

Update on Elm Creek watershed modeling

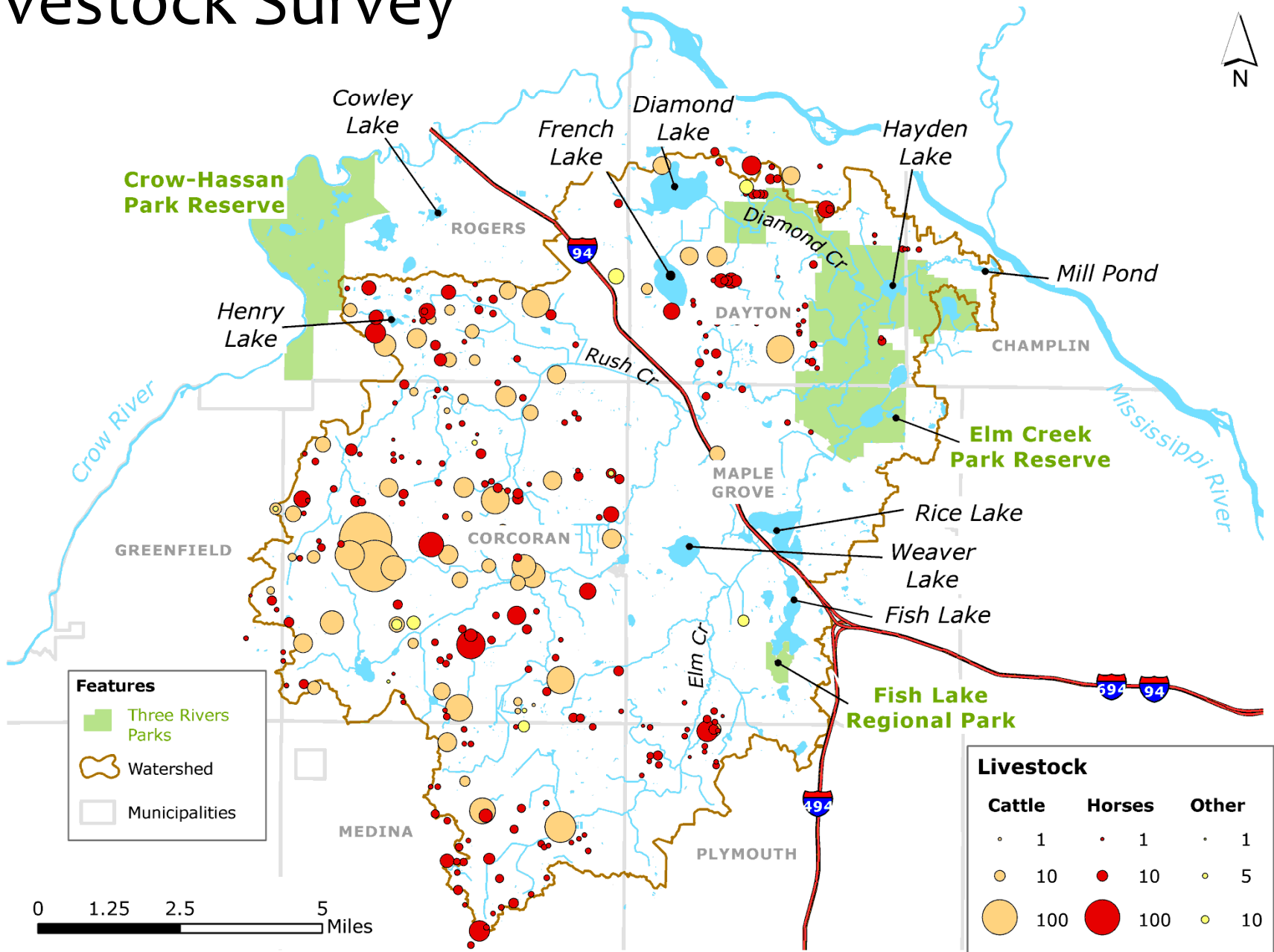
February 13, 2013

Livestock survey

Picture of feedlot removed because of license and copyright agreement

- * Performed by Jon Hess in cooperation with Ali Durgunoglu and Jim Kujawa
- * Examined aerial photos for all parcels in the watershed for three years, 2006, 2008, and 2011

