

**INFLUENCE OF PATCH SIZE, ISOLATION, AND FIRE HISTORY ON HOPPER
(HOMOPTERA: AUCHENORRHYNCHA) COMMUNITIES OF EIGHT PRAIRIE REMNANTS
IN SOUTHERN WISCONSIN**

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Abstract: There is rising concern that the use of fire in managing small, isolated prairie remnants may be adversely affecting prairie-specialist insects. There is also concern that small remnants may be inadequate for conserving prairie insect diversity. To address these issues, an analysis was made on a quantitative collection of hopper (Homoptera: Auchenorrhyncha) specimens collected during a spider study conducted in 1986-87. The work was done on 8 dry prairie remnants in south central Wisconsin that ranged in size from 0.1 to 17 ha. The data were analyzed for effects of remnant size, remnant isolation, average fire-return-interval (1 to 5 years), time-since-last-fire (0 to 4 years), and fire extent (all or part of a site burned) on hopper density, richness, and diversity. The analysis was done on all native species combined and on prairie-specialist species as a sub-group. The specialists were also analyzed individually. The data set revealed no striking, widespread effects of fire history, remnant size, or isolation on density, richness, or diversity. However, remnants less than 1.5 ha in size had markedly fewer specialists than those over 1.5 ha. Of the 9 prairie-specialists, one (*Flexamia albida*), appeared sensitive to remnant size, and another (*Scaphytopius cinereus*) to time-since-last-fire. *F. albida* tended to be more prevalent on larger sites, and *S. cinereus* more prevalent on areas that had gone the longest without fire. Average fire-return-interval seemed to have no effect on any specialist species. Sampling effort and year had far greater and more consistent influence than fire history, remnant size, or isolation.