Livestock producers in Utah and other western states depend heavily on forage produced on public rangelands for seasonal grazing in the annual production cycle. Of all public land uses, grazing by domestic livestock remains the most controversial. Stakeholders who oppose the use of public grazing allotments outright view them as unnecessary subsidies that also are detrimental to long-term wildlife conservation goals. In contrast, other public land stakeholders, including many wildlife biologists, are concerned that the total removal of livestock grazing practices from public rangelands would cause habitat conditions to deteriorate for many resident wildlife species. To date few replicated, large-scale experiments have been published that validate either of these contrasting viewpoints. To address these public land-use issues the Utah Legislature provides ongoing funds to support the Cedar Mountain Initiative (CMI). The goal of CMI is to conduct research to determine how aspen rangelands can be better managed to support compatible livestock and wildlife enterprises. Our objective is to describe elk and mule deer habitat-use patterns on aspen rangeland ecosystems that are used for summer livestock grazing and to assess if these patterns are driven by interactions with livestock for space and/or forage or the effects of other environmental variables. This paper summarizes results from our pilot year, the 2000 summer grazing season. The CMI study site is located in the high elevation aspen rangeland of Utah's Iron and Washington Counties. During the pilot year of the study five cow elk and five doe mule deer were captured and fitted with non-differential GPS/VHF radio-collars. Two elk and one deer died (one elk from hunter harvest and one elk and one deer of unknown causes). Data from three elk and four deer were used for descriptive analysis. Few behavioral patterns could be discerned for elk habitat use largely due to the small sample size compared to large area of use. While sample size was also low for deer during the first year, some patterns were evident. Three of four deer spatially avoided cattle during early livestock rotations, but two of four deer moved back into the area when cows were rotated out of the pastures. Two of the four deer had home ranges that included sheep pastures but neither appeared socially intolerant of sheep. Deer habitat use was probably influenced by cattle, but also by timing within the reproductive cycle. While deer shifted habitat use away from cattle, none of the deer abandoned their home ranges outright. In order to alleviate some of the problems associated with small sample sizes additional GPS collars have been purchased and deployed. The study now has seven cow elk and nine doe mule deer fitted with GPS collars. These animals will be recaptured in August 2001 to download location data, change collar batteries and redeploy.