Livestock Survey



Livestock survey results

Scenario Summary			
	Mid Range	High Range	Low Range
Livestock Type	Daily phosphorus production per 1000 lbs. animal weight		
Beef	0.083	0.092	0.048
Dairy	0.07	0.16	0.04
Horse	0.041	0.071	0.011
Sheep	0.087	0.0957	0.0783
Swine	0.1	0.18	0.044
Elk	0.087	0.0957	0.0783
Year	Resulting pounds of phosphorus in ECWS per year		
2006	59,876	102,730	30,288
2008	66,359	113,130	33,659
2011	69,415	119,362	35,325
Max	88,612	149,145	44,900

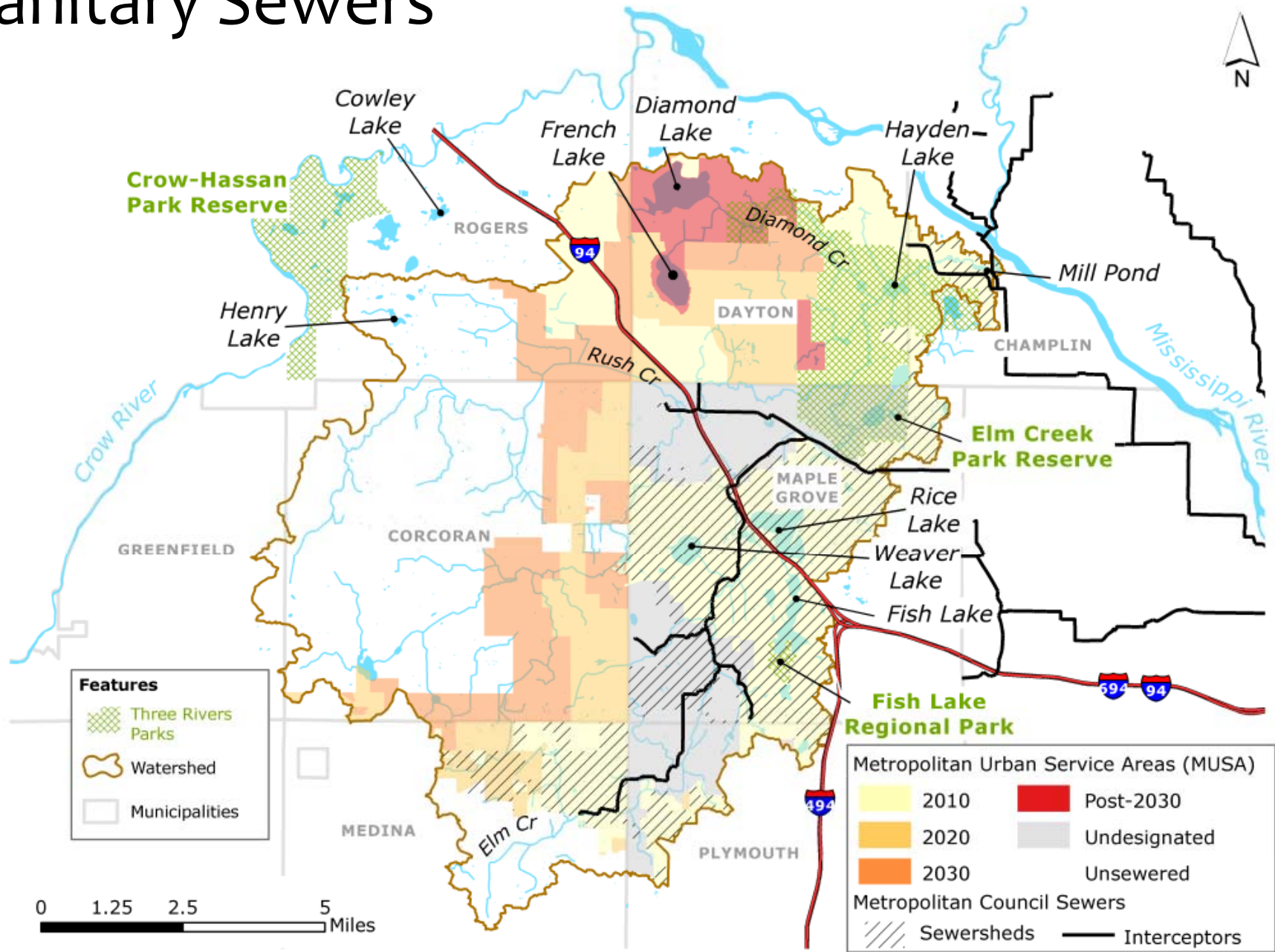
Notes: P values taken from low and high end of literature ranges. A range of +/- 10% used for sheep/elk daily phosphorus production.

