum opportunity and maximum days. Difficult terrain and challenging hunt conditions maintains buck numbers** (We polled hunters and there does not seem to be consensus for a standard opening date. It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg.27)
- **Alternative: open deer and elk on September 20** (We polled hunters and there does not seem to be consensus for a standard opening date. It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg.27)
- **Resident general seasons is 41 days for rifle hunting, which is unsustainable. Make season shorter** (See Strategy Opening and Closing Dates and Variable Season Dates; pg. 27)
- **Would like late youth doe season late November/early December to recruit young hunters** (For the 2011 hunting season, WGFD modified mule deer regulations allowing any youth to take either sex of deer during an antlered deer season. This liberalizes hunting opportunities for youth license holders statewide during the established season dates. See Strategy: Youth Hunting; pg. 30)
- **Against point restrictions** (Presently evaluating antler point restrictions. See Strategy: Antler Point Restrictions; pg. 31)
- **Would like to see point restrictions implemented** (Presently evaluating antler point restrictions. See Strategy: Antler Point Restrictions; pg. 31)
- **Antler point restriction is not necessarily forever and you are not necessarily going to get that nature back** (Presently evaluating antler point restrictions. See Strategy: Antler Point Restrictions; pg. 31)
- **Against common opener—not needed; current season provide good range of opportunity and distributes hunters better than a common opener would** (We polled hunters and there does not seem to be consensus for a standard opening date.

It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg. 27)

- **Does not feel that hunter numbers are too high** (We received a variety of comments on ways to reduce hunter crowding. However, at this point there does not seem to be consensus among hunters. It appears the majority of hunters polled preferred status quo. See Strategy: Opening and Closing Dates; pg. 27)
- **Spread people out for increased hunt quality** (We received a variety of comments relative to reducing hunter crowding. There does not seem to be a consensus as to any actions that may result in having people more spread out. See Strategies: Opening and Closing Date and Variable Season Dates; pg. 27)
- **Wants to keep general season hunts** (We concur with comment. See Strategy: Variable Season Dates; pg. 27)
- **How many deer have been saved by the underpasses?** (Annually, there were 300-500 mule deer killed by vehicles prior to the installation of the underpasses. Today, the number of vehicle related mortalities have been reduced to less than 25 deer.)
- **How do we know how many get killed? WYDOT info?** (The deer mortality estimates are derived directly from carcasses removed from highway rights-of-way (ROW) by WDOT personnel. The annual carcass count is a conservative figure as it does not include deer that were struck by vehicles but were able to leave the ROW prior to death.)
- **Look into putting underpasses on 189 from Kemmerer to I-80** (We have worked with WYDOT to design ten mule deer underpasses and one pronghorn overpass from the old Bon Rico restaurant to Interstate Highway 80. Locations for underpasses and full design occurred last year. The total cost of the project, including fencing, will be ~\$25,000,000. The potential federal funding source we were seeking was diverted to other states. We will continue to seek funding for all or portions of this project. See Strategy: Highway Crossings; pg. 17)
- **Bring back herd objective meetings every 7 years** (Herd objectives were reviewed on a 5 year basis in the past. Efforts are underway to begin herd unit objective reviews in a cyclic manner, but no specifics about the cycle have been determined. See strategy: Evaluate Herd Unit Objective; pg. 32)
- **Keep population objective above 40,000** (The WGFD will evaluate whether existing habitat conditions can support this herd at its current population objective and will engage the public if a revision to the objective appears warranted. See Strategy: Evaluate Herd Unit Objective; pg. 32)
- **If 50,000 is not attainable go to 40,000 plus or minus margin for error in counts** (The WGFD will evaluate whether existing habitat conditions can support this herd at its current population objective and will engage the public if a revision to the objective appears warranted. See Strategy: Evaluate Herd Unit Objective; pg. 32)
- **WGFD should set a herd objective number.** (The WGFD will evaluate whether existing habitat conditions can support this herd at its current population objective and will engage the public if a revision to the objective appears warranted. See Strategy: Evaluate Herd Unit Objective; pg. 32)
- **What does WGFD think the herd objective should be? What is the downside of keeping the herd objective at 50, 000? How far back does the historical data go relative to the population objective? What is the historical average?** (Severe winter weather ultimately determines the total number of deer in the herd unit. The

downside of managing for large deer populations is the potential to damage the winter habitat. If this occurs it takes a very long time to repair the damage to the point it can sustain large deer populations again. Historical population objectives have varied from; 1974 to 1984 = 30,000, 1985 to 1993=38,000 and 1994 to present = 50,000. See Strategy: Evaluate the Herd Unit Objective; pg. 32)

