



SUSTAINABLE & HEALTHY COMMUNITIES PROGRAM

Predicting Nitrogen in Streams: A Comparison of Two Estimates of Fertilizer Application

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0.5 km



Background

Excess nitrogen has harmful impacts on our ecosystems and public health

Nr input critical to the agriculture that we depend on

Agriculture uses more Nr and accounts for more Nr losses to the environment than any other economic sector

9.9 Tg N/yr are used to produce agricultural crops

Many modeling efforts seek to predict nitrogen loads to waterways/atmosphere

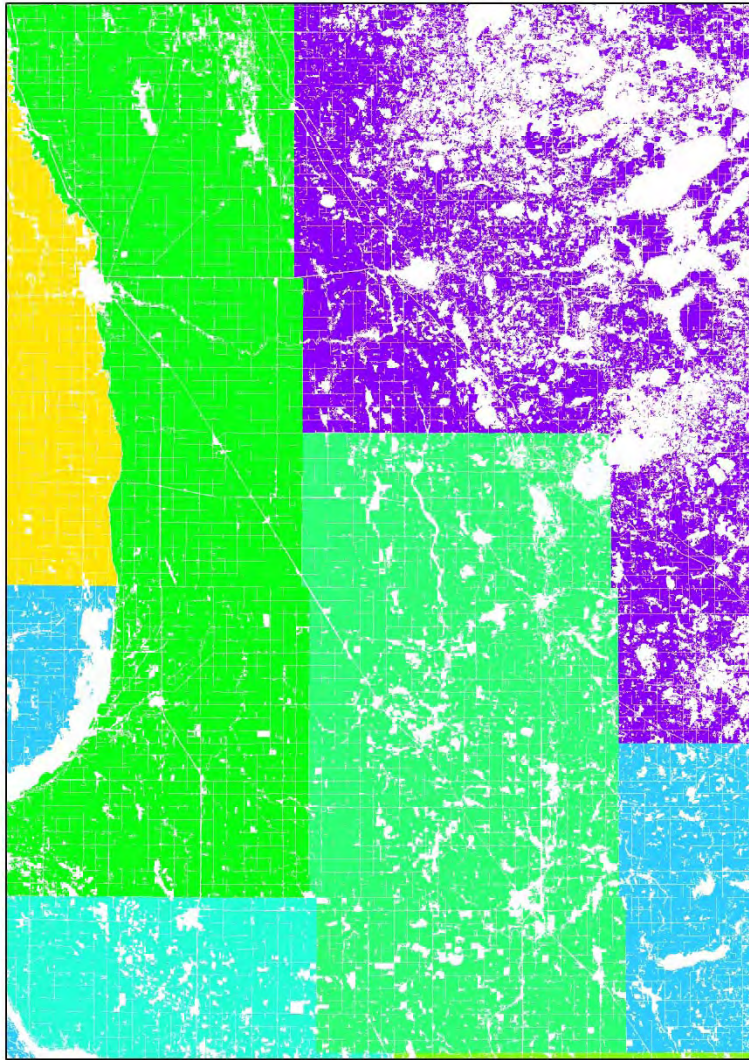
Models frequently use fertilizer application as one of the inputs

The more accurate and spatially explicit the model inputs and models are, the more likely it is the results can help guide efficient use of fertilizer and restoration and conservation efforts



