

Introduction

1 CHAPTER

A. Purpose and Objectives of the Manual

This manual provides background information and a field method for identifying and evaluating site characteristics necessary for concluding whether or not a particular area of land is wetland as defined in Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended (Appendix A). This manual is designed as a technical operational manual for Michigan Department of Environmental Quality (MDEQ) staff and for use by other wetland professionals. This manual is not intended for use by persons that are not familiar with wetlands, and specifically the biological, chemical, and physical characteristics of wetlands.

In evaluating a site for the presence or absence of wetlands, the user of this manual is directed through a series of steps that involve gathering available in-office information and recording detailed information regarding the biological, chemical, and physical characteristics present at a site. Evaluation of this information leads to a decision as to whether or not wetlands occur on a site and the location of the boundary between wetland and non-wetland areas. The number of steps and the level of detail necessary in conducting a site evaluation will vary greatly from one location to another and depend upon the user's professional experience, the reason for conducting the evaluation, and the clarity of site characteristics. Characteristics of wetlands may be more apparent to experienced wetland professionals who may use fewer steps in the application of this method.

The objectives of this manual are:

1. To describe the physical, chemical, and biological characteristics that reflect wetland conditions, as defined in Part 303.
2. To provide a field method for identifying wetland areas and their boundaries with adjacent non-wetland areas.
3. To provide supporting information to aid in applying the method.

This manual does not consider MDEQ jurisdictional issues or regulatory authority over activities proposed or occurring within wetland areas. For information as to whether or not a proposed activity is regulated according to Part 303 and other state land/water interface regulatory statutes, refer to the appropriate Part of NREPA and associated administrative rules.



Bog in Northern Michigan

The following discussion provides relevant statutory and introductory information regarding the necessary physical, chemical, and biological characteristics to consider in evaluating sites for the presence or absence of wetlands and identifying wetland boundaries.

B. Characteristics of Wetlands

The study of the distribution and cycling of water over the earth's surface is known as hydrology. Mitsch and Gosselink (1993) state that "hydrology is probably the single most important determinant of the establishment and maintenance of specific types of wetlands and wetland processes." Kusler (1987) broadly defines **wetland hydrology** to include "the flow of water (precipitation, groundwater, surface water) into, through, and out of a wetland, the characteristics of this flow, and its interaction with the wetland." Wetland hydrology is the driving force for the other biological, chemical, and physical characteristics considered in identifying wetlands and their boundaries and is discussed in Chapter 2.

In order to properly identify wetlands, the regulatory definition requires, under normal conditions, the presence of wetland vegetation or aquatic life. The term **wetland vegetation** generally refers to those plant species adapted to survive in areas that are frequently inundated or saturated by water for long periods of time. Due to morphological, physiological, and/or reproductive adaptations, wetland plant species have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic or wet soil conditions. Chapter 3 describes the characteristics, identification, and use of wetland vegetation and aquatic life in identifying wetlands and locating wetland boundaries.

Soils that occur in wetlands are referred to as hydric soils. A **hydric soil** is defined by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register, July 13, 1994). Hydric soils exhibit morphological and chemical characteristics resulting from repeated periods of saturation and/or inundation that occur for more than a few days. Saturation or inundation of the soil, when combined with microbiological activity, results in a depletion of oxygen. This combination promotes biogeochemical processes such as the accumulation of organic matter and the reduction, translocation, and/or accumulation of iron and other reducible chemical elements. These processes result in specific soil characteristics that persist in the soil during both wet and dry periods. The identification of these soil characteristics is particularly useful for identifying hydric soils.

The characteristics of hydric soils and their use in identifying wetlands and their boundaries are described in Chapter 4.

C. Regulatory Framework for Wetland Identification in Michigan

The State of Michigan, through