

Management Plan for Mule Deer

Mission Statement

To conserve and improve mule deer habitat and minimize factors limiting healthy mule deer populations

Purpose

This plan is written to stabilize, and then to reverse, mule deer population declines in Nevada. Without implementation, mule deer and other wildlife populations will continue to shrink, and the coincident degradation of essential habitats will affect the quality of life in Nevada and the economy of the state.

Executive Summary

Nevadans strongly support the conservation of Nevada's mule deer resource as well as actions that improve the current status of populations and habitats. At the same time, hunters and others present diverse, varied, and sometimes conflicting demands that challenge mule deer management. The Nevada Department Wildlife (NDOW) has statutory responsibility for the management of mule deer and seeks to implement and promote management actions that positively affect mule deer populations and habitats. The Nevada Management Plan for Mule Deer (Plan) has four objectives. These are habitat, population management, harvest, and communication/outreach. The Plan does not explicitly address the role of law enforcement in achieving Plan objectives, but game wardens are the public face of NDOW, and active participation by law enforcement personnel is critical to Plan success. Also, while the Plan does not articulate specific monitoring objectives, NDOW and the Nevada Board of Wildlife Commissioners emphasize that habitat monitoring and measuring the response of mule deer populations to different management regimes are essential to accomplishing Plan objectives.

Related Documents

NDOW will use this Plan to guide population and habitat actions at the Management Area and Hunt Unit level. It incorporates by reference the following documents:

- **Nevada Mule Deer Bulletin** (Nevada's Mule Deer, Population Dynamics: Issues And Influences (Nevada Department of Wildlife Biological Bulletin No. 14, 2004),
- **Nevada Comprehensive Wildlife Action Plan** (Nevada Department of Wildlife, 2005) and
- **North American Mule Deer Conservation Plan** (Western Association of Fish And Wildlife Agencies, 2004).

Audience

For successful implementation, the Plan requires close cooperation among all NDOW Bureaus, including Game, Habitat, Law Enforcement, Diversity, and Conservation Education. It also requires that NDOW collaborates with the Nevada Board of Wildlife Commissioners, County Wildlife Advisory Boards, and develops strong partnerships with federal land management agencies and a host of other organizations. It presents a collection of issues that confront management of Nevada mule deer herds, and it lists corresponding strategies that may assist in issues resolution. The Plan recognizes that because mule deer occupy diverse habitats in Nevada, not all strategies will be applicable to all deer herds. As the science and art of mule deer management evolves, other strategies may be added as the Plan is implemented or revised.

The Plan is written to assist:

- **NDOW employees responsible for operations on the ground;**
- **NDOW leadership in their oversight of operations;**
- **The Wildlife Commission in establishing statewide policy and regulation;**
- **Both NDOW and the Commission in seeking Federal and statewide Legislation and in discussions with local governments;**
- **Both NDOW and the Commission in seeking regulation change for other state and federal agencies;**
- **All land management agencies in developing regulation and policy;**
- **Private landowners;**
- **Sportsmen and other conservation groups attempting to assist NDOW in mule deer and/or habitat improvement; and**
- **The general public in understanding the habitat requirements and management strategies implemented to conserve and enhance mule deer populations.**

Implementation

Specific Area Management Plans will be developed in accordance with the guidance provided in this statewide Mule Deer Management Plan. These Area Management Plans revised as needed, or on an annual basis, by Game Bureau Field Biologists, and provided to the Game Bureau Chief in advance of the March meeting of the Nevada Board of Wildlife Commissioners.

Departmental Coordination

The successful implementation of this plan depends on close coordination among the various NDOW Bureaus. Accordingly:

- **The Game Bureau Chief will provide annual updates on the development, implementation and revision of Area Management Plans derived from the guidance provided in this Management Plan for Mule Deer.**

Updates will be presented at the March meeting of the Nevada Board of Wildlife Commissioners.

- **The Habitat, Diversity, and Law Enforcement Bureau Chiefs will provide annual updates on their activities in support of the guidance provided in this statewide Management Plan for Mule Deer.**
- **Implementation of this statewide Management Plan for Mule Deer will be reviewed at the March 2007 meeting of the Nevada Board of Wildlife Commissioners, and at least every 3 years thereafter.**

Objectives

Habitat

Habitat is the single greatest factor affecting mule deer density and distribution. Therefore, the protection of existing mule deer habitats and improvements to poor mule deer habitat are critical. Here, as elsewhere throughout the Plan, the application of some strategies will be based on need, opportunity, and probability of success. For example, “acquisition of conservation easements in and around critical mule deer habitat...” and “acquisition of key mule deer habitats from willing sellers...” are purposely provided as alternatives to development, intended to maintain open space to the betterment of mule deer, and not inconsistent with “traditional uses.”