- **It is premature to lower the objective. If WGFD lower the objective will federal partners still be willing to prioritize habitat improvement projects?** (The WGFD will evaluate whether existing habitat conditions can support the present population objective and will engage the public if a revision appears warranted. See Strategy: Evaluate Herd Unit Objective; pg 32)

Research

- **More money allocated to research on habitat, population and predators and the effects on the deer herd** (The Wyoming Range has been identified as a priority for research. However, it will continue to compete with other equally important wildlife research issues statewide. A limited annual research budget will require that we continue to aggressively seek outside funding sources and partnerships to adequately fund additional research. See Strategy: Research Priorities; pg. 34)
- **Consider making harvest report mandatory** (We will evaluate alternative harvest techniques and improve our harvest techniques based on findings. At this time, we do not believe mandatory reporting will significantly improve the validity of results. See Strategy: Harvest Reporting; pg. 31)
- **Compare WGFD harvest survey to other states and analyze for improvements** (We will evaluate alternative harvest techniques and improve our harvest techniques based on findings. See Strategy: Harvest Reporting; pg. 31)
- **Harvest survey too complicated** (We will evaluate alternative harvest techniques and improve our harvest techniques based on findings. See Strategy: Harvest Reporting; pg. 31)
- **Supports evaluating other computer models to estimate herd size** (We concur with this comment. We are transitioning away from our current program at this time. See Strategy: Research Priorities; pg. 34)

Predator Management

- **More predator management; control coyotes to increase fawn production;** (See Strategy: Coyote Control; pg.39)
- **Partner with BLM to control coyotes** (In cases where the WGFD estimates the habitat base could support additional deer, and coyote predation is limiting population growth, the WGFD will help organize partnerships to reduce coyote numbers. See Strategy : Coyote Control; pg. 39)
- **Oil and Gas \$ for coyote control?** (See Strategy: Coyote Control; pg. 39)
- **Sportsmen document coyote kills** (WGFD will coordinate with partners to obtain historical data on predator control efforts throughout the Wyoming Range and to obtain information on predator population trends. See Strategy: Predator Research; pg. 36)
- **Increase lion quotas** (See Strategy: Impacts from Trophy Game; pg.39)
- **WGFD needs to take a look at both the coyote control and lion quota system** (See Strategy: Impacts from Trophy Game; pg.39)

- **Wants to see G&F put more emphasis on helping with coyote control and admitting it as a major factor in bringing back the mule deer herd** (We do manage under guidelines addressing coyote control when specific mule deer recruitment/survival thresholds are met. See Strategy: Coyote Control; pg.39)
- **WGFD to coordinate better with ADMB** (The WGFD is coordinating with the ADMB and predator management districts to guide predator management efforts that benefit mule deer. See Strategy: Coyote Control; pg. 39)
- **More research on predator control** (We concur with this comment. Wildlife managers will compile information on activities of predator control agencies and boards to help assess whether predator control is benefiting mule deer in the Wyoming Range. See Strategy: Predator Research; pg. 38)
- **Need to evaluate the impact of coyotes on mule deer** (WGFD managers will compile information on activities of predator control agencies and boards. The impact of a single predator is extremely difficult to quantify. See Strategy: Predator Research; pg. 38)
- **Has GF considered raising the bear quota? Specific –Spring quota** (Yes, since 2006 spring female black bear quotas for the Wyoming Range have increased nearly 50%. See Strategy: Impacts from Trophy Game; pg. 39)

