



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002ND17B

Title: Study of Effectiveness of Northern Prairie Wetlands as a Resource to Control Nutrient (Phosphorus) Load to Receiving Water.

Project Type: Research

Focus Categories: Wetlands, Nutrients, Water Quality

Keywords: Northern Prairie Wetlands, Nutrient Load, Receiving Water Quality

Start Date: 09/01/2002

End Date: 02/28/2003

Federal Funds: \$11,312

Non-Federal Matching Funds: \$22,848

Congressional District: 1

Principal Investigator:

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Abstract

Wetlands are dominant aquatic resources in the prairie pothole region (PPR), an area that spans portions of Iowa and Minnesota, the Dakotas, and three Canadian provinces. Ranging from tiny potholes to huge lacustrine complexes, prairie wetlands are among the world's most productive ecosystems. Intense agriculture and associated drainage of wetlands, urban sprawl, and other human-induced changes over the past 100 years has had a tremendous effect on this area's natural resources. The prairie upland, almost all of the prairie wetlands, and some of the timberlands have been converted to cropland. The conversion of wetlands into agricultural lands and intense use of fertilizers has been a source of eutrophication and impairment in water quality of lakes and rivers. The conversion of the depressions into wetlands has been done with a purpose of restoring the wildlife and natural habitat of the region. The results of this study will provide a better understanding of how phosphorus moves through a wetland and influences wetland characteristics. The phosphorus retention capacity and transportation through these semi-permanent wetlands can be applied to similar systems in the prairie pothole region to predict the effectiveness of wetlands in controlling the phosphorus transport to the receiving streams. This information will be of interest to federal agencies such as US EPA, the Natural Resources Conservation Service, the Bureau of Reclamation, the Army Corp of Engineers, and the US Geological Survey, as well as to the State Resources Management agencies and private agencies concerned with surface water management, water quality, and wetland habitat issues.