ISSUES

Urbanization and Development

Increasing human population growth will exert a consistent and largely irreversible negative impact on mule deer habitats in Nevada.

STRATEGY: Acquire conservation easements in and around critical mule deer habitats from willing participants.

STRATEGY: Acquire key mule deer habitats from willing sellers when feasible.

STRATEGY: Cooperate and coordinate proactively with local municipalities to assure that mule deer habitat is conserved in land use planning decisions.

STRATEGY: Provide mule deer distribution information where appropriate and promote mitigation.

STRATEGY: Cooperate and coordinate with private landowners to improve, conserve, and/or protect mule deer habitat wherever willing land owners have an expressed desire.

STRATEGY: Cooperate and coordinate with private landowners, land management agencies, counties, road departments and the Nevada Department of Transportation to maintain migratory corridors free from impediments (fences, roads, etc.) wherever possible.

STRATEGY: Coordinate with county of origin and provide information on potential impacts resulting from interbasin water transfers.

STRATEGY: Develop and/or enhance water availability in water limited habitats to mitigate the effects of habitat loss, fragmentation, and degradation.

Sustainable Use of Public and Private Rangelands

Mule deer and other herbivores depend on forbs and native grasses throughout the year, particularly in spring and summer. Landscape scale reductions in these forage plants are having negative impacts on mule deer and other wildlife.

STRATEGY: Prioritize issues by management area.

STRATEGY: Consistently engage land management agencies in mule deer habitat issues.

STRATEGY: Cooperate and coordinate with federal land management agencies in land use planning, resource management planning, grazing plans, fire planning efforts, energy development lease plans, and other planning efforts to avoid or mitigate potentially harmful human impacts on mule deer and/or mule deer habitat.

STRATEGY: Advocate proactive habitat improvement approaches using best management practices.

STRATEGY: Develop and distribute a catalog of best management practices for land management agencies use to optimize meeting nutritional requirements for highly productive mule deer populations.

STRATEGY: Promote appropriate grazing strategies for livestock and wild horses to benefit mule deer habitats (especially riparian areas) and support federal agency efforts to manage wild horse numbers at or below AML (appropriate management level).

STRATEGY: Determine how weather patterns affect mule deer populations in different Management Areas; use this information to predict future population responses.

STRATEGY: Determine relationships among seasonal precipitation, availability and nutritional quality of forage, and mule deer population trends.

STRATEGY: Restore areas historically overgrazed by horses and/or livestock (especially riparian areas).

STRATEGY: Reintroduce forbs and perennial grasses in areas with a depleted understory.

STRATEGY: Greenstrip areas of critical mule deer importance to protect from fire and in the event of fire, stress the importance of critical mule deer habitats to fire fighting personnel.

STRATEGY: Develop habitat management plans by management area.

STRATEGY: Evaluate off-road vehicle impacts to mule deer habitats.

Plant Senescence

Mule deer are highly selective browsers. They depend on new and easily digested vegetative growth. Plant senescence throughout Nevada rangelands is having negative impacts on habitat for mule deer and other wildlife

STRATEGY: Encourage research to determine the relative nutritional value of different species of senesced vegetation; prioritize restoration efforts on the basis of research findings.

STRATEGY: Restore plant vigor of senesced vegetation through disturbance and other methods.

Pinyon Juniper Encroachment

Pinyon-Juniper forests provide thermal cover for mule deer, but dense stands reduce understory plant productivity and diversity, increase site aridity, and accelerate soil erosion. Pinyon-Juniper conditions throughout much of Nevada are having negative impacts on mule deer and other wildlife

STRATEGY: Minimize impacts of pinyon-juniper encroachment on mule deer habitat via treatments (mechanical, chemical, prescribed fire).

STRATEGY: Reduce acreages of closed canopy pinyon juniper stands.

Invasive Species

Cheat grass and other invasive plants occupy millions of acres of sage-brush steppe. They increase fire frequency and out-compete native vegetation. Invasive plants negatively impact mule deer habitat throughout Nevada.

