

The Conservation Reserve Program in the Upper Midwest: Prioritizing Contract Renewal Efforts

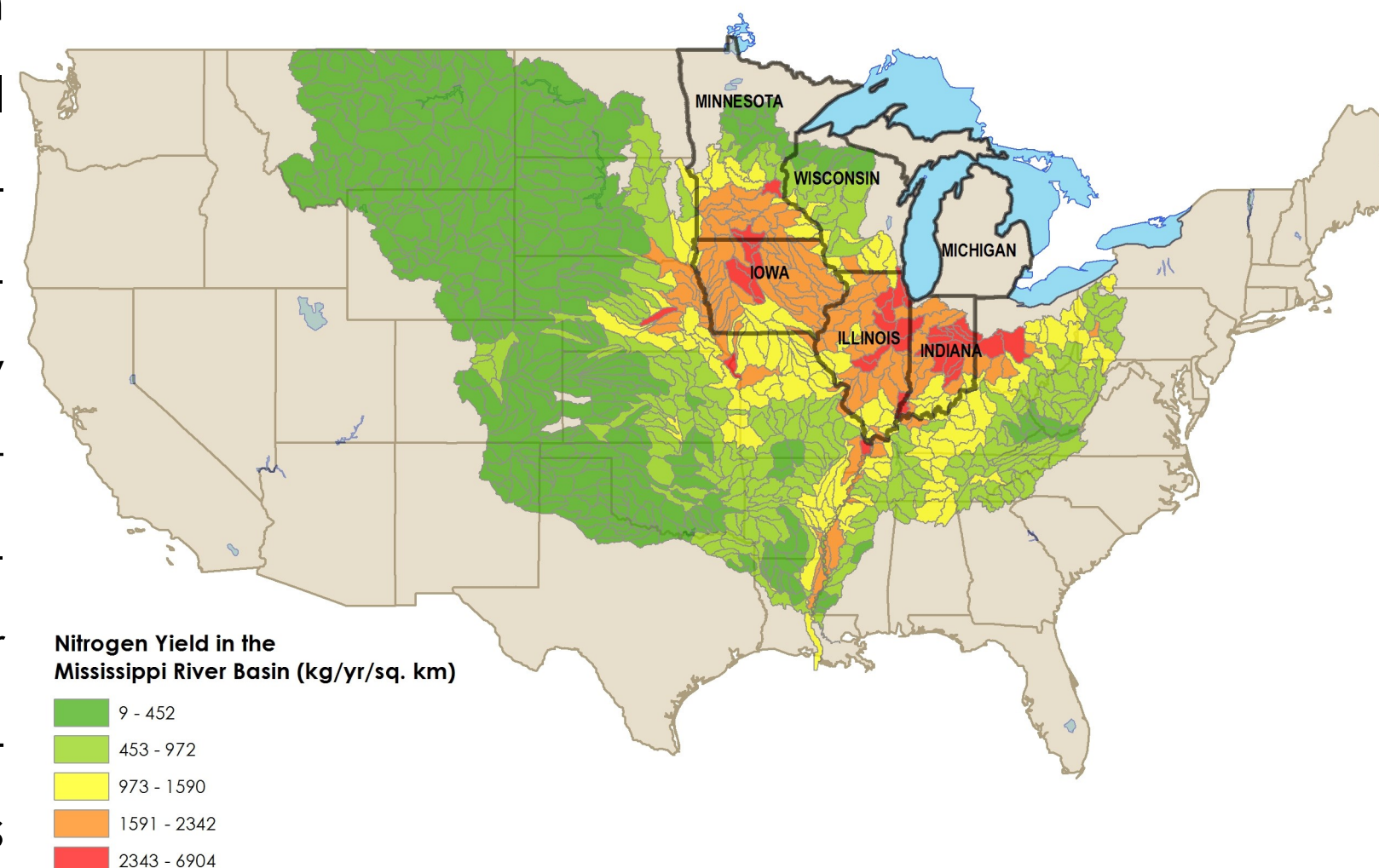
Introduction

The Conservation Reserve Program (CRP) is a federally funded conservation program that assists landowners in conserving and improving valuable natural resources. Farmers remove environmentally sensitive, highly erodible land from agricultural production and plant vegetative cover to provide environmental services. In exchange for retiring land from production, the United States Department of Agriculture (USDA) offers farmers rental payments, but unfortunately environmental benefits can be short lived. CRP contracts expire after ten to fifteen years, and if not renewed, land can return to intensive annual cropping systems.¹

