



Western Prairie Fringed Orchids thrive with some ground disturbance such as occasional burning and grazing. Photo by: National Parks Service, Adnan Akyuz.

grazing ensures under or overgrazing does not occur. Maintaining suitable habitat for the orchid's pollinator, night-flying moths, is also critical to maintain orchid populations.

**CONSERVATION HELP**

The focus of recovery for this species has been maintaining the habitat of known populations and providing the highest level of protection. The Nebraska Game & Parks Commission and the U.S. Fish & Wildlife Service are working together to monitor and identify populations and work with landowners.

Because the majority of this species occurs on private land, landowners can help conserve this species by enhancing their meadow and prairie habitats with the orchid. Nebraska Game and Parks Commission biologists and those of other agencies can help landowners develop management plans that benefit this species through grazing practices, prescribed burning and careful herbicide application.

Individuals can help by donating to conservation organizations, like the Wildlife Conservation Fund, that work to protect the species and conserve its habitat in Nebraska.

**REFERENCES**

U.S. Fish and Wildlife Service. 2009. Western Prairie Fringed Orchid (*Platanthera praeclara*) 5-Year Review: Summary and Evaluation. 37 pp.

Western Prairie Fringed Orchid Fact Sheet. U.S. Fish and Wildlife Service, Ecological Services Field Offices in the Upper Midwest. 2011.

Online Field Guide: Western Prairie Fringed Orchid. Missouri Department of Conservation. 2012.

This pamphlet, "Nebraska's Threatened & Endangered Species: Western Prairie Fringed Orchid" is one of a series of pamphlets about Nebraska's rare species. To learn more about Nebraska's rare species, please visit [rarespecies.nebraska.gov](http://rarespecies.nebraska.gov).

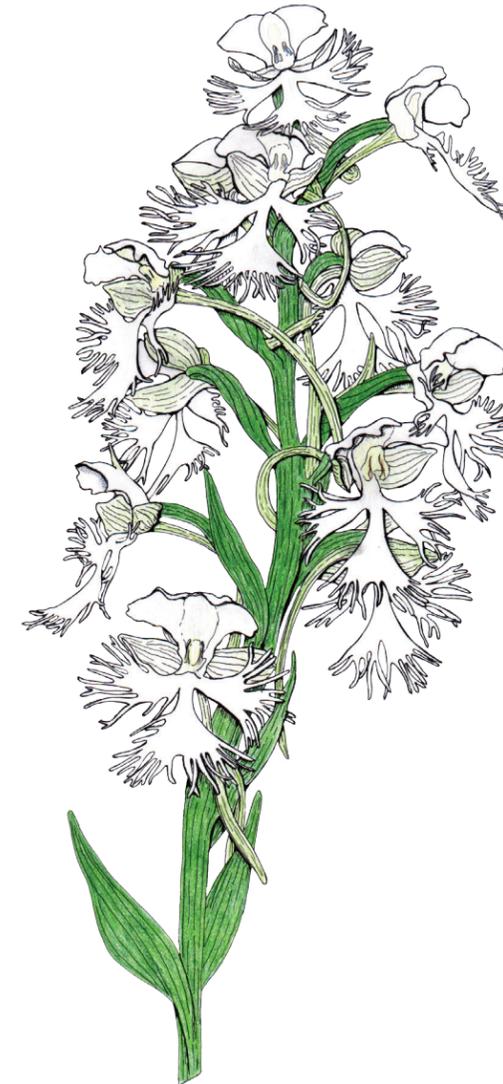
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NOTE: New data of the occurrence and distribution of this species are being collected constantly and some of the information in the pamphlet may be outdated. The information in this pamphlet should be used for a general understanding of the species and not as the sole source of range location for any report, project, regional or local planning, or for environmental impact assessments. For current information on this species, please contact the Nebraska Game & Parks Commission, Wildlife Division.



# Nebraska's Threatened & Endangered Species



## Western Prairie Fringed Orchid *Platanthera praeclara*



A Publication of the Nebraska Game & Parks Commission

# Western Prairie Fringed Orchid

## *Platanthera praeclara*

### DESCRIPTION

The western prairie fringed orchid is one of Nebraska's rarest plants. This perennial grows from a fleshy, tuberous root and has a single stem with alternate leaves. The long leaves come together at the base of the stem and the veins are parallel. The western prairie fringed orchid can grow to 3 feet in height, but an average height is 18 to 30 inches.

The flowers form an open arrangement at the top of the stem. Approximately two dozen creamy white or greenish flowers are present on each stalk. The lower lip of the flowers is divided into three feathery and fringed lobes, hence the common name. Together with the upper petals and sepals they form a hood.

