

Note: This digital document was adapted from Sather, N. 1991. "Western prairie fringed orchid: a threatened midwestern prairie plant." Minnesota Department of Natural Resources, St. Paul. 14 pages.

WESTERN PRAIRIE FRINGED ORCHID

A THREATENED
MIDWESTERN
PRAIRIE PLANT



Photo by G. N. Rysgaard

What is Western Prairie Fringed Orchid?

The Western prairie fringed orchid (*Platanthera praeclara*) is a federally threatened prairie wildflower presently known to occur in 7 states and one Canadian province. It was first documented by the Lewis and Clark expedition (under the name *Habenaria leucophaea*) apparently in what is now Wyoming, but the heart of its apparent historic range was from the Red River valley of Manitoba, Minnesota, and North Dakota, extending southeastward to Iowa and Missouri and westward to northeastern Oklahoma, eastern Kansas, central Nebraska and eastern South Dakota.

Western prairie fringed orchid occurs most often in remnant native prairies and meadows, but has also been observed at disturbed sites. In the southern part of its range it is more likely to be found in mesic upland prairies and in the north more frequently in wet prairies and sedge meadows. It is also known from prairies and swales in sand dune complexes that are fed by shallow underground water.

What does the Western Prairie Fringed Orchid look like?

The federally protected Western prairie fringed orchid is a stout, erect, long-lived perennial with a showy open raceme (spike) of up to two dozen white to creamy white flowers often an inch or

more in size, each with a long nectar spur. The sepals are tinged with pale green. The lip, or lower petal, of each flower, is deeply three-lobed and fringed. The single smooth stem can grow from 2 ½ to 4 feet tall. The 2 to 5 simple elongate leaves are thick and hairless.

The closely related Eastern prairie fringed orchid is also federally protected. It occurs east of the Mississippi River and in eastern Iowa. The Eastern and the Western prairie fringed orchids were considered a single species until 1986. They are now recognized as two species on the basis of technical differences in shape of the column (the reproductive structure), flower size, color, petal shape and length of the nectar bearing spur.

A third more common member of the same genus is the Ragged fringed orchid. It looks like a smaller version of the prairie fringed orchids, but the pale greenish white flowers are about half the size and the flower spike is narrower and often more compact. Petals of the Ragged fringed orchid are more linear than those of the prairie fringed orchids. The sepals are deflected downward behind the lip, and the lateral lobes of the lip are raggedly fringed almost to the base.

The three species are presented below for visual comparison:



A. The Western prairie fringed orchid (*Platanthera praeclara*) is distinguished by its large flowers (up to 1 ½ inches in length), large angular column, and broadly triangular petals. The lateral lobes of the lip on the western species are often, but not always, narrower than those on the eastern species. **(Photo courtesy of George Nelson Rysgaard).**



B. The Eastern prairie fringed orchid (*Platanthera leucophaea*) generally occurs east of the Mississippi. It has somewhat smaller flowers (up to 1 inch in length), smaller rounded column, and more oval petals. **(Photo courtesy of Marlin Bowles).**



C. The Ragged fringed orchid (*Platanthera lacera*) has a narrower spike of smaller greenish flowers. **(Photo courtesy of Jeanne Daniels).**

What laws protect Western Prairie Fringed Orchid?

The Western prairie fringed orchid was listed as federally threatened in the United States in 1989. It is protected by the 1988 reauthorization of the 1973 Endangered Species Act (PL 100-478). Under the provisions of this act it is against federal statutes to remove or destroy listed plants by any federal action or on any area under federal jurisdiction, or to knowingly violate any state law protecting the species. Violation of this statute carries civil and criminal penalties of up to \$25,000.

A federal recovery plan for the species was released in September, 1996 and is available for purchase from: Fish and Wildlife Service, 5430 Grosvenor Lane, Suite 110 Bethesda, Maryland 20814. The recovery plan for the Eastern prairie fringed orchid can be obtained from the same source.

Platanthera praeclara is protected by law in Manitoba and is one of the species under consideration for listing in a new Canadian endangered species law that is likely to become effective in 1999.

Permits are required for collection of *Platanthera praeclara* for international trade and export under provisions of the Convention on Trade in Endangered Species (CITES). The penalty for violation of this law is a fine of up to \$50,000 or 1 year in jail.

