South Central Lake Superior Watershed Infrastructure Vulnerability

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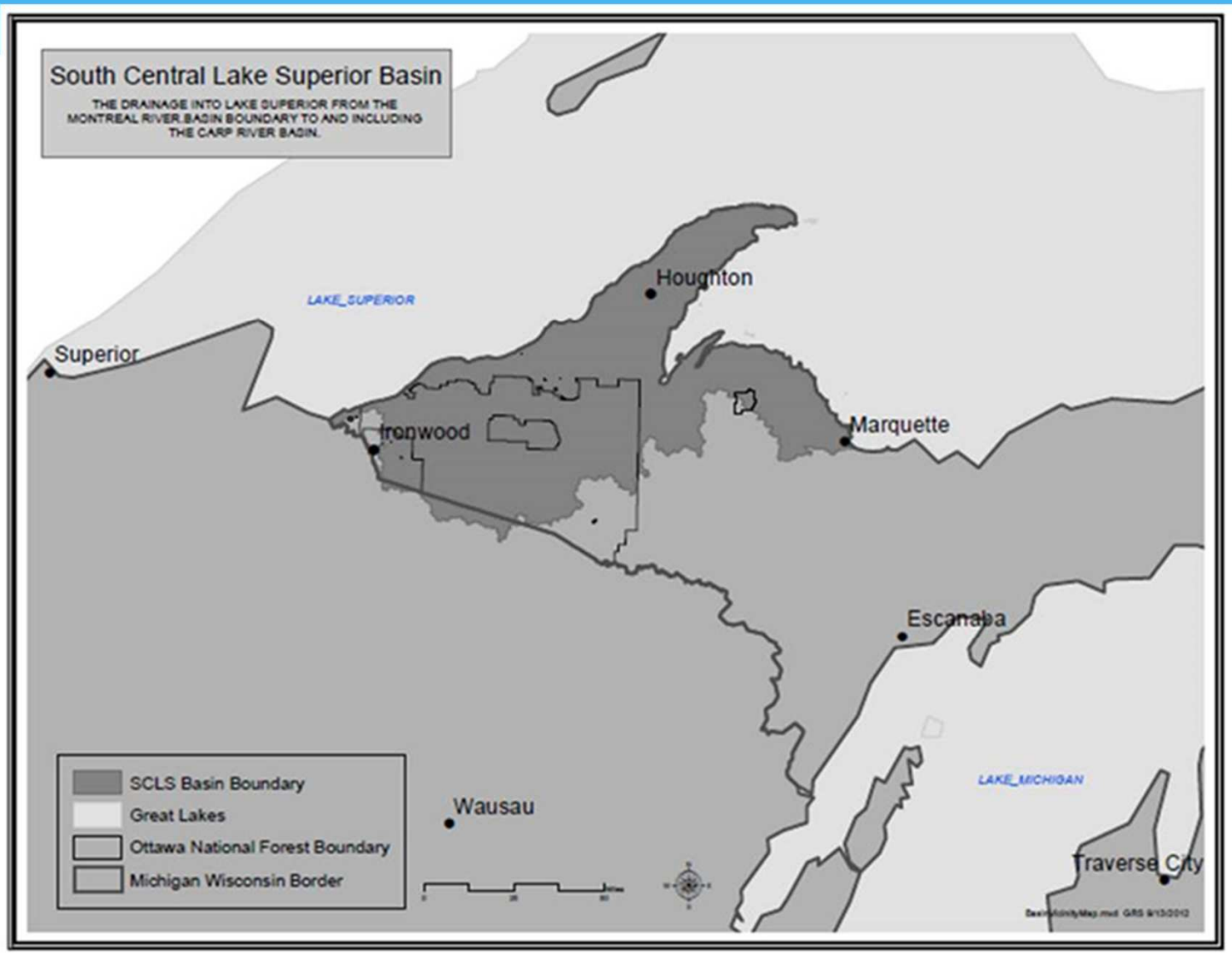
South Central Lake Superior Basin



