

ENDANGERED SPECIES

Technical Bulletin Reprint

Wildland Management Center
School of Natural Resources
The University of Michigan

PRAIRIE: An Important and Rare Habitat

By Todd Paddock

One hundred and fifty years ago, a great belt of prairies stretched from Mexico to Canada between the Appalachians and the Rockies. These prairie ecosystems supported both an abundance and diversity of plants, birds, insects, mammals, reptiles, amphibians, and microorganisms. But the original prairies have now almost completely disappeared and many of the species associated with them are gone or exist only in small numbers. Because most prairies are now small isolated islands, it is particularly difficult for some species to maintain viable populations.

Species Lost

The black-footed ferret (*Mustela nigripes*), red wolf (*Canis rufus*), running buffalo clover (*Trifolium stolonifera*), and blowout (*Penstemon haydenii*) are all prairie species listed as endangered or threatened under the Federal Endangered Species Program, and hundreds of prairie species are on state endangered species lists. *Thismia americana*, the only North American species of the plant family Burmanniaceae, was discovered in an Illinois prairie in 1912 and has not been seen since 1914; we will never know what other species have disappeared along with their prairie habitat. Fortunately, the importance of prairies ecologically and historically has been recognized in the past decade, and there have been many successful efforts to preserve and restore them.

Interest in prairie preservation is both local and national in character. Private individuals such as farmers and conservationists and private organizations such as the Nature Conservancy working with state agencies have been most important in the movement to save prairie remnants.

In Missouri, for example, public and private organizations working in cooperation have established an impressive history of prairie preservation. The state's Departments of Conservation and Natural Resources, the University of Missouri, the Missouri Prairie Foundation, and the Nature Conservancy have worked together to create an extensive system of prairie reserves.

Tom Toney, Wildlife District Supervisor and Prairie Biologist for the Missouri Department of Conservation, told me that prairie preservation began in Missouri in 1959 with efforts to restore habitat suitable for the Greater Prairie Chicken (*Tympanuchus cupido*). In the mid-1960's a group of prairie conservationists founded the Missouri Prairie Foundation; the foundation raised funds, purchased prairies, and then sold them to the Missouri Department of Conservation.

Worthy of Protection

Later, the State of Missouri created a Natural History Section within the Department of Conservation which recognized prairie as an ecosystem worthy of protection for its own sake. Some federal and state funds were available for purchasing prairies, but most of the money for acquisitions continued to come from private individuals and corporations through groups like the Nature Conservancy and the Missouri Prairie Foundation.

Today, the Missouri Department of Conservation and the Department of Natural Resources maintain 8,700 acres of prairie with controlled burning and the use of buffer strips. Many of the prairie preserves started out as refuges but have now been opened to hunting for deer, rabbits, quail, pheasants, and possibly in the near

future, prairie chickens.

Farmers and ranchers have also played an important role in the effort to preserve prairies because they own most of the prairies left in the midwest. The current depression in the farm economy has had an adverse impact on prairie preservation, according to Doug Labd, Director of Stewardship

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Budget Freeze Delays ESTB

A budget crunch at the end of the fiscal year caused the U.S. Fish and Wildlife Service to combine publication of the August and September issues and the October and November issues of the *Endangered Species Technical Bulletin*.

The August/September issue of the *Bulletin* was printed in November. The October/November issue is scheduled to be printed in December. The Fish and Wildlife Service hopes to resume its regular publication schedule with the publication of the December issue at the end of that month.

As a consequence of the combined issues, there was no *Reprint* for October 1986 (Vol. 3, No. 12). The *Reprint* will follow the publication schedule of the Fish and Wildlife Service with combined issues for October/November and December/January.

The *Reprint* publication date will remain two months behind that of the *Bulletin*. The end of the month printing date for the *Bulletin* and the inevitable delay in getting the white pages to Ann Arbor for reprinting are responsible for the difference in publication dates.

Prairie continued

and the Registry Program for the Missouri Nature Conservancy. He says that family farmers, especially those who have owned their farm for a long time, tend to show a great interest in saving prairies; as more farms are sold to corporations, chances are smaller that remaining prairie will be saved.