Law Enforcement

- **Increase in poaching by nonresidents a problem** (We are committed to increase winter range patrols to reduce illegal take of trophy mule deer. See Strategy: Winter Range Task Forces; pgs. 41-42)
- **Stop ORV use during hunting season; more BLM enforcement of road closures** (We are committed to coordinate with federal land management agencies to enforce existing travel regulations. See Strategy: Road Closures; pg. 43)
- **GF/BLM/USFS don't seem to be enforcing ORV road closures. All agencies should work together to enforce road closures** (We are committed to coordinate with federal land management agencies to enforce existing travel regulations. See Strategy: Road Closures; pg. 43)
- **Supports “winter range task force”** (Agree with comment. See Strategy: Winter Range Task Force; pgs. 41-42)
- **Are people obeying the shed season rules? What is the fine?** (Overall compliance has been good. Violation is considered a low misdemeanor; fine is \$220, but at the warden's discretion and individual can be made to go to court where the judge can assign a fine. See Strategy: Winter Range Task Forces; pg. 41-42)
- **Expand law enforcement - Maintain or gain law enforcement at times other than breeding season** (Agree with comment. See Strategy: Winter Range Task Force; pgs. 41-42)
- **Enhanced federal capability to assist GF with enforcement i.e. on winter range** (Agree with comment. See Strategy: Winter Range Task Force; pgs. 41-42)
- **Obtain funds to increase enforcement of road closures** (Funding would need to go to BLM and U.S. Forest Service. WGFD has no authority over road closures. See Road Closures; pg. 43)

Appendix A

- **Special weapon season—offer muzzleloader hunt** (We hunt deer in this herd (total days regardless of area and including Archery) for 44 days (Sept 1 – Oct 14). Unlike some states that provide much shorter specific weapons seasons and greatly limit individual hunter opportunity, we support providing as much opportunity as possible within our existing season framework. Muzzleloader hunters have the ability to hunt the entire rifle season currently. See Appendix A; pg. 46)
- **Opposed to special weapon season (i.e. muzzleloader)** (See Appendix A; pg. 46)
- **High buck:doe ratios in the population; poor candidate for limited quota hunting** (We would agree with this assessment. See Appendix A; pg. 45)
- **Wyoming Range does not need limited quota—not supported by biology or majority public opinion; would discourage local hunters and youth hunters** (We would agree with this assessment. See Appendix A; pg. 45)
- **Choose your weapon seasons—hunters should not be able to hunt both archery and rifle** (The concept of “choose your weapon” limitations has been proposed in Wyoming over the years, but has not been supported by the majority of hunters throughout Wyoming. See Appendix A; pg. 45)
- **Would like to see analysis of number of outfitters and clients; feels they contribute to crowding** (We have no statutory authority to regulate licensed outfitters/guide. That authority rest with the Wyoming State Board of Outfitters and Professional Guides. See Appendix A; pg. 48)
- **Has the issue of drop camps been addressed in the plan?** (It has not. We have no statutory authority to regulate licensed outfitters/guides, nor authority to regulate the publics’ camps on Federal Land. See Appendix A; pg. 48)
- **Against doe/fawn harvest and any deer seasons** (We utilize a flexible and dynamic management system that allows a variety of hunting season limitations in order to achieve management goals. As an example, for the 2012 hunting season we eliminated “any” deer hunting replacing it with “antlered-only” deer hunting in response to significant over-winter mortality throughout the deer herd during the 2010-211 winter. See Appendix A; pg. 47)
- **Would like to see canceling doe fawn licenses in the event of winter kill** (We utilize a flexible and dynamic management system that allows a variety of hunting season limitations in order to achieve management goals. As an example, for the 2012 hunting season we eliminated “any” deer hunting replacing it with “antlered-only” deer hunting in response to significant over-winter mortality throughout the deer herd during the 2010-211 winter. See Appendix A; pg. 47)
- **How does deer season effect population objective? Would a no doe harvest increase population?** (Since 1993, antlerless deer were harvested only one year in the southern portion of this herd (Areas 134 and 135). Beginning in 2000, limited doe harvest was allowed periodically in Hunt Area 143, though not at a level sufficient to suppress population growth. See Appendix A; pg. 47)
- **Supports limited quota** (To implement this management strategy, we would need to assess biological, social and economic tradeoffs. See Appendix A; pg. 45)
- **Resident tag limits** (To implement this management strategy, we would need to assess biological, social and economic tradeoffs. See Appendix A; pg. 45)
- **Implore Governor to delist wolves and grizzly bears and allow WY to implement predator control** (This decision is not under the control of the Governor; he cannot

do this. Federal government is the only the only entity that can delist must delist.
See Appendix A; pg. 49)

- **Increase penalties for poaching** (Penalties are established by the Wyoming Legislature and not directly by the Game and Fish Department. See Appendix A; pg. 48)

Public comments not referenced in the Wyoming Range Mule Deer Plan

Some comments received do not fit into the prioritized issues established by the public, and are therefore not referenced in the Plan. These comments will remain as part of the record of public input about Wyoming Range mule deer management, and if the opportunity arises to make future changes or address them specifically, we will do so.

