

## **I. EXECUTIVE SUMMARY**

California's mule and black-tailed deer are among our most visible and widespread wildlife species, inhabiting much of the wildlands in the state. Consequently, their value as representatives of California's wildlife resources is high. Deer are enjoyed for viewing as in the mountain meadows of Yosemite National Park, along 17-mile drive on the Monterey Peninsula, or concentrated on winter range on the east side of the Sierra Nevada and Cascade ranges. Deer are an integral component in the food chain, from their role as grazers/browsers of wildland plants to their role as prey species to California's top carnivores particularly the mountain lion, black bear, coyote, and golden eagle.

Deer inhabit about 75 percent of California's wildlands in a wide variety of habitats. Most of that habitat is administered as public land by the federal government (e.g., U.S. Forest Service, Bureau of Land Management, National Park Service, Military) or is privately owned (e.g., timber holdings, ranches). Because of the diverse ownership and objectives of each, improving deer habitat condition may not be a high priority in many areas.

Deer are also California's most popular game mammal, attracting between 165,000-200,000 hunters to the field annually. The opportunity to go deer hunting provides for thousands of Californian's and their families, the chance to get out of the office, away from the cities and suburbs, to enjoy the wildlands of the state. Most of that opportunity is realized on public lands.

In recent years, California deer populations have experienced declines in several areas of the state, while in others, populations have remained fairly stable. The greatest declines have occurred in northeastern California and the Northern/Central Sierra Nevada. Conversely, deer populations along the western "half" of the state have remained stable to slightly increasing.

In response to a request from the Fish and Game Commission, the Department of Fish and Game, Bureau of Land Management, and U.S. Forest Service conducted a technical workshop in April 1997 to assess California's deer populations and habitat conditions on public lands. Essentially, the Commission asked whether the three agencies could initiate new work together to improve habitat conditions for deer on public lands.

With the state divided into 11 Deer Assessment Units (DAUs), workshop participants discussed deer population trends, habitat status, habitat issues, and opportunities for changes in habitat condition. This report is a product of that workshop and expands on the topics that were discussed to improve the understanding of concerns and issues related to deer habitat and management of public lands.

Based on the assessment of deer population trends, two DAUs- Northeastern California and Northeast Sierra Nevada were identified as the top priority to initiate efforts to improve conditions for deer. The second highest priority was determined to be either the Central Sierra Nevada where deer declines have been substantial, or a combination of the Eastern and Southern Sierra Nevada where there is opportunity to capitalize on several years of intensive research on deer and factors affecting them. The analysis in this report reflects the importance of priority placed on the various DAUs. Consequently, there is substantially more discussion that applies to Northeastern California and Sierra Nevada units than to the Coastal or Desert units.

On forest-dominated areas such as the west slope of the Sierra Nevada, or in chaparral communities of the Coast Range, deer thrive on early successional habitats that are a product of disturbances that open up the forest and shrub canopy to allow grass/forb/shrub growth to occur. Fire and logging have been the primary mechanisms enabling “sunlight to hit the ground” in forests. Management changes over the decades have decreased the disturbance to these habitats, resulting in declining habitat condition for deer. Because it occurs at a scale of millions of acres, this is likely the single greatest factor contributing to the lowered deer populations we experience today compared to the past several decades. Practices related to timber management such as stand thinning, biomass, underburning/fuel reduction, and herbicide spraying were identified as concerns affecting early successional vegetation important to deer.

Within forested summer ranges, mountain meadow, riparian, aspen, and montane shrub communities can provide valuable high quality habitats depending on the condition of forage and cover. However, livestock grazing can negatively affect the quality of those habitats when grazing/browsing is excessive. Concerns relating to conditions of specific habitat types or vegetation communities exist in Great Basin ranges in northeastern California and east of the Sierra Nevada. Here, livestock and wild horse/burro impacts on bitterbrush stands, aspen stands, and the small riparian-wetland areas are of concern because these communities are important in the life history of mule deer. More effective monitoring of livestock use and enforcement of existing standards would likely result in improvements to many habitats.

Impacts of juniper encroachment and expansion of cheatgrass range further degrade the condition of the range and exacerbate potential competition between wild and domestic herbivores. Development of winter range on private lands (e.g., near Susanville, Reno, and Bishop) removes acreage of deer winter range and increases deer-human conflict. Public lands occurring at this urban-wildland interface can become more important than in the past as the remaining habitats for wildlife. Incidence of summer wildfire on the east side has also contributed substantially to the problems faced by deer. Fire in these habitats frequently kills desirable browse species which are often replaced by undesirable, exotic annuals such as cheatgrass. Harsh and unreliable precipitation patterns causing either drought or winter die-off have both occurred in the past decade, further compounding factors that can be managed.

