Upper Mississippi Forest Partnership

Preservation of Riparian Corridor Water Quality and Aquatic Habitat
South Fork Salt River Watershed Analysis

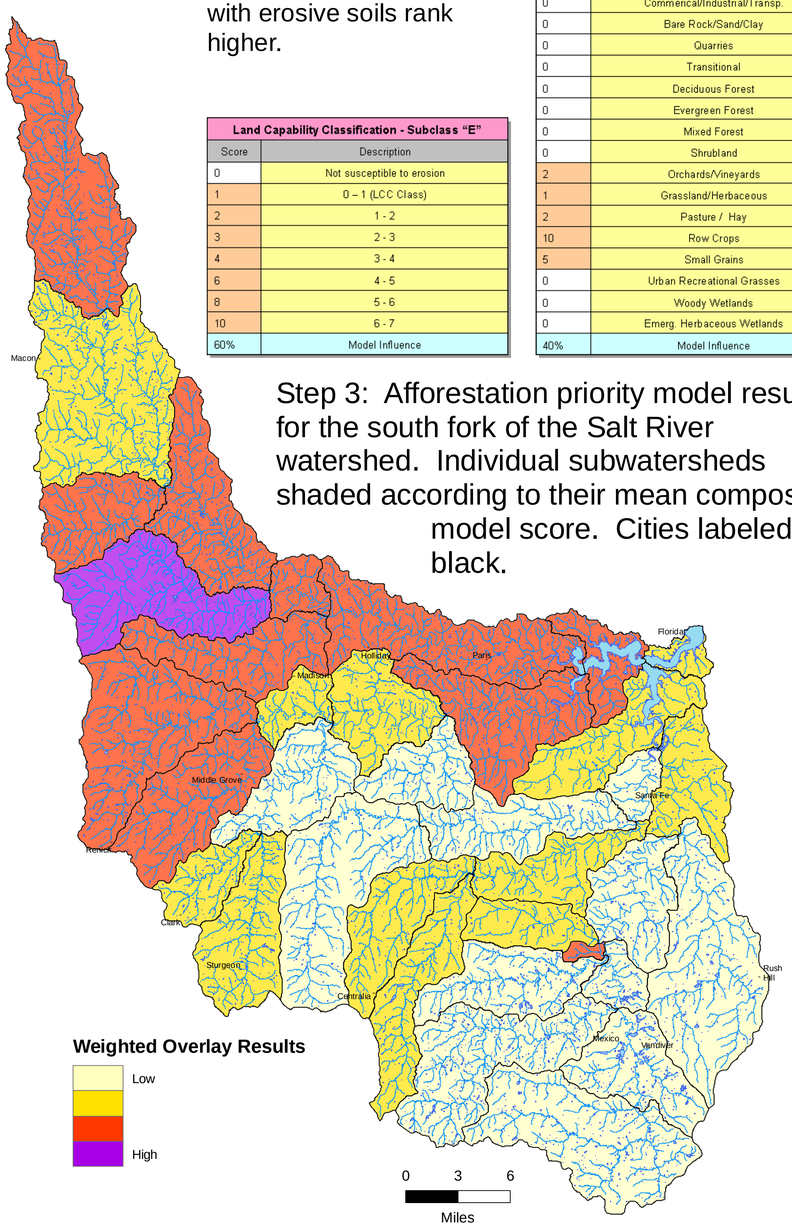
Riparian corridor afforestation priority model