Comments not Referenced in Plan

- WGFD needs to make some decisions that may be unpopular with the general public to protect the Wyoming Range mule deer herd
- We liked the vehicle [of the standard opener questionnaire], but there is not enough background data
- Main concern is for the Sublette Herd and the impact on mule deer from the opening dates in the Wyoming Range
- How many deer are in the WRMDH? (Estimates vary annually depending on winter severity. For 2011, the population estimate for the Wyoming Range deer herd was approximately 36,000. (See pgs. 24-25)
- How many deer winter from La Barge to Big Piney? (Winter trend counts vary annually. For the LaBarge/Big Piney winter range complex since 2004, trend counts have varied from 2,640 to 4,520 deer with an average of 3,360. (See pgs. 24-25)
- If we are under objective why have a long season? (We annually evaluate public comments in addition to management data collected for that year. While the Wyoming Range deer herd is presently below the desired total population objective, management actions (i.e. hunting season lengths) have maintained quality buck doe ratios in line with public desires.)
- Is WGFD exploring working with Union Pacific to provide safe train track crossings for mule deer? This was an important point from the first two rounds of meetings. (The WGFD has been and will continue to pursue solutions for the Union Pacific ROW in Nugget Canyon and other locations. Success to date has been minimal, but we will continue to pursue options.)
- Bison should be encouraged on Federal lands instead of livestock
- Bison used to treat vegetation instead of Spike
- Habitat quality is up to WGFD, public can't help much.
- Make 132 special management for trophies
- Expand law enforcement - Use members of the public as "auxiliary" law enforcement presence; "hire" using monies from restitution and Mitigation Trust Fund account
- Increase enforcement/checkpoints/personnel in backcountry during the hunt season. Set up checkpoints in Sheep Creek or Rye Grass. Mix up the locations.
- Against raising license fees to limit hunters

- Lots has changed, hunters have expensive sophisticated gear. WGFD should increase tag costs. The Wyoming Range mule deer herd is a finite resource.
- Public will support increased tag fees provided that quantifiable results are a result
- Would like to see more accountability with money that is donated to ADMB
- ADMB funds should go to counties
- ADMB money requires sportsmen reps on county board to apply for grants
- Predator control is not just killing coyotes; it is done also for livestock and wildlife.
- Recent Sweetwater mule deer and antelope study was sponsored by the local Predator Board in collaboration with the Berryman Institute
- Would like to know difference in “recreational” vs. “special” herd management; more public involvement in designation
- Implement predator control similar to Nevada’s system
- Go to a statewide deer opening date to distribute hunter pressure
- Move Region H to an October 1st opening date with limited entry early September hunt
- Wildlife Services flights for coyote on Pine Creek and deep snow country recently could not find any coyotes. In Nugget Canyon, the coyotes follow the deer.
- Collaborative Forest Landscape Restoration – minimum 50,000ac collaborative effort pay for monitoring and treatment
- Survey [about season opening dates] should have included season closings as well
- Predator stamp sale should be added to web site. Put info with AccessYes and Search & Rescue are.
- Why did game counting change from wardens to biologists?
- Increase awareness of predator stamp for vendors, develop, add sign
- Considered selling shed antler licenses to fund enforcement
- I think that there is 1/3 fewer deer in the Hoback since the mid-90’s. The numbers have decreased since the mid-90s. The number of deer herd may not always be accurate.
- There are a lot fewer working ranches and livestock today, which leads to the development of ranchettes and habitat fragmentation. WGFD needs to work to maintain traditional ranches.
- Utilize average age harvest as a tool to assess overall health of the population, incorporate it in the data collection where you can
- I believe that habitat is in better shape today than 30 years ago.