2012 floods

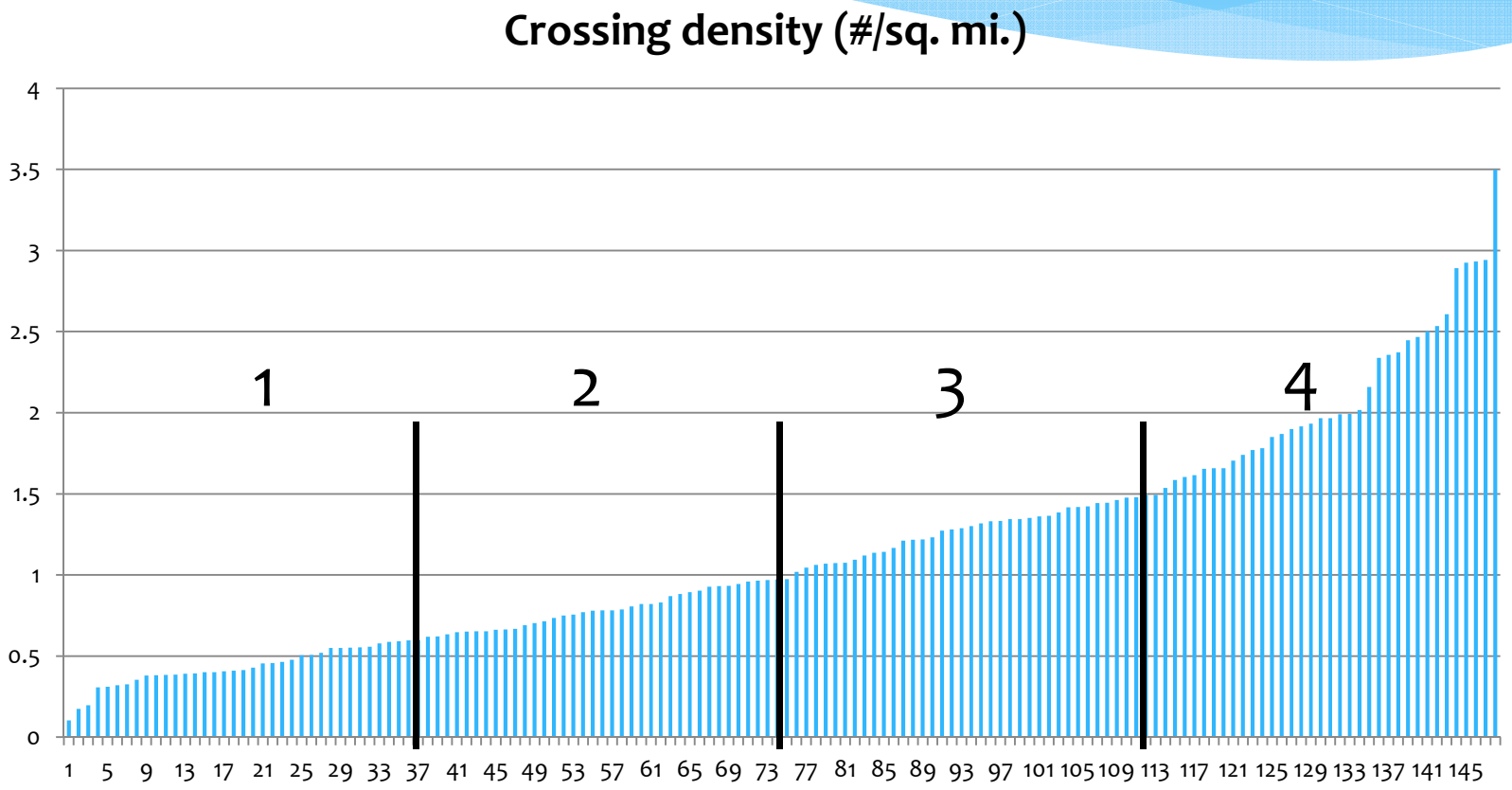
Thunder Bay

Duluth

Wawa

Road/stream crossings

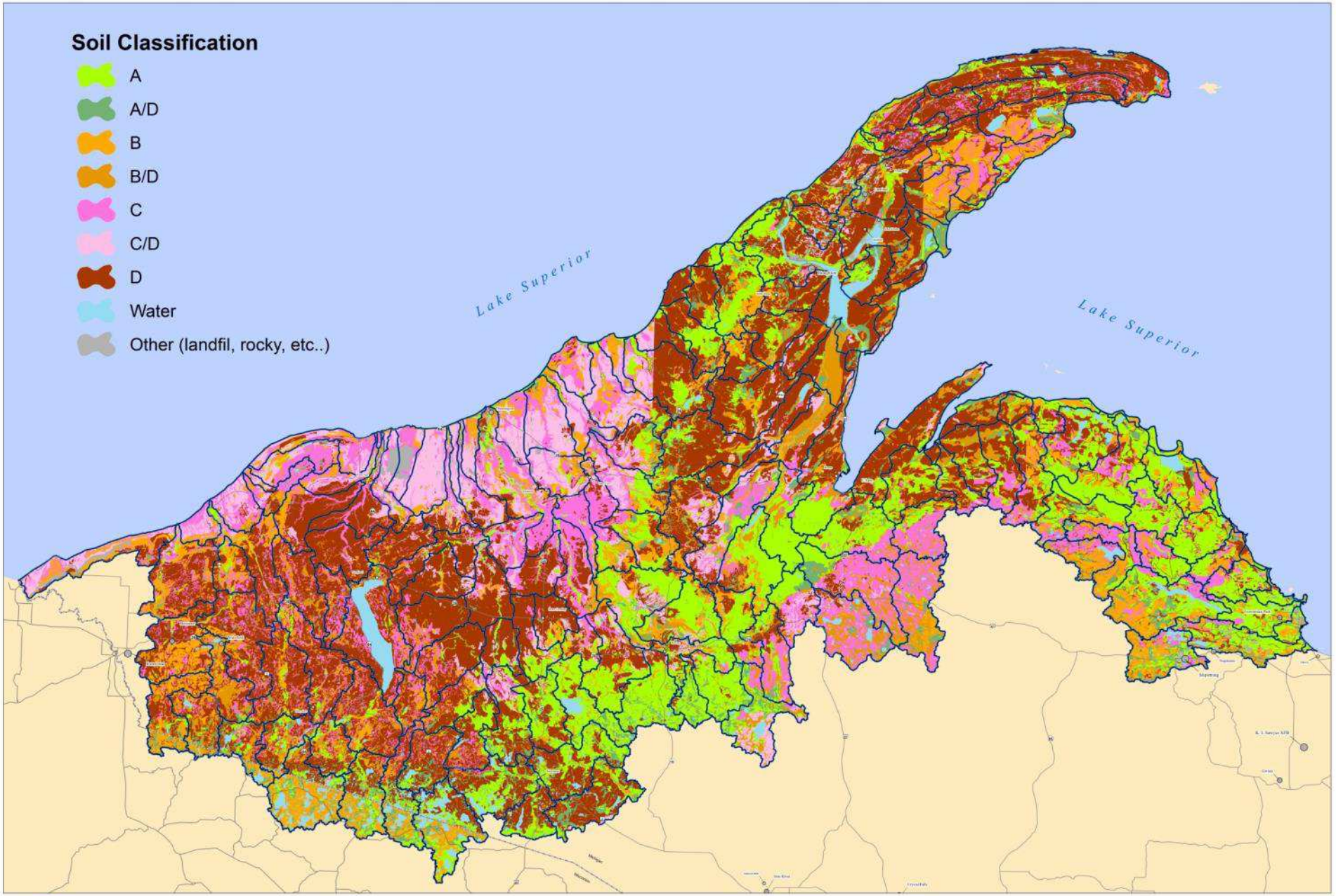
Road / stream crossing density



USDA
United States Department of Agriculture

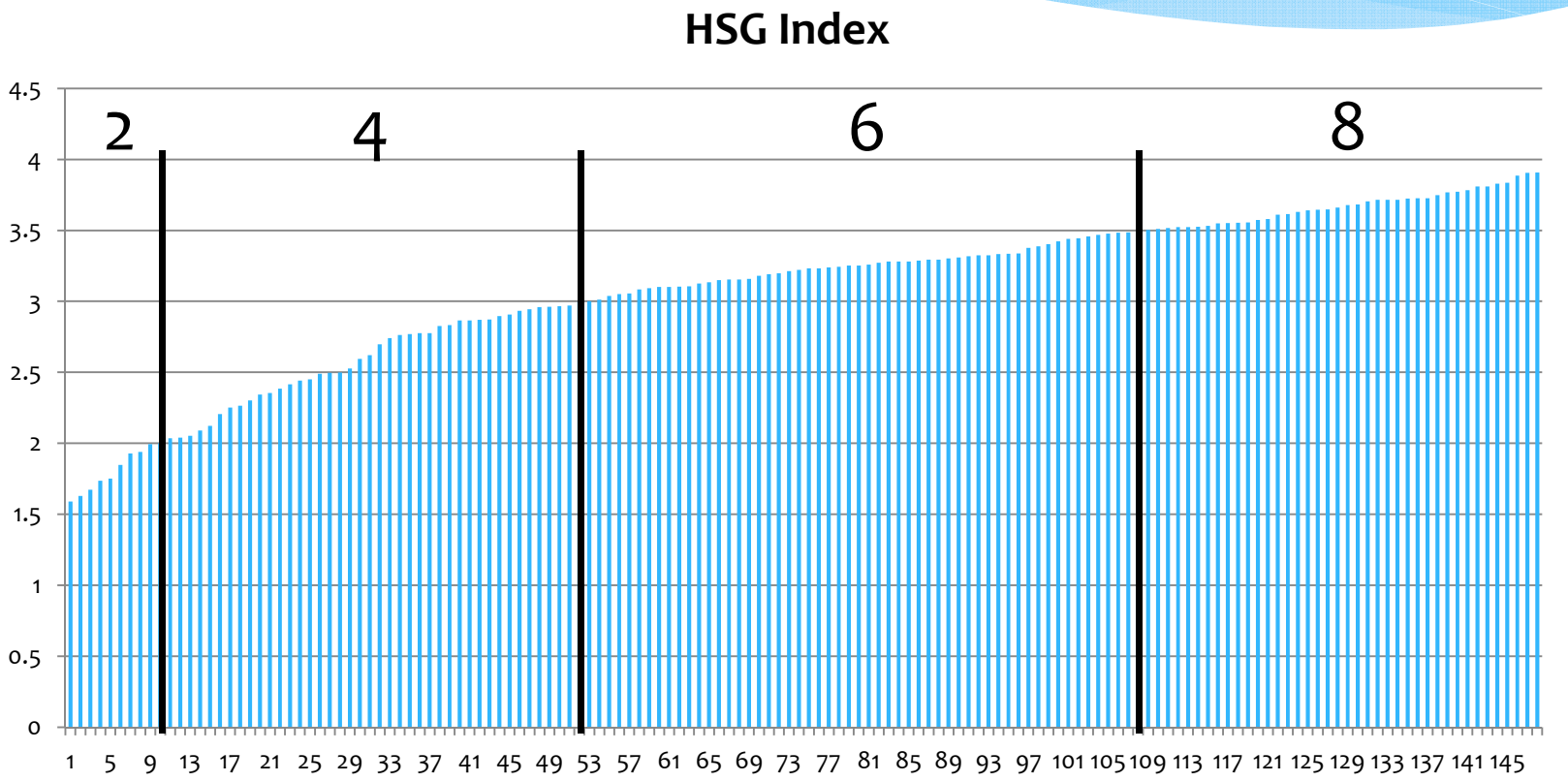
