

## LASSEN DEER STUDY

### EFFECTS OF WILDFIRE ON BITTERBRUCH

There's no question, acts by NDOW, BLM and Forest Service personnel over the last 25 years have done an unmeasurable amount of harm to wildlife. In their quest to remove livestock from our rangelands, government personnel set the stage for the kinds of fires we are experiencing today -- fires, which not only destroy existing feed, but the very plants themselves. It takes a long time for an average rangeland to return to its original condition. Bitterbrush, for example, may not reestablish itself for up to a hundred years.

Between 1983 and 1988, wildfires burned almost 200,000 acres of rangeland in Lassen and Washoe counties of northeastern California and Northwestern Nevada. These wildfires, plus a summer range burning program used by the Bureau of Land Management's Susanville District, prompted a study to assess the impact of summer fires on key deer winter range.

The Bureau of Land Management had received a good deal of criticism regarding the summer burning program. The program was initiated to reduce juniper and sagebrush dominated rangelands. Research has shown that the most effective way to control sagebrush and juniper is with a hot, summer fire. Unfortunately, such hot fires generally kill desirable shrubs and often perennial grasses.

The Lassen-Washoe area comprises the winter range of the East Lassen deer herd, Doyle deer herd, and some of the Loyalton-Truckee deer herd. Wildfires in the Lassen-Washoe range occur primarily during the summer months when lightning storms are common and the vegetation is most flammable. S.C. Bunting reported that bitterbrush, typically found at higher elevations was more likely to resprout following fire than bitterbrush which occupies the lower elevations. The primary result of summer fire in the Great Basin is the eradication of big sagebrush and bitterbrush for varying lengths of time. It is not uncommon for bitterbrush to be completely destroyed by wildfire; taking up to 50 years to reestablish itself.

From September through December, bitterbrush has historically been the most important food for mule deer on winter range, whereas, from January to March, sagebrush has been the dominant forage source for deer. As in much of the Great Basin, burned areas frequently are taken over by cheatgrass. Burned areas provide little browse or thermal cover for wintering mule deer.

Studies completed in the early 1950's involving the Lassen herd indicated that the deer throughout the area consumed 63 percent

browse and 28 percent grass during December. By comparison, during December 1987, on fire depleted ranges, dry cheatgrass comprised 80 percent of the deer's diet, while bitterbrush was found to be almost non-existent in the deer's diet.

As browse and thermal cover are reduced, the period of time that deer can maintain themselves is also reduced. It takes a good deal more snow to cover browse than it does to cover cheatgrass. Snowdepth can quickly drain deer condition when forage is made unavailable. In severe winters, mule deer in shrub-steppe communities must rely heavily on browse, while in mild winters, both shrub and herbaceous forages are important.

Between 1962 and 1988, the fall deer population in the study area peaked at about 15,500 animals in 1964 and declined thereafter. Between 1983 and 1988, as wildfires consumed more and more range, Fall population counts dropped about 28 percent to a low of about 7,100 deer. Many deer died during the winter of 1987.

Economic investigations indicate that the value of Lassen County mule deer to California is high. In 1989, J. Loomis, M. Creel, and J. Cooper, estimated deer hunting value for zones X5 and X6 of California, to be \$1,700,000 and \$1,600,000 per year respectively; much of the value attributable to purchase of supplies, food, lodging, and transportation in the local communities. If the deer population was at levels of thirty years ago, the economic benefit to the local economy would be significantly higher.