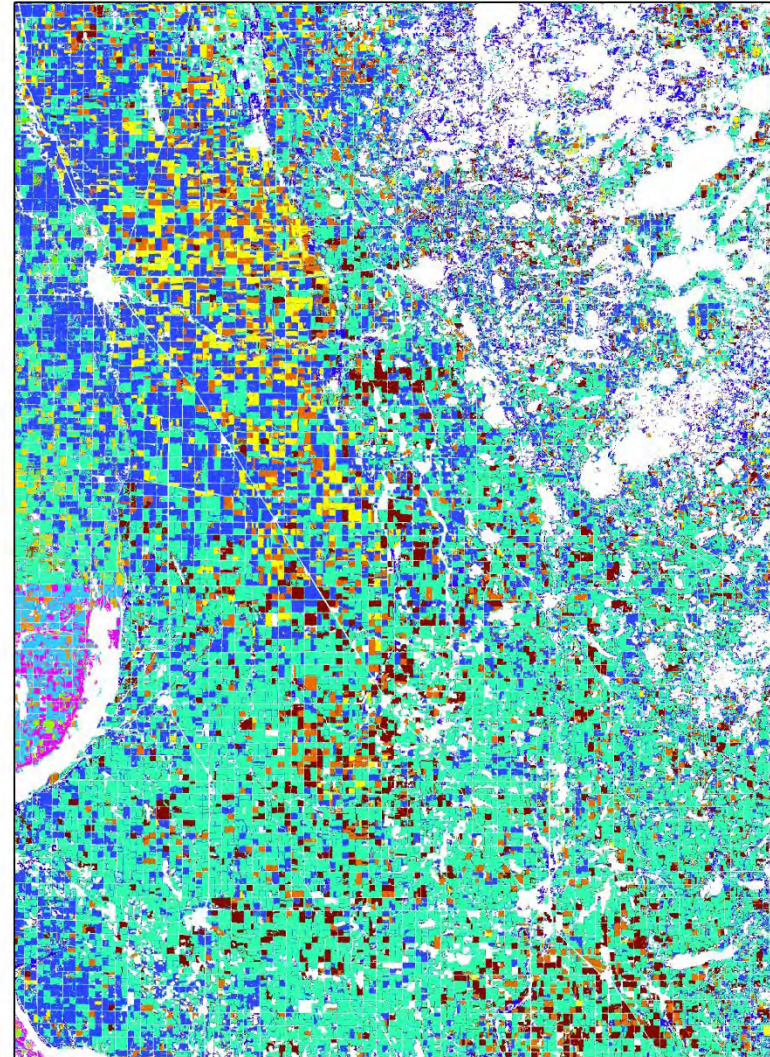
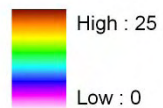
Background

Recommendation: EPA's Science Advisory Board (SAB) Integrated Nitrogen Committee *recommends doing a better job of tracking fertilizer use to better inform decision-making about policies and mitigation options for reducing Nr load in these systems and to facilitate monitoring and evaluation of impact from implemented policies and mitigation efforts.*



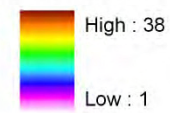
Ruddy
Fertilizer
Sales

Nitrogen Application Rate (Total Tons N)