South Central Lake Superior Basin Watershed Vulnerability

Soil Types



Forest Service
Ottawa National Forest

Hydrologic soil group index



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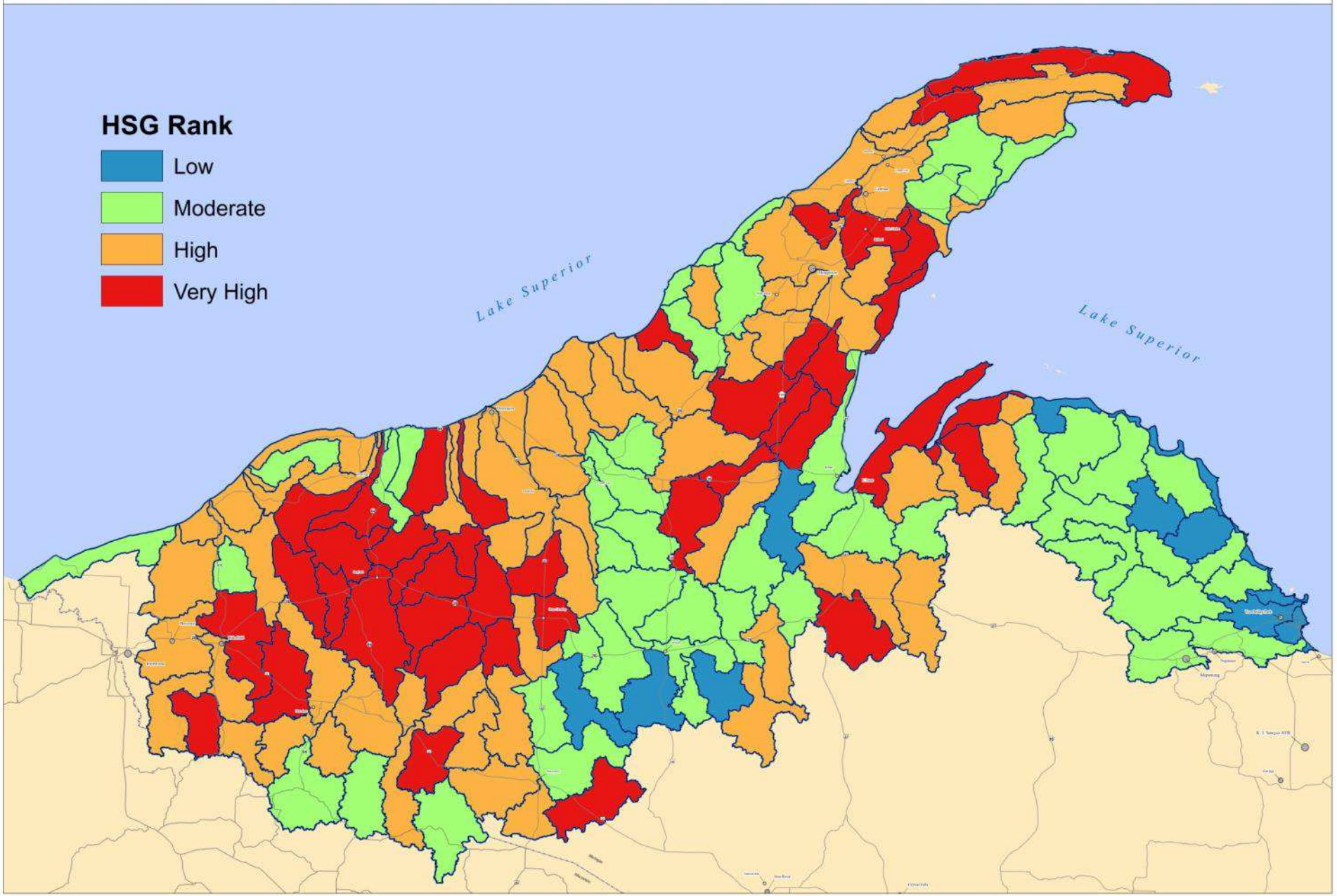
South Central Lake Superior Basin Watershed Vulnerability