State protection for the Western prairie fringed orchid varies. Several state laws afford protection comparable to federal protection, restricting projects that would impact the species on public lands. In addition, some states restrict taking of the plant or its parts from public or private lands for sale, trade, or export and require a permit before plants or their parts can be used in research. Penalties vary from state to state. For details on applicable state laws contact the agencies listed on the bottom of this page.

Within Minnesota, *Platanthera praeclara* is protected by the state's Endangered Species Statute (84.0895) administered by the Department of Natural Resources. This Act and the associated Rules impose a variety of restrictions, a permit program and several exemptions also apply. A person may not take, import, transport, or sell any portion of a state endangered or threatened species. It is advisable to read the full text of the statute and Rules to understand all regulations and exemptions pertaining to species that are designated under this law. Applications for permits to conduct research that will benefit the survival of the species and is consistent with goals set forth in the species' federal recovery plan should be addressed to: Bonita Eliason, Coordinator, Minnesota Natural Heritage and Nongame Research Program, DNR Box 25, 500 Lafayette Road, St. Paul, MN 55155-4025.

Platanthera praeclara is also protected by Minnesota's 1930 Wildflower Law (17.23) administered by the Department of Agriculture. This law governs the taking of orchids, gentians, lotus, trailing arbutus and trillium for commercial horticultural purposes. However, because the plant is also on the state endangered species list, final authority for its protection resides with the Department of Natural Resources, which administers the Endangered Species Statute (84.0895).

Although agricultural use of orchid habitat is not restricted by either state or federal endangered species laws, U.S. EPA regulations (FIFRA) may apply to the use of certain pesticides within areas where federally endangered or threatened plants occur. Special NRCS programs may also be available to landowners with the orchid on their land. Contact your regional United States Fish & Wildlife Service (USFWS) office to determine what pesticide restriction programs apply within your state.

How is the Western Prairie Fringed Orchid threatened?

The Western prairie fringed orchid is listed as a federally threatened species because it is faced with possible extinction throughout its range. Some of today's populations are threatened by conversion of pastures and hayfields to cropland. Several possible threats remain unsubstantiated. For instance, dormant season fires benefit the prairie ecosystem, and overgrazing damages it, but data are unavailable to demonstrate the positive or negative effects of fire or grazing on the orchid itself. Any action that repeatedly removes seed from orchid populations is likely to result in eventual decline of the species.

Natural fluctuations in the weather, such as severe drought, flooding and frost are known to have an adverse impact of flowering and human activities that exacerbate these natural occurrences may be some of the greatest threats to the species today. Observed declines in numbers of flowering Western prairie fringed orchid plants throughout the range during the drought of the late 1980's suggest that flower production is adversely affected by reduced soil moisture. These observations raise concern over potential effects of long term hydrologic changes that could be caused by ditching, drain tile and center pivot irrigation systems.

Contact with herbicides used to control weeds in rights-of-way and pastures may have an adverse effect on the orchid. Insecticides may also have an indirect detrimental effect by jeopardizing survival of pollinators.

Why be concerned about the Western Prairie Fringed Orchid?

Like all native species, the Western prairie fringed orchid has its own specific niche in the ecosystem and its own unique relationships to other plants and animals with which it lives. It is a part of the whole, a part best expressed in the words of Wisconsin conservationist Aldo Leopold: “The first rule of intelligent tinkering is to save all the parts.”

Every species possesses a genetic and chemical makeup unlike that of any other species. This unique genetic information is potentially valuable to all of us. Native plants provide a reservoir for undiscovered medicines, crops, and landscape materials. The extinction of any species eliminates forever its potential for providing such benefits.

As is the case for most rare prairie plants, the Western prairie fringed orchid’s rarity is best explained by habitat loss. Historic records exist for more than 160 sites in 102 counties and nine states, whereas the present distribution is from 55 sites in 34 counties in 7 states and one Canadian province.

Initial habitat loss occurred at the time of European settlement, when vast acreages of prairie were converted to agriculture. A second decline is believed to have occurred when mechanized farming replaced horses, prompting landowners to convert additional pasture and hay land to cropland.

Where is Western Prairie Fringed Orchid protected?