STRATEGY: Prevent the spread of invasive and other noxious weeds that degrade mule deer habitat.

STRATEGY: Implement control programs to eradicate invasive and noxious weeds whenever practical to improve mule deer habitat.

STRATEGY: Promote research useful to the reestablishment of beneficial vegetation types in burned areas previously of critical mule deer importance.

Wildfire

Fire can benefit or harm the condition of Nevada rangelands, depending on timing, elevation, intensity, and frequency. More frequent and hotter fires are having negative impacts in Nevada on habitat for mule deer and other wildlife.

STRATEGY: Reestablish beneficial vegetation types in burned areas of critical mule deer habitat.

STRATEGY: Promote research useful to the reestablishment of beneficial vegetation types in burned areas previously of critical mule deer importance.

STRATEGY: Greenstrip areas of critical mule deer importance to protect from fire.

STRATEGY: Coordinate with wildfire incident command personnel to emphasize mule deer habitat protection in wildfire control.

Type Conversion

Historically, much Nevada rangeland was treated to convert native upland plant communities to crested wheatgrass. Although crested wheatgrass has nutritional value to mule deer and other wildlife, type conversion has resulted in the loss of

preferred forage plants and overall negative impacts on mule deer and other wildlife.

STRATEGY: Cooperate and coordinate with land management agencies in land use planning to minimize impacts of habitat type conversions resulting from large scale disturbance.

STRATEGY: Where crested wheatgrass or other exotic vegetation is planted after fire or other perturbations, work with others to assure that affected habitats eventually return to native conditions.

Population Management

Traditionally, NDOW has focused considerable effort on the survey and inventory of big game populations. This information is used to infer habitat health and to make harvest recommendations. In the absence of landscape scale habitat monitoring, mule deer survey and inventory will continue to be used for these purposes. Accordingly, the second principle objective is to suggest strategies, highlight information needs, and plot the actions necessary to assure practical but science-based management of Nevada mule deer herds using the best and most current practices available.

ISSUES

Accurate survey and inventory strategies

Science-based, replicable survey methods are a key to science-based mule deer population management.

STRATEGY: Evaluate and refine mule deer survey and inventory protocols by integrating aerial and ground survey technologies.

STRATEGY: Establish objectives for management units that meet biological goals.

STRATEGY: Monitor the effects of harvest levels on population demographics and abundance.

STRATEGY: Use monitoring data to propose and adjust harvest rates, timing, duration of hunts, and quotas to achieve population objectives.

STRATEGY: Monitor adult female survival in representative areas to adequately describe when and how population change occurs.

STRATEGY: Monitor winter fawn survival in key areas to maintain an accurate index of recruitment.

STRATEGY: Periodically review and delineate seasonal mule deer habitats.

STRATEGY: Use long-term weather data (e.g., snow, lack of moisture) to develop maps of critical areas for special management under extreme weather events.

STRATEGY: Identify environmental covariates that may influence survey accuracy and repeatability.

Population health and nutritional status

A variety of health and nutritional issues are (or could be) having negative impacts on mule deer in Nevada.

STRATEGY: Develop and sustain surveillance programs for diseases that may affect mule deer.

STRATEGY: Develop and sustain surveillance programs to detect evidence of nutritional deficiencies exhibited by mule deer.

STRATEGY: Encourage research to determine plant characteristics (i.e., species diversity, density, age, distribution) that provide optimal nutritional levels to sustain mule deer.

STRATEGY: Develop and implement a standard habitat condition index based on review and summary of body condition measures.

STRATEGY: Monitor trends in body condition and correlate with other weather, habitat, and population parameters to develop predictive models explaining mule deer population dynamics.

STRATEGY: Develop and sustain rapid response capabilities to investigate morbidity or mortalities in mule deer populations.

STRATEGY: Implement management strategies, including antlerless hunts, to prevent or disperse high concentrations of mule deer and so minimize the spread of zoonotic disease.

STRATEGY: Develop statistical models to predict the presence, prevalence, potential for spread, and population impacts of diseases in mule deer populations.

STRATEGY: Establish close ties with state and federal agriculture agencies, human health and environmental agencies to coordinate surveillance, monitoring, and management of diseases and parasites that may cross the wildlife/livestock and wildlife/human interface.

Minimize factors potentially limiting mule deer populations

Situations exist in which the mule deer population is less than expected in relation to the available habitat.

