Development and Evaluation of a Monitoring Program for Pygmy Rabbits (2007-2009)

The recent petition for Endangered Species Act (ESA) listing for pygmy rabbits was, in part, based on a perceived decline in the species, however, data to evaluate this supposition are not available. Efforts during the past 2-3 years have documented numerous new occurrences of the species in Idaho, which have helped to fill out the statewide distribution of pygmy rabbits. However, it is not known if populations of pygmy rabbits fluctuate or cycle, as documented in other lagomorphs, and some observations suggest that populations may shift across a landscape over time. Therefore, an understanding of population trends over time requires information on changes in both abundance and distribution. This work addressed the first of these population criteria.

Monitoring burrow systems over the past 7 years in the Lemhi Valley has documented marked fluctuations in density of active burrows, which likely reflect fluctuations in population density of rabbits. Although burrow entrance counts are commonly used to estimate population abundance for semi-fossorial mammals, this relationship has not been evaluated for pygmy rabbits. Our work investigated the relationship between density of burrow systems and density of rabbits, and used this information to evaluate an index of rabbit abundance that could be employed by wildlife biologists to monitor changes in abundance of pygmy rabbit populations over time.

Accomplishments through 2009

Accomplishments through 2009 Since winter 2006, we have surveyed 551 16-ha plots that were selected based on a stratified random design (i.e., more random points were selected in “good” habitat than in poor habitat or in areas that have recently burned). We documented 1,141 burrow systems since 2006, and found at least one active pygmy rabbit burrow system on 31 percent of surveyed plots (n = 170 plots, range = 1 – 38 burrow systems per plot. During the winters of 2006 and 2007, our surveys were restricted to the southeast corner of the Site, and, on average, 52 plots were surveyed each season. Fall 2007 marked the beginning of Site-wide sampling, and so data collected from that point on represent a more accurate description of pygmy distribution across the entire Site. In fall 2007, pygmy rabbits occurred on 37 percent of surveyed plots (n=244). In contrast, in winter 2009 only 12 percent of plots had active burrows (n=178). During fall 2009, plots with active burrows comprised 44 percent of sampled plots (n=25). Because analysis of these data is pending, we cannot yet offer an explanation for why the number plots with recent pygmy rabbit activity is so much lower in winter 2009 than in other seasons. It is possible the population experienced a sharp decrease in numbers in winter 2009 similar to what happens in other rabbit species. Further analyses are required, however, before such statements can be verified.