The environmental benefits from CRP acreage is of significant importance in the Upper Midwest states of Illinois, Iowa, Indiana, Michigan, Minnesota, and Wisconsin, because of the high nutrient load from the region into the Mississippi River Basin. Nutrients make their way to the Gulf of Mexico, leading to a hypoxic "dead zone,"

depleted of oxygen and most biological activity. CRP acreage can help mitigate this effect by preventing nutrient runoff and soil erosion in the Upper Midwest.² The 2014 Farm Bill decreases the total amount of

CRP acreage that can be enrolled over the next five years,³ and this project aims to visualize how to prioritize efforts to renew expiring contracts in the Upper Midwest. The final map prioritize the landscape in terms of CRP acreage, CRP rental payments, farm income, and proximity to impaired bodies of water.

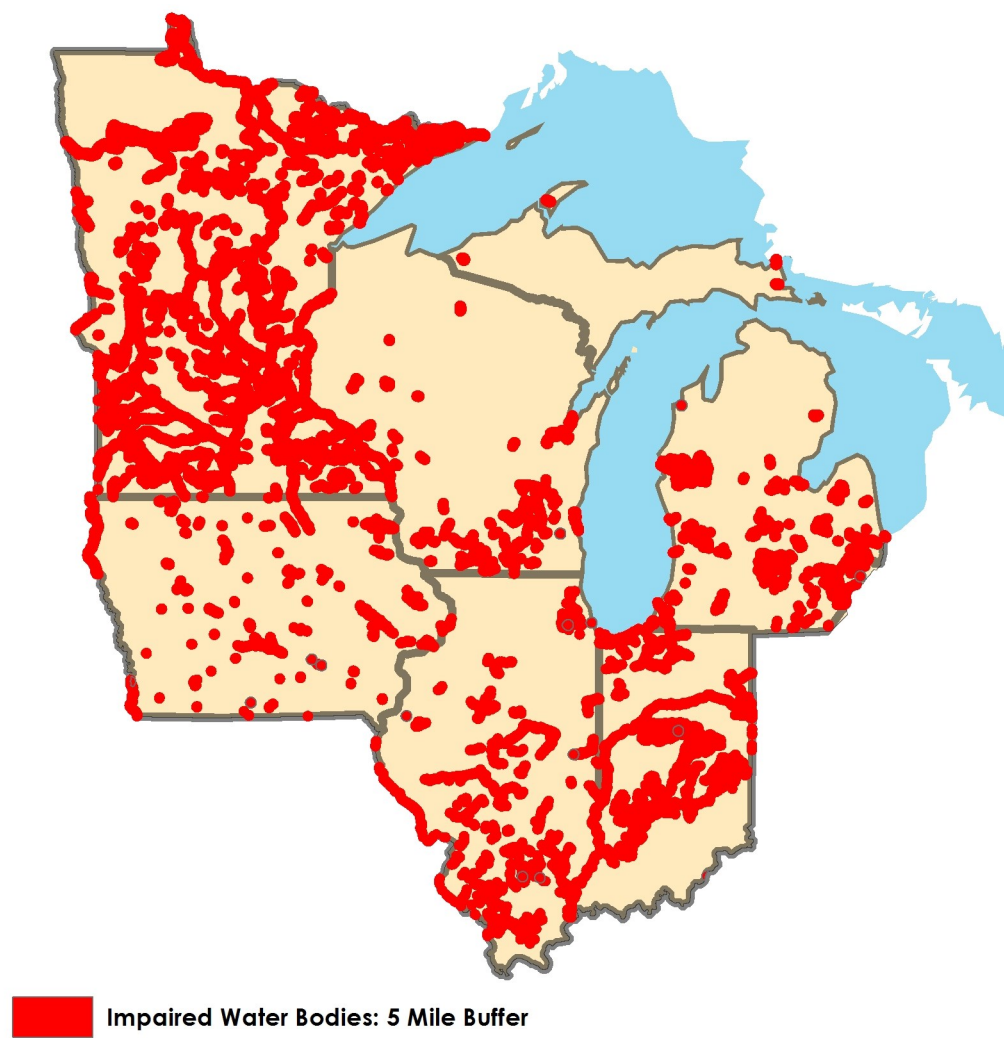


Methodology