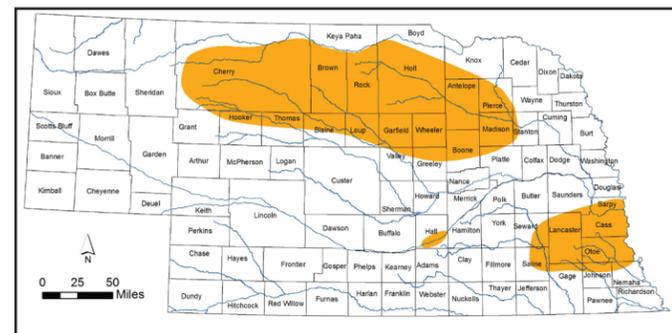
### RANGE

The western prairie fringed orchid historically was found throughout the Tallgrass prairie region of the central United States. It was found from Manitoba in the north to Oklahoma in the south. In Nebraska, the western prairie fringed orchid grows in wet to somewhat drier prairies in eastern portion of the state and the Sandhills.

In Nebraska, the western prairie fringed orchid has experienced a 60 percent decrease in its range. It can be found in restricted areas throughout its historic range, although it is believed to be extirpated from Oklahoma and South Dakota.

### HABITAT

The western prairie fringed orchid can be found in



Western Prairie Fringed Orchid Range Map. Courtesy Nebraska Game & Parks Commission Natural Heritage Program. 2013.



The Western Prairie Fringed Orchid is one of Nebraska's rarest plants; it is found only in Tallgrass prairies and the Sandhills. Photo by: NEBRASKAland Magazine/NGPC.

the Tallgrass prairie landscape. In eastern Nebraska they are found in upland prairies and loess soils. In central and northeast Nebraska they occur in wet prairies and meadows. The western prairie fringed orchid can also be found in the sandy soils of sub-irrigated meadows in the Sandhills. While all these sites are different, they all contain Tallgrass prairie habitat and high soil moisture.

### REPRODUCTION

Orchids begin growth in early May and, with favorable conditions, flower from mid-June to mid-July depending on location in the state and growing conditions. Flowering occurs for up to 3 weeks with individual flowers lasting up to 10 days.

The western prairie fringed orchid is highly specific in that it is only pollinated by a few species of nocturnal sphinx moths. Near dusk, the orchid increases its sweet-scented fragrance to attract these large moths. The flower is specifically designed to guide the approaching moths to the spur, or extended tip, where a plentiful supply of nectar is found.

As the moth hovers and uses its long tongue to extract the nectar it inadvertently rubs its eyes against two specialized structures on the flower which contain the pollen. The moth then deposits this pollen when it visits its next flower.

While the plant uses tubers, underground fleshy roots, and vegetative shoots to spread from a parent plant, pollination is required for seed production. The seeds are then dispersed by the wind.

The orchid seed, made up of only an embryo, contains no endosperm. The endosperm, present in most other seeds, provides food for the seed. Orchid seeds establish a relationship with specific mycorrhizae — soil inhabiting fungi. These fungi provide water and nutrients to enable the seed to grow leaves and begin photosynthesis.

This delicate relationship continues throughout the orchid's life. During periods of stress or when growing conditions are unfavorable, the mycorrhizal relationship allows the plant to survive underground. When conditions are again favorable the orchid produces above-ground growth.

### POPULATION STATUS

Declines in the orchid populations in Nebraska have been primarily caused by the conversion of native grasslands to cropland. Overgrazing, annual haying,



The flower of the Western Prairie Fringed Orchid is adapted specifically to pollination by Sphinx Moths. Photo by: U.S. Forest Service, J. Challey.



Western Prairie Fringed Orchids grow to a typical height of 18-30" and have up to two dozen flowers at the top of each stalk. Photo by: Thomas Madsen.

exotic plant invasion (especially cool-season grasses and leafy spurge), developments and herbicide spraying are also threats. As a prairie species, the orchid evolved with grazing by native herbivores, and although orchids exist on moderately grazed grasslands, they cannot tolerate heavy grazing for extended periods.

Additionally, since the western prairie fringed orchid is so reliant on sphinx moths for pollination and seed production any threat to these insects, such as the use of insecticides, is a threat to the orchid. Loss of these important native pollinators may be impacting pollination and gene flow in this species.

The orchid is both a federal and state listed threatened species in Nebraska.

### MANAGEMENT & OUTLOOK

This prairie wildflower has a delicate existence and requires active management. The western prairie fringed orchid can also benefit from prescribed fire as it can reduce competing exotic, cool-season grasses, reduce litter levels and set back encroaching woody vegetation from orchid habitat. The orchid is not impacted by fire as long as it is not conducted during the orchid's prime growth and seed producing period.

Carefully planned grazing and invasive plant control is also important to effectively maintain and increase western prairie fringed orchid populations. However, these practices can have detrimental effects if they are not carefully implemented; proper