



Friends of Minnesota Scientific & Natural Areas

April 27, 2026

Ann Mulholland
Executive Director, TNC
Minnesota, North Dakota and South Dakota
1101 W. River Pkwy, Suite 200
Minneapolis, Mn 55415

Re: Pembina Trail Preserve SNA – Western Prairie Fringed Orchid

Dear Ms. Mulholland:

Friends of Minnesota Scientific & Natural Areas is a Minnesota, non-profit tax-exempt corporation whose mission is to advocate for the establishment, use, management, and perpetuation of Minnesota's Scientific and Natural Areas in an undisturbed natural state. Among our goals, we promote scientific study and educational use of plant and animal communities to further the conservation and perpetuation of all resources within Minnesota's Scientific and Natural Areas (SNA).

We recently become aware that the Nature Conservancy (TNC) is considering discontinuing its long-term experimental study of prairie management options specifically designed to document the impacts of selected common management practices on the rare Western Prairie Fringed Orchid (WPFO) at Pembina Trail Preserve, a dedicated SNA. WPFO is state endangered, federally threatened, and listed as endangered in both Canada, and the IUCN Red Book.

We are writing to urge you not to curtail or modify this unique long-term research project that has been on-going for 25 years. Pembina Trail Preserve SNA is one of the few WPFO sites in the United States most likely to sustain this rare plant in the face of increasing climate change. This on-going research project is the only such study established on the basis of many years' prior data with a large enough geographic area and sufficiently dispersed population to support sufficient replications of spring and fall burns on a four-year cycle, annual haying and control plots.

The WPFO is undeniably the most important species of concern at the site, having as many as 6,000 flowering plants at its peak at this location. Its perennial life history depends on root infection by specialized mycorrhizal soil fungi and pollination by morphologically specialized hawk moths. Development from seed to an aboveground plant may take up to three

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years in the field, with an additional 5–6-year period before a plant first flowers--all dependent on the roots being infected by their supporting fungus. Plants are capable of repeated episodes of year-round underground dormancy lasting for one to several years. These life history traits sustain the orchid through periods of unpredictable stress and wide interannual swings in the number of flowering plants observed from year to year. However, their associated lag times between environmental or management stimuli and their flowering responses necessitate consistent long-term studies on the order of decades.

Because of their built-in life history lag times, the necessary longevity of studies seeking to detect long term responses to management or environmental change in Western Prairie Fringed Orchid populations is necessarily greater than in TNCs associated study of wet prairie vegetation response times. The latter study, using the same treatments within the same infrastructure that was established (using baseline orchid counts) demonstrated that significant negative impacts from haying didn't show up for 10 years.

Continuation of this research at this site using the existing study infrastructure and protocols is the only way to determine if future responses to the same management regimes may be different because of the disconnect between evolving plant phenology and fixed timing of management. Climate change is one of the big unknowns regarding what future management strategies maybe necessary to perpetuate the WPFO at the most significant site in the United States for the species.

Pembina Trail Preserve SNA is part of a complex of related populations of this orchid located in wet prairie communities between two major strandlines of Glacial Lake Agassiz. This inter-beach location at the southern tip of the Aspen Parkland suggests that results of the Pembina study can be extrapolated to Burnham WMA, Foxboro SNA, Crookston Prairie SNA, and other small populations between these two beaches. Together all of these populations comprise the country's largest privately and/or state protected and managed metapopulation.

At the present time, the importance of research and appropriate management at these sites is especially urgent because this metapopulation is the only large US population not in jeopardy of compromise because of federal ownership or management.

Given the TNCs long term research investment at this site we feel it is imperative that this existing study be continued in order to document what other changes due to management alternatives may show up in future years in the face of climate change.

We thank you for your re-consideration – and for your reply to us - regarding this urgent research issue as it effects the future of management of one of TNCs flagship preserves and the well-being of the state endangered Western Prairie Fringed Orchid.

Please contact me any time if you have questions or comments.

Very truly yours,

Ann Muholland, TNC
April 23, 2026

Bob Djupstrom
Board Secretary
Friends of Minnesota Scientific and Natural Areas, Inc.

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cc: Board of Directors
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