

Prairie

1 Fire in Savanna Restoration:

A 17-year Record (Minnesota)

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An effort to restore and maintain oak savanna on the Cedar Creek Natural History Area, Anoka County, was initiated in 1964. In 17 years, 100 burns (total area 3278 ha) have been conducted on 12 blocks (total area 152 ha) on 53 days. Spring fires (April 6 to May 21) have been used, and the number of fires per block has ranged from one to sixteen. On the sandy upland soils, cover types are predominantly oak (*Quercus ellipsoidalis*, *Q. rubra*, *Q. macrocarpa*), and old fields. Fire protection before fire management was started had allowed heavy understories to develop in the oak stands.

Burns are usually conducted as training exercises for forestry and wildlife students (Irving, 1970 Proc. Tall Timber Fire Ecol. Conf.). File records include weather and fire behavior observations. Studies in progress are measuring patterns of tree mortality and changes in plant species composition related to fire treatment, soil type, and land use history. The effects of fire on American hazel (*Corylus americanum*) included a temporary reduction in height and density (Axelrod and Irving, 1978 Minn. Acad. of Sci. 44(2):9-11). For information on access for research contact D.F. Parmalee, Field Biology Program, University of Minnesota, 10 Church Street, Minneapolis, MN 55455. Additional information on fire treatments and studies in progress is available on request.

2 Butterflies, Grasshoppers Surveyed at Ordway Prairie (South Dakota)

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Two insect inventory projects conducted on the Samuel H. Ordway, Jr. Memorial Prairie in South Dakota have resulted in the development of species lists of the butterflies and grasshoppers (*Acrididae*) found on the 7,600 acre prairie. Field work was conducted from May through October 1980. Within that time thirty-four species of butterflies, including skippers, were collected and/or observed. In addition, flight records were maintained throughout the season. Thirty-one species of grasshoppers, their identification currently being verified, were also collected.

The list of butterflies will provide some of the first documentation of this sort for McPherson

County. Of special interest was the collection of several female Dakota skippers (*Hesperia dacotae*), a species whose existence is threatened by the gradual disappearance of prairie habitat.

Of the thirty-one grasshopper species, many have the potential for becoming economically important. Management plans for Ordway Prairie may soon include special considerations for certain species. Therefore, the species lists serve as a baseline inventory and can be referred to when related information is needed.

The species lists and the collections of specimens for the butterflies and the grasshoppers are maintained at the Ordway Prairie headquarters and are accessible as reference for future research.

The Nature Conservancy owns and manages the Ordway Prairie.

3 22-Year Prairie Management Report (Kansas)

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The Rockefeller Experimental Prairie is a research facility located on the University of Kansas' Nelson Environmental Study Area in southeast Jefferson County. The objectives there have been to evaluate the effectiveness of different management practices in maintaining a tallgrass prairie and to investigate the plant-animal interactions in this fire subclimax ecosystem. In 1957, 43 hectares of formerly grazed and cultivated land was reseeded to tallgrass prairie consisting of big bluestem (*Andropogon gerardi*), little bluestem (*A. scoparius*), Indian grass (*Sorghastrum avenaceum*) and switchgrass (*Panicum virgatum*). In 1962, after the prairie vegetation became established, the area was divided into comparable six ha tracts and a different management practice was thenceforth applied to each of four tracts: burning (annually in late March), mowing (to ground level in late July), grazing (summer only), and control (protected from disturbance).

The difference in successional development of the areas is now apparent by simple observation. The prairie grasses on the tracts that are mowed or burned have been maintained in good condition. Conversely, the tracts that have been grazed or protected have been invaded by weedy forbs, shrubs, and trees with a concomitant loss of the grasses. Overall, the burned tract has the lowest species diversity of both flora and fauna. The grazed tract has more diversity than the mowed tract, and the control tract has the greatest diversity of all.

Northeast Kansas is an ecotonal region between eastern hardwood forests and Great