Positive public comments received for the Wyoming Range Mule Deer Plan

- Great job with this process!
- WGFD does a great job with the research process
- This is a great process
- Glad that you are doing this for us. We need to work together. Like the option hunt in several places and love the opportunity provided in multiple hunt areas. We need to keep that.
- Positive help from Steve and Gary with getting habitat projects off the ground in the Greys River
- Deer populations seem stable and sampling good

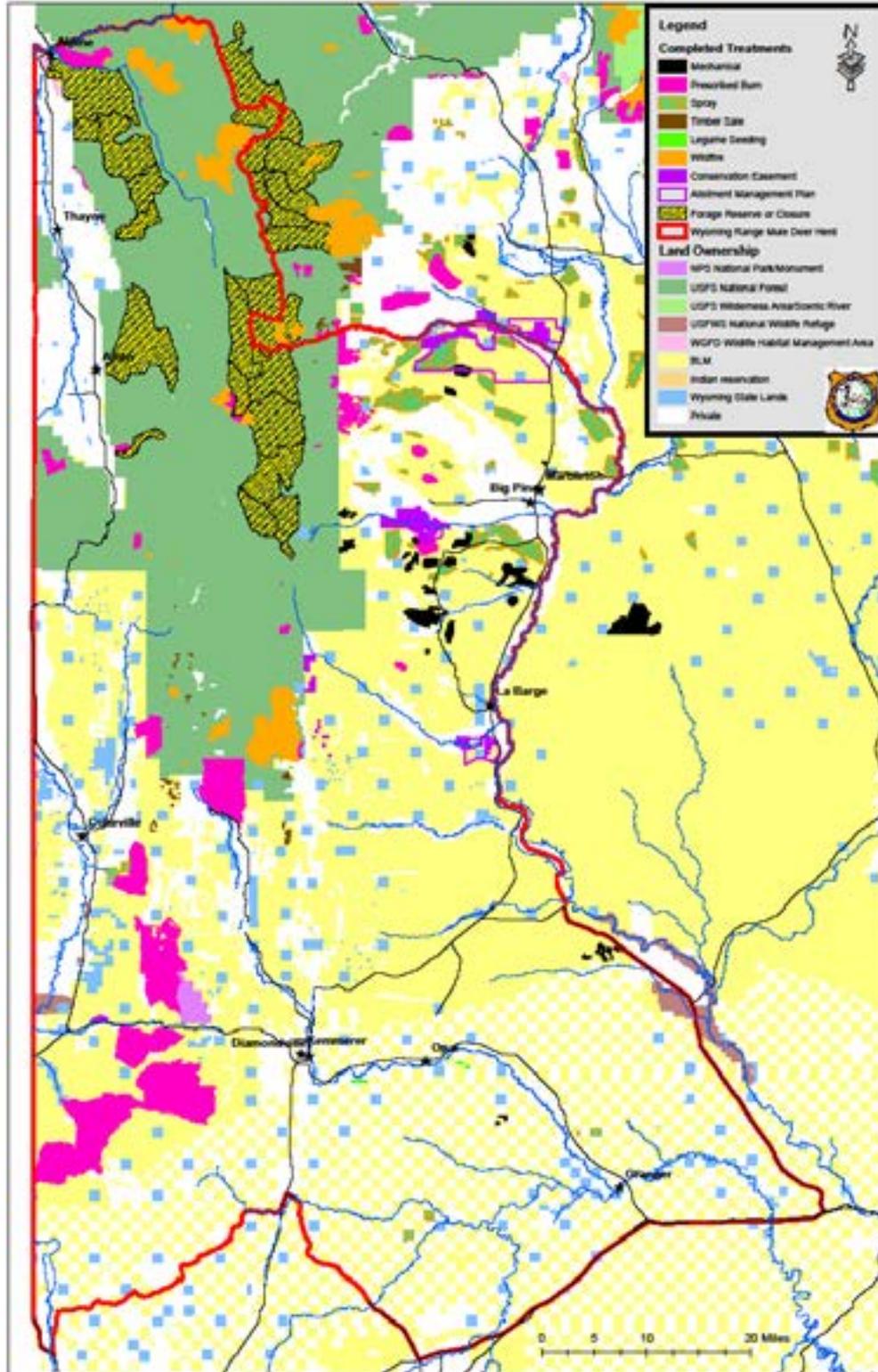
- Generally very good hunting opportunity in Wyoming Range
- Continue good work on educating public about Wyoming Range issues
- We appreciate the opportunity to participate in this process.
- WGFD does great job for mule deer
- Appreciative of meetings, public input, and survey research
- Encourage WGFD to continue to use biology to make decisions; not cater to special interest groups
- Admire Game Wardens because every contact is armed
- Pleased with management of the herd
- Generous seasons dates reduce crowding
- Commend WGFD on plan and proposals
- Thanks for taking the time to conduct the meetings
- Supportive of Mule Deer Initiative and appreciates Game and Fish's sincerity about public input