The current state of the farm economy has had other negative effects on prairies. A primary reason for the continued existence of virgin prairie is that the soil on which it is found has been either too wet or too shallow to cultivate. Now, however, many farmers faced with the possibility of bankruptcy are forced to cultivate all the acreage they can even if it is marginal and requires draining or special machinery.

Yet even in these hard times some farmers are participating in preservation efforts. The Missouri Department of Conservation has a program which helps farmers save both money and the prairies they own. According to

Missouri's prairie biologist Toney, the program shows farmers how to increase their production of hay by managing for indigenous prairie species instead of introduced species. Missouri's hard-pressed farmers are more interested than ever in the program, Toney says.

Virtually all prairie that could be converted to cropland was lost long ago. . .

The biggest obstacle to prairie protection is the limited amount of prairie left, according to Mark Heitlinger, Director of Stewardship for the Midwest Regional Office of the Nature Conservancy. Today it is very hard to find prairie in states like Iowa, Illinois, northern Missouri, or southern Minnesota, because where prairie once dominated lies rich and easily cultivated soil; virtually all prairie that could be converted to cropland was lost long ago.

Other prairie habitats, however, have geological features that have hindered cultivation and so remain prairie today. For example, in Minnesota some prairies remained uncultivated because ridges of rocky

glacial soil (called Agasiz lines) were interspersed with wetlands, preventing plowing.

Almost all Missouri prairies are in the southern quarter of the state because the soil in this area was not suitable for any crop but hay. The two largest tracts of tallgrass prairie left today, in the Flint Hills of eastern Kansas and in Osage County, Oklahoma, exist only because formations of rock lying close to the surface make the soil too shallow to plow.

Prairie remnants along railroad corridors are another large portion of remaining prairies, according to Robert Grese, Assistant Professor of Landscape Architecture at the University of Michigan's School of Natural Resources. In some states such as Illinois, says Grese, railroad prairies make up the bulk of what is left. While individual tracts are small, Grese feels that the preservation and proper management of these corridors could be a way of establishing a prairie network, thus reconnecting many island remnants.

Although there is presently strong interest in prairies, the obstacles to preservation on any but a small scale are great. No national monument or park dedicated to prairie (or any other

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Publication of the *Reprint*
is made possible by gifts from

American Natural Resources Co.
Detroit, Michigan

Chevron U.S.A., Inc.
San Francisco, California

Chicago Zoological Society
Chicago, Illinois

National Wildlife Federation
Washington, D.C.

Annual Subscriptions for the *Endangered Species Technical Bulletin Reprint* are \$12.00. (Canada: \$17 US) Send check or money order (made payable to: The University of Michigan) to:

Endangered Species Technical Bulletin
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Ann Arbor, MI 48109-1115



Tallgrass prairie is now the most rare prairie type due to the suitability of the land for cultivation, but there are now efforts to protect fragments which escaped the plow.

Prairie continued

grassland) yet exists. Efforts are underway to get federal protection of a significant tract of tallgrass prairie, and William Mott, Director of the National Park Service, recently named the establishment of such a park a priority. But it won't be easy. In the case of tallgrass prairie, very little is left and what is left is expensive. Where larger tracts of tallgrass prairie have remained, as in the Flint Hills of Kansas, there has been strong local opposition to the creation of a federal prairie park.



Photo by Paul Larmer

Prairie remnants in railroad right-of-ways, like this one in Michigan, may one day link larger prairie fragments.

The Nature Conservancy is currently in a position to purchase a large tract of tallgrass prairie in the hopes of helping create a federal tallgrass prairie park. Herb Beattie, Director of the Conservancy's Oklahoma Field Office, feels that the Conservancy is close to a specific proposal for purchasing between 55,000 and 85,000 acres of the prairie, located in Osage County, Oklahoma, for eventual resale to the National Park Service. The Conservancy is also working on securing an additional 50,000 acres of conservation easement around the future park. Beattie considers the tract one of the best surviving examples of original tallgrass prairie and he is optimistic about its future inclusion in the National Park System.

