Mule Deer

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in the course of the year results in slightly suboptimum population
dynamics. Suboptimum nutrition on a regular basis results in subopti-
mum population dynamics. Poor nutrition results in poor population
dynamics. Nutrition and the population dynamics for every deer herd
are directly correlated.

The long-term decline of mule deer populations in the West is
undoubtedly the direct result of decreased quantity and nutritional
goodness of year-round dietary forages (Workman and Low 1976;
Hancock 1981; Clements and Young 1997; Gill 2001; Utah DWR 1951-
2008; Utah DWR 1958-2008). The degree of the forage bottleneck and
limitation on a year-round period determines the level of herd popula-
tion dynamics. Only when year-round forages are plentiful and near
maximum nutrient quality do deer herds reach maximum herd popula-
tion dynamics and productivity.

Sad, once the vegetative productivity of a range has been depleted by
overuse, many years, decades, or even longer time periods are required to
recover good range condition. Even more alarming, when soil is eroded
from overused ranges, potential range production is essentially perma-
nently reduced.

Reduced range productivity is observed directly not only by declining
harvest of deer, but also by reduced reproduction and recruitment rates.
Whereas fawn-to-doe ratios on many units were consistently above 90
fawns per 100 does in the pre-1960s, rates on almost all units since the
1980s have been consistently under 80 fawns per 100 does. Clearly, pro-
duction of nutritional forages for mule deer has generally declined state-
wide and probably throughout the West. Deer populations must be annu-
ally evaluated and balanced with the range resources.

### Chapter Synopsis

To manage any deer unit, areas of utilization on both summer and win-
ter ranges as well as migration patterns must be understood and docu-
mented. Units having potentially distinct subpopulations must be further
defined and evaluated. Accurate data must be annually collected within
each geographic herd boundary. These data include total hunter harvest
with age and sex determinations, reproduction and recruitment classifi-
cation counts, monitoring of overwinter forage utilization, and periodic
range trend data and analyses. Additional data on any deer herd should be
collected to address specific problems. Surveys of hunter opinions must be obtained without bias and thoughtfully considered. Annual livestock grazing must be properly managed on both summer and winter ranges. Planned range improvements must be annually implemented. Predator control programs must be flexible, balanced with the deer population, adaptable to the population trends of the current deer population, and managed in concert for all wildlife species. Elk and deer numbers must be evaluated and balanced with the available limiting rangeland. White-tailed deer must be managed to have minimum negative effects on mule deer. Hunter access to public lands must be carefully evaluated. Hunter management regulations must be set as liberal as possible and provide the highest optimal hunter success and satisfaction, but still meet management goals. Finally, mule deer populations must be annually evaluated, maintained, and balanced within the constraints of available forage resources on both summer and winter rangelands.
Epilogue

I often wonder what man will do with the mountains . . . will he cut down all the trees to make ships and houses? If so, what will be the final and far upshot? Will human destructions like those of Nature—fire and flood and earthquake—work out a higher good, a finer beauty? Will . . . all this wild beauty be set to poetry and song? And what then is coming? What is the human part of the mountain’s destiny?

John Muir

Throughout this volume I have assumed sustainable mule deer populations and hunting harvest will continue perpetually. What if they do not? In Utah a few units have been closed for one or more years to allow the population to recover, and then reopened with limited-entry hunting restrictions. What if populations decline to the point where recovery is unlikely, such has been the case with sage grouse in many Utah counties that have been closed to hunting for decades? What if mule deer populations continue to decline to the level where hunting is no longer feasible? Is it possible mule deer could decline to the level of endangerment of the species? It has been reported by some researchers that within 50 to 100 years, due to declining habitat, disease, fire, urbanization, hybridization with white-tailed deer, and other negative factors, that the mule deer species is on track for listing under the Endangered Species Act or even doomed to extinction. If human starvation became severe within