

Upper Mississippi Forest Partnership

Preservation of Riparian Corridor Water Quality and Aquatic Habitat Watowan River Watershed Analysis



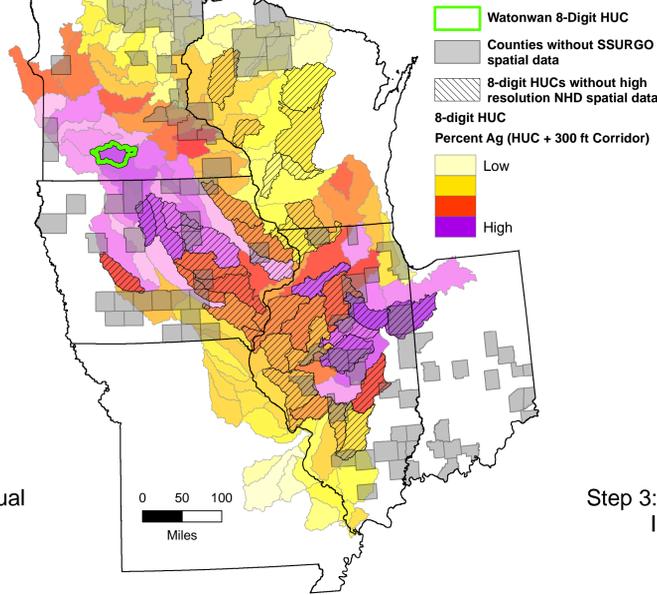
Riparian corridor afforestation priority model

National Land Cover Dataset (1992)	
Score	Description
0	Open Water
0	Low Intensity Residential
0	High Intensity Residential
0	Commercial/Industrial/Transp.
0	Bare Rock/Sand/Clay
0	Quarries
0	Transitional
0	Deciduous Forest
0	Evergreen Forest
0	Mixed Forest
0	Shrubland
2	Orchards/Vineyards
1	Grassland/Herbaceous
2	Pasture / Hay
10	Row Crops
5	Small Grains
0	Urban Recreational Grasses
0	Woody Wetlands
0	Emerg. Herbaceous Wetlands
40%	Model Influence

Step 2: Rank subwatersheds according to land use and erosive soils. Agricultural areas with erosive soils rank higher.

Land Capability Classification - Subclass "E"	
Score	Description
0	Not susceptible to erosion
1	0 - 1 (LCC Class)
2	1 - 2
3	2 - 3
4	3 - 4
6	4 - 5
8	5 - 6
10	6 - 7
60%	Model Influence

Step 1: Location of watersheds with high percentage agriculture and high percentage agriculture within a 300-foot corridor of waterbodies.



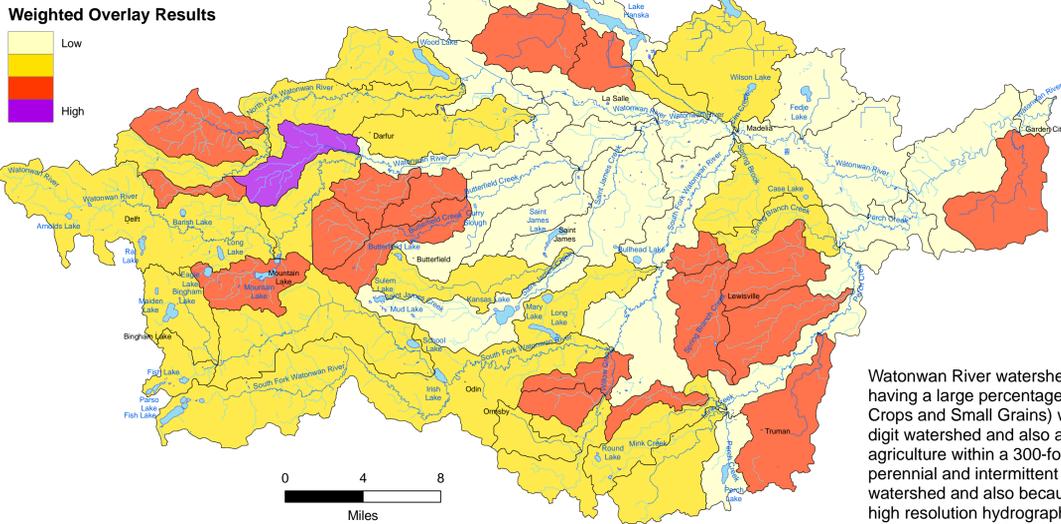
Riparian corridor forest conservation priority model

