

EFFECT OF A FALL BURN ON BAKERTOWN FEN (BERRIEN CO., MICHIGAN)

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Abstract. Bakertown Fen, in southwestern Michigan, is a calcareous seepage area dominated by grasses, sedges and forbs. Cover of each species was determined in randomly selected quadrats in both spring and fall of 1978. A total of 273 species was recorded; the dominants in decreasing order of importance were *Eleocharis* spp., *Carex* spp., *Thelypteris palustris*, *Solidago* spp., *Andropogon gerardi*, *Aster* spp., and *Cacalia tuberosa*. The fen was burned in October 1978 and the vegetation sample repeated in 1979. The burn did not significantly alter the spring cover values; however there was a significant difference between fall cover values, and a change in the order of dominance. This difference was due largely to an increase in cover contributed by *Carex* spp., *Eleocharis* spp., *Andropogon gerardi* and *Aster* spp. Species diversity in the spring sample increased following the burn, but species numbers were similar in the 2 fall samples. Ten species not recorded in the 1978 sample were recorded in the 1979 sample. Burning did not cause disappearance of any species from the area sampled.

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Introduction

This study was initiated during the summer of 1977 to evaluate the effects of grassland management practices on selected areas of a 4765 ha prairie chicken (*Tympanuchus cupido pinnatus*) management area located in the Buena Vista Marsh, Portage County, Wisconsin (Fig. 1). Controlled burning, rotary mowing, herbicides, grazing, and plowing are used to control plant succession on the management area by Wisconsin Department of Natural Resources (WDNR).

The objectives of this study were to determine the impact of controlled burning on old field vegetation and resident populations of insects, birds, and small mammals, and to determine the effectiveness of controlled burning, rotary mowing, herbicides, and root plowing as management tools.

Prairie chicken habitat needs and management have been researched by Hamerstrom et al. (1957) and Hamerstrom and Hamerstrom (1973) in Wisconsin, Drobney and Sparrowe (1977) in Missouri, Jones (1963) in Oklahoma, Kirsch (1974) in North Dakota, Westemeier (1971, 1973) in Wisconsin and Illinois, Rebel et al. (1970) in Kansas, and Lehmann (1941) in Texas.

Management guidelines established by Hamerstrom et al. (1957) emphasized that grasslands need to be maintained in grass-forb stages of plant succession for nesting and brood rearing habitat. They state that "grassland is vitally important to prairie chickens, the keystone in prairie chicken ecology. . . the bird does not require true

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Abstract. Bakertown Fen, in southwestern Michigan, is a calcareous sedge fen dominated by grasses, sedges and forbs. Cover of each species was determined in randomly selected quadrats in both spring and fall of 1978. A total of 273 species was recorded; the dominants in decreasing order of importance were *Elymus* spp., *Carex* spp., *Thelypodium palustre*, *Solidago* spp., *Andropogon gerardii*, *Aster* spp., and *Cassia tuberosa*. The fen was burned in October 1978 and the vegetation sample repeated in 1979. The burn did not significantly alter the spring cover values; however there was a significant difference between fall cover values, and a change in the order of dominance. This difference was due largely to an increase in cover contributed by *Carex* spp., *Elymus* spp., *Andropogon gerardii* and *Aster* spp. Species diversity in the spring sample increased following the burn, but species numbers were similar in the 2 fall samples. Ten species not recorded in the 1978 sample were recorded in the 1979 sample. Burning did not cause disappearance of any species from the area sampled.

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