Identified 341 operations.

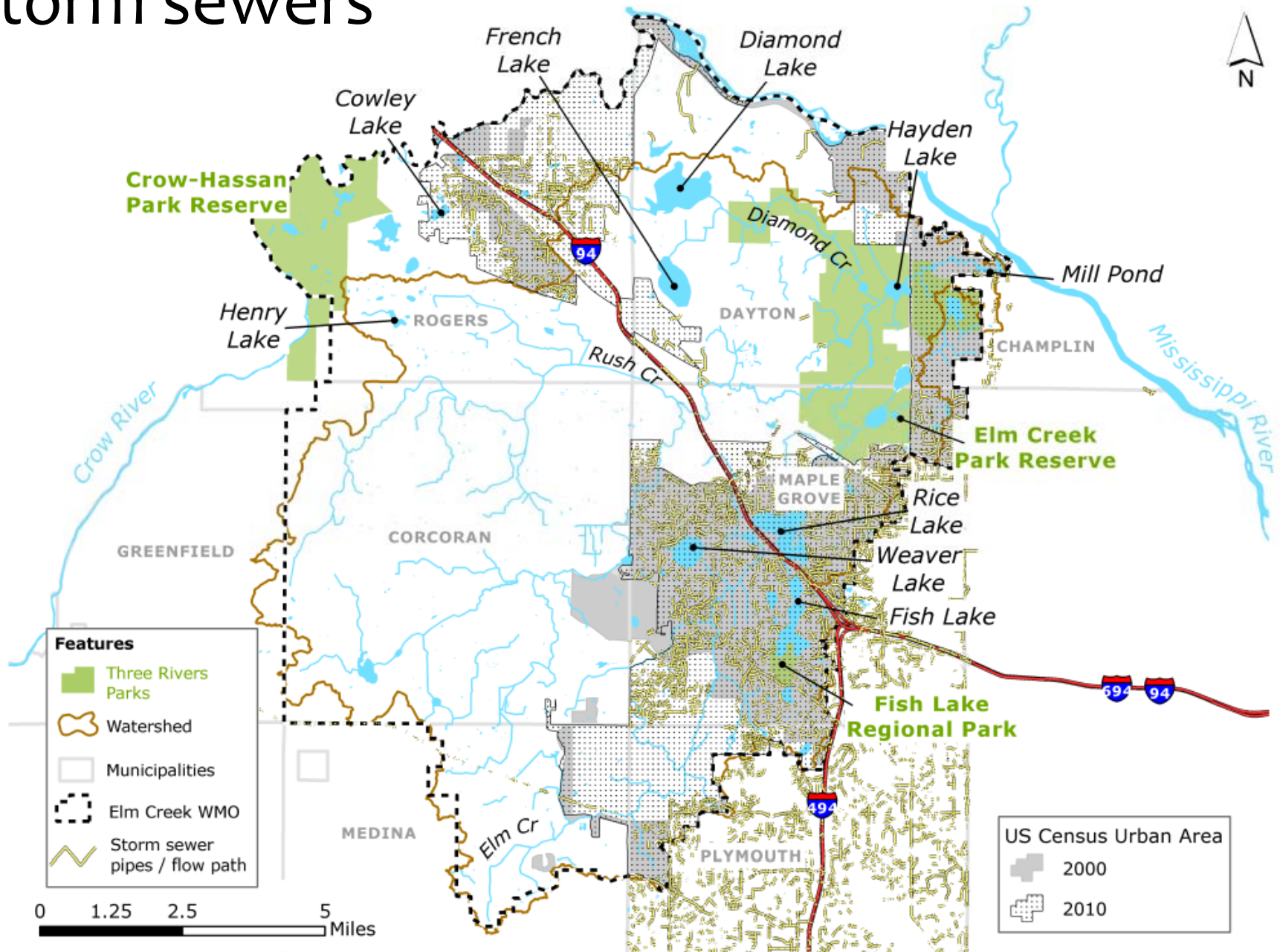
Maximum animal counts: 2027 cattle, 1382 horses, 185 other

