Upper Mississippi Forest Partnership

Priority Forests for Conservation (2001 Land Cover Update)

For this analysis, National Land Cover Dataset (2001) - land cover types 41, 42, 43, and 90 (deciduous forest, evergreen forest, mixed, and woody wetland, respectively) occurring within the UMRS were considered forest.

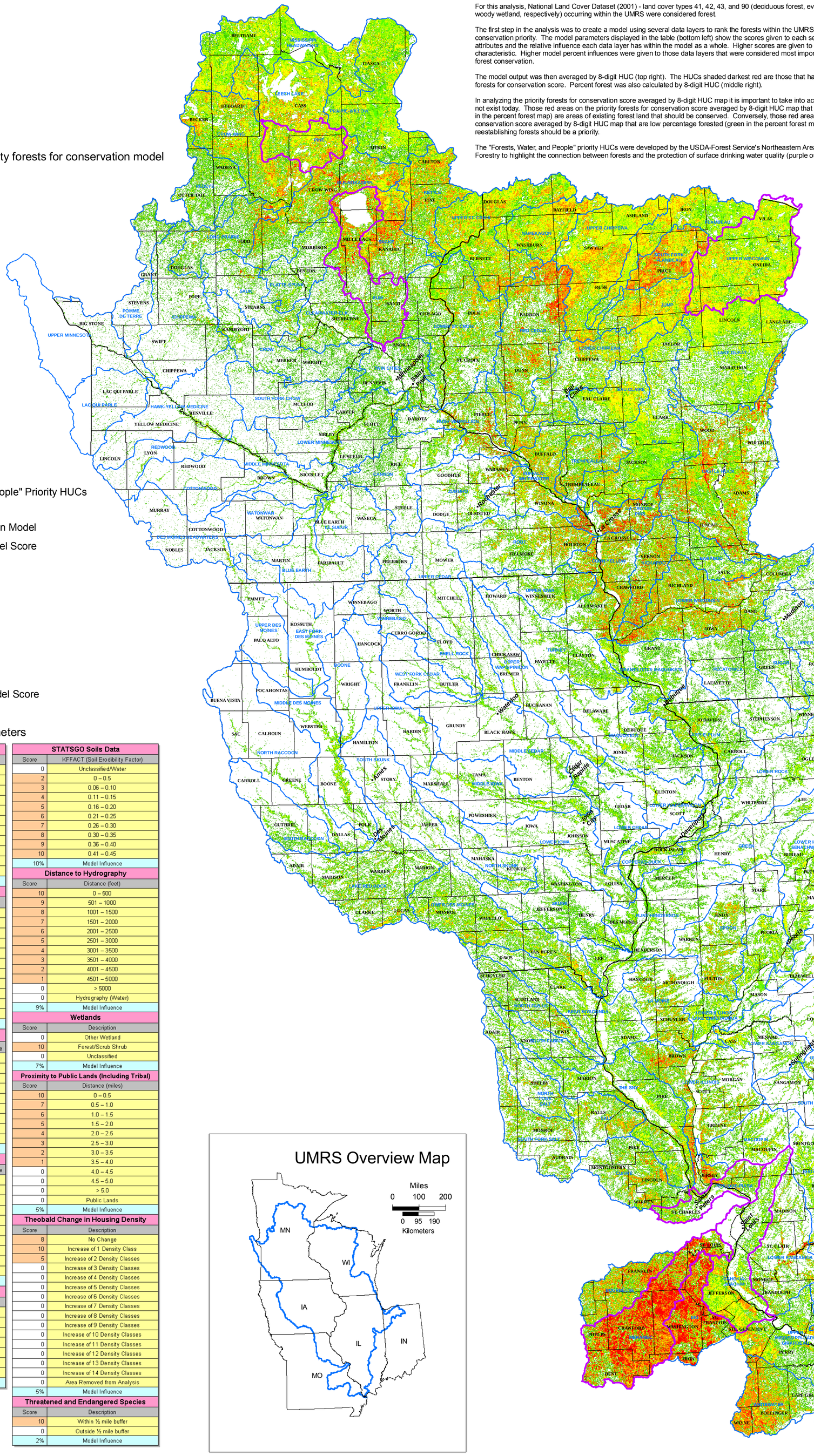
The first step in the analysis was to create a model using several data layers to rank the forests within the UMRS that have the highest conservation priority. The model parameters displayed in the table (bottom left) show the scores given to each separate data layer's unique attributes and the relative influence each data layer has within the model as a whole. Higher scores are given to an attribute if it is the preferred characteristic. Higher model percent influences were given to those data layers that were considered most important in prioritizing areas for forest conservation.

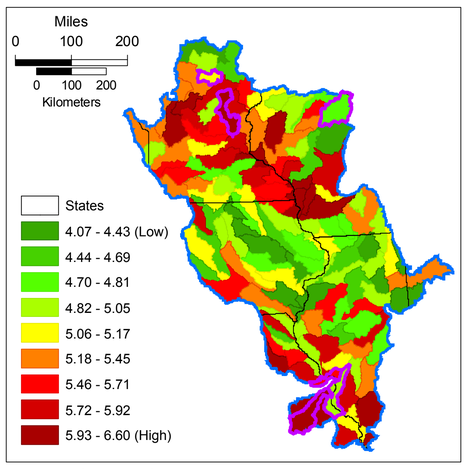
The model output was then averaged by 8-digit HUC (top right). The HUCs shaded darkest red are those that have the highest mean priority forests for conservation score. Percent forest was also calculated by 8-digit HUC (middle right).