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

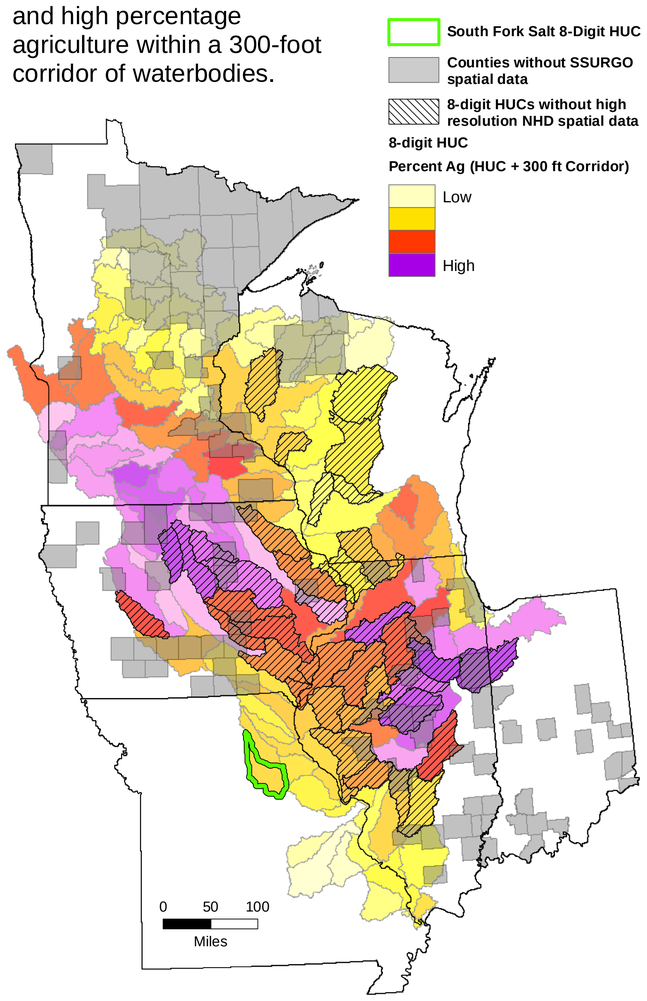
Land Capability Classification - Subclass "E"	
Score	Description
0	Not susceptible to erosion
1	0 – 1 (LCC Class)
2	1 - 2
3	2 - 3
4	3 - 4
6	4 - 5
8	5 - 6
10	6 - 7
60%	Model Influence

National Land Cover Dataset (1992)	
Score	Description
0	Open Water
0	Low Intensity Residential
0	High Intensity Residential
0	Commerical/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 3: Afforestation priority model results for the south fork of the Salt River watershed. Individual subwatersheds shaded according to their mean composite model score. Cities labeled in black.



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



South fork Salt River watershed chosen based upon having a contrasting landscape to the Watonwan River watershed. The Watonwan River watershed is dominated by agriculture and gentle slopes, whereas the south fork Salt River watershed has steeper slopes and is less dominated by agriculture. Additionally, this watershed has surface run-off and other erosion problems and water quality concerns in Mark Twain Lake. This watershed also met the minimum data requirements with the availability of high resolution hydrography (NHD) and high resolution soils (SSURGO) data.

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

Riparian corridor forest conservation priority model

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
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60%	Model Influence

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0	Bare Rock/Sand/Clay
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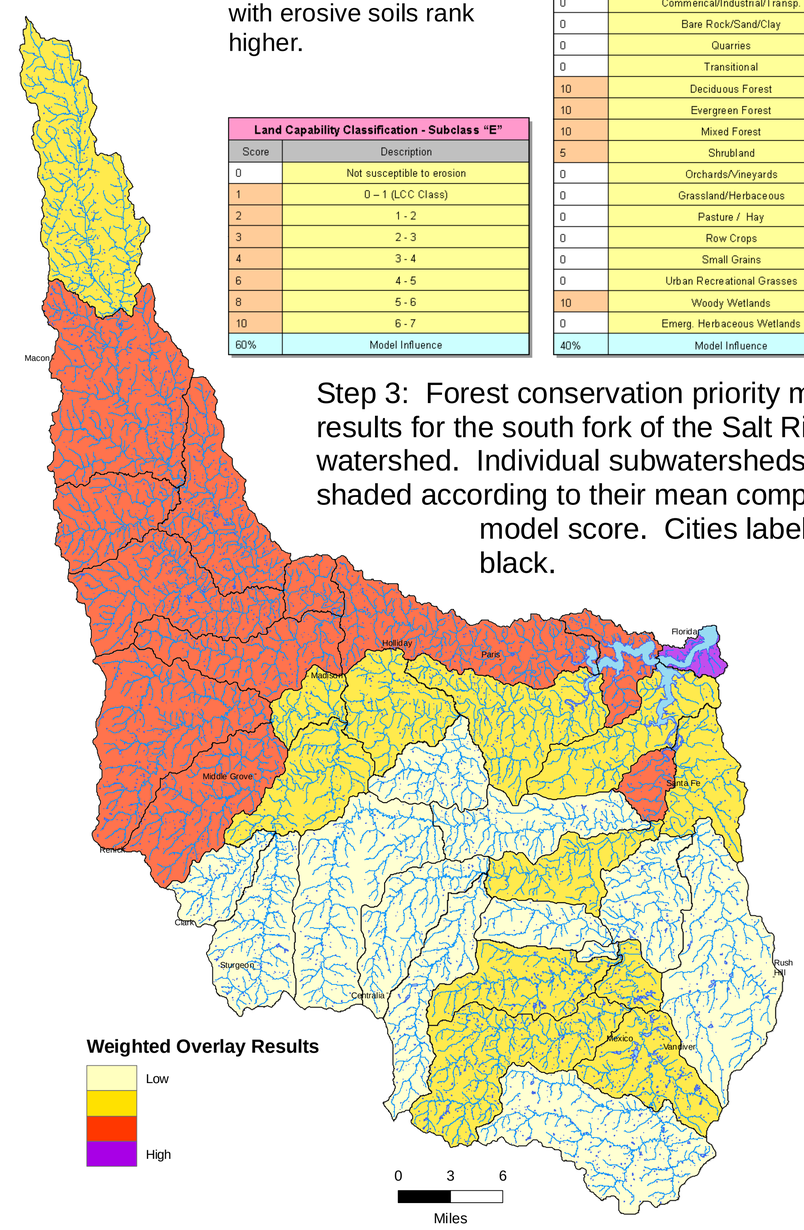
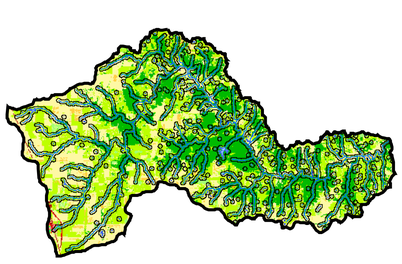
10	Deciduous Forest
10	Evergreen Forest
10	Mixed Forest
5	Shrubland
0	Orchards/Vineyards
0	Grassland/Herbaceous
0	Pasture / Hay
0	Row Crops
0	Small Grains
0	Urban Recreational Grasses
10	Woody Wetlands
0	Emerg. Herbaceous Wetlands
40%	Model Influence