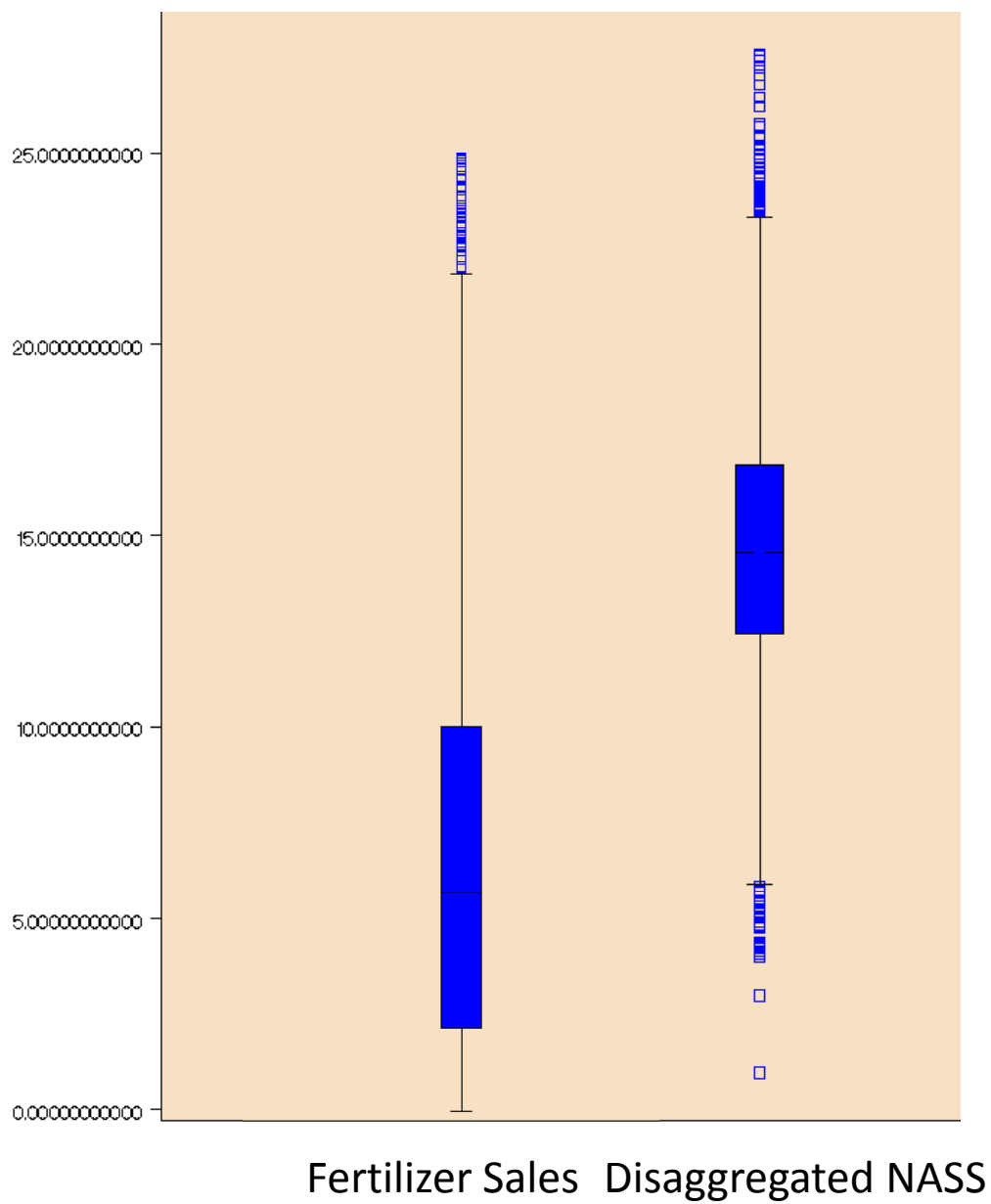


Disaggregated
NASS

Nitrogen Application Rate (Total Tons N)

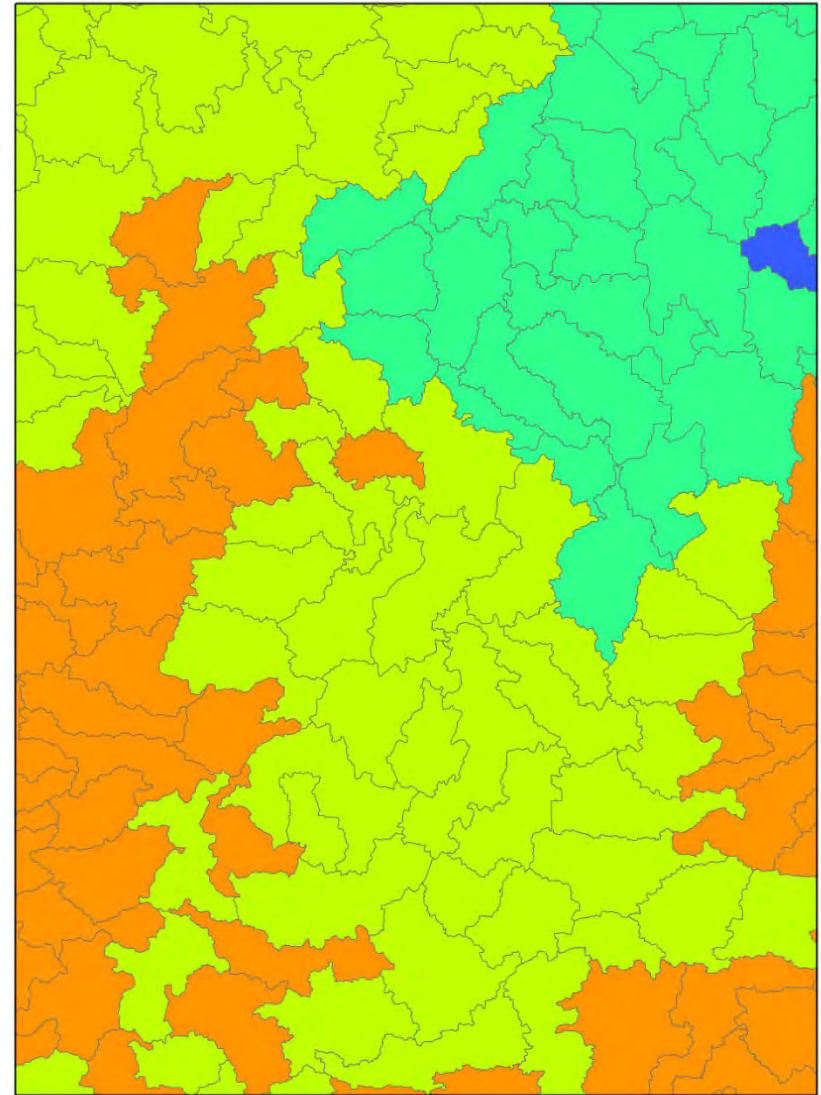
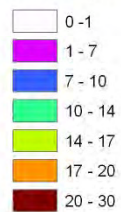


Mean Nitrogen Application Rate (lbs)