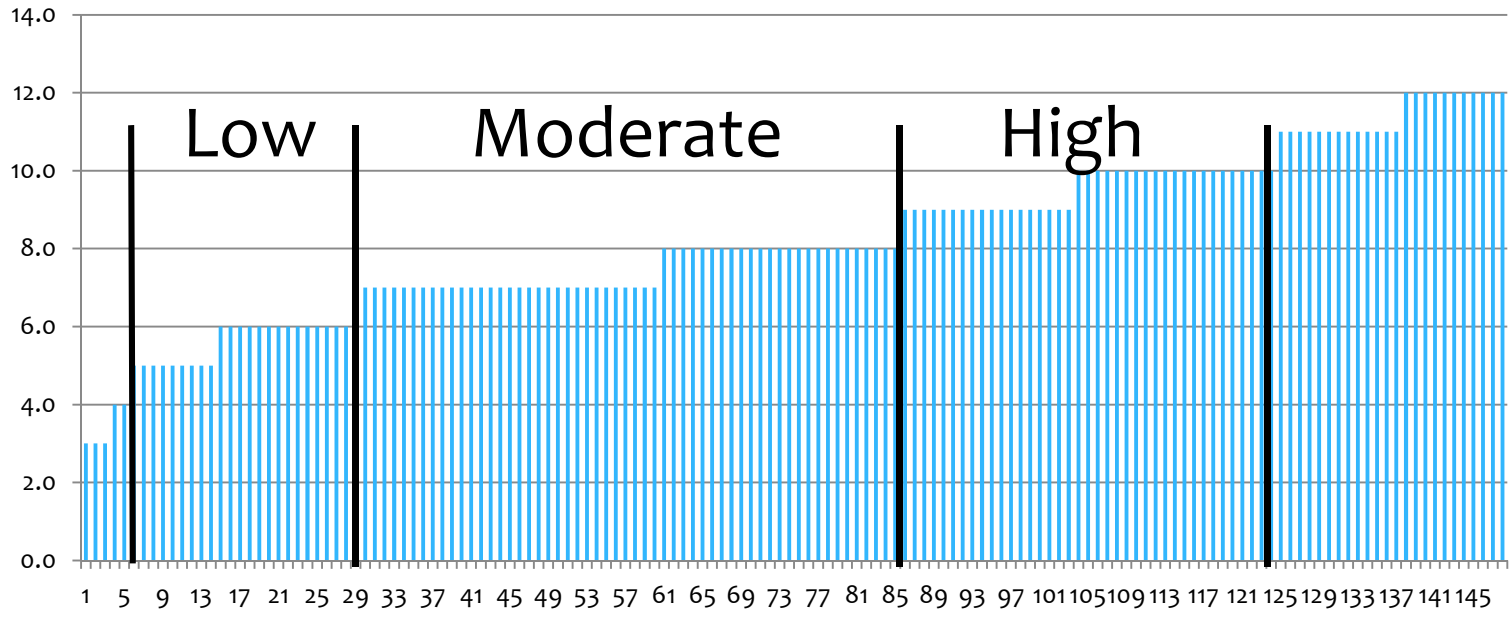
HSG Ranking



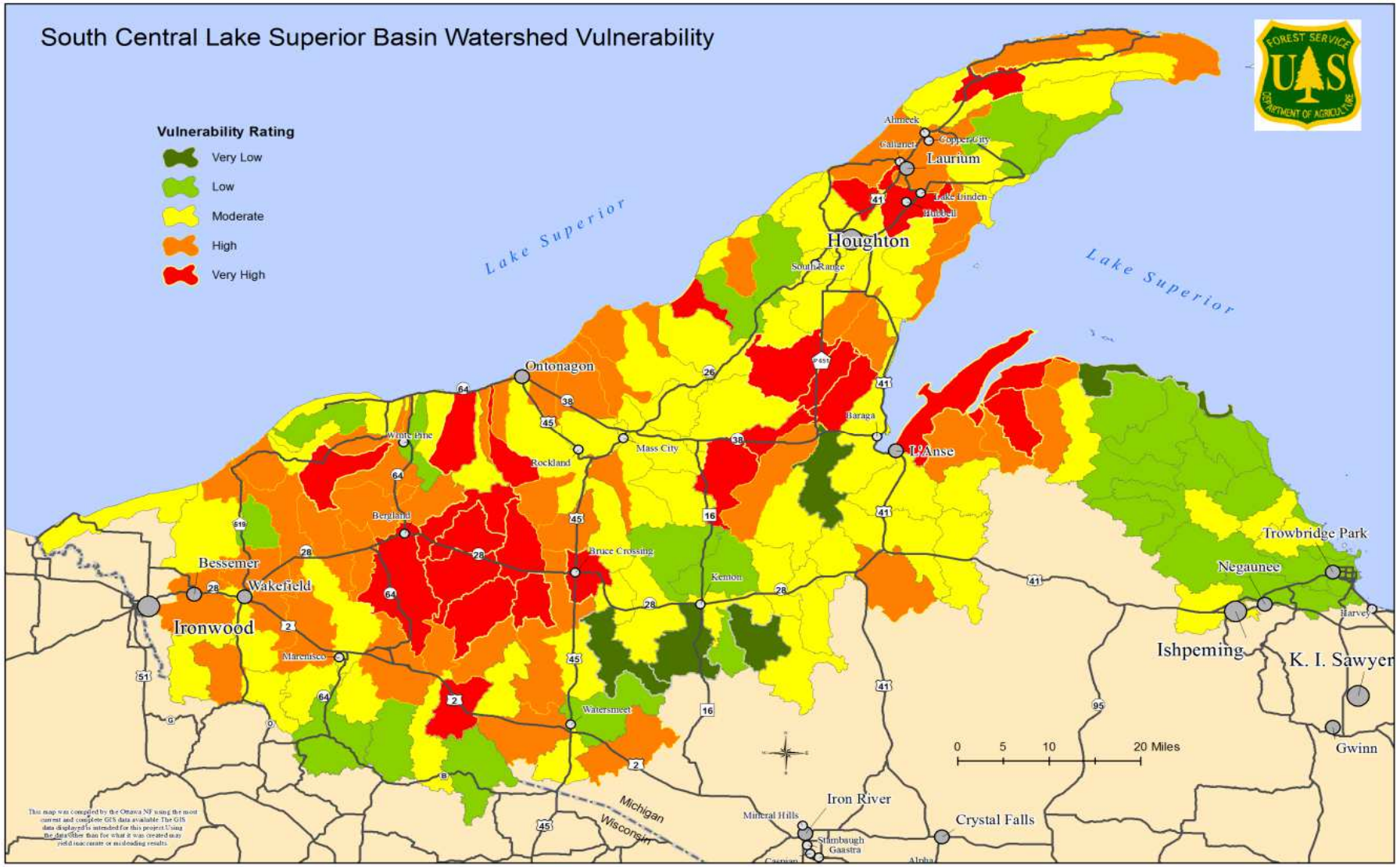
Forest Service
Ottawa National Forest

0 5 10 20 Miles

Infrastructure rating

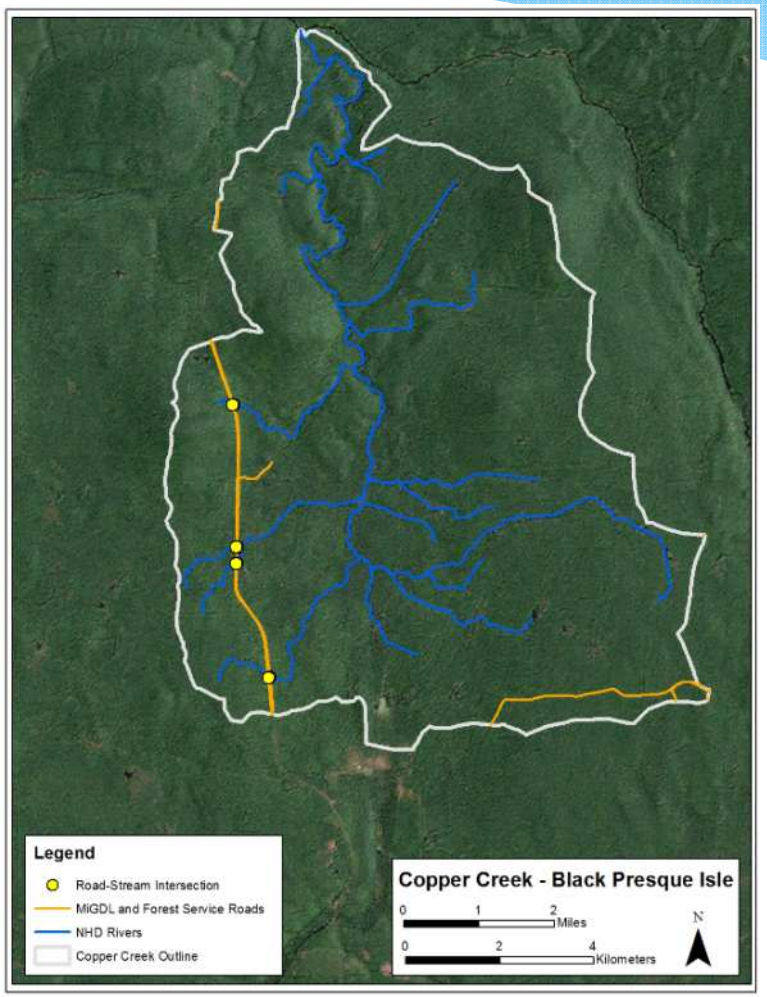


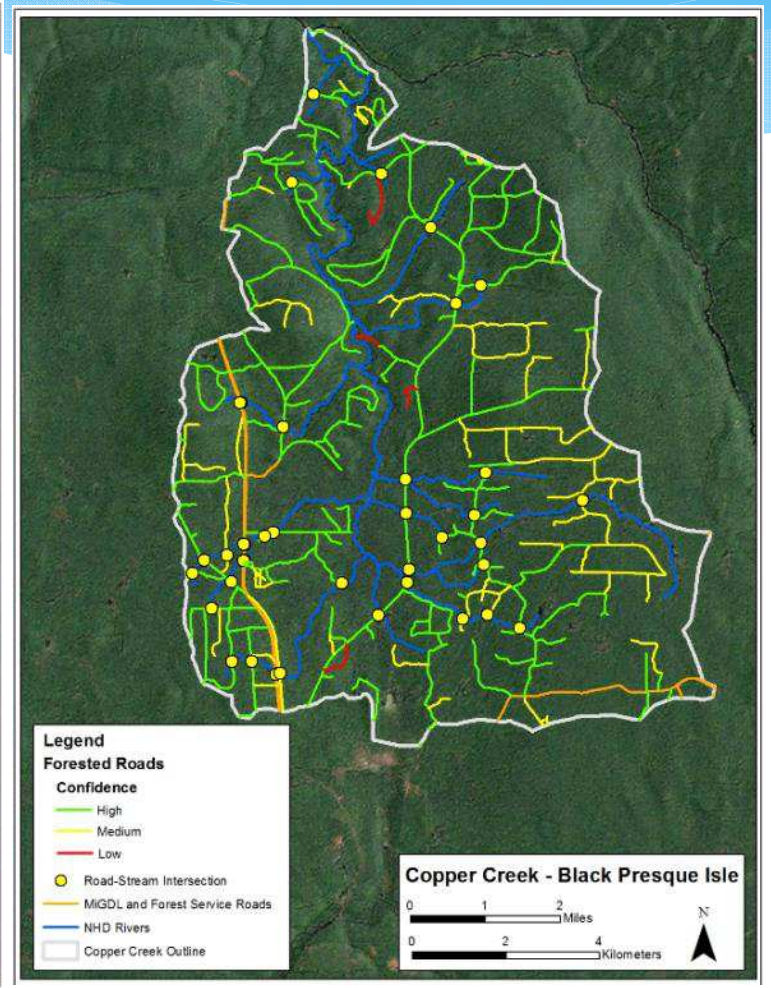
The map


South Central Lake Superior Basin Watershed Vulnerability
Vulnerability Rating
Very Low
Low
Moderate
High
Very High
Lake Superior
Lake Superior
Houghton
Laurium
Ontonagon
L'Anse
Ironwood
Bessemer
Wakefield
Negaunee
Ishpeming
K. I. Sawyer
Gwinn
Iron River
Crystal Falls
Michigan
Wisconsin
0 5 10 20 Miles