2011 animal counts: 1581 cattle, 1058 horses, 162 other

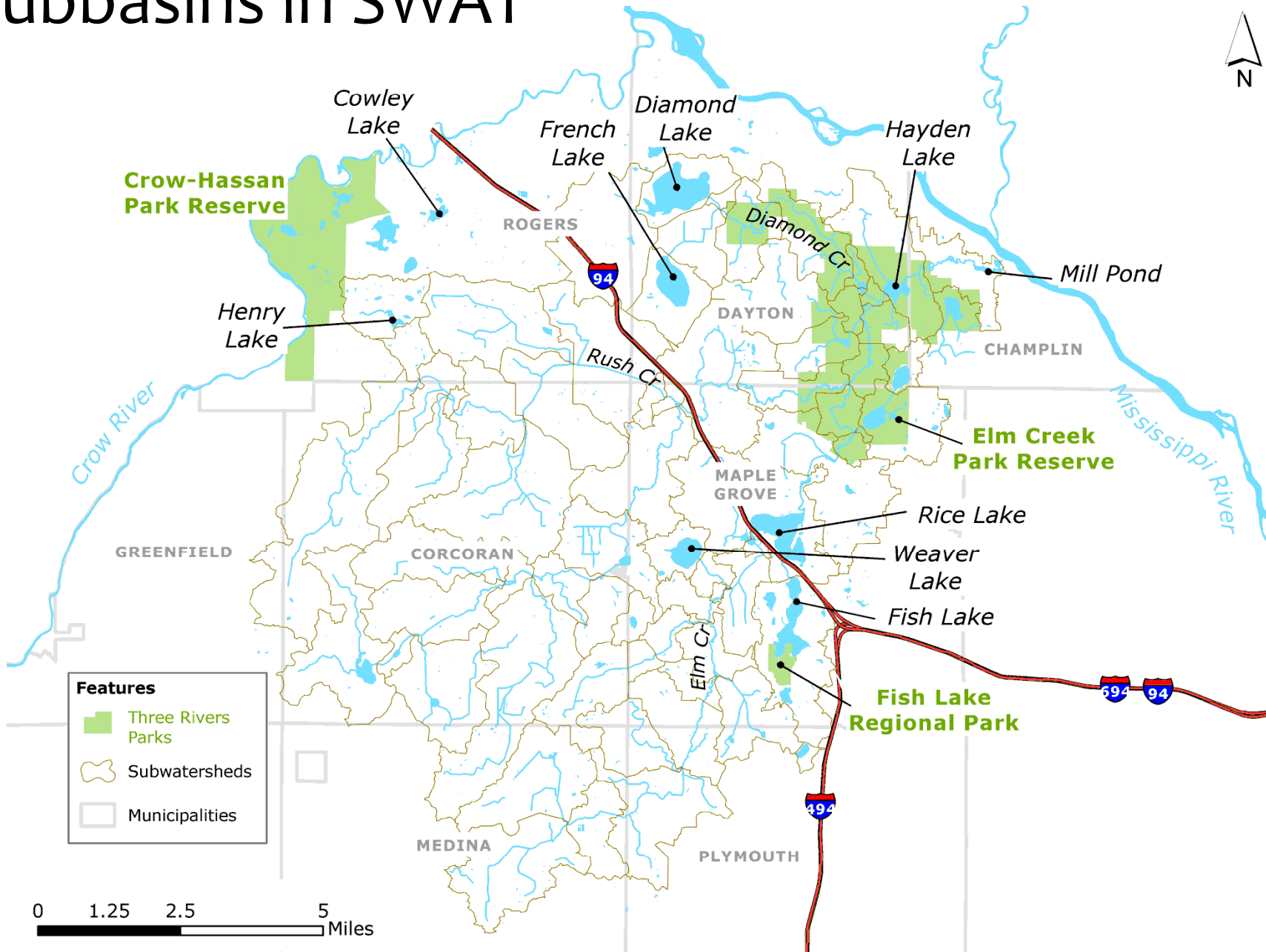
Sanitary Sewers



Storm sewers



Subbasins in SWAT



SWAT model update

- * Model is running
 - * 5,323 hydrologic response units
 - * 456 soils
 - * 10 minutes/year – too long
- * Current efforts
 - * Configuring water storage for lakes and wetlands
 - * Simplifying soil inputs to reduce run time
 - * Configuring agricultural management