At lower elevation winter ranges of the Sierra Nevada, urbanization on private land increases the relative value to wildlife of remaining public lands. Increasing age (decadence) of shrub stands and decline in habitat quality is a concern as in higher elevation forested ranges. In some areas, competition can be a factor when livestock graze/browse vegetation during spring and summer that deer must rely on in winter.

Identification of factors negatively affecting deer habitat, how they relate to deer, and potential opportunities to alleviate the negative impacts were discussed. It is important to recognize that land management activities that could benefit deer, could also benefit many other game and nongame wildlife species. Development and implementation of a Pilot Management Strategy encompassing entire DAUs is proposed. A process to assess, more specifically, the factors affecting habitats is a component of this strategy, as is the need to involve other stakeholders interested in public lands management. As we proceed beyond this general technical assessment to specific management strategies, and ultimately implementation, all three agencies would need to make commitments to support projects and activities to improve habitat conditions.

## **II. BACKGROUND**

At the request of the Fish and Game Commission, Wildlife Management Division staff in the Department of Fish and Game (hereafter Department or DFG) met with representatives of the U.S. Forest Service (hereafter USFS) and Bureau of Land Management (hereafter BLM) in late January 1997 to begin investigating the potential to increase efforts to improve conditions for deer on public lands administered by the USFS and BLM. The initial meeting concluded with a collective recommendation that an overall assessment of deer populations and deer habitat conditions on public land throughout the state was needed to help identify key problems and opportunities on an area by area basis.

This report is the product of that overall assessment and focuses specifically on public lands managed for multiple use. There is, however, an important link to private wildlands that is discussed because of the habitat implications to public land management as a consequence of management strategies occurring on private lands. Greater support from private landowners to maintain and enhance wildland habitats is highly desirable in the context of a landscape approach to habitat management. Gaining that support will require all the agencies to work together with private interests and local governments to develop programs, incentives, or other opportunities.

In assessing habitat status, we evaluated management activities contributing to the conditions that currently exist. With some activities, the DFG has historically been concerned about their impacts to deer and other wildlife. Some concerns may be easy to agree to, resolve, or take action. The easy ones are not the focus of this document. Rather, the intent here is to discuss some of the more difficult long-term issues that have affected the operations and relationships of all three of the agencies, and more importantly affected habitats, for several years, if not decades.

The agency representatives agreed that after the information contained herein has been reviewed and presented, we could begin a Pilot Management Strategy to incorporate possible alternatives to remedy deer habitat issues. This later stage will step beyond the technical recommendations and possible solutions to habitat issues in California, and involve the diverse perspectives and input from other interested parties (e.g., user groups representing hunting, fishing, livestock, and timber interests; other agencies and local governments, conservation organizations, or individuals).

### **Objectives of the Workshop**

The recommendation for an assessment of deer populations and habitat conditions translated into a larger, one day workshop held April 29, 1997, at the Feather River Inn, Portola, California. The workshop objectives were straightforward:

- 1) On an area-by-area analysis, summarize:
  - Area Description
  - Location
  - Ownership patterns
  - Habitats of primary importance to deer
- 2) Discuss and capture local expert thoughts, ideas, and recommendations on:
  - Assessment of deer population trends--an indicator of habitat quality

- Assessment of deer habitat trends
- Summarize factors affecting deer habitat: Positive Negative Neutral
- Opportunities to further enhance forest and rangeland habitats on public lands
- Constraints to further enhance forest and rangeland habitats on public lands

3) Summarize common and important themes and discuss future steps. Specifically, how can we be more effective at increasing the accommodation of early successional forested habitats and of preferred rangeland habitats on public lands to benefit deer?

## **Participation**

The workshop provided an opportunity to bring together employees from the three agencies to improve the understanding of each agency's perspective on deer and wildlife habitat. This report is an expanded product of the one-day workshop, which in turn, is based on the decades of collective experience and professional opinions of the participants.

Workshop participants included: 17 from DFG, 1 from the Commission, 13 from USFS, and 7 from BLM (Appendix 1). Several local forest service personnel whose names were not captured on the attendance list were also present. DFG staff were present from throughout the state, USFS staff represented 6 of 18 national forests, and BLM staff were present from northeastern California and the Bakersfield District. Statewide representatives for each organization were also in attendance.