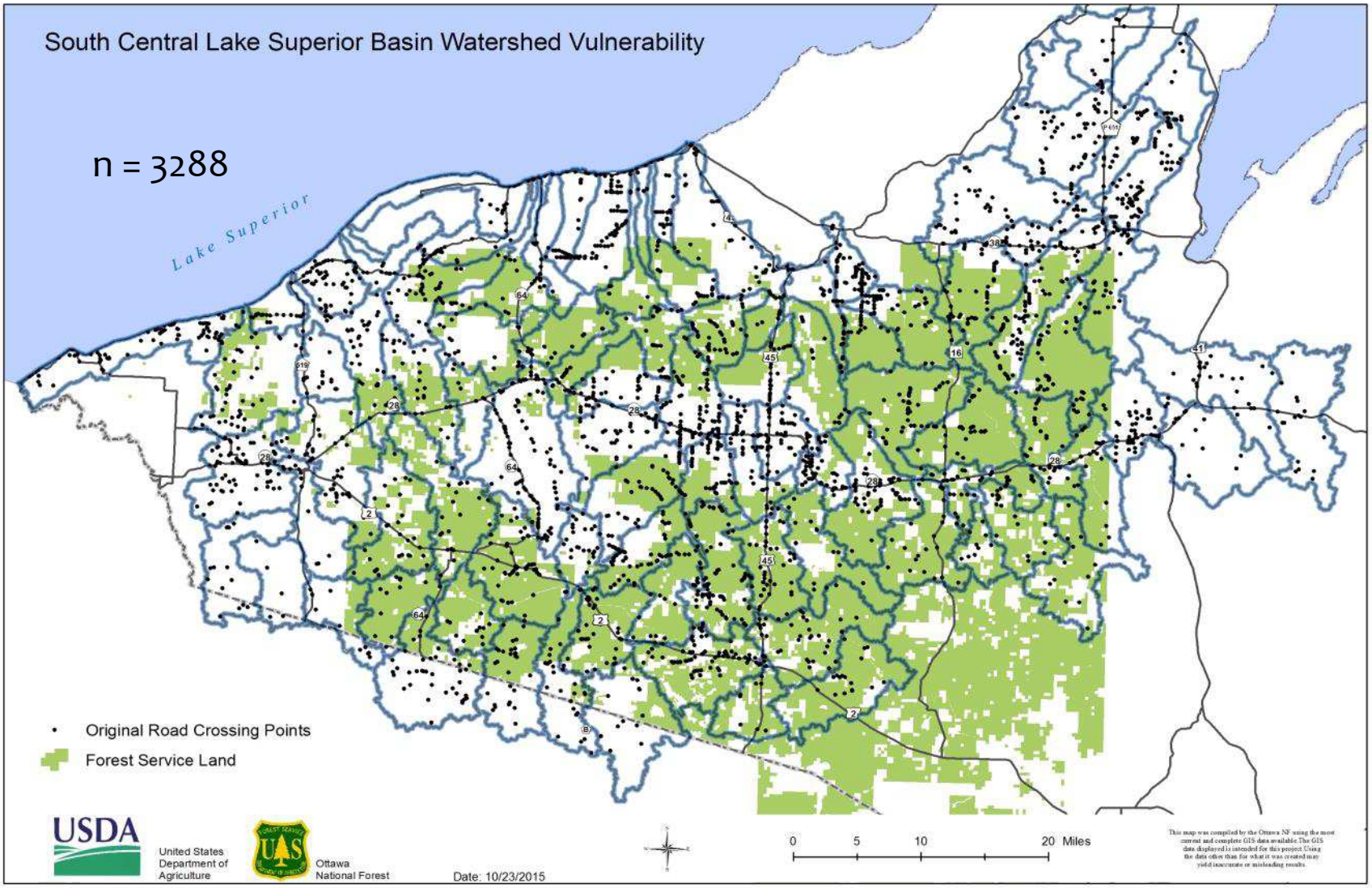
But Wait!

