

Remnant Prairie and Savanna Restoration

Document Purpose – This fact sheet is a companion to BWSR’s Native Vegetation Establishment and Enhancement Guidelines and provides detailed considerations for project planning and design with an emphasis on vegetation selection, installation and management.

Introduction – Remnant plant communities such as prairies and savannas are often priorities for plant community restoration. Restoration is often accomplished by removing invasive species, or restoring natural disturbance such as prescribed fire or natural hydrology conditions.

Site Selection – Intact native plant communities can degrade over time due to invasive species, lack of natural disturbance, changes in hydrology and other factors. As a result, restoration efforts may be needed to promote plant community resiliency and plant diversity. Projects are often selected based on the quality of plant communities, how rare individual communities are, and the threat posed by invasive species or other impacts. Local resource managers and ecologists play a key role in prioritizing restoration areas and prescribing restoration methods.



General Planning Considerations – Remnant plant communities require additional planning to protect the integrity of existing soil health, vegetation and wildlife during the restoration process. In many cases, returning natural disturbance such as prescribed burning or prescribed grazing to sites is a first step. Many sites also benefit from inter-seeding of diverse native plant species that have been lost over time. Invasive species removal is also a common need for remnant plant communities to restore plant and animal diversity.



Remnant prairie in the bluffslands of Goodhue County

Structural Design Considerations – For prairie and wetland complexes, structures such as berms, embankments and water control structures may be incorporated to restore wetland hydrology. These structures require site preparation and seeding with mixes to provide stabilization and other landscapes functions. The [Minnesota Wetland Restoration Guide](#) provides detailed information about planning and vegetating wetland structures.

Plant and Seed Selection – A common goal of plant community restoration is to increase ecological function through removing invasive species and increasing the diversity and cover of native plant populations. Some efforts focus on improving wildlife habitat for rare and declining species and may involve the restoration of key plant species that are important for wildlife.

Diversity goals typically focus on restoring diversity to levels that are characteristic of high-quality communities. The diversity of natural communities can vary significantly, with some sedge meadow communities having relatively low diversity, and mesic prairies having around 200 species.

The species already growing at project sites or species that may establish from the seedbank after restoration efforts are the focus for native plant community restoration projects. It is uncommon to bring new species to plant community restoration sites unless a specific species is missing that plays a key role for a plant community integrity or wildlife habitat. Examples include introducing lupine for Karner blue butterfly habitat or violets for Regal fritillary butterflies.

Plant Source Considerations – If seeding will be conducted as part of a restoration effort there should be a focus on collecting seed from the restoration site or intact communities nearby. In some cases, seed is obtained from the surrounding ecological subsection, particularly if species are being re-introduced to a community.

Vegetation Establishment – Inter-seeding is the most common method of introducing plant species into remnant plant communities. The Xerces Society inter-seeding guide provides detailed information for planting methods. In some cases, bare-root or containerized herbaceous or woody plants are installed for restoring project using local sources of plant materials. Some plant vendors will grow plants from locally collected seed.

Operations and Maintenance – Methods of managing native plant communities can vary depending on the community type and the natural disturbance that is part of that community. Prescribed fire is an important management tool for fire-dependent communities such as prairies, savannas and some woodlands. Removal of invasive species through a variety of methods is also a common technique to allow native vegetation to thrive. A long-term adaptive approach is needed to effectively manage native plant communities.

Information Sources

Minnesota Wetland Restoration Guide: <https://bwsr.state.mn.us/mn-wetland-restoration-guide>

Minnesota DNR Prairie Protection Webpage: <https://www.dnr.state.mn.us/prairierestoration/index.html>