Negative public comments received for the Wyoming Range Mule Deer Plan

- Skeptical of the Department's approach in this process
- Not in favor of current open house meetings; feels they are misrepresented
- Biologists should count deer, not plug numbers into computers
- Does not believe drought is a contributing factor to deer declines
- Does not believe WGFD stated buck:doe ratio is accurate
- Feels deer harvest is too high
- Feels seasons are too long
- I appreciate local law enforcement coming to meetings with wildlife services. Game and Fish need to communicate
- Do not shorten seasons
- Shorten seasons from two months
- Does not believe oil & gas development affects herd

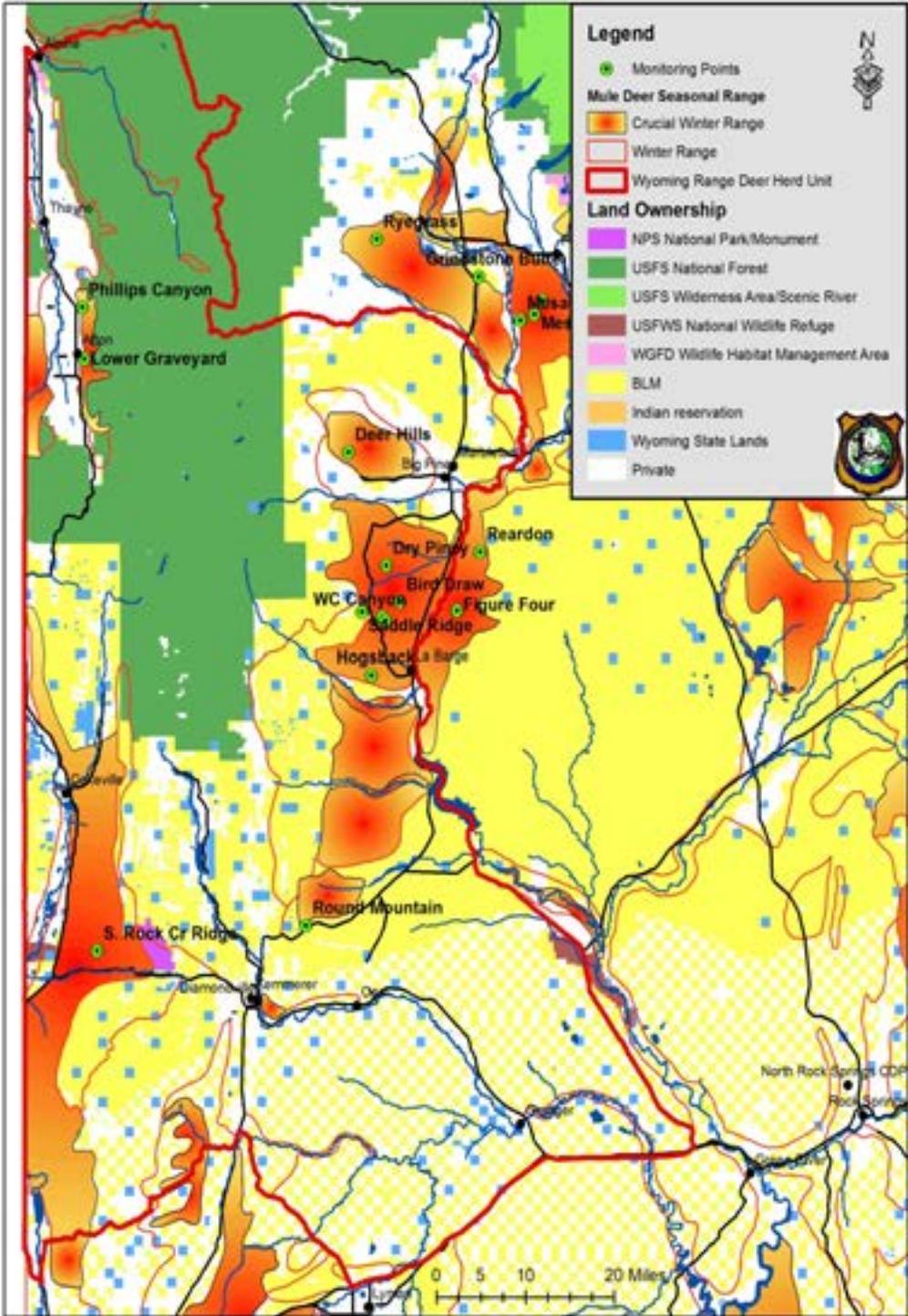
Appendix C: Completed Habitat Treatment Map

