

Appendix:

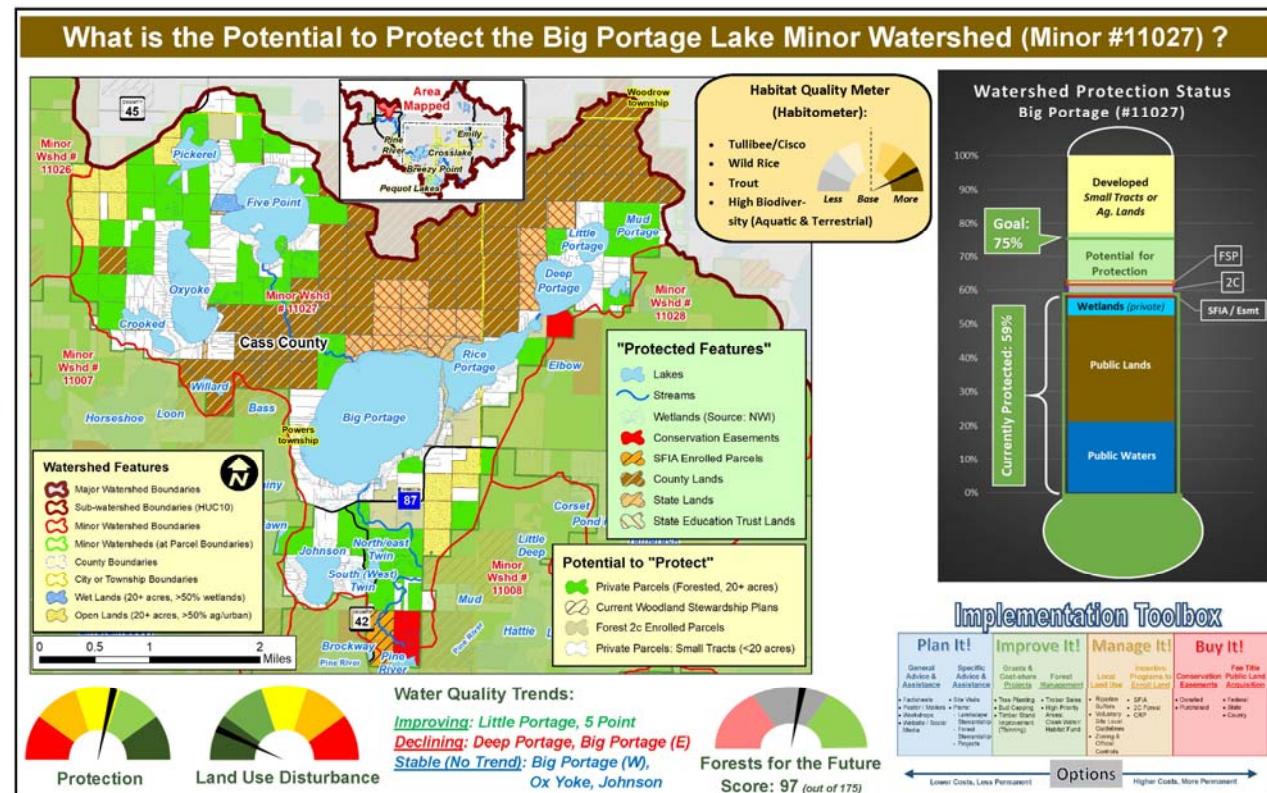
Minor Watershed Protection & RAQ Scoring Maps

For each Minor Watershed in each of the six sub-watersheds (69 total), the following map sheets were developed. Each map sheet is optimized for viewing / printing at 11 x 17 inches.

Map Sheet 1: What is the Potential to Protect the Minor Watershed into the Future?

This map sheet shows the current amount of protected lands in the watershed as well as lands that have the potential to be protected, which are those parcels greater than 20 acres. It also includes a cost scenario for achieving a protection goal of 75% and includes the implementation toolbox and other related information.

Each sheet includes a thermometer graphic that illustrates the amount (and type) of protection, potential for protection, and developed / agricultural lands in relation to a goal of 75% protection (or other protection goal amount). Various needles are employed to give the viewer a quick understanding of the protection and land use disturbance levels as well as the quality of the forests (based on the DNR Forest for the Future mean score). The water quality trends are listed as well. The Habitat Quality Meter (or “habitometer”) is an indicator of quality and is described in more detail on the next page.