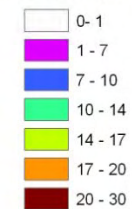




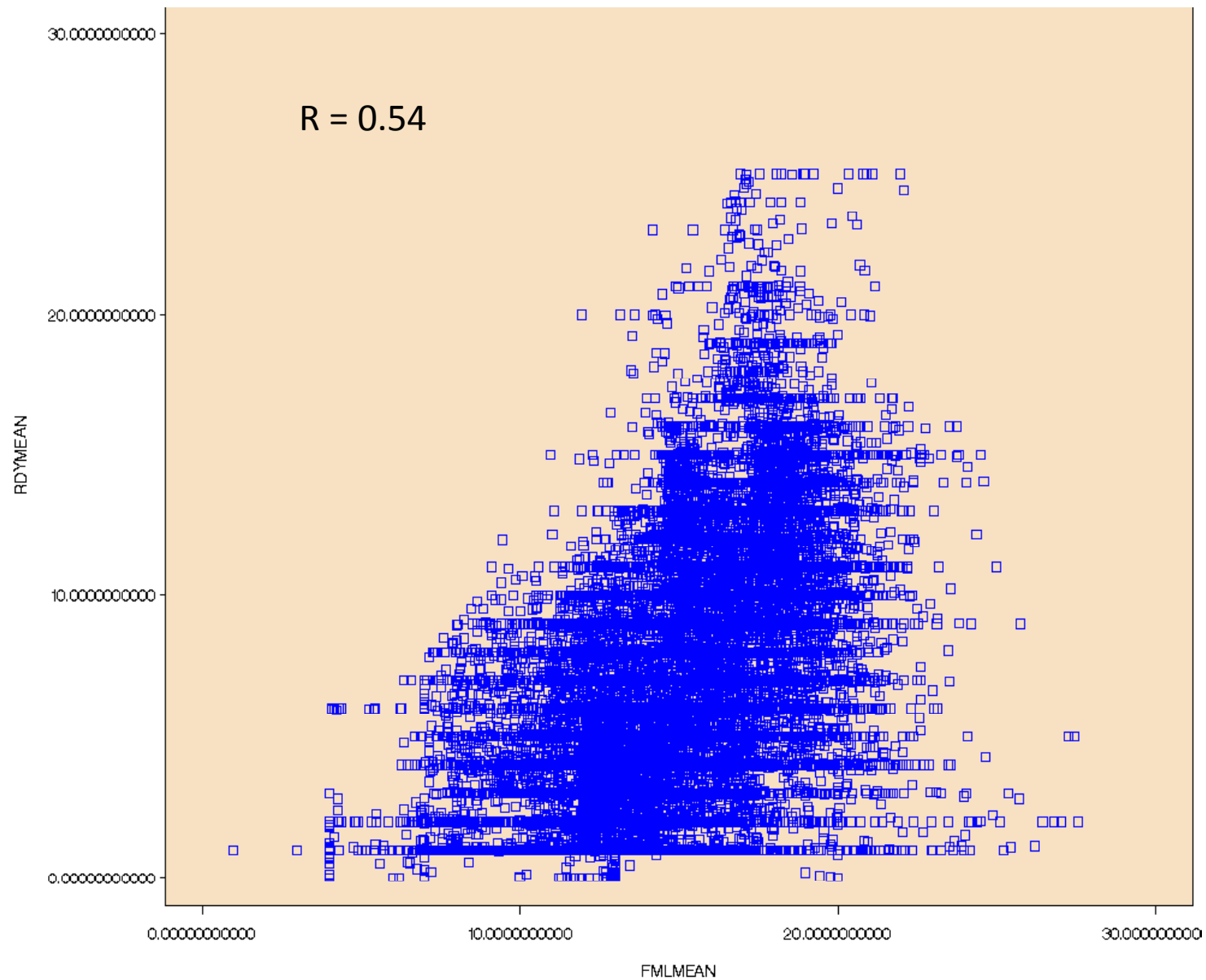
Nitrogen Application Rate (Average lbs per pixel)



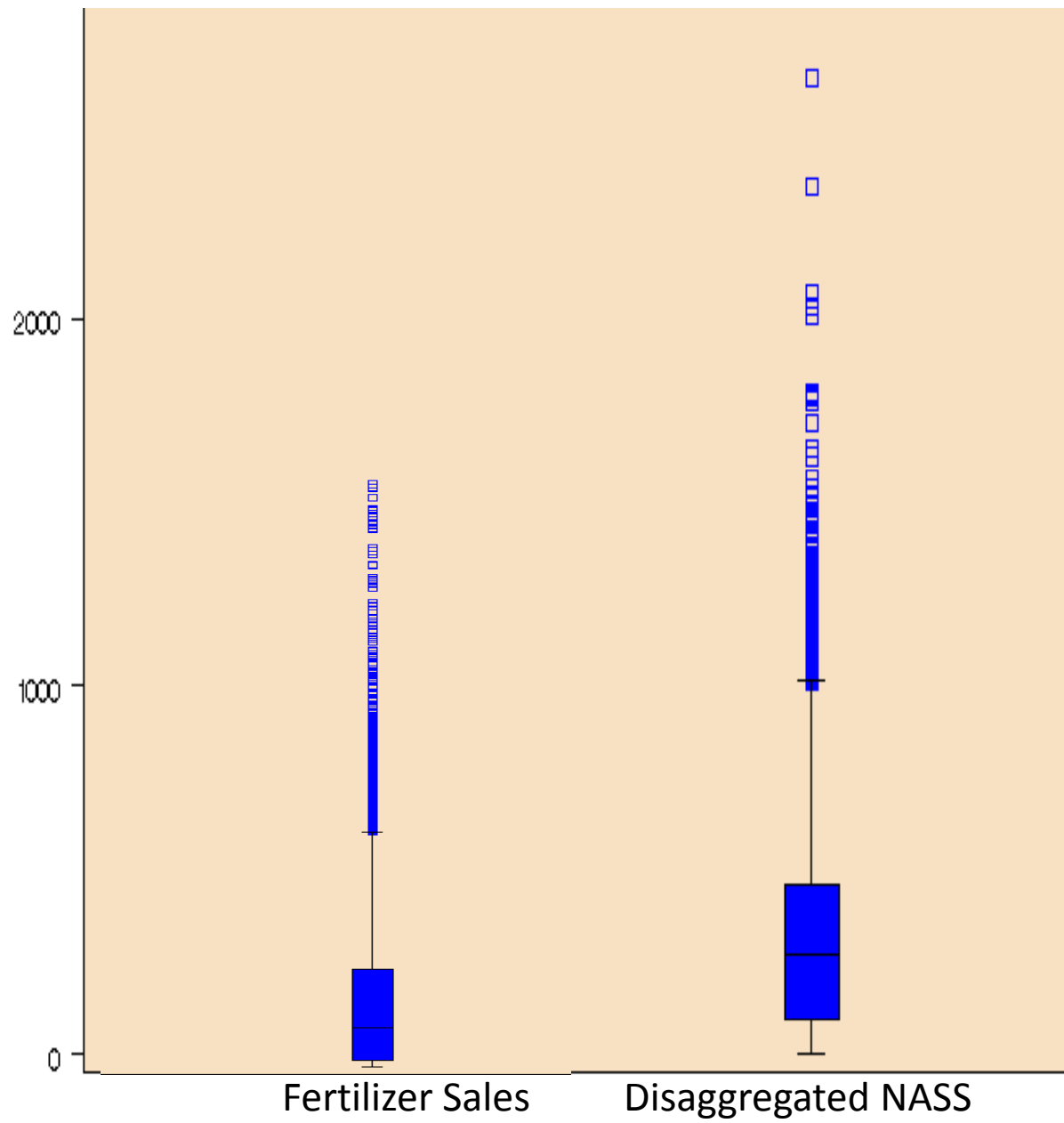
Nitrogen Application Rate (Average lbs per pixel)



Correlation between Nitrogen Application HUC 12 Watershed Means Disaggregated NASS vs County Fertilizer Sales



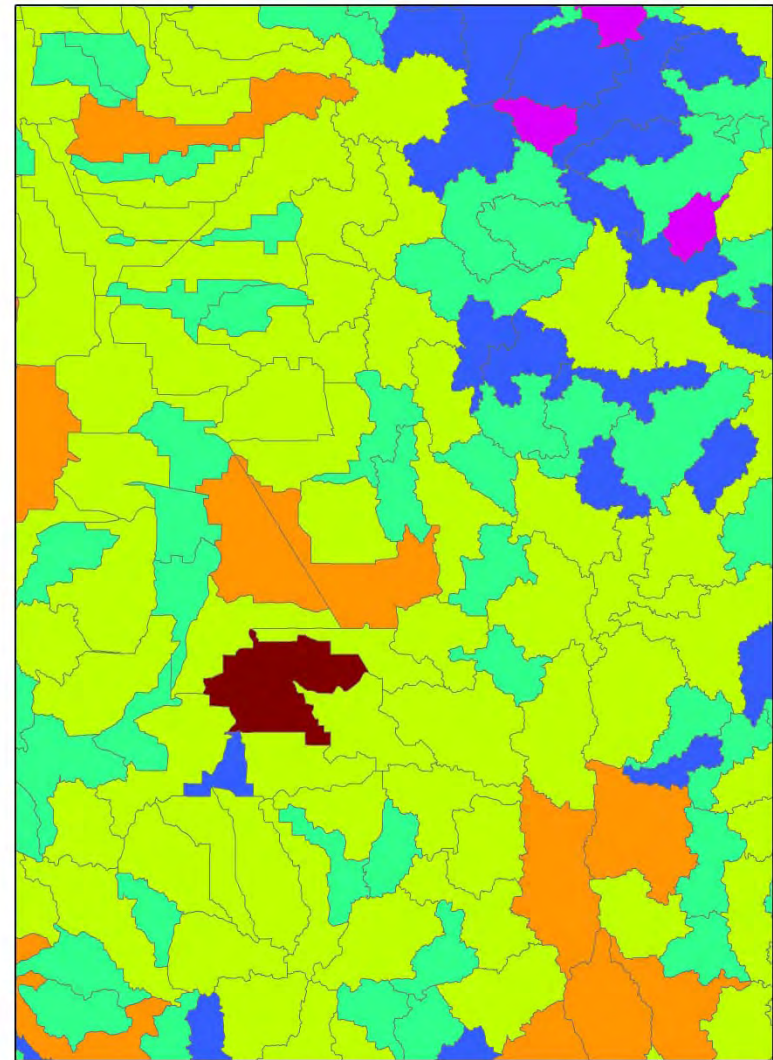
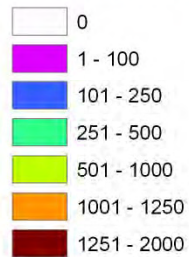
Sum Nitrogen Application Rate (Tons)





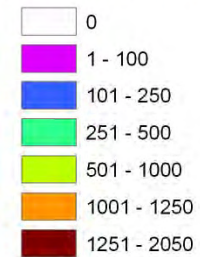
Nitrogen Application Rate (Total Tons N)

Fertilizer
Sales

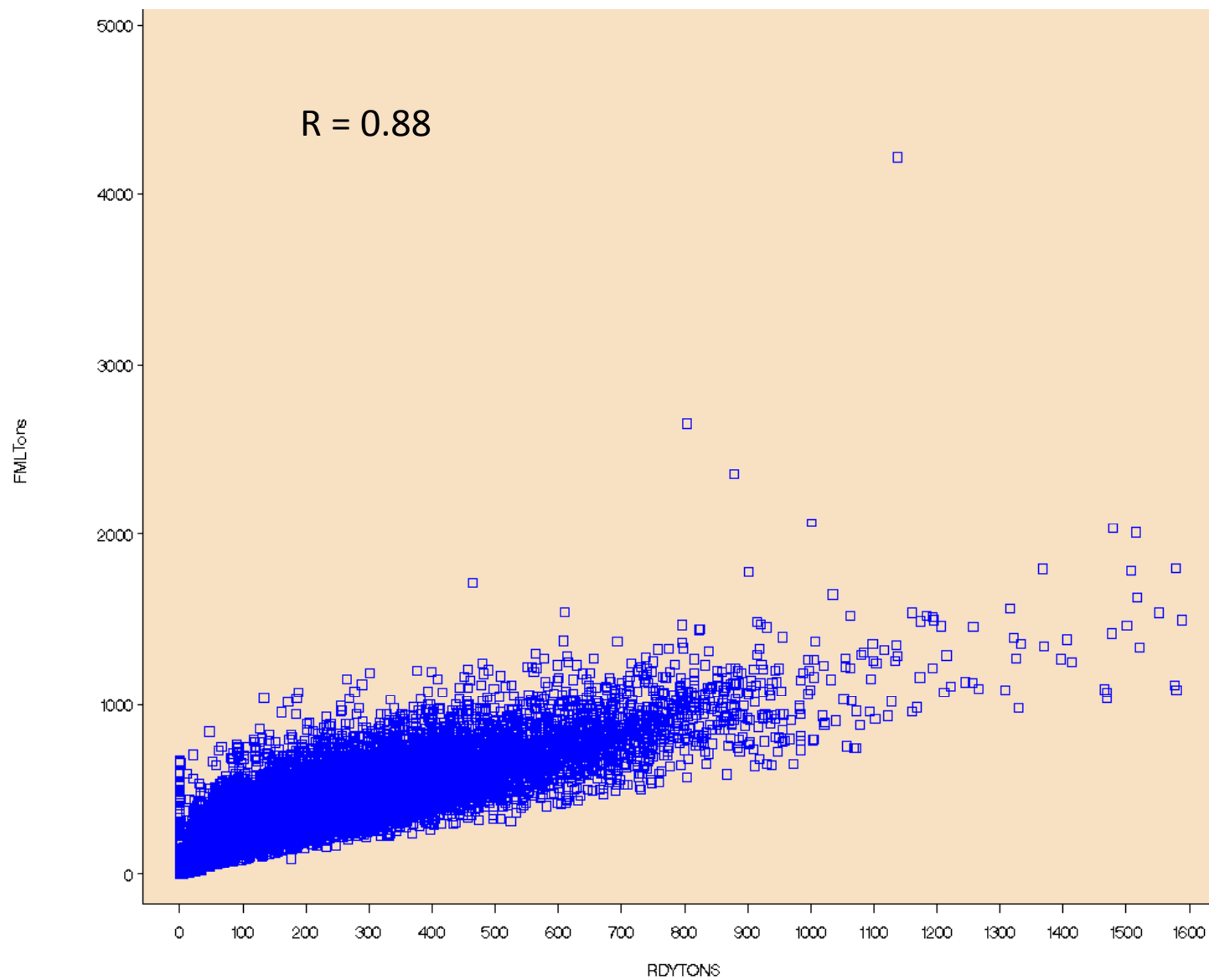


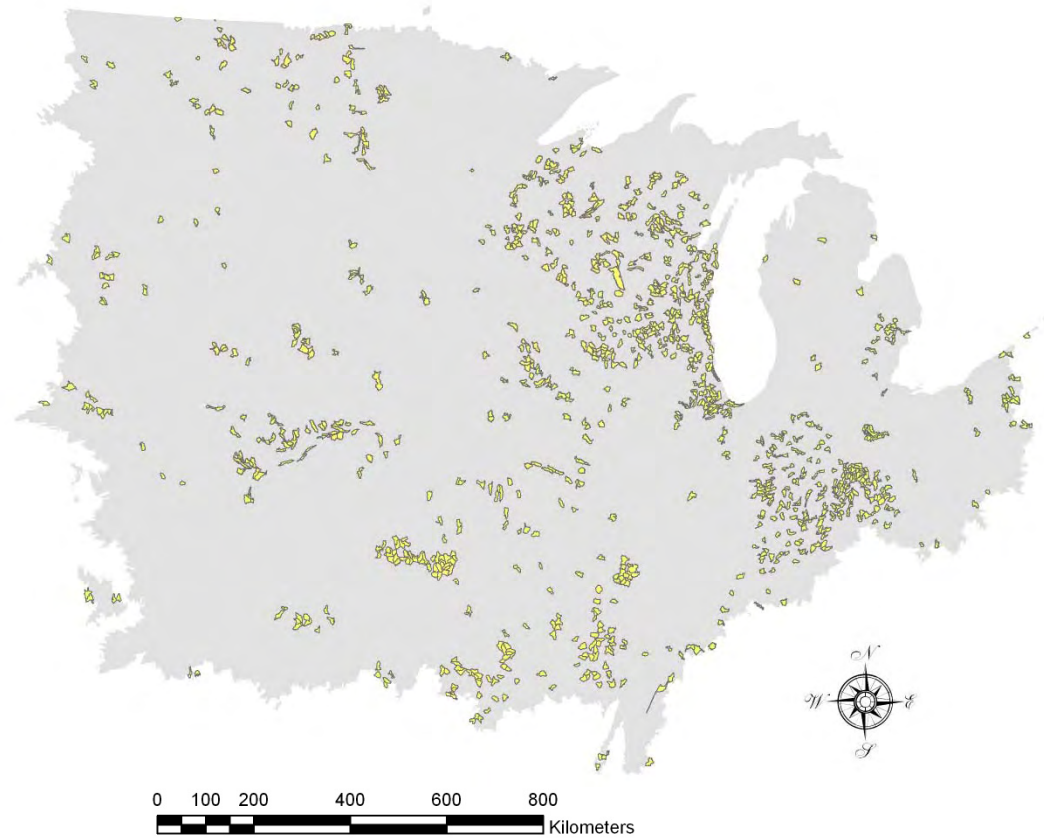
Nitrogen Application Rate (Total Tons N)

Disaggregated
NASS



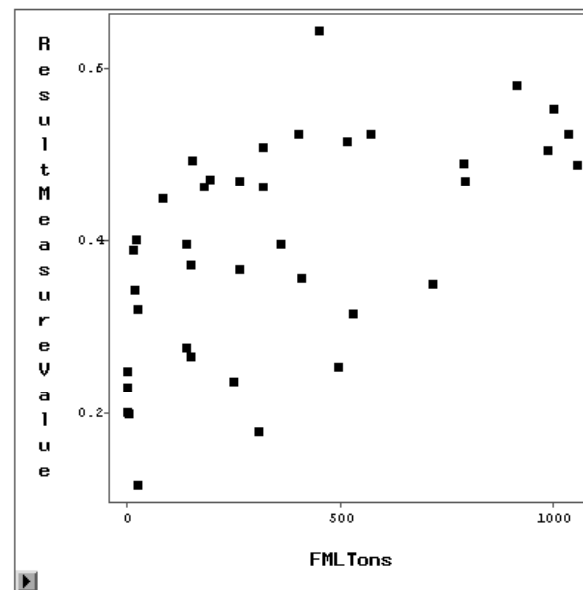
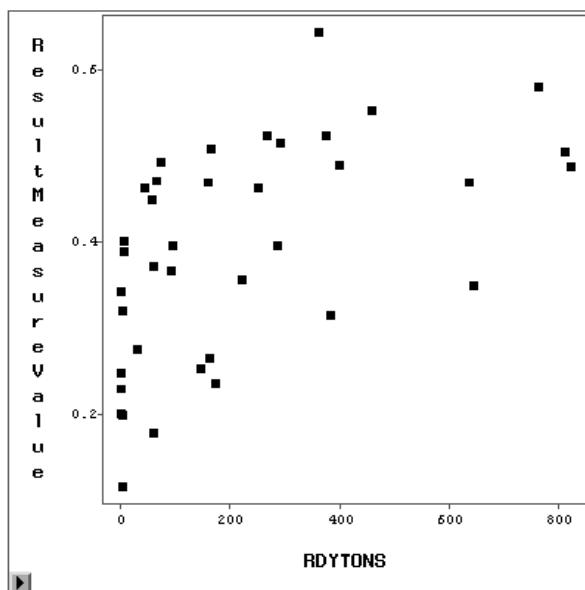
Correlation between Nitrogen Application HUC 12 Watershed Sum Disaggregated NASS vs Fertilizer Sales



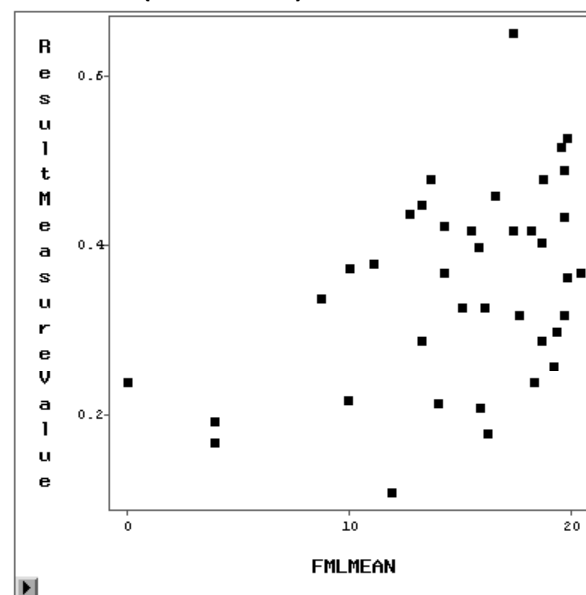
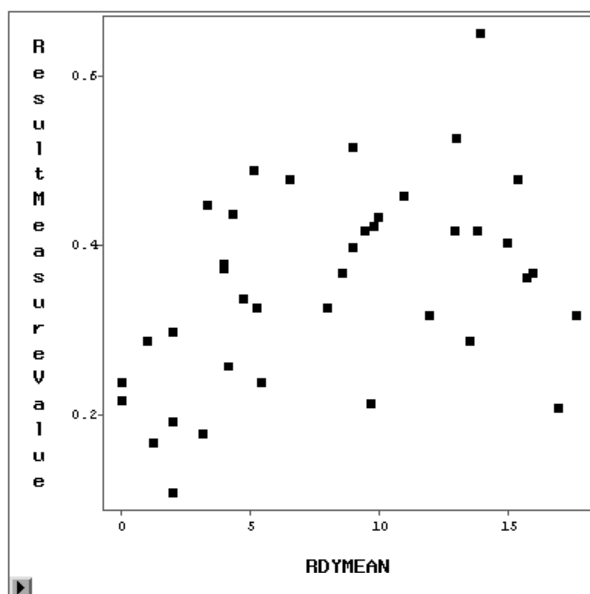


Yellow Huc12s have nitrogen data in the five year around 2001.

Kjeldahl N (mg/L as N)



Nitrogen Fertilizer Application (Total lbs)



Nitrogen Fertilizer Application (Average lbs per pixel)