* Mapping unmapped roads

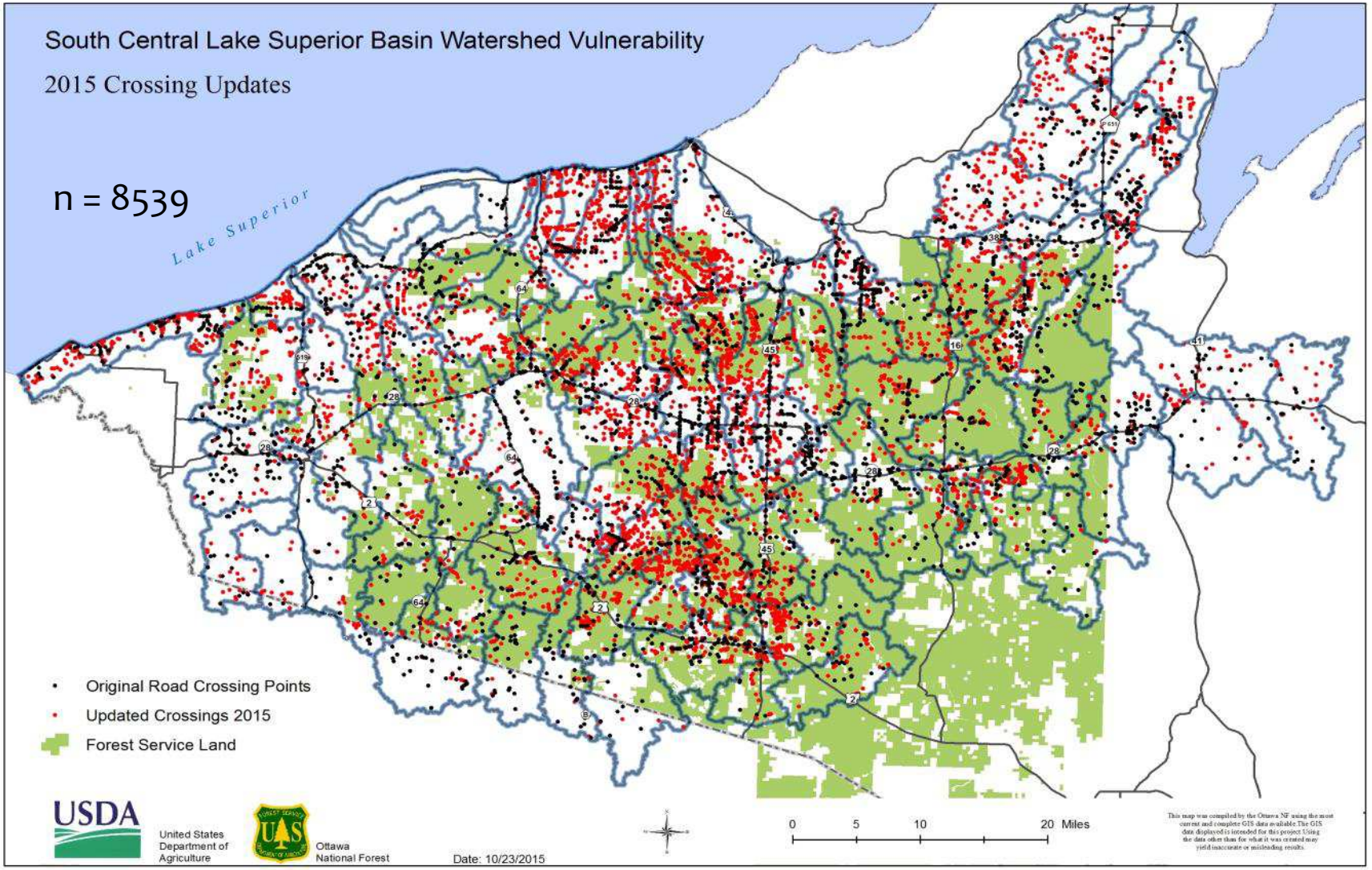




Original stream crossings

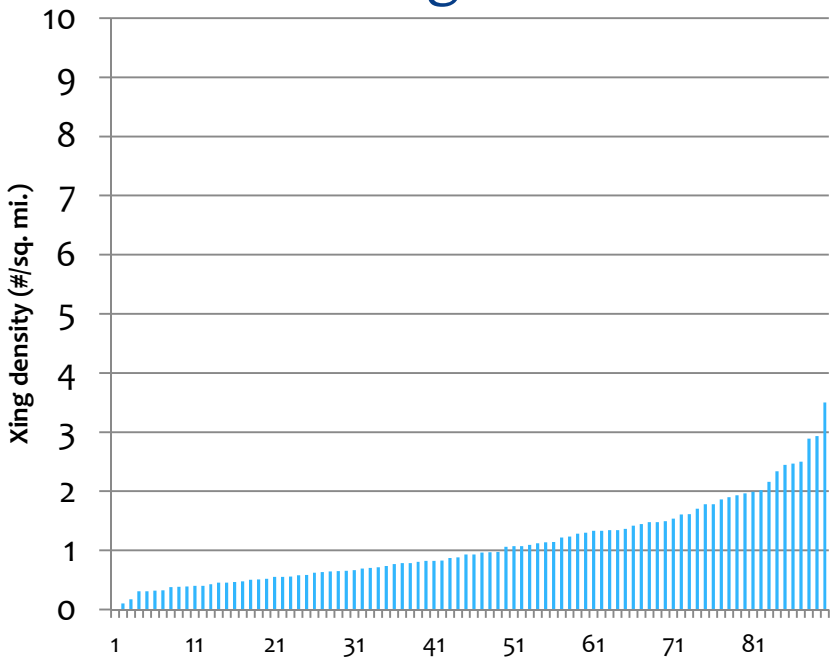


Updated stream crossings

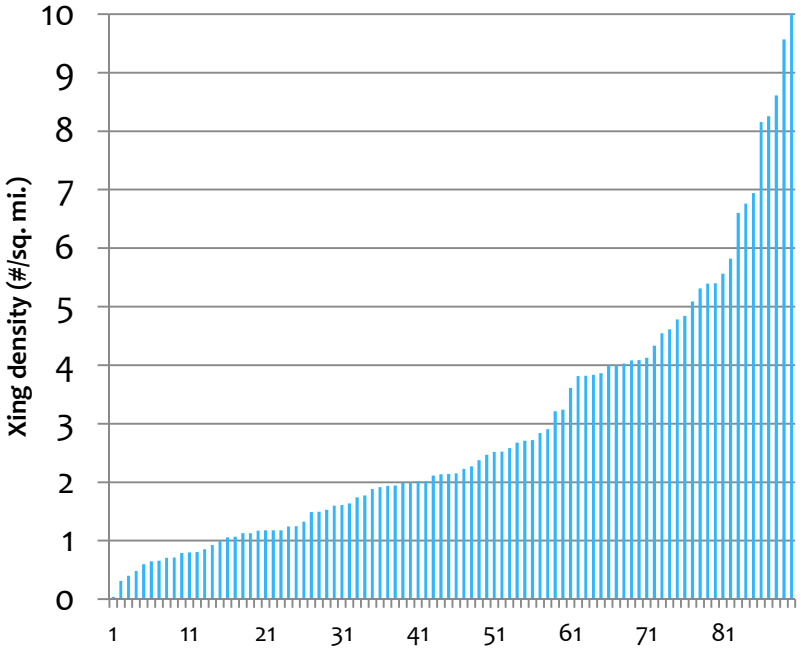


Stream crossing density

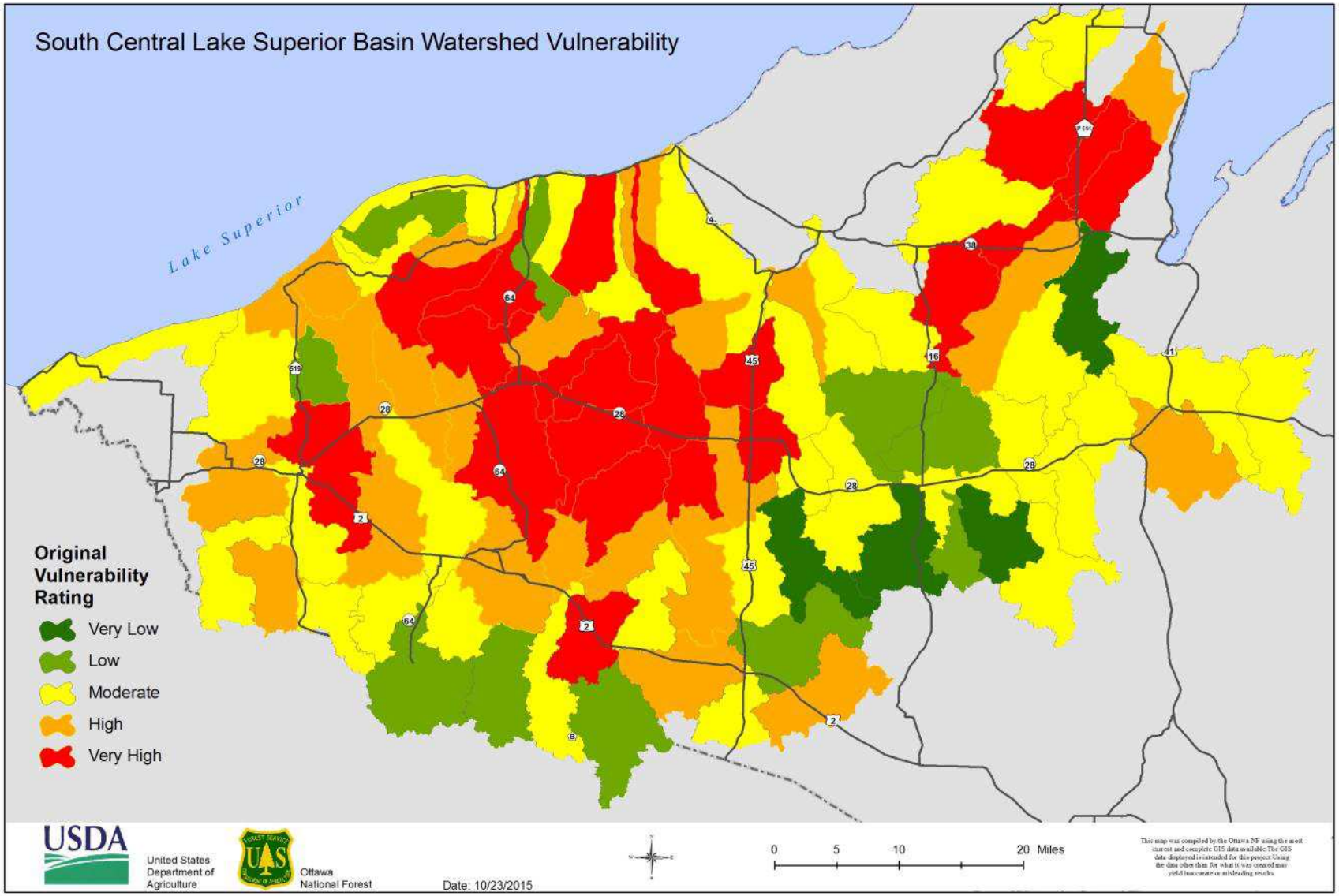
Original



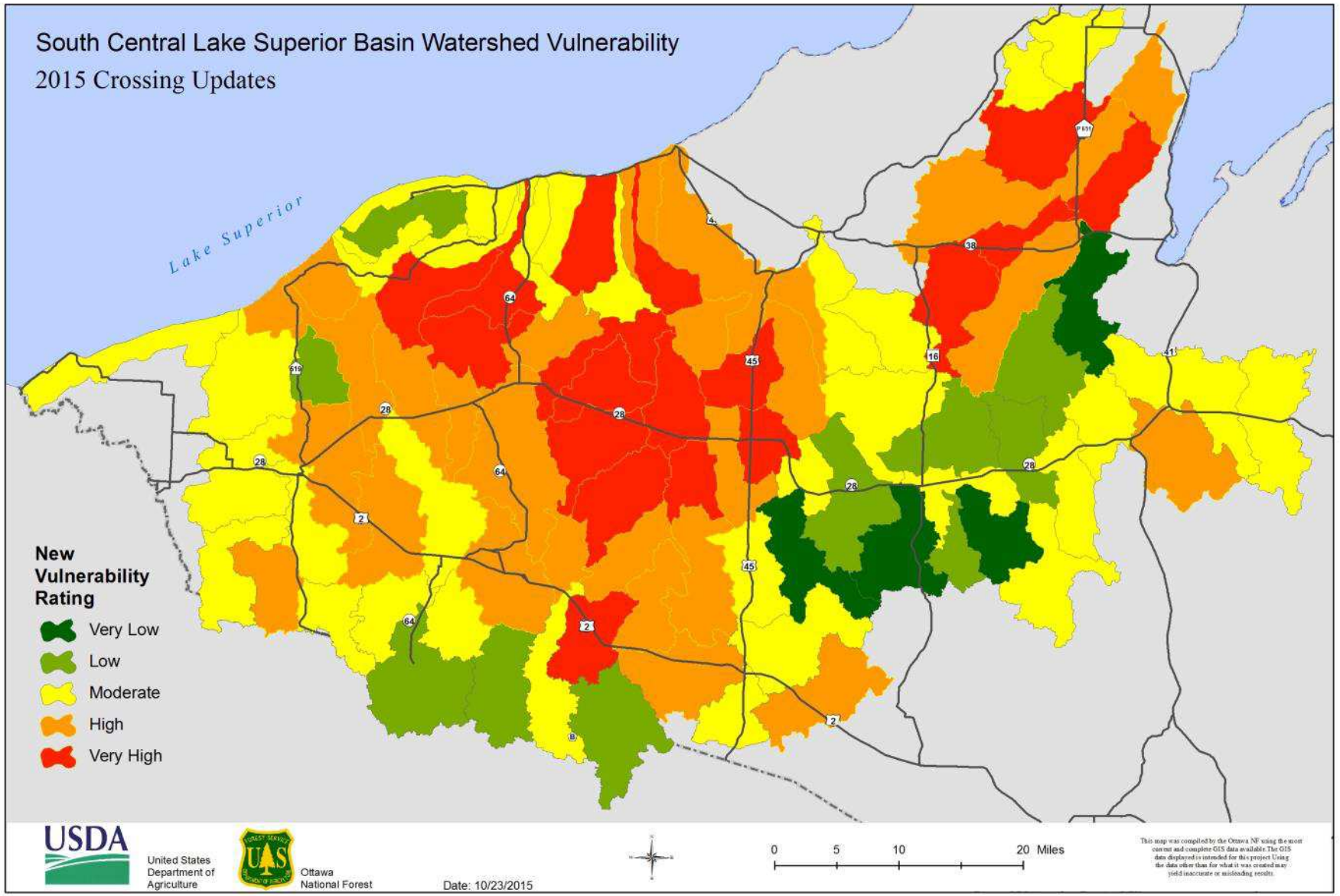
Updated



Original map



Updated map


South Central Lake Superior Basin Watershed Vulnerability
2015 Crossing Updates
Lake Superior
New Vulnerability Rating
Very Low
Low
Moderate
High
Very High
USDA
United States Department of Agriculture
Ottawa National Forest
Date: 10/23/2015
0 5 10 20 Miles

Next steps

* Complete road/stream crossing inventories in the most vulnerable watersheds
* Model stream flows to assess risk of hydrologic failure (hydraulic analysis, climate change)
* Develop index of ecological/social/economic risk of failure
* Prioritize replacement (risk/cost/benefit analysis)