STRATEGY: Implement or encourage the implementation of research or adaptive management schemes to determine or resolve differences between expected population size and habitat resources available.

STRATEGY: Implement predator management when data suggest that mule deer numbers or population demographics are being negatively impacted by predators.

STRATEGY: Assess the effectiveness of predator management practices and determine trigger points that would lead to the initiation and termination of predator control programs.

Harvest

Mule deer harvest management is a divisive and politically sensitive topic. NDOW has long emphasized the importance of habitat changes and weather conditions as major factors behind population fluctuations, but perhaps may not always adequately address

effects of hunting on mule deer abundance and population dynamics. Harvest schemes are central to mule deer management, and the biological features of these schemes are essential to NDOW mule deer management efforts and of great interest to mule deer hunters and other enthusiasts. For these reasons, the biological issues related to harvest and strategies that may be useful in the development of Management Area specific harvest recommendations are outlined below. In addition, although individual game violations are unlikely to affect mule deer populations, collectively they can pose a threat to the degree of success of this management plan. For this reason, law enforcement is included as an issue under this plan objective.

ISSUES

Balance competing demands on the mule deer resource

Some mule deer hunters pursue trophy animals while others are more interested in opportunities to hunt mule deer regardless of the probability of encountering trophy bucks. Others are less interested in hunting opportunity than in the knowledge that mule deer are a healthy part of intact ecosystems.

STRATEGY: With the assistance of County Wildlife Advisory Boards, define, develop and sustain both trophy and opportunity hunts throughout Nevada.

STRATEGY: Implement hunt plans at the Management Area and Hunt Unit level, including the use of antlerless (e.g., doe) hunts, to accommodate the spectrum of hunter preferences.

STRATEGY: Assure that hunt plans are consistent with mule deer population and habitat objectives

STRATEGY: Cooperate with others to implement management practices that assure mule deer viewing opportunities for the public.

Enforce laws and regulations

Unlawful take and unethical hunter behavior impact mule deer management

STRATEGY: Regulate and monitor hunters.

STRATEGY: Conduct uniformed saturation patrols in documented problem areas.

STRATEGY: Maximize voluntary compliance with laws and regulations relating to mule deer protection, management and harvest.

STRATEGY: Promote Operation Game Thief and Unit Watch Programs prior to and during the mule deer season.

STRATEGY: Promote NDOW coordination on enforcement issues, hunter return cards, season dates, quotas, unit boundaries and maps, tag lists, special hunts, and special regulations.

STRATEGY: Maximize voluntary compliance with laws and regulations relating to mule deer protection, management and harvest.

STRATEGY: Solicit cooperation and support of private landowners, especially in problem areas.

STRATEGY: Enforce compliance with laws and regulations through continuing emphasis on short and long-term investigations of unlawful conduct.

Private Lands Deer Management

Although most of Nevada is public land, much of the best habitat is privately owned. In order to effectively manage mule deer, it is essential that private land owners are willing participants in the development and implementation of conservation actions. While many of the actions suggested for private lands are similar to those appropriate for public lands, there are also important differences.

ISSUES

Minimize land owner-mule deer conflicts

Two benefits of working with landowners to resolve conflicts are increased support for mule deer and the development of partnerships to conserve and enhance mule deer habitat.

STRATEGY: Foster dialogue with landowners regarding mule deer biology, behavior, and habitat requirements.

STRATEGY: Utilize private land hunts, emergency depredation hunts, antlerless hunts, and/or hazing to remove deer from private lands where conflict exists.

STRATEGY: Work with landowners to limit or discourage unwanted use of agricultural products by mule deer.

STRATEGY: Encourage landowners to maintain migratory corridors.

STRATEGY: Encourage and educate landowners to modify fencing or build new fences that minimize or avoid impacts on deer.

STRATEGY: Encourage the use of innovative programs including volunteer or honor camp labor to assist willing landowners with fence or habitat manipulation projects.

STRATEGY: Maintain adjacent public lands in healthy, native, productive condition.

STRATEGY: Maintain or develop water resources on adjacent public uplands to reduce mule deer use of agriculture lands.

Maximize mule deer habitat suitability of private lands

Private nonagricultural land often has great potential as mule deer habitat.

STRATEGY: Encourage or support projects to create high quality forage with willing landowners.