The success of the Nature Conservancy's work with local, state, and federal governments points to the

growing importance of private groups and individuals in the preservation of critical habitats and the species that depend on them. Prairie preservation apparently came too late for *Thomomys americana*, and the future of the black-footed ferret is dim, but with continued cooperation between individuals, private organizations, and governments, there appears to be hope for maintaining this important and rare ecosystem.

Todd Paddock is a freelance writer based in Ann Arbor, Michigan.

Prairie Types

"The names of these three grassland types are descriptive: the tallgrass prairie, which requires a moister environment than the other two, supports grasses that are over five feet high; the mixed prairie supports grasses ranging between two and four feet; and the other shortgrass prairie, which requires the least moisture, supports grasses that are less than two feet tall.

"Although these height classifications are somewhat arbitrary, they roughly correspond to the natural heights of the species that characterize each community. These communities succeed each other along a gradient of decreasing moisture from east to west. They are not separated by distinct linear boundaries, but instead grade into each other in broad transitional zones that shift over time, depending on the weather."

— Lauren Brown, *The Audubon Society Nature Guides: Grasslands*.
New York: Alfred A. Knopf, Inc., 1985.

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EPA Failed to Protect Threatened Species Report Says

By Philip Shabecoff

WASHINGTON — The Environmental Protection Agency repeatedly violated the Endangered Species Act by failing to protect threatened animals and plants from pesticides, according to a report prepared for the agency.

Officials of the agency acknowledged that it had failed to comply with the law. They said measures were being taken and that the agency would be in full compliance by 1988.

The report said that on numerous occasions the agency took no action to restrict the use of pesticides, even when the Interior Department's Fish and Wildlife Service presented a formal opinion that wildlife on its list of endangered species was being placed in jeopardy by specific insecticides or herbicides.

In some instances, including cases involving a rare California condor, a bald eagle, and brown pelicans, the agency did not even investigate reports of pesticide poisonings, the report said.

The report, which covers the years 1980 through 1984, was prepared by the Center for Environmental Education, a private nonprofit group here under a contract with the federal agency.

"There is no question about it, we didn't comply with the requirements of the law," said John A. Moore, assistant administrator of the agency for pesticides and toxic substances. "I do not dispute the findings." Moore said

that the corrective actions were started well before the report was submitted.

Milton Russell, the agency's assistant administrator for policy and planning, whose office commissioned the study, said, "It was not willful disregard but it is something that needs to be fixed."

The report found that the environmental agency had failed to take proper action in about a third of the roughly 40 cases where the Fish and Wildlife Service's endangered species office warned that species were being jeopardized by pesticides. Under the requirements of the Endangered Species Act, the report said, the agency should have acted to mitigate the threat to the wildlife.

Among the options available are restricting the use of a pesticide, requiring specific instructions on the pesticide labels for the protection of wildlife, specifying "reasonable and prudent alternatives" or modifying the way the pesticide is applied.

In one case cited by the report, the agency failed to comply with the law after the agency learned that 110 endangered species had been placed in jeopardy by exposure to the pesticide Chlorpyrifos.

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Dear Readers,

My predecessor, Paul Larmer left the *Reprint* in September to become editor of the *SNR News*, the alumni magazine here at the School of Natural Resources. During Paul's tenure as *Reprint* editor our subscriber base grew dramatically from 280 to 580, and while the *Reprint* program is still not self-sufficient the future looks good. Paul's commitment to the *Reprint* was and continues to be remarkable. We are lucky he is just down the hall and still contributing ideas and guidance.

I hope I will be able to sustain the growth of the program which Paul began and help, as he did, to ensure its future. My first act toward that end will be to raise the annual subscription rate. As of January 1, 1987, a one-year subscription to the *Reprint* will be \$15.00 (\$18.00 U.S. for subscriptions mailed outside the U.S.). This is the first increase in the *Reprint's* three year history; it is, regrettably, necessary in order to raise part of the additional revenue needed to cover our printing costs. I hope you will support us in this move toward a secure future.

Pamela Pride Eaton
Reprint Editor

October/November 1986

Vol. 4, No. 1

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