ASSESSMENT OF WETLAND CONDITION IN THE PRAIRIE POTHOLE REGION

Edward "Shawn" DeKeyser and Christina Hargiss
North Dakota State University
Department of Soil Science
Fargo, ND 58105

ABSTRACT

Wetland plant community integrity (health) was assessed within the Missouri Coteau of central North Dakota utilizing a probabilistic sample design. The assessment was accomplished at the randomly selected points by employing the geographic information system-based Landscape Wetland Condition Analysis Model (LWCAM), the North Dakota Rapid Assessment Method (NDRAM) for estimating wetland condition, the vegetative-based Index of Plant Community Integrity (IPCI), and the hydrogeomorphic model (HGM) developed for the region. A total of 255 study wetlands sampled using these four sampling procedures for assessment and comparison purposes. There were approximately an additional 700 wetlands sampled using only the NDRAM. A number of land uses and resultant vegetative compositions were represented in the study area. Results indicated that wetland condition was based on land use while topography and geology were factors affecting land use. Future repeat assessment of this area may indicate the trend of wetland plant community integrity in relation to the present and future land practices. The results of this study can be used to estimate wetland condition across the Prairie Pothole Region, and will provide valuable information for determining appropriate financial and time needs to utilize the developed wetland sampling methods.

KEYWORDS

Probabilistic design, wetland assessment, Prairie Pothole Region.