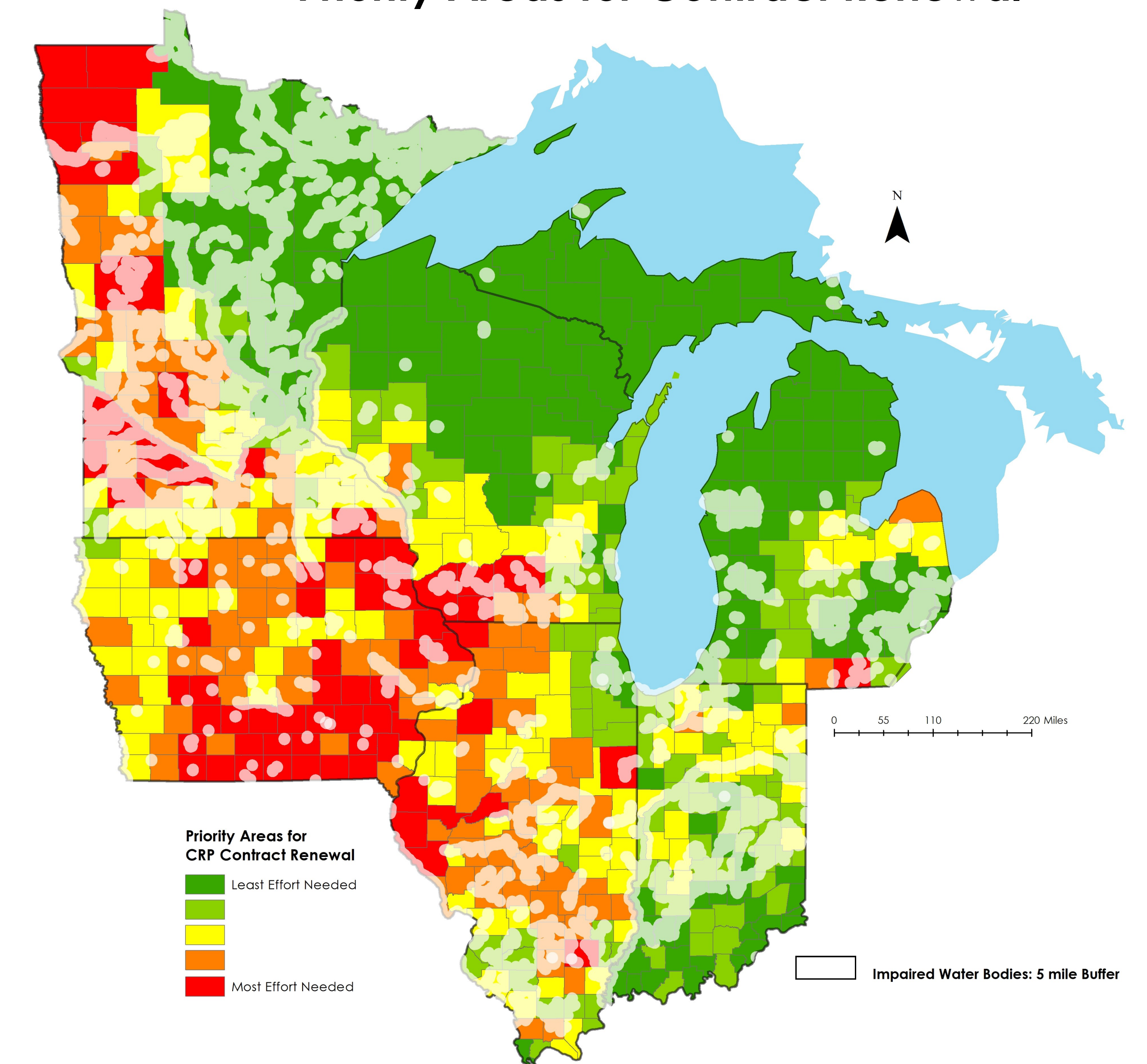
Data gathered from USDA's Farm Service Agency (FSA) and National Agricultural Statistics Service (NASS) were utilized to map current CRP acreage, acreage that will expire between 2014 and 2018, CRP rental payments per acre, and farm-related income by county. These parameters were illustrated in choropleth maps by county, and then were then assigned a score between 1 and 5 for each county, to identify areas where efforts are most needed to urge landowners to reenroll land in CRP. Counties received higher scores for higher acreage and for higher expiring acres, indicating that these areas have significant potential to lose environmental benefits if contracts are not renewed. High CRP rental payments resulted in a high preference score for the rent parameter, because if reenrollment is more financially feasible, efforts should seek out landowners who already have incentive to extend their contracts.