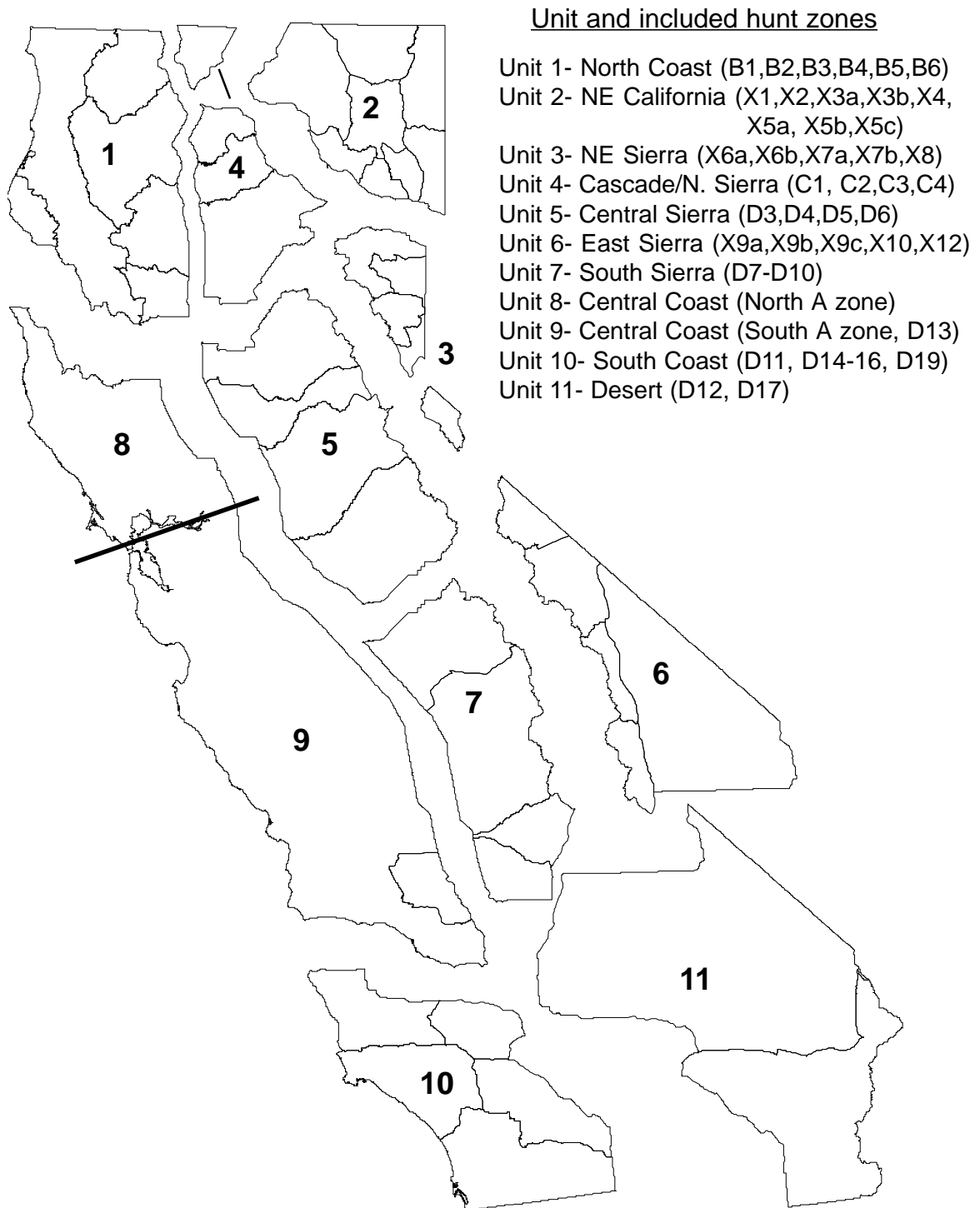
Collectively, we took a step back in time in discussing a game species and game management, a major focus of the two land management agencies during most of their existence, and always an important facet of the DFG. Hopefully, we all recognized that the habitats on which deer depend in California, are most of the same habitats on which much of the more recent focus--on ecosystem management and biodiversity--also depend.

## **Geographic Areas of Analysis**

To help guide the assessment, the DFG provided a recently developed strategy for analyzing deer populations and habitat status. The intent of the new strategy is to have deer population/habitat analyses and deer harvest recommendations eventually based more on environmental and ecological factors than on the somewhat ecologically artificial boundaries of existing hunt zones. These preliminary Deer Assessment Units (or DAU's) were developed by DFG regional and staff biologists by combining existing deer hunt zones into DAU's based on similarities (Figure 1).

This new strategy would also reduce the number of geographic areas for data analysis from 45 to 11 (45 existing hunt zones versus 11 proposed DAU's) thereby providing more power to the analysis and reducing the amount of variability in DFG estimates (Appendix 3).

## DEER ASSESSMENT UNITS (DAUs)



**FIGURE 1. Deer population/hunting data in California is currently compiled on a zone basis. There are 45 primary hunt zones in the state. This graphic illustrates one possible grouping of these zones into 11 geographic areas (or deer assessment units) based primarily on environmental similarities.**