Map Sheet 2: RAQ Scoring Map

This sheet shows the RAQ Score (Riparian, Adjacency, Quality) for each of the parcels identified as having “Potential to Protect” according to Sheet 1.

RAQ Scoring Methodology:

Once a watershed is prioritized and the protection analysis and geomorphologic / land cover analysis is completed, the next step is to develop a strategy to conduct targeted outreach to landowners within the watershed. Assuming there are resources available to assist landowners with enrolling in various programs shown previously in the *Private Forest Landowner Toolbox* and local staff personnel able to communicate these options to landowners, which parcels should be targeted first?

One obvious place to start is with the landowners that own the most amount of forested land in the watershed. A simple GIS analysis can quickly summarize the parcels that have the potential for protection (>20 acres) by landowner resulting in a prioritized list of landowners based on the total acreage of lands they own within the watershed.

That approach treats all parcels of the same size equally. However, one of the key concepts of the minor watershed “drill down” methodology is to find where the public benefits can be stacked the highest, because those areas make a better argument for public investment into private forest management (for more on this key concept, see Part ?, Section ?). From this concept, an approach is suggested that proposes a simple scoring system based on three characteristics:

1. *Riparian:*

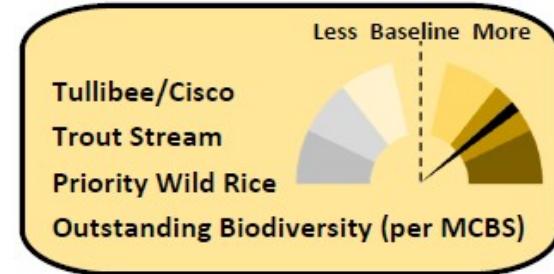
In the last 5-10 years, a number of conservation-based scoring models have been developed, many of them specific to certain programs with specific eligibility requirements. Generally, most of these models suggest starting with riparian parcels (i.e. shoreline parcels). These parcels could be riparian to lakes or streams. As mentioned earlier in this document, the forest-water interface is critical for water quality and habitat, and provides numerous public benefits.

2. *Adjacency:*

It is generally accepted that in order to build resilience into the forest system, contiguous tracts of land are preferred vs. tracts scattered across the landscape. This allows for easier and efficient management, better habitat (less fragmentation), and a healthier and more diverse overall forest community. For this simple scoring approach, tracts of land were measured based on their adjacency to other public/protected lands. Parcels touching public/protected lands on two or more sides scored the highest, as shown in the table on the next page.

3. *Quality:*

Quality is the most subjective of the 3 criteria used in this scoring system. To overcome this limitation, the goal is for local technical teams to define what constitutes “quality” for each minor watershed or landscape area within their realm of expertise. Quality could include a number of things, such as: lakes/stream with cisco, trout, or wild rice or other outstanding or unique biological resources, high conservation value forests, upland areas of high biological diversity or rare species, groundwater recharge/wellhead protection areas, etc. In addition to being built into the scoring system, the atlas sheet “What is the Potential to Protect?” includes many of these quality indicators in a simple habitat quality meter or “habitometer” as shown to the right. This meter assumes a baseline level of habitat for all forested watersheds and then for each quality point, the meter goes to the right by a corresponding amount.



