

THE IMPORTANCE OF CATTLE IN CONSERVATION OF DRY PRAIRIE IN WISCONSIN

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ABSTRACT: Among Wisconsin prairie managers, cattle have been taboo. Yet many prairie plants and animals were found on some dry prairie pastures in the course of research during 1993–1996 on the rare prairie plant *Onosmodium molle*. This research also looked at the land use on *O. molle* sites and other taxa found on them. The importance of cattle to *O. molle* had been suspected, but the importance of cattle to other rare prairie species was a surprise that forces the reconsideration of how we define, and how we defend, our vanishing dry prairies.

Key words: *Onosmodium molle*, dry prairie, Wisconsin Department of Natural Resources

INTRODUCTION

Aldo Leopold (1933) wrote that cattle could be used, together with other tools often associated with the destruction of native communities, to manage and restore these ecosystems. John Curtis (1959) wrote that grazing destroys mesic and wet prairies quickly, but that dry prairies can endure grazing somewhat better because the alien taxa most invasive in grasslands generally cannot succeed in such dry conditions. Despite the tremendous influence the body of work left to us by these two people, none of the conservation agencies in Wisconsin use grazing as a tool to manage prairies.

In the course of Masters research focused on *Onosmodium molle* A. Michaux (Boraginaceae) in Wisconsin, many prairie taxa, some rare enough to be listed as endangered or threatened by the Wisconsin Department of Natural Resources (WDNR), were discovered in the same pastures where *O. molle* is successful (Williams 1996). These rare prairie taxa include plants, birds, insects, and probably other less well-studied fauna. The importance of cattle to *O. molle* had been suspected, but the importance of cattle to other rare prairie species was a surprise that forces the reconsideration of how we define and defend our vanishing dry prairies.

METHODS

Onosmodium molle was sought using data from historic collections, from WDNR files, from the literature, from knowledgeable people, and by actively searching for it across the landscape. A census was made of *O. molle* plants wherever found, except for the four largest populations, so the area in which they grew could be circumscribed and better

understood. If a population spread over an area that included different sets of land-use practices, such as a pasture and its adjacent roadside, these were studied as two separate sites, two different land-use units.

Once the *O. molle* plants on a site were located, all the other plant species growing there were recorded. Plants at sites where *O. molle* was suspected to occur also were recorded. Areas where it was too damp or shady were not included in the inventory. The result is a site flora for each *O. molle* site listing those plants that grew where *O. molle* grew or might as well be growing, based on where it actually grew on that site. Sites were visited repeatedly to make each site flora as complete as possible. These data are tabulated in a single, 28-page appendix in Williams (1996).

RESULTS

Onosmodium molle was found on 59 sites in Wisconsin. There were 71 species found on more than 50% of these sites. This is a list of species, including many alien plants, that grow in dry prairie pastures, and this is the most appropriate description of *O. molle* habitat in Wisconsin. Rare plants on these sites included *Lespedeza leptostachya* (endangered, on 7% of *O. molle* sites), *Asclepias lanuginosa* (threatened, 3%), *Cacalia plantaginea* (threatened, 22%), *Cirsium hillii* (threatened, 19%), *Echinacea pallida* (threatened, 3%), *Parthenium integrifolium* (threatened, 5%), *Carex richardsonii* (special concern, 8%), and *Pedimelum esculentum* (19%). Grassland birds present in these prairie pastures include loggerhead shrike (*Lanius ludovicianus*, endangered), Bell's vireo (*Vireo belii*, threatened), upland sandpiper (*Bartramia longicauda*), northern bobwhite (*Colinus virginianus*), horned lark (*Eremophila alpestris*),

eastern kingbird (*Tyrannus tyrannus*), brown thrasher (*Toxostoma rufum*), eastern and western meadowlarks (*Sturnella magna* and *Sturnella neglecta*), bobolink (*Dolichonyx orizivorus*), dickcissel (*Spiza americana*), nesting common nighthawk (*Chordeiles minor*), wild turkey (*Meleagris gallopavo*), and vesper (*Pooecetes gramineus*), field (*Spizella pusilla*), savannah (*Passerculus sandwichensis*), grasshopper (*Ammodramus savannarum*), and clay-colored (*Spizella pallida*) sparrows. Grassland insects probably include many species we don't yet know much about, but regal fritillary (endangered) is present in several *O. molle* pastures. This grazed prairie habitat is, almost without exception, the only habitat in which regal fritillaries are now found in Wisconsin.

DISCUSSION

The percentages given above may not seem as significant as they actually are. For example, *Lespedeza leptostachya* is currently known from about 16 sites in Wisconsin, 4 of which are sites where *O. molle* also occurs. This means 25% of the current *L. leptostachya* sites also support *O. molle*. Another example is *Asclepias lanuginosa*, which is currently known from about eight sites in Wisconsin, two of which are sites where *O. molle* also occurs. This means 25% of the current *A. lanuginosa* sites also support *O. molle*.

One other *A. lanuginosa* site is in a pasture where *O. molle* doesn't grow. This can be said of others of these rare prairie taxa as well—rare species were found in pastures where *O. molle* was sought but not found. These similar sites are not reflected in the percentages above. Many prairie pastures that don't support *O. molle* are also of tremendous conservation value.

Bell's vireo is listed as threatened in Wisconsin, yet in this research, this bird was frequently encountered in these brushy, dry prairie pastures where *O. molle* was found or sought. If WDNR looked at these pastures, Bell's vireo might not be deemed sufficiently rare to warrant threatened status. This is true of *Cirsium hillii* as well. The presence of cows has apparently caused conservationists to look elsewhere for prairie taxa, because of the unwarranted reputation of cows in the destruction of prairie. While cows have certainly destroyed many prairies, it is not the cows themselves that cause this destruction; rather it is the grazing regime imposed on the land by farmers that is to blame. That it is easy to destroy prairie with cattle has led to the faulty conclusion that cattle invariably destroy prairie.

These dry pastures are generally large, old pastures that have not been tilled in the past because they are rocky. Mowing is not done in these pastures, or it is partial and occasional. Herbicides are not used in these pastures, except occasionally as spot application, and neither is fire. This may be especially important in terms of prairie insect conservation. In the past, our management of Wisconsin prairies has depended on fire and we are only now beginning to realize that this may be devastating to prairie insect diversity. Though we may have saved some plants by using fire to manage prairies, we may have irreparably damaged these prairies by eliminating many species of insects.

These pastures offer a new and spacious, fire-free, species-rich arena in which to practice a less fire-dependent form of prairie conservation. For conservationists to ignore pastures because they imagine cattle have destroyed the native flora and fauna is to miss a huge opportunity to affect prairie conservation in Wisconsin today and in the future.

LITERATURE CITED

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