Reproductive Ecology and Population Viability of British Columbia’s Endangered Brewer’s Sparrow

(*Spizella breweri breweri*)

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ABSTRACT

Brewer’s Sparrows (*Spizella breweri breweri*) are Red-listed in B.C. due to their restricted breeding range in the southern Okanagan Valley and to their threatened shrubsteppe breeding habitat. North American Breeding Bird Survey data indicate that this species has declined significantly throughout its range, extending through the shrubsteppe regions of the western U.S., by 3.9% per year for the last 30 years. The spatial pattern of this decline indicates that it may be most severe in the core of the range with more stable populations around the range periphery. This pattern shows that British Columbia’s population, at the northern range edge, may not only be provincially significant, but, if stable or increasing, could be an important conservation refuge for this species. We are studying the reproductive ecology and population viability of Brewer’s sparrows at 4 sites in B.C.’s south Okanagan to determine if these populations are stable and to examine how reproductive success is related to varying habitat quality and food availability. In 1997 and 1998 we banded 101 and 125 adults, along with 26 and 225 fledglings respectively. We also followed nest, hatching, and fledging success for 115 and 258 nests in 1997 and 1998 respectively. We will use Population Viability Analysis (PVA) to investigate which life history stages are key to population dynamics, the rate of population change, and the risk of extinction. The PVA will be refined with another full season in 1999 and a follow-up season in 2000 to survey for birds banded in previous years. Examining the factors that affect reproduction and determining the population dynamics through PVA will allow us to make management recommendations for this provincially endangered and possibly, globally significant population.