Completed Habitat Treatments



Appendix D: Winter Range Shrub Monitoring Transect Map and Data Summary

Winter Range Shrub Transect Locations

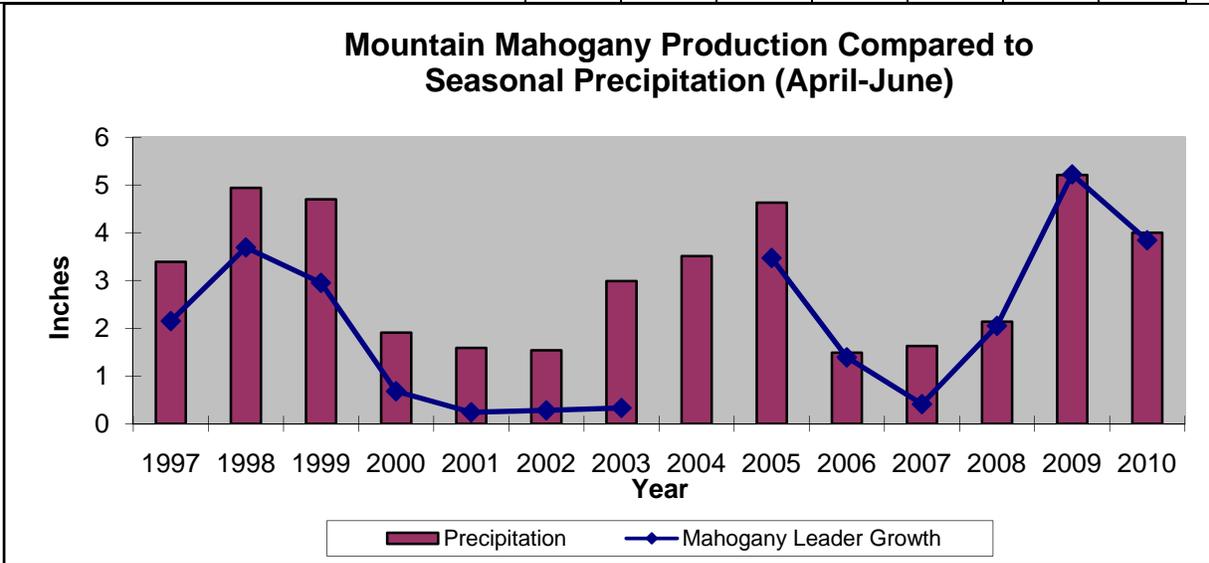


Wyo Sagebrush Production (inches)		
Location	2005	2010
Hogsback		1.2
S. Rock Cr Ridge	1.2	

Mtn Big Sagebrush Production (inches)							
Location	2004	2005	2006	2007	2008	2009	2010
Deer Hills		1.73	0.28	0.27	0.95	0.94	0.7