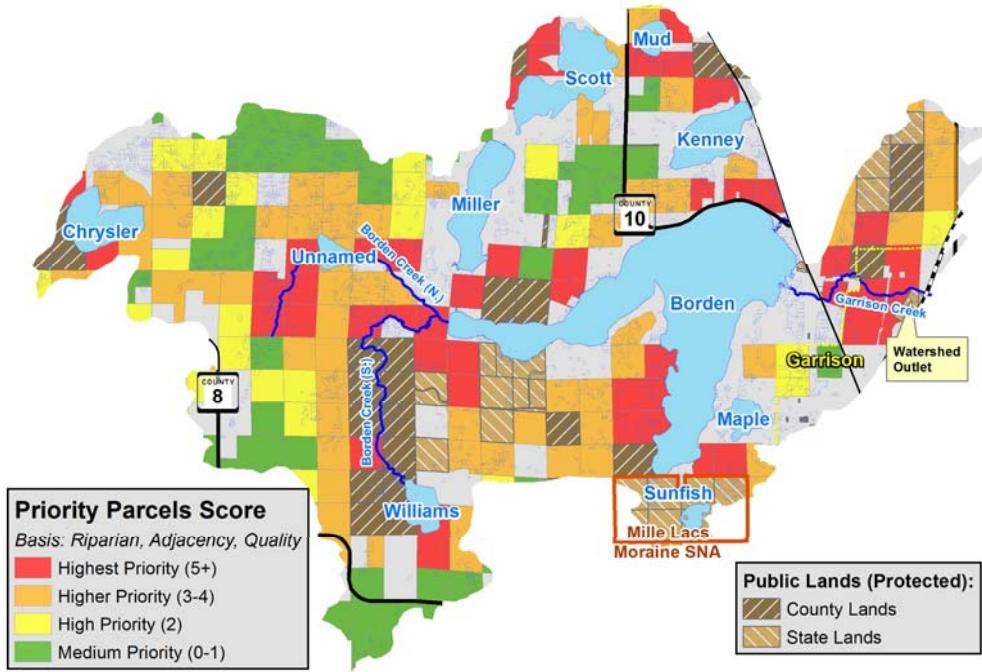
The scores for each of the Riparian, Adjacency, and Quality criteria (or “RAQ” for short) are added together to form a composite score for the watershed as shown in the map on the next page. The specific details of the scoring criteria for this project are shown below:

Scoring Criteria:		
Riparian	3	Riparian
	2	Non-riparian: Shoreland (1 parcel back)
	1	2 parcels back
Adjacency	3	2 sides touching public land
	2	1 side touching public land
	1	One parcel removed from public land or touching parcel with SFIA or Easement
Quality*	3	1 point for each feature that the parcel touches: such as High or Outstanding Biodiversity (upl. or aqu.), Wild Rice L, Cisco L, Trout L/Streams, etc.
	2	
	1	

* Quality is locally determined and can include other features, including groundwater resources. For this project, quality also included:

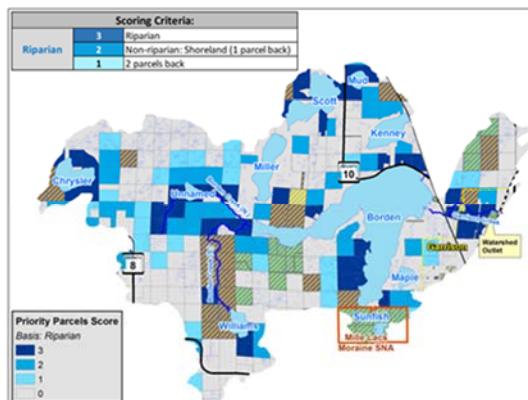
- Outstanding Resource Value Resources (MPCA)
- Old Growth Forests (DNR)
- Lakes with Exceptional IBI Scores (DNR)
- Drinking Water Supply Management Areas (MDH)
- High or Outstanding Wildlife Action Network Score (DNR)

Example Composite RAQ Scoring Map:

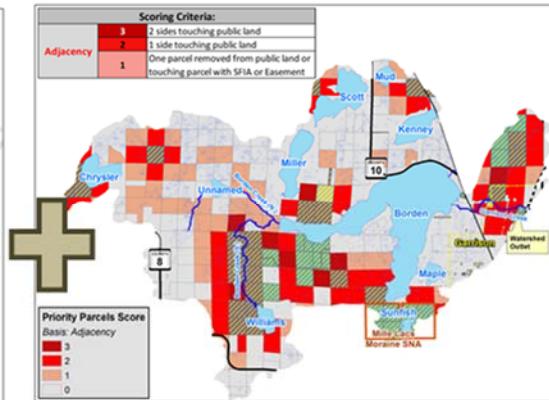


Maps for each component score making up the overall score are shown below:

Riparian



+ Adjacency



+ Quality

