POPULATION DEMOGRAPHICS, BREEDING ECOLOGY AND RESPONSES TO GRAZING OF MONTANA SAGEBRUSH STEPPE SONGBIRDS

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Sagebrush steppe is one of the most threatened ecosystems in North America. Avian adult density estimates are often used to assess conservation actions given the relative ease in collecting data to inform these estimates. However, information on how conservation actions influence life histories such as nest density and nest success are lacking, despite the fact that life histories inform abundance. We investigated songbird adult densities, nest densities, and nest success over multiple breeding seasons in central Montana. Our goal is to understand the relationships among adult abundance, nest density, and nest success, as well as how land management practices, in the form of grazing, influence those patterns. Two grazing systems were compared in our study: a system using a combination of rest and deferment (hereafter rest-rotation) and traditional grazing. For the purposes of our study, we define rest-rotation grazing as changing the timing of grazing in pastures each year, with some pastures alternately rested every few years. Traditional grazing is defined as grazing a pasture at the same annual season each year or all season. Recently, rest-rotation systems have been used as a conservation management tool by the Natural Resource Conservation Service-Sage Grouse Initiative. Their goal is to encourage private landowners to graze their livestock more sustainably to maintain or improve rangeland productivity, while also benefiting habitat for greater sage-grouse (Centrocercus urophasianus). We explore the effects of rest-rotation compared to traditional grazing on songbird population demographics during the breeding season.