Despite financial incentives, in some areas high crop prices and farm income levels will encourage farmers to return environmentally sensitive land to production.⁴ High farm-related income areas received a higher score for income, as landowners will need additional encouragement in the face of the alternative higher income they could receive by returning CRP land to production. The ranks from all four parameters for each county were summed and joined to the Upper Midwest map, showing lowest effort needed in green to highest effort in red.

In order to more closely examine the role of water quality in the Upper Midwest, I placed a 5-mile buffer around water bodies that the EPA classified as "impaired" in the region. Overlaying this buffer on the prioritization score analysis illustrates where to focus efforts aims at renewing expiring CRP contracts in terms of acreage, financial concerns, and impaired water bodies.



Priority Areas for Contract Renewal



Limitations & Next Steps

CRP data is not available at the farm level, and thus the specificity to which CRP reenrollment efforts can be analyzed remains limited. Additional factors that were not included in this spatial analysis but may influence a farmers' willingness to reenroll in CRP include localized socioeconomic conditions, individual perceptions of federal agricultural programs, and varying climatic forces and available environmental resources.

In considering the results of this spatial analysis that sums acreage, rental payments, and farm income, national efforts to reenroll expiring CRP contracts are needed in eastern Iowa and northern Minnesota. Overlaying impaired water bodies indicates that southwestern Minnesota and southwestern Wisconsin are also of significant concern. State and county level policymakers, advocates, and conservationists can all play a role encouraging and supporting landowners in the reenrollment process.

