

THE ROLE OF RECRUITMENT IN THE DYNAMICS OF A SIERRAN SUBALPINE BIRD COMMUNITY

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The role of recruitment of young in the dynamics of bird populations, although often suggested as being of critical importance (see, e.g., Andrewartha and Birch 1984), has only recently been quantitatively investigated, primarily through studies of lifetime reproductive success (McCleery and Perrins 1988; J. Smith 1988; van Noordwijk and van Balen 1988). These studies have shown that variations in the rate of recruitment of young into the breeding population, acting primarily through variations in the first-year survival of young birds, may well be the most important factor affecting lifetime reproductive success. Therefore, year-to-year variations in the rate of recruitment among coexisting populations probably play a major role in the dynamics and stability of avian communities.

Although theoretical treatments of community stability have existed for more than two decades (see Goodman 1975 for a review) and considerable debate still exists regarding the major factors that influence the dynamics and stability of avian communities (see, e.g., Wiens 1983, 1984; Grant 1985; Noon et al. 1985; Dunning 1986; Ricklefs 1987; Wiens and Rotenberry 1987), relatively few field studies have monitored the dynamics and stability of an entire land-bird community over a long period of time (Wiens 1973; Holmes and Sturges 1975; Wiens and Rotenberry 1981a; Williamson 1983; Svensson et al. 1984; Holmes et al. 1986). Even fewer studies have provided data on the long-term productivity of an entire land-bird community. These have relied on indirect means of estimating productivity, such as timed transects measuring the increase in numbers of birds between early summer and midsummer (Holmes and Sturges 1975) or standardized mist netting during the breeding season measuring the ratio of young to adults (DeSante and Geupel 1987). Indeed, nearly all information on annual variations in land-bird productivity and recruitment has arisen from intensive single-species studies (e.g., Perrins and Moss 1975; Nolan 1978; Petrinovich and Patterson 1983; Woolfenden and Fitzpatrick 1984; Bryant 1988; Harvey et al. 1988; McCleery and Perrins 1988; J. Smith 1988; van Noordwijk and van Balen 1988). This is the first long-term study of an entire breeding-bird community that has attempted to moni-

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