National Land Cover Dataset (1992)	
Score	Description
0	Open Water
0	Low Intensity Residential
0	High Intensity Residential
0	Commercial/Industrial/Transp.
0	Bare Rock/Sand/Clay
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0	Row Crops
0	Small Grains
0	Urban Recreational Grasses
10	Woody Wetlands
0	Emerg. Herbaceous Wetlands
40%	Model Influence

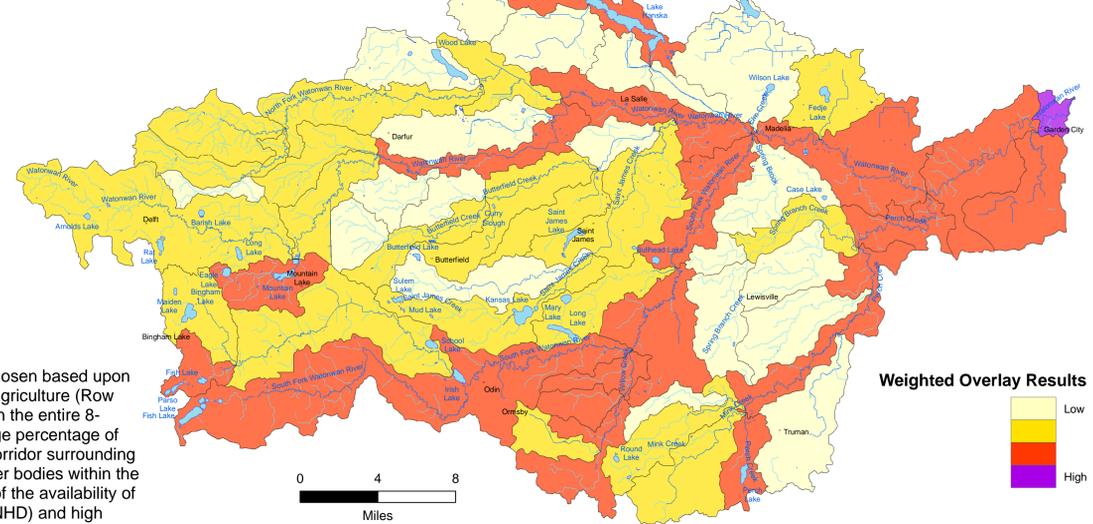
Step 2: Rank subwatersheds according to land use and erosive soils. Forested areas with erosive soils rank higher.

Land Capability Classification - Subclass "E"	
Score	Description
0	Not susceptible to erosion
1	0 - 1 (LCC Class)
2	1 - 2
3	2 - 3
4	3 - 4
6	4 - 5
8	5 - 6
10	6 - 7
60%	Model Influence

Step 3: Afforestation priority model results for Watowan River watershed. Individual subwatersheds shaded according to their mean composite model score. Cities (black) and Hydrography (blue) labeled.

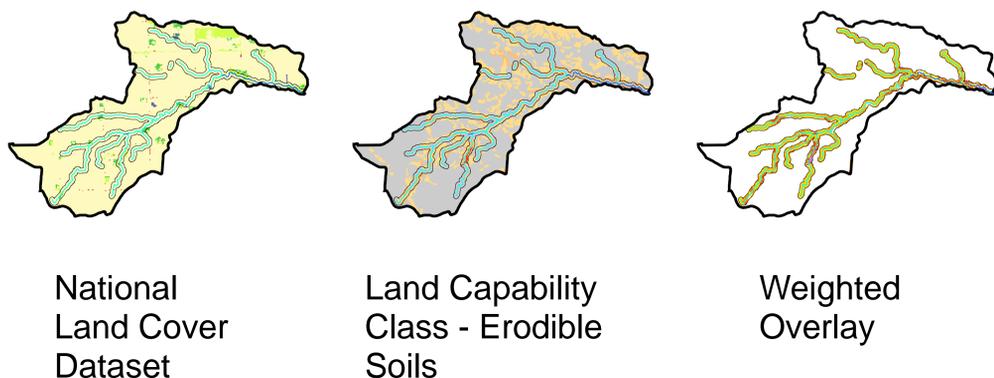


Step 3: Forest conservation model results for Watowan River watershed. Individual subwatersheds shaded according to their mean composite model score. Cities (black) and Hydrography (blue) labeled.

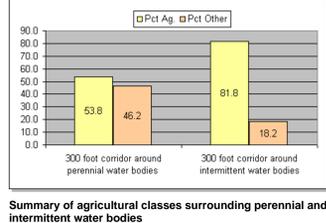


Step 4: Delineating areas in agriculture with potentially erosive soils within 300 feet of a water body.