Cartographer: Alyssa Charney

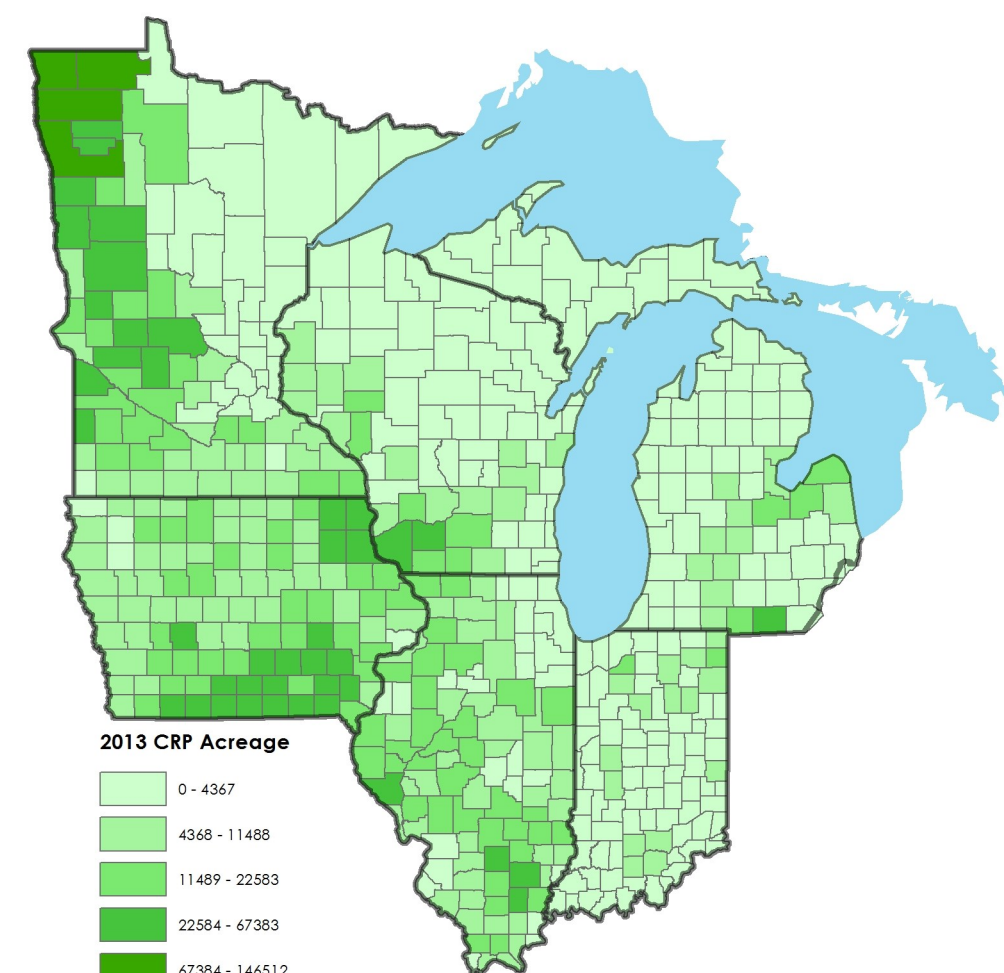
Date: May 2, 2014

Coordinate System: GCS_North_American_1983

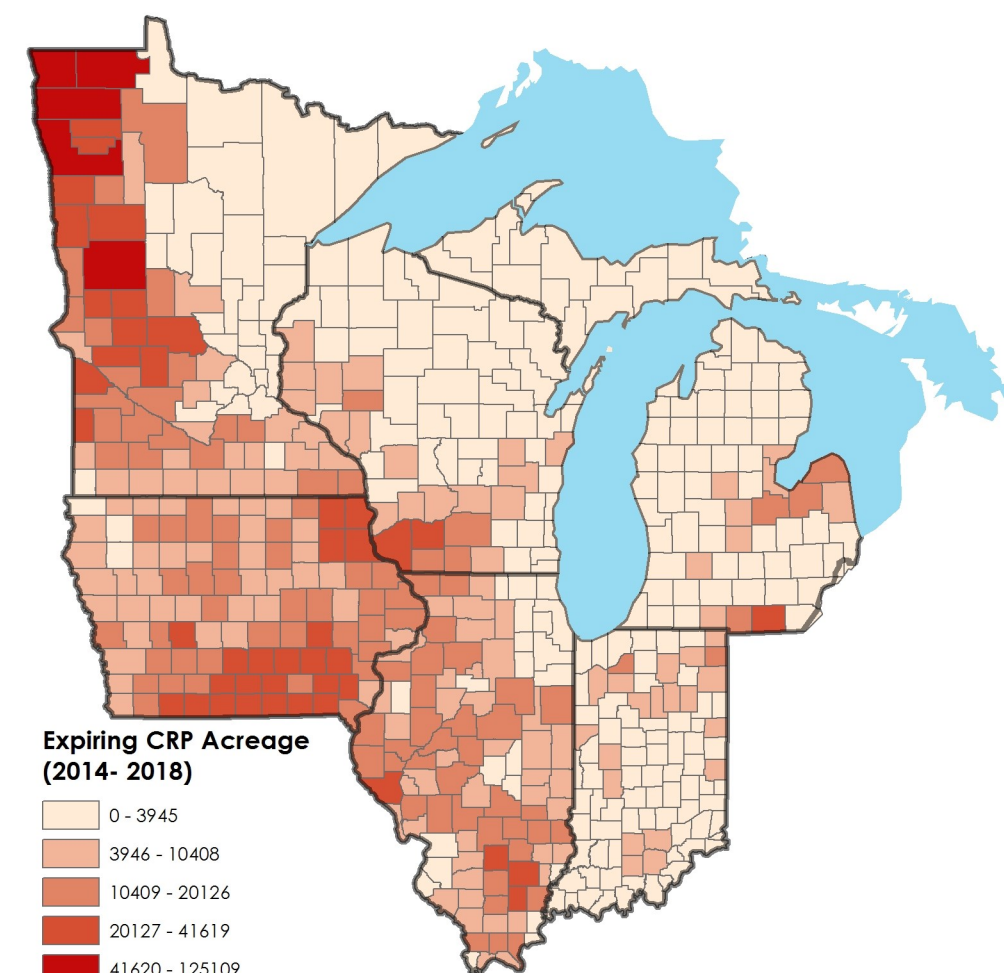
Data Sources: U.S. Census Bureau, United States Department of Agriculture (USDA) Farm Services Agency (FSA), USDA National Agricultural Statistics Service (NASS), United States Environmental Protection Agency (EPA)

