A Landowner's Guide *to* Conservation Of

WESTERN PRAIRIE Fringed Orchid in NORTH DAKOTA

Who is this guide for?

This guide is for North Dakota landowners who are unfamiliar with the rare Western prairie fringed orchid (*Plantanthera praeclara)* and the importance of native prairie to the orchid. Many landowners are less familiar with how to manage and protect the orchid. This guide answers some basic questions about the orchid and its management. As an owner of a remnant native prairie, landowners are part of a small but important group helping to conserve North Dakota's rarest plant, the Western prairie fringed orchid.

McCain and Associates

Is private property important to threatened and endangered species?

Yes. Private property is very important in the management and conservation of threatened and endangered species because a large percent of them occur on private land.

GETTING TO KNOW THE ORCHID

The Western prairie fringed orchid is federally listed as a *threatened* prairie wildflower. This orchid is protected by the Endangered Species Act. It is against federal law to remove or destroy listed plants by any federal action or on any area under federal jurisdiction. As a private landowner in North Dakota, you are not under any obligation to protect this plant if you are not cooperating with federal programs. Unlike some states, North Dakota does not have any state laws which protect the orchid.

This orchid is only found in North Dakota, Minnesota, Iowa, Missouri, Nebraska, Kansas, and Manitoba. It has been lost in South Dakota and Oklahoma. The only known orchids in North Dakota occur in Richland and Ransom Counties.

Plant Characteristics

- Smooth, erect, perennial herb grows from 2 ½ to 4 feet tall.
- The stalk bears up to 24 showy, (1 inch wide) white flowers.
- The lower petal of each flower is deeply 3-lobed and fringed.
- In early to mid- July, flowering occurs for up to 3 weeks with individuals lasting up to 10 days.

Habitat

Western prairie fringed orchids occur almost exclusively in remnant native prairie, wet prairies and wet meadows, but have been observed in roadside ditches and disturbed areas. They are seldom found in full shade or in dry uplands. The majority of the sites occur on moist, neutral to slightly alkaline, fertile sandy loam soils.

Common plants found in orchid habitat include baltic rush, Northern reedgrass, Canada anemone, heath aster, softstem bulrush, white clover, Canada goldenrod, leadplant, white meadowsweet, and sandbar willow.

typical habitat

DECLINE OF THE ORCHID

The decline of the Western prairie fringed orchid is directly linked to the conversion of prairies to cropland. In North Dakota, approximately 80% of the prairie is gone with about 95% loss in the Red River Valley. The orchid population fluctuates seasonally in response to climatic conditions such as excessive drought or flooding. Any action that repeatedly removes seed from populations is thought to result in the future decline of this species.

Potential Threats

- Woody plant encroachment
- Conversion of grasslands to cropland
- Invasion of noxious weeds and non-native species
- Herbicides and insecticide impacts to orchid and pollinators
- Hydrologic changes that draws down the water table in orchid habitat
- Excessive drought or flooding
- Overgrazing
- Collecting of plants

grassland with wildflowers

What Landowners Can Do?

Landowners with Western prairie fringed orchid habitat play an important role in guaranteeing the plant's survival. Landowners who have chosen not to break up their lands are contributing directly to the survival of this rare plant. Once the land is converted to cropland, the orchid has no chance of survival. If you have orchids on your land, congratulations and thank you! You have been doing your part to conserve this rare part of nature.

There are a variety of conservation options available to landowners who might voluntarily wish to protect and conserve the orchid's habitat. The goal of these techniques is to encourage the growth of noxious or exotic plants that threaten to take over.

Management Techniques

Once you have read this guide and feel you are able to carry out some of the management techniques outlined below, draw up a management plan for your site. A plan can be simple or elaborate, depending on your ability or if you're able to get assistance from others. You can use the various sections in this guide as a framework for your plan. A plan can consists of a map of your property showing the native prairie and the other buildings and features within it and the following:

- photos of the habitat in different seasons
- a list of goals
- a list of species currently present
- notes on location of orchids
- plan for burns
- plans for mowing and haying
- plans for weed control

Management techniques such as burning, grazing or mowing could have a positive or negative effect on orchid populations, depending on its frequency, timing, and intensity. Annual tillage is fatal to the orchid. Conserving existing grasslands is the highest priority to ensure the continuation of this species. Management practices that benefit the orchid are those that:

- Promote good grassland and wetland health.
- Reduce competing invasive plant species without damaging the orchid.
- Maintain the hydrological regime that supplies ground water to the wetlands supporting the orchid.
- Allow the orchid to flower and set seed annually.

orchid prior to flowering

McCain and Associates

Grazing

A well developed grazing system can help maintain a healthy prairie and provide a benefit to the orchids. Continuous, heavy, season season-long grazing will eventually hurt the prairie and increase the chance of unwanted species.

- Develop a grazing system that is sustainable and flexible.
- Keep your eye open for the Orchid starting late- June through mid-August.
- If possible, locate water developments, creep feeders, salting areas, and cattle rubs away from orchid habitat or known orchid populations.
- Grazing systems should consider litter build-up. Excess litter will favor invasive species such as Kentucky bluegrass and smooth brome grass.
- Consider a rest-rotation system, which includes periods of rest from grazing.
- Stock cattle according to available forage supply.

