

**RESTORATION OF CLASS II AND III PRAIRIE POTHOLE WETLANDS IN  
NORTH DAKOTA FROM DIFFERENT DISTURBANCE GRADIENTS**

**A Paper  
Submitted to the Graduate Faculty  
of the  
North Dakota State University  
of Agricultural and Applied Science**

**By**

**Michael Stephen Noone**

**In Partial Fulfillment of the Requirements  
for the Degree of  
MASTER OF SCIENCE**

**Major Program:  
Natural Resource Management**

**Major Department:  
Civil Engineering**

**December 2001**

**Fargo, North Dakota**

## ABSTRACT

Noone, Michael Stephen, M.S., Program of Natural Resource Management, Department of Civil Engineering, College of Engineering and Architecture, North Dakota State University, December 2001. Restoration of Class II and III Prairie Pothole Wetlands in North Dakota from Different Disturbance Gradients. Major Professors: Dr. Brian Nelson and Dr. Jimmie Richardson.

This paper was intended as a synthesis of materials on the subject of restoration of Class II and III wetlands in North Dakota from different influences. Those influences include complete wetland removal/drainage, agriculture, and grazing. Different disturbances are associated with each influence. Disturbances include eutrophication, sedimentation, changes in the plant community, salinization, and changes in the water regime. Last, suggestions for future research and thoughts on the subject are offered.

Eutrophication disturbances can be remediated through a cessation of the causes, such as vegetative buffers, and through either biological or physical removal of the nutrients. Similarly, sedimentation disturbances can be remediated through a cessation of the causes, such as vegetative buffers, and through physical removal of the sediments. Disturbances to the plant community can be achieved through changes in the management, such as grazing and fire, through alteration of the water regime, or through reintroduction of the desired plant species. Salinization is a disturbance best solved through prevention; other remedies are flushing the area, chemical removal, or physical removal. Changes in the water regime are achieved through removal of those factors that cause problems.

Wetland restoration is a problem that has many useful methods available for its solution. These methods, however, may not always be acceptable due to cost and time constraints, or political considerations. Land use managers should keep all of these factors in mind when restoring a wetland.