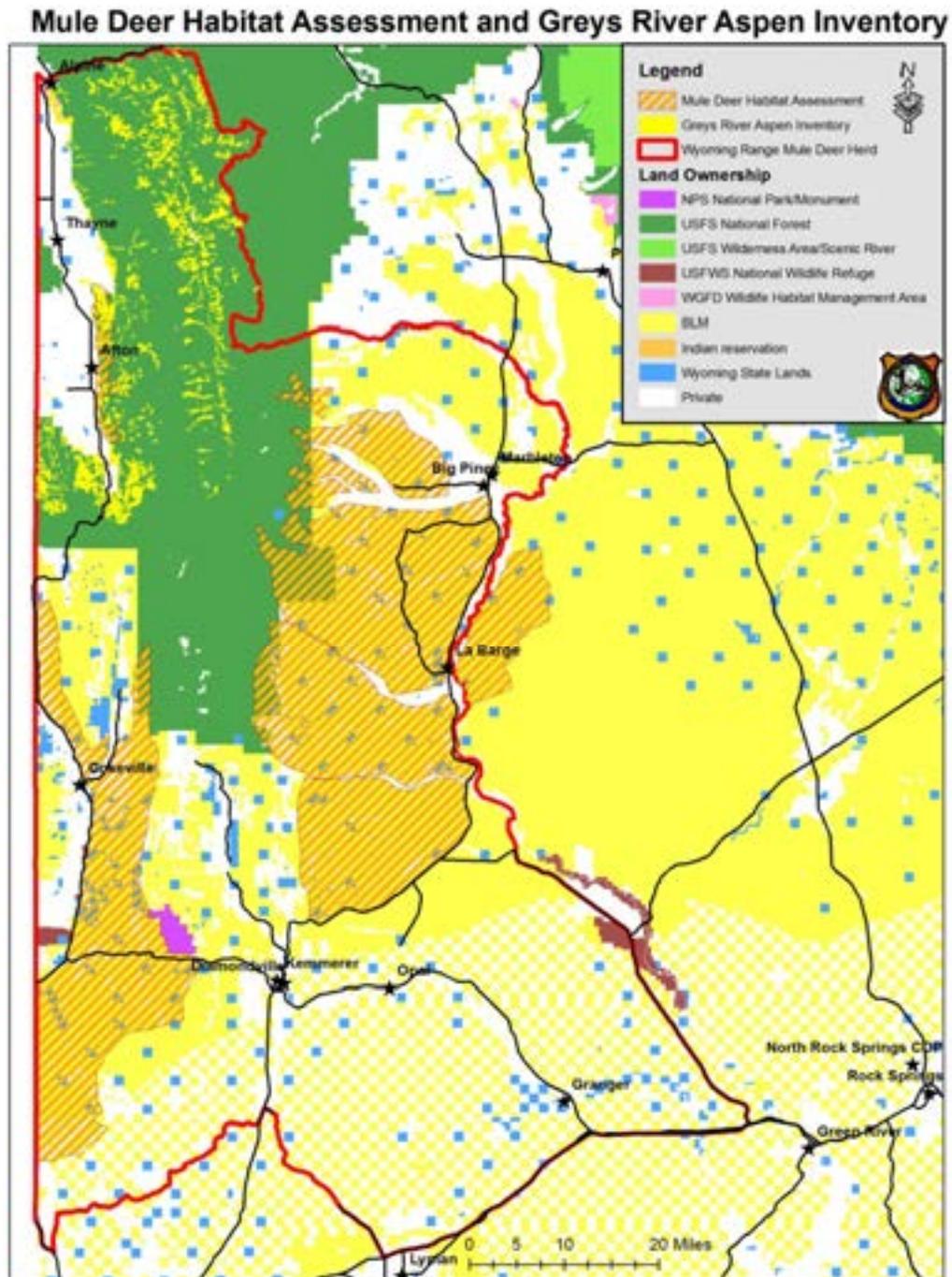
Black Sagebrush Production (inches)		
Location	2009	2010
WC Canyon	1.50	2.30
Dry Piney		0.70
Figure Four		0.80
Saddle Ridge		1.30

Bitterbrush Production (inches)							
Location	2004	2005	2006	2007	2008	2009	2010
Phillips Canyon	6.7	5.9	3.8	3.90	5.2	6.7	
Lower Graveyard	6.9						
Round Mountain		3.8					



True Mountain Mahogany Production (inches)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bird Draw	2.87	4.94	4.50	0.95	0.26	0.27	0.36	NA	3.15	0.86	0.22	1.47	6.81	3.7
Saddle Ridge	1.88	2.72	2.00	0.57	0.21	0.3	0.33	NA	2.93	0.89	0.20	4.2	5.95	3.8
WC Canyon	1.70	3.42	2.36	0.52	0.24	0.26	0.31	NA	2.61	0.79	0.21	1.22	1.5	3
Wildcat									5.2	3	1.00	1.3	6.6	5.51
Reardon Draw														3.2
Average	2.15	3.69	2.95	0.68	0.24	0.28	0.33		3.47	1.39	0.41	2.05	5.22	3.84
14 Year Average														2.34

Appendix E: Habitat Assessment and Aspen Inventory Map



Appendix F: Nugget Canyon Underpass Map

