

Natural Scenic Beauty of Wisconsin Wetlands



The Wisconsin Department of Natural Resources (DNR) manages wetlands to promote, protect, restore, enhance, and preserve the quantity, quality, and diversity of Wisconsin's wetlands. Pursuant to s. 281.36(3g), *Wis. Stats.*, wetland individual permits can only be authorized if a project does not cause significant adverse impacts to wetland functional values.

Natural scenic beauty is specifically identified as a wetland water quality standard in s. NR 103.02, *Wis. Adm. Code*. The purpose of this project was to inform development of a decision support tool to facilitate assessments related to natural scenic beauty.

Key Findings

- » DNR staff did not differ markedly from members of the public in identifying how landscape features contribute to scenic quality.
- » Differences in preferences for specific landscape features instead focused on the relative importance of landscape characteristics.
- » Staff exhibited greater appreciation for plant diversity and sedge meadows than the public.
- » Public perceptions varied considerably with age, and participation in hiking, birdwatching and trapping activities.

Wetland Profile		Calculations	Staff	Panel
Anthropogenic Structures	Absent	Intercept	-114.7	-13.5
Dead Trees	Present	Anthropogenic Structures	20.5	9.6
Dead Vegetation	Absent	Dead Trees	5.9	-1.7
Flowers	Present	Dead Vegetation	17.8	20.7
Open Water	Present	Flowers	3.2	4.0
Bare Soil	Absent	Open Water	7.1	5.6
Hill	Present	Bare Soil	1.0	-4.8
Plant Diversity	High	Hill	25.2	15.4
Invasive Vegetation Extent	50 to 75	Plant Diversity	29.7	-0.5
Type : Wet Prairie	Absent	Invasive Vegetation Extent	28.1	21.6
Type: Marsh	Absent	Type : Wet Prairie	17.6	5.1
Type: Mature Forest	Present	Type: Marsh	4.8	3.1
Type: Immature Forest	Present	Type: Mature Forest	13.9	14.0
Type: Sedge Meadow	Present	Type: Immature Forest	25.8	11.2
Type: Tall Shrub	Absent	Type: Sedge Meadow	1.6	-8.3
Type: Farmed	Absent	Type: Tall Shrub	17.5	7.3
		Type: Farmed	52.9	10.8
Predicted Scenic Beauty	Relative Score	Predicted SBE	157.9	99.7
Staff	100%	Max Possible Predicted SBE	157.9	132.3
Panel	89%	Min Possible Predicted SBE	-412.5	-156.7
		Range of Possible Predicted SBE	570.4	289.0
		Relative Score:	100%	89%

Fig. 1. Screenshot of Scenic Beauty Estimation tool allowing prediction of the scenic quality of any combination of coded landscape features comparison of perceptions of DNR staff involved in permitting decisions with those of the public.

Methods

- » DNR field staff collected photographs during Summer 2022
- » Inventoried landscape features depicted in photos included wetland type, plant diversity, presence of open water, wildflowers, human-made structures, etc.
- » The aesthetic quality of each photo was evaluated by staff and members of the public using an online survey.
- » Statistical analysis assessed the influence of landscape features on scenic quality.
- » Two models were developed: 1) compared staff and the public; 2) assessed diversity of perceptions within the public.

Conclusions

The Scenic Beauty Estimation models developed for this study provided insights into similarities and differences among perceptions of wetland landscapes between department staff and online panelists, as well as a sense of the heterogeneity of preference present in the Wisconsin population. These models are, however, not without their limitations, and the results developed offer a starting point rather than an end to the issue of assessing natural scenic beauty functional values in wetland management.