STRATEGY: Encourage landowners to maintain noncultivated habitats that are free of migratory impediments and provide cover and water resources.

STRATEGY: Maintain and enhance the mule deer damage compensation tag program.

STRATEGY: Explore legislation to provide funding to enhance habitat for mule deer and other wildlife.

Communication and Outreach

Effective communication strategies are essential to maintain and enhance public support for mule deer conservation and for the protection and growth of essential habitat.

ISSUES

Nevadans are increasingly urban and less likely to understand the habitat requirements for healthy mule deer populations.

STRATEGY: Maximize workshop and other opportunities for direct participation by volunteers in mule deer conservation activities.

STRATEGY: Develop and routinely distribute educational materials that inform the public about mule deer biology and habitat requirements.

STRATEGY: Develop communication strategies that inform the public about the number of mule deer that can reasonably be expected in different habitats, and the challenges posed by environmental circumstances (e.g., drought, heavy snows, invasive species encroachment, and wildfire)

STRATEGY: Develop and provide information on practices that may harm or benefit mule deer populations (e.g., wildlife friendly fencing designs, supplemental feeding, and optimizing nutritional value of native plants)

STRATEGY: Encourage public involvement in gathering and reporting information about unusual incidents involving mule deer, including instances of suspected mule deer morbidity or mortality caused by disease or nutritional deficiencies.

STRATEGY: Design and conduct scientific surveys to determine the economic, social, and cultural values of mule deer hunting in local communities.

STRATEGY: Design and implement surveys to determine the beneficial aspects of mule deer populations to non-consumptive users.

STRATEGY: Provide mule deer related materials for incorporation into elementary and secondary school curriculums and for use by Department of Wildlife in hunter education.

STRATEGY: Create and distribute mule deer related public service announcements and press releases for media distribution.

STRATEGY: Create and distribute news releases on criminal investigations, successful cases related to mule deer, and other law enforcement actions related to big game (e.g., trespass).

STRATEGY: Provide mule deer related information for posting on NDOW and other websites that explains agency policy and the state of existing knowledge about mule deer populations and the factors affecting them.

STRATEGY: Encourage Department of Wildlife participation in educational activities, and other public forums to provide information about mule deer biology and habitat requirements.

STRATEGY: Promote voluntary mule deer orientation/indoctrination.

STRATEGY: Provide training opportunities for NDOW personnel so that personnel have current knowledge of mule deer issues and best management practices.

STRATEGY: Maximize opportunities for contact between game wardens and the public to provide opportunities to distribute information about hunting regulations and the management practices they reflect.

STRATEGY: During uniformed patrols, maximize availability and distribution of literature related to mule deer regulations changes.

STRATEGY: Encourage participation by NDOW personnel in special public contact opportunities, sports shows, conventions, and other events that provide opportunities to promote voluntary compliance.

Develop effective communication strategies with decision-makers
Many legislators and other decision-makers lack understanding of mule deer population dynamics and habitat requirements.

STRATEGY: Synthesize results of data analyses and present to decision makers at the federal, state, and local levels, both as background and in the context of specific legislative proposals and planning efforts that may affect mule deer.

STRATEGY: Regularly prepare and distribute information on sensitive topics such as predation or wild horse management that may influence funding for mule deer conservation efforts.

Develop and maintain effective interagency communication strategies
Because much of Nevada is federally managed, it is essential that the Department of Wildlife foster strong working relationships with federal land management agencies to promote mule deer habitat conservation and enhancement.

STRATEGY: Participate in the development of federal land use planning efforts to assure that mule deer habitat requirements are considered.

STRATEGY: Participate in federal National Environmental Policy Act processes when those processes impact mule deer habitats.

STRATEGY: Stress the importance of critical mule deer habitats to fire fighting incident command and planning personnel to minimize habitat loss to wildfire.

Plan Evaluation Schedule

The Nevada Board of Wildlife Commissioners intends to use the Management Plan for Mule Deer as a working document. In order to balance the diverse and evolving needs expressed by the public during the development of this plan, the Nevada Board of Wildlife Commissioners and NDOW will be responsive to new data, ecosystem change, and public interests. Those wishing to evaluate or modify the plan are invited to contact the NDOW in writing. Requests will be presented to the Commission as agenda items. Written or public presentations by members of the public may also be made before the Wildlife Commission. The Commission will review this Plan at the March 2007 meeting of the Commission, and at least every 3 years thereafter.