In analyzing the priority forests for conservation score averaged by 8-digit HUC map it is important to take into account where forests do or do not exist today. Those red areas on the priority forests for conservation score averaged by 8-digit HUC map that are currently forested (red in the percent forest map) are areas of existing forest land that should be conserved. Conversely, those red areas on the priority forests for conservation score averaged by 8-digit HUC map that are low percentage forested (green in the percent forest map) are areas where reestablishing forests should be a priority.

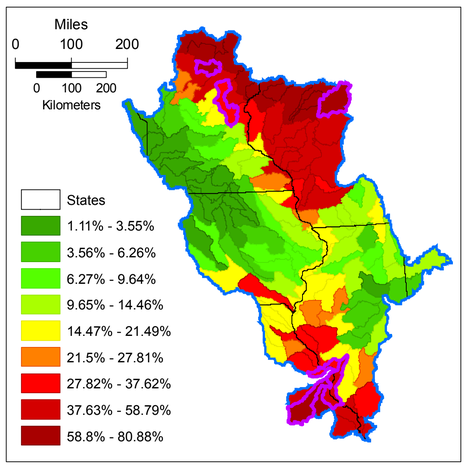
The "Forests, Water, and People" priority HUCs were developed by the USDA-Forest Service's Northeastern Area State and Private Forestry to highlight the connection between forests and the protection of surface drinking water quality (purple outline).

Priority forests for conservation model





Priority forests for conservation score averaged by 8-digit HUC



Percent forest (NLCD 2001) averaged by 8-digit HUC

Legend

- Major Cities
- States
- Counties
- "Forests, Water, and People" Priority HUCs
- 8-Digit HUC

Priority Forests for Conservation Model

- Low Priority Forest Model Score
- High Priority Forest Model Score

N
W E
S

Miles
0 50 100
0 100 200
Kilometers

1:1,325,000

Priority Forest Model Parameters

SPARROW Nitrogen Yield	
Score	Kg/sq km/year
10	120 – 250
9	251 – 500
8	501 – 750
7	751 – 1000
6	1001 – 1250
5	1251 – 1500
4	1501 – 1750
3	1751 – 2000
2	2001 – 2250
1	2251 – 2500
0	> 2500
15%	Model Influence

EPA drinking Water Intakes	
Score	Adjusted population of water consumers
0	0 – 25
1	26 – 58
2	59 – 83
3	84 – 170
4	171 – 207
5	208 – 281
6	282 – 470
7	471 – 694
8	695 – 1017
9	1018 – 1541
10	> 1541
13%	Model Influence

LINK Bottomland Forest Model Results	
Score	Mean Potential Species Occurrence Score
0	0
1	1 – 10
2	10 – 20
3	20 – 30
4	30 – 40
5	40 – 50
6	50 – 60
7	60 – 70
8	70 – 80
12%	Model Influence

LINK Upland Forest Model Results	
Score	Mean Potential Species Occurrence Score
0	0
1	1 – 10
2	10 – 20
3	20 – 30
4	30 – 40
5	40 – 50
6	50 – 60
7	60 – 70
8	70 – 80
9	80 - 90
12%	Model Influence

Slope (Percent Rise)	
Score	Description
0	0 - 2
2	3 - 5
6	6 - 10
7	11 - 14
8	15 - 18
9	19 - 25
10	26 - 163
10%	Model Influence

STATSGO Soils Data	
Score	KFFACT (Soil Erodibility Factor)
0	Unclassified/Water
2	0 – 0.5
3	0.06 – 0.10
4	0.11 – 0.15
5	0.16 – 0.20
6	0.21 – 0.25
7	0.26 – 0.30
8	0.30 – 0.35
9	0.36 – 0.40
10	0.41 – 0.45
10%	Model Influence

Distance to Hydrography	
Score	Distance (feet)
10	0 – 500
9	501 – 1000
8	1001 – 1500
7	1501 – 2000
6	2001 – 2500
5	2501 – 3000
4	3001 – 3500
3	3501 – 4000
2	4001 – 4500
1	4501 – 5000
0	> 5000
0	Hydrography (Water)
9%	Model Influence

Wetlands	
Score	Description
0	Other Wetland
10	Forest/Scrub Shrub
0	Unclassified
7%	Model Influence

Proximity to Public Lands (Including Tribal)	
Score	Distance (miles)
10	0 – 0.5
7	0.5 – 1.0
6	1.0 – 1.5
5	1.5 – 2.0
4	2.0 – 2.5
3	2.5 – 3.0
2	3.0 – 3.5
1	3.5 – 4.0
0	4.0 – 4.5
0	4.5 – 5.0
0	> 5.0
0	Public Lands
5%	Model Influence

Theobald Change in Housing Density	
Score	Description
8	No Change
10	Increase of 1 Density Class
5	Increase of 2 Density Classes
0	Increase of 3 Density Classes
0	Increase of 4 Density Classes
0	Increase of 5 Density Classes
0	Increase of 6 Density Classes
0	Increase of 7 Density Classes
0	Increase of 8 Density Classes
0	Increase of 9 Density Classes
0	Increase of 10 Density Classes
0	Increase of 11 Density Classes
0	Increase of 12 Density Classes
0	Increase of 13 Density Classes
0	Increase of 14 Density Classes
0	Area Removed from Analysis
5%	Model Influence

Threatened and Endangered Species	
Score	Description
10	Within ½ mile buffer
0	Outside ½ mile buffer
2%	Model Influence

Map Date: September 24, 2009

USGS
science for a changing world