



## POPULATION MANAGEMENT AND OBJECTIVES

### Fact Sheet #28

#### INTRODUCTION

State and provincial wildlife agencies manage wildlife to ensure populations are healthy and persist for future generations. Wildlife management is a science-based decision making process that requires knowledge and understanding of population trends, factors influencing local wildlife populations, interactions among wildlife species, human influences, and effects of habitat conditions. For mule deer, population management boils down to strategies to increase, decrease, or maintain deer numbers to stay within biological and social carrying capacities. Wildlife biologists develop management objectives to guide decisions to achieve desired goals.

#### USING OBJECTIVES IN DEER POPULATION MANAGEMENT

Management objectives are targets developed by wildlife managers and stakeholders that direct management decisions and may be formalized in a management plan. Management objectives are socially established within biological limits of the population, which scientific surveys, population models, and recommended harvests are used to meet. Whether expressly written or an unstated internal target for the wildlife manager, management objectives have been used throughout the history of wildlife management to set direction and guide conservation action. Ideally, established objectives reflect a balance between biological, recreational, economic, and stakeholder tolerances and expectations.



Management objectives are used to assess current population or herd status as well as outcomes of conservation actions. Objectives are also useful when communicating the need for conservation actions with stakeholders.

Though not always hard numbers to which managers must strictly adhere, management objectives are always measurable targets used as a tool to achieve conservation goals. These objectives are often expressed as a range of values and management decisions are based on where the population stands in relation to the objectives. When developing objectives, managers consider habitat quality, carrying capacity, private property conflicts, recreational benefits, and what is biologically appropriate for the population.

Management objectives are seldom defined simply as a number of deer; in fact, most agencies use other measurable attributes, such as sex or age ratios (buck:doe and fawn:doe), harvest success rates, hunter satisfaction, relative deer density, age structure of harvested deer, and landowner tolerance and satisfaction among others. Further, management objectives can be expressed in terms of maintaining mule deer numbers at sustainable levels, keeping within desired deer densities in certain management zones, achieving maximum sustainable harvest, reducing human-wildlife conflicts, or maintaining desired sex and age ratios. Objectives can be as simple as wanting to increase population size in a particular unit or maintain maximum hunter satisfaction. In contrast, some objectives may be to maintain deer density at 6 deer per square mile, with a

buck:doe ratio of 30 bucks per 100 does and a hunt success of 20%. Regardless of complexity, objectives must be measurable within the financial and logistical constraints of the agency.

Agencies use several management tools to meet objectives. If mule deer population parameters are within an acceptable range, managers may simply monitor the population with no change to management. Season dates and number of licenses may be adjusted if population size or sex ratios are not within objectives. For example, if the buck:doe ratio is higher than desired, agencies may offer more buck hunting opportunities. If the population size is above objective, the agency may increase antlerless tags to reduce the number of does available to reproduce the following year. If hunter satisfaction or harvest rates are perpetually low, agencies may reduce tags, change how they are allocated, adjust season length, or manipulate habitat conditions.

### **ATTRIBUTES OF GOOD MANAGEMENT OBJECTIVES**

Management objectives need to be realistic, measurable, attainable, and sustainable. Because mule deer population dynamics differ throughout their range in response to local conditions, objectives should be tailored to specific populations with the appropriate time frame and spatial scale in mind. Long-term management objectives provide consistency among years and areas, allow for variable environmental conditions, and permit agencies to allocate resources to specific goals over an extended time frame.

### **STATED POPULATION OBJECTIVES MUST BE FLEXIBLE**

Although management objectives are important to clarify management direction, they can restrict wildlife agencies in times where more flexibility is needed. For example, a management objective that describes a minimum population size can limit the agency's ability to implement an antlerless harvest when the population is below objective and a wildfire reduces carrying capacity dramatically. Social pressures may strive for overly high population objectives, yet these may simply be unattainable given the biological carrying capacity of the habitat. Unachievable population objectives are problematic because it may appear the management agency is failing to manage the deer population properly, which can then erode public support of the agency and local personnel. Objectives must remain flexible to consider changing conditions that influence population size or other demographic parameters.

### **YOUR VOICE MATTERS**

When developing management objectives that affect wildlife populations, agencies solicit public input and give stakeholders a chance to comment on the direction of wildlife management. Agencies have established complex public processes to involve all stakeholders. Without input, managers cannot assess public desires and overall satisfaction with current or proposed management objectives. This input allows managers to develop objectives that address social desires, but still remain within the biological constraints of the deer population. Concerned and interested citizens must engage in the public processes to help guide management.



### **CONCLUSIONS**

Management objectives establish guidelines that agencies work within to determine appropriate management strategies, and the objectives must be measurable and quantifiable. In addition to population size, demographic objectives such as post-hunt buck:doe ratios, fawn:doe ratios, or hunt success rates give managers a measurable goal to use in adjusting seasons, tag allocations, and harvest levels. Agencies work to incorporate desires and concerns of diverse stakeholders when considering objectives and making management recommendations, highlighting the importance of public input.

**More information on mule deer can be found at [www.muledeerworkinggroup.com](http://www.muledeerworkinggroup.com)**

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