Step 3: Forest conservation priority model results for the south fork of the Salt River watershed. Individual subwatersheds shaded according to their mean composite model score. Cities labeled in black.

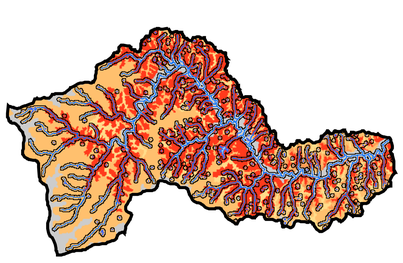


Step 4: Delineating agricultural areas with potentially erosive soils within 300 feet of a water body.

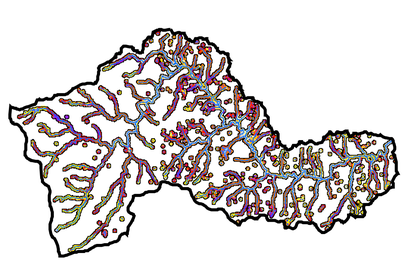
Example subwatershed (shaded in purple in map above) depicting NLCD, Land Capability Class, and weighted overlay results. Example subwatershed chosen based on highest mean afforestation priority model score.



National Land Cover Dataset



Land Capability Class - Erodible Soils

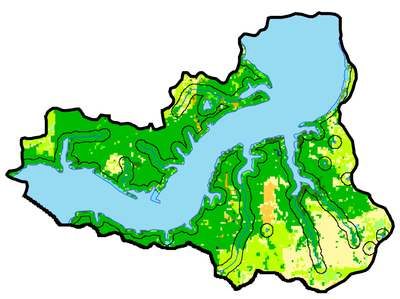


Weighted Overlay

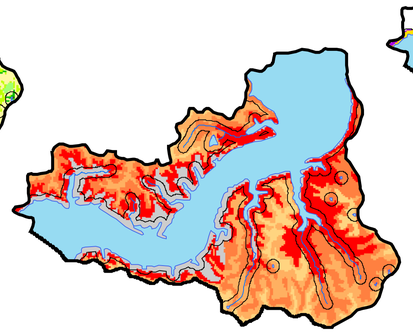
0 2 4
Miles

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

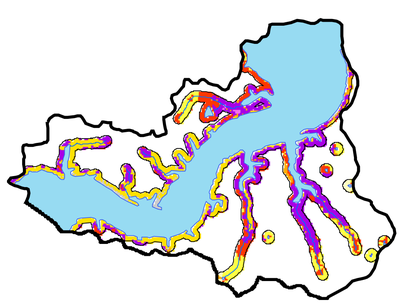
Example subwatershed (shaded in purple in map above) depicting NLCD, Land Capability Class, and weighted overlay results. Example subwatershed chosen based on highest mean forest conservation priority model score.



National Land Cover Dataset



Land Capability Class - Erodible Soils



Weighted Overlay

0 1 2
Miles

Legend

- NHD Hydrography (Lines)
- NHD Hydrography (Polys)
- 300-Foot Corridor
- Subwatershed Boundary

Weighted Overlay Results
- Low
- High

SSURGO Land Capability Class Subclass "E"
- 0
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7

National Landcover 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

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