Haying/Mowing

Over the past 20 years the amount of mowing in wetlands with orchids on the Sheyenne National Grasslands has been reduced or delayed until July 15. Mowing helps reduce shrub encroachment. Annual mowing in orchid habitat may not benefit the orchid but is the preferred land use compared with annual tillage for crop production.

Haying/mowing guidelines to consider include:

- Mow after seed dispersal or after July 15 when field assessment confirms the absence of flowering orchids.
- Mow sites that support orchids after seed dispersal-Late September.

Idle Grasslands

Orchids frequent sites that have been resting for short periods of time. However, allowing the grassland to sit undisturbed is not a good long term management choice. Prairie grasses and wildflowers rely on disturbances. As prairies sit idle, dead plant material accumulates, soil temperatures change, woody species move in, and nutrient cycles are altered.

Grasslands that sit idle for extended periods often become dominated by one or two grass types. Once established, these species outcompete and replace the native vegetation that once occurred there.

Prescribed Fire

Why use Fire? Fire removes old litter accumulation and releases nutrients back to the soil. Fire keeps unwanted brush or trees from dominating the prairie. Fire can set back unwanted grass species. The grasslands have evolved with fire.

Consider this before burning:

- Survey for orchids during the blooming period the season prior to burning.
- Conduct spring burns before orchids emerge-typically before May 15th.
- Conduct fall burns when orchids are dormant-Late September.
- Only burn 1/5 of the total grassland in any given year.

Prescribed Burn

ND Forest Service

Seeding Grasses

Seeding in orchid habitat may be done by broadcast seeding or using a no-till rangeland drill during the months of October-May. Sites should be seeded with native species only. Avoid using competitive grasses like Kentucky bluegrass or smooth brome grass.

orchids in ditch

McCain and Associates

- Typical grass mixes should contain species already occurring at the site and adaptive to the soils in the area. Mixes used to reclaim lowland areas will be different than those used for upland sites.
- Typical species of lowland areas (swales): Baltic rush, wooly sedge, northern reedgrass, and soft stem bulrush).
- Typical species in upland prairie: blue grama, needle-and-thread grass, little bluestem, and prairie sandreed.

Pesticide Use

Using pesticides can impact the orchid. One of the most common noxious weeds impacting orchids is leafy spurge. Herbicide use to control leafy spurge in orchid habitat has been ongoing since the 1950's. In recent years, plateau herbicide applied at a 6-8 oz. per acre rate has become the herbicide of choice for reducing leafy spurge densities. Plateau will injure orchids 1 and 2 years after treatment when applied at the 8 oz per acre rate. Orchid injury also occurred at the 6 oz per acre rate on a few plants, but was limited to 12 months or less after application.

Consider this before applying any pesticide:

- Spot spray weeds when possible.
- Spray leafy spurge in the fall after orchids have dispersed seeds- approximately September 15.
- Spray on calm days to reduce off target drifting of herbicide.

pesticide spraying

The Nature Conservancy

- Use drift reducing agents and drift reducing nozzles during application.
- Avoid any direct herbicide contact with the orchid.
- Use all herbicides according to the label.
- Avoid herbicides that degrade slowly and are mobile in the environment.
- Become familiar with adjacent land use.
- Consult with a professional prior to using herbicides within orchid habitat.

impacts from pesticides

McCain and Associates

Landowners can also contact the North Dakota Department of Agriculture for additional recommendations regarding ground and aerial applications, practices which reduce orchid exposures to herbicides and other pesticides. The Department of Agriculture asks that landowners with orchids near pesticide use area periodically observe orchids during the growing season and report anything that looks adverse, even if not apparently due to pesticides to the US Fish and Wildlife Service or the ND Department of Agriculture.

An herbicide risk assessment was completed by the USDA Forest Service. The table provides a summary of expected susceptibility of the orchid for each herbicide.

Herbicide	Susceptibility of the Orchid
2,4-D (Amines)	Safe
Chlorsulfuron	Not Safe
Clopyralid	Safe
Dicamba	Safe with lower end application rates.
Glyphosate	Safe only with fall application or while orchid is dormant.
Imazapic	Generally safe with 6 oz. or lower application rate.
Imazapyr	Not Safe
Metsulfuron Methyl	Not Safe
Picloram	Safe using the lower end allowed application rates.
Sulfometuron Methyl	Not Safe
Triclopyr	Safe

Can I get assistance in finding out if I have orchids on my property?

Yes. If you need assistance in determining if orchids or other rare plant species are on your property, contact the North Dakota Natural Heritage Inventory coordinator. The Natural Heritage Inventory maintains a biological conservation database containing locations, and biology of plant and animal species, as well as natural community information. Site specific data is available to landowners, organizations, consultants and government agencies. If you suspect you may have orchids on your property you can arrange for the Natural Heritage Inventory to do a field survey. Field surveys for orchid are most effective during the growing season, with July – August optimal.