Approximately 80 percent of known Western prairie fringed orchid sites are protected in preserves or other publicly managed areas where the orchid’s needs are specifically addressed in implemented long-term management plans. However, the majority of these sites are concentrated in the Northern Tallgrass Prairie Ecoregion of North Dakota, Minnesota, and Manitoba, leaving orchids in the southern end of the range at greater risk.

Examples are preserves managed by private conservation organizations such as The Nature Conservancy and the Manitoba Naturalists Society, state preserves and certain state parks, national wildlife refuges, wildlife management areas and other public lands.

Who knows the location of Western Prairie Fringed Orchid and how is this information used?

Up-to-date information on the status and location of Western prairie fringed orchid populations is maintained in computerized databases of state Natural Heritage Programs and for each state in which the species occurs and the provincial Conservation Data Centre in Manitoba. Such data are used for environmental review and conservation planning. Information from these databases is available to consulting firms and state agencies preparing environmental assessments of proposed projects. Specific information on locations of the orchid in Minnesota is available to consultants and researchers by filling out a state **data request form** (available in Minnesota by contacting the Minnesota Department of Natural Resources Natural Heritage and Nongame

Research Program at (651) 297-2276, or by downloading from
http://www.dnr.state.mn.us/ecological_services/nhnrp/nhis.html#inforequest)

A federally appointed recovery team uses these data to make recommendations for the recovery of the species and to assess progress toward this goal. The U.S. Fish and Wildlife Service uses these locations to determine which federal projects might have a negative impact on the species. Location information is also used by the EPA and state departments of agriculture to determine areas where pesticide use restrictions are necessary for the protection of the species.

How are Western Prairie Fringed Orchid populations managed?

Because the Western prairie fringed orchid occurs in prairies and wet meadows, most preserves on which the species occurs in Minnesota are managed by periodic prescribed burning. Today's prairie remnants are often invaded by non-native grasses or woody species. Carefully planned and controlled fires are the primary tool used by preserve managers to reduce mulch buildup and control the increase of non-native grasses.

In some areas, such as the Sheyenne National Grassland of North Dakota, there are existing grazing leases in orchid habitat. In this case grazing has the secondary effect of reducing mulch buildup. Because little is known of the comparative effects of fire and grazing on populations of the orchid itself, the U.S. Forest Service, which administers the Sheyenne National Grassland, has allowed the continuation of grazing under interim management guidelines pending the results of research to determine the best management of this site.

A number of Western prairie fringed orchid sites occur on private lands where farmers or other landowners have maintained the species through conservation-minded agricultural practices. Many landowners are proud to have such a rare species on their land and keep the plant in mind when planning agricultural activities. Western prairie fringed orchids persist in some grazed prairies, hay lands and prairie remnants that families have maintained for their own enjoyment. Despite the interest of their landowners, populations on lands devoted to agriculture are not considered to be "protected" because of the possibility that changes in agricultural practices or ownership could jeopardize them in the future.

Is there a federal recovery plan for this species?

A federal recovery plan for the Western prairie fringed orchid was released in 1996. It is available for purchase from:

Fish and Wildlife Service Reference Service
5430 Grosvenor Lane, Suite 110
Bethesda, Maryland 20814

WHOM DO I CONTACT?

IN IOWA, MINNESOTA, AND MISSOURI CONTACT:

U.S. Fish and Wildlife Service
Office of Endangered Species
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111
(612) 725-3276

IN NORTH & SOUTH DAKOTA, KANSAS AND NEBRASKA CONTACT:

U.S. Fish and Wildlife Service
Office of Endangered Species
Box 25486
Denver Federal Center
Denver, Colorado 80225
(303) 236-7531

IN OKLAHOMA CONTACT:

U.S. Fish and Wildlife Service
Office of Endangered Species
P.O. Box 1306
Albuquerque, New Mexico 87103
(505) 766-3972

IN MANITOBA CONTACT:

Manitoba Conservation Data Centre
Box 24, 200 Saulteaux Crescent
Winnipeg, Manitoba R3J 3W3
(204) 945-7743

This digital document is an update and adaptation of *Biological Report #36* a full color booklet available from the *Minnesota Natural Heritage and Nongame Research Program, Section of Ecological Service, Minnesota Department of Natural Resources.*