References: 1. Hellerstein, D. (2013). USDA Economic Research Service-Challenges Facing USDA's Conservation Reserve Program. 2. Jha, M. K., Schilling, K. E., Gassman, P. W., & Walter, C. F. (2010). Targeting land-use change for nitrate-nitrogen load reductions in an agricultural watershed. *Journal of Soil and Water Conservation*, 65(6), 342-352. 3. National Sustainable Agriculture Coalition (NSAC). (2014). 2014 Farm Bill Drill Down: The Bill by the Numbers. 4. Hellerstein, D. R., & Malcolm, S. A. (2011). *The influence of rising commodity prices on the conservation reserve program*. US Department of Agriculture, Economic Research Service.

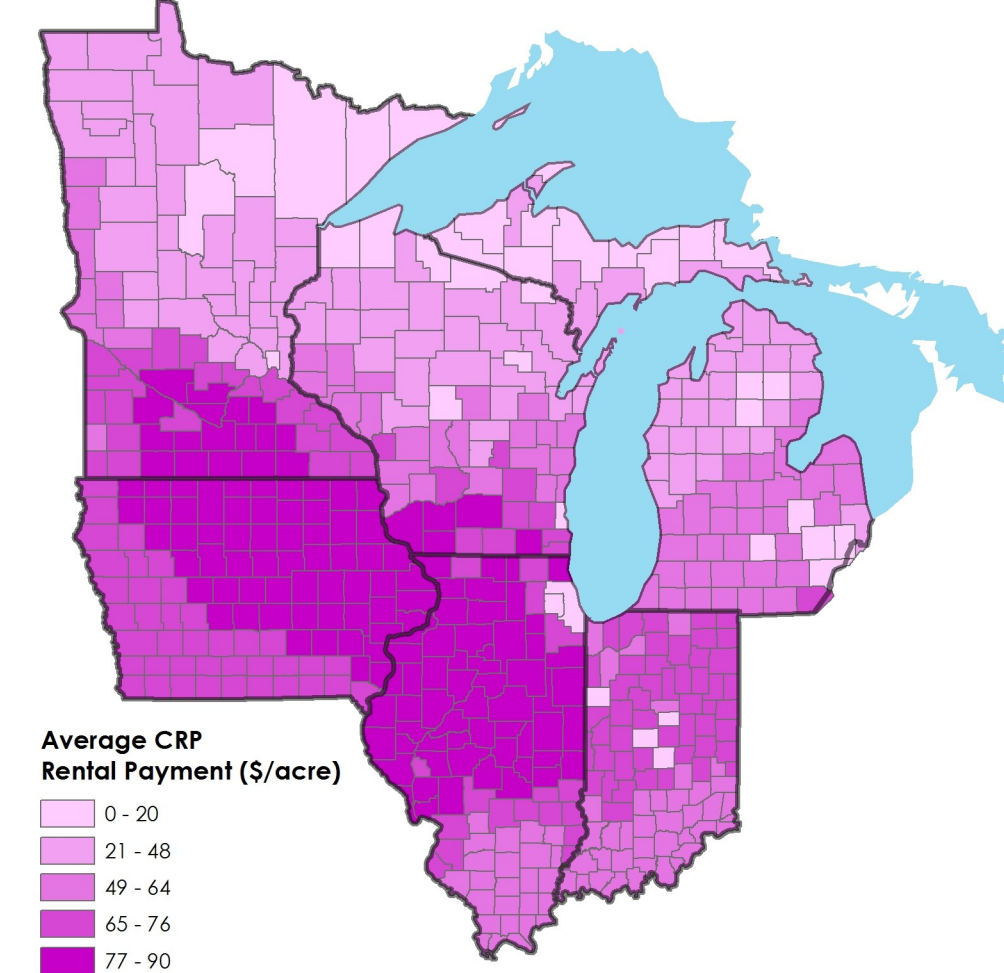
Acreage



Expiring Acreage



Rental Payments



Farm Income