Example subwatershed (shaded in purple in map above) depicting NLCD, Land Capability Class, and weighted overlay results. Example subwatershed chosen based on highest mean afforestation priority model score.



	300 foot corridor around perennial water bodies	300 foot corridor around intermittent water bodies
Acres of Ag.	20936.8	36866.7
Acres of Other	17875.1	8187.7
Total Acres	38711.9	45054.3
Pct Ag.	53.8	81.8
Pct Other	46.2	18.2

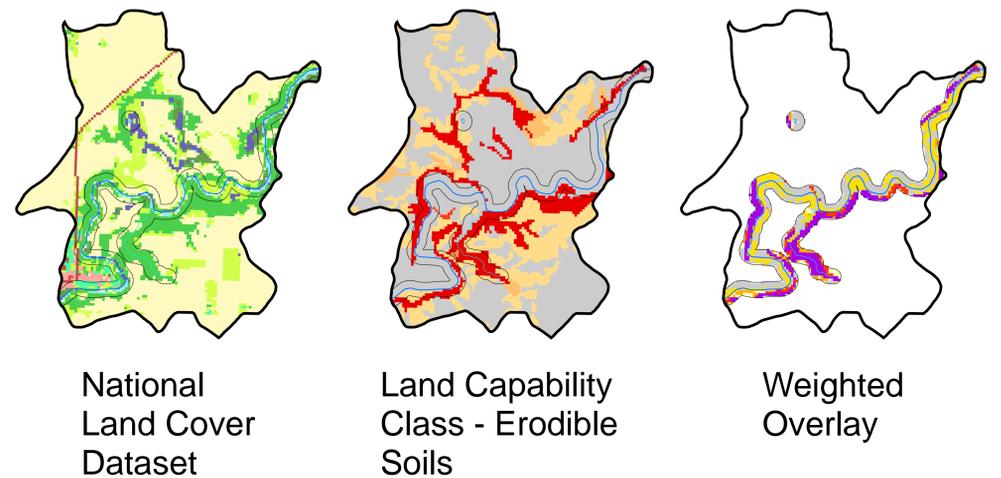


Summary of agricultural classes surrounding perennial and intermittent water bodies

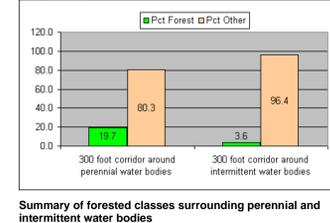
Afforestation and forest conservation models were individually run on land area within a 300 foot corridor surrounding perennial and intermittent water bodies within the Watowan River watershed as delineated by the National Hydrography Dataset (NHD). These results were then averaged by subwatershed boundary (MN DNR) and are displayed in the map layers to the left and right.

Step 4: Delineating forested areas with potentially erosive soils within 300 feet of a water body.

Example subwatershed (shaded in purple in map above) depicting NLCD, Land Capability Class, and weighted overlay results. Example subwatershed chosen based on highest mean forest conservation priority model score.



	300 foot corridor around perennial water bodies	300 foot corridor around intermittent water bodies
Acres of Forest	7626.1	1629.7
Acres of Other	31095.8	43424.6
Total Acres	38711.9	45054.3
Pct Forest	19.7	3.6
Pct Other	80.3	96.4



Summary of forested classes surrounding perennial and intermittent water bodies



- Legend**
- Subwatershed Boundary
 - 300-Foot Corridor
 - NHD Hydrography
 - Intermittent (Lines)
 - Perennial (Lines)
 - Perennial (Polys)
 - Weighted Overlay Results
 - Low
 - High
- SSURGO Land Capability Class Subclass "E"**
- Not susceptible to erosion
 - Low Erodibility
 - High Erodibility
- National Land Cover Dataset (NLCD 1992)**
- 11 - Open Water
 - 21 - Low Intensity Residential
 - 22 - High Intensity Residential
 - 23 - Commercial/Industrial/Transportation
 - 31 - Bare Rock/Sand/Clay
 - 32 - Quarries/Strip Mines/Gravel Pits
 - 33 - Transitional
 - 41 - Deciduous Forest
 - 42 - Evergreen Forest
 - 43 - Mixed Forest
 - 51 - Shrubland
 - 61 - Orchards/Vineyards
 - 71 - Grasslands/Herbaceous
 - 81 - Pasture/Hay
 - 82 - Row Crops
 - 83 - Small Grains
 - 85 - Urban/Recreational Grasses
 - 91 - Woody Wetlands
 - 92 - Emergent Herbaceous Wetlands

Map Date: November 2, 2006

