

# MBS Recommendations for Evaluating and Mapping Native Prairie in Minnesota

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*DRAFT: 4 May, 2016*

1. Please refer to the Field Guide to the Native Plant Communities of Minnesota for information on the composition of different native prairie community types in Minnesota. For information on assigning condition ranks to prairie communities, please refer to the following Minnesota Biological Survey (MBS) Condition Ranking Guidelines:

- a. [Upland Prairie System](#)
- b. [Wetland Prairie System](#)
- c. [Prairie Extremely Rich Fen](#)

When mapping prairies, map the areas that meet the conditions for Ranks A through D. If a prairie is dominated by natives, then rank it at least C rank. If it is dominated by non-natives but has enough natives to be clearly a prairie remnant, then rank as CD or D.

2. The following GIS resources for prairie identification and delineation are very useful:
  - a. Aerial photography:
    - 1) Historical photos (1930s, 1950s) available from the DNR website are very useful for identifying areas that were cultivated in the past.
    - 2) The 1991 NAPP photography was a color infrared layer taken in spring 1991 that is excellent for detecting dry and mesic prairies with standing dead prairie grasses (bluish grey signature). This is not totally reliable, as smooth brome can also have this signature. DNR does not have a digital version of this layer in the original color, but does have a black and white version in which the prairies are a somewhat lighter shade than adjacent areas dominated cool-season grasses.
    - 3) The FSA 2008 color-infrared cover taken in August, shows dry prairies as bluish-grey areas, in contrast to reddish areas dominated by invasives. This is not totally reliable, as areas dominated by smooth brome can also have a dark bluish signature. Mesic prairies can be a bluish-grey color or can be fairly reddish colored. Reed canary grass typically shows up as a bright hot pink. All signatures identified from photos must be visited in the field to verify what they are.
  - b. Topography: Recently developed Lidar data are being used to create 2-foot elevation contours and 3-foot hillshade layers. These are excellent for identifying the steeper slopes or swales in landscapes with subtle relief.

- 1) Soils: Soil survey polygons obtainable from NRCS are useful for delineating specific native plant communities that are strongly influenced and classified by substrate characteristics, such as dry prairie. Soil survey polygons have been useful as a preliminary step for locating some calcareous fens in some counties, but must always be confirmed by field visits.
  - 2) CRP layer: Very useful for quickly identifying areas that have previously been cultivated.
3. There are conditions that can make it very difficult to determine whether or not prairie is present.
- a. Time of year:
    - 1) March - May: Early in the year, some prairies may be dominated by cool season, non-native grasses. Warm season natives may be difficult to see at this time, especially if they were clipped off the previous fall. In pastures that were not grazed late in the year and had good development of warm season natives in August – October, then the standing dead natives may be easily seen early the following spring. Visits to early season sites can confirm the presence of native prairie but they are not reliable times to assess species diversity and condition rank.
    - 2) June: good for viewing early season flora, sedges.
    - 3) July through mid-September would be the best time to assess the warm season component and rank the condition of prairies.
    - 4) Rare species: different species are detectable at different times of year. Some species have a very short window of opportunity, such as *Botrychium campestre* which is visible for just a couple of weeks typically in late May and early June. Collection records obtained on-line from the University of Minnesota herbarium can help identify times of year to search for specific species.
  - b. Management conditions:
    - 1) Grazing: Some areas that are undergoing heavy grazing can appear to not be prairies. Some of these sites look from the road like they are destroyed but one does find a native component in them once you walk into the site. It is challenging but possible to identify natives that have been clipped off to a height of a few inches. The best approach is to return to the site at a different time when the pasture is being rested. In heavily grazed pastures, steep slopes where cows spend less time typically have the best diversity – a common pattern in heavily grazed pastures is native prairie on steep slopes with non-native species dominating shallower toe slopes and level hilltops.
    - 2) Herbicide: Some landowners treat pastures with broadleaf herbicide to kill thistles, with severe impacts on floristic diversity. Diversity is often much better on steep slopes that they cannot access. Diversity can rebound in later years in pastures that have light, infrequent herbicide treatment.