North Dakota's Natural Areas Program

North Dakota has a Natural Areas Registry Program which is administered through the North Dakota Parks and Recreation Department. Private landowners play an important part in protecting orchid habitat and other rare plant and animals species and other significant ecological communities. If you are interested in information on what you can do to restore and protect natural areas on your property, contact the Natural Areas Registry Program coordinator.

Public or private landowners may enter into a non-binding agreement to protect their land through the Natural Areas Registry Program. This program notifies landowners of important natural features on their land and requests voluntary protection by the landowner. The landowner may enroll in the program and receives recognition and management advice from program staff. Private landowners are not required to provide public access to their site.

Additional Western Prairie Fringed Orchid Resources

Kirby, D.R., Lym, R.G., Sterling, J.J, and Sieg C.H., 2003. Observation: Leafy spurge control in Western prairie fringed orchid habitat. J. Range Management. 56: 466-473, September.

N.D. Department of Agriculture. 2009. Endangered Species Protection Program

Sather, N. 1991. Western Prairie Fringed Orchid; A Threatened Midwestern Prairie Plant. Minnesota Department of Natural Resources, St. Paul, MN.

U.S. Fish and Wildlife Service. 1996. *Platanthera praeclara* (western prairie fringed orchid) Recovery Plan. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. vi + 101 pp.

U.S. Forest Service. 2001. Land and Resource Management Plan for the Dakota Prairie Grasslands, Northern Region.

U.S. Forest Service. Dakota Prairie Grasslands. 2007. Final Environmental Impact Statement, Noxious Weed Management Project.

Willson, G.D, Page, M.J., and Akyuz, F.A. 2006. Precipitation and Fire Effects on Flowering of a Rare Prairie Orchid. Great Plains Research 16 (Spring 2006): 37-43.

Wolken, P.M., Sieg, C.H., and Williams, S.E. 2001. Quantifying suitable habitat of the threatened Western prairie fringed orchid. J. Range Management. 54:611-616 Sept.

In North Dakota Who Do I Contact?

For more information on western prairie fringed orchid, surveys or to report sightings of orchids, contact:

U.S. Fish & Wildlife Service

3425 Miriam Ave., Bismarck, ND 58501 • 701-250-4402

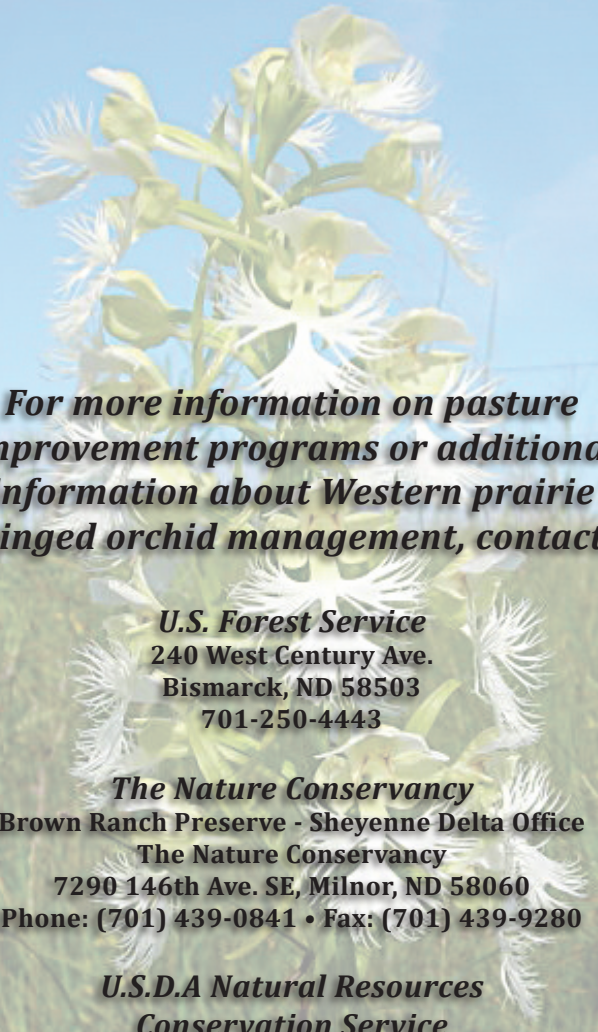
ND Parks & Recreation Department.

Natural Heritage Inventory

State Nature Preserves/Natural Areas Registry Program

1600 East Century Avenue, Suite 3, Bismarck, ND 58503 • 701-328-5370

WESTERN PRAIRIE Fringed Orchid in NORTH DAKOTA



For more information on pasture improvement programs or additional information about Western prairie fringed orchid management, contact:

U.S. Forest Service
240 West Century Ave.
Bismarck, ND 58503
701-250-4443

The Nature Conservancy
Brown Ranch Preserve - Sheyenne Delta Office
The Nature Conservancy
7290 146th Ave. SE, Milnor, ND 58060
Phone: (701) 439-0841 • Fax: (701) 439-9280

U.S.D.A Natural Resources Conservation Service
220 East Rosser Ave.
Bismarck, ND 58501
701-530-2000

ND Department of Agriculture
600 East Boulevard Ave. Dept. 602,
Bismarck, ND 58505-00250
Toll-free: 1800-242-7535