

I propose to investigate the effect of agriculture runoff on surface water quality in northern Minnesota. I would like to investigate the types of pollution runoff in different agricultural regions of Minnesota and the extent to which point sources such as farms have on watersheds and the quality of surface water, particularly lakes, within the watershed. Fishing, boating, and swimming in lakes are an integral part of Minnesotan culture and economy in rural areas.

Characterizing the relationship between surface water quality and farm runoff provides a tool for developing more efficient policy to best protect these areas.

The data sets that I think will be important for this project are land cover, precipitation, agricultural land use, and water quality data sets. It will be important to map the runoff from the point source farms into the surface waters in the area and for characterizing the pollutants and their transport. I think I will be focusing on nitrogen and phosphorous as they are typically pollutants of particular concern. It would be interesting to investigate how far agg pollution travels from farms, but I am not sure yet if this is feasible. Another topic of interest is how the surface water quality and the economic health of an area is related, but I am not sure if the data exists for this to be feasible.

Dr. Maidment, I am not really sure if this project is feasible or an appropriate scope. If you have any suggestions for other directions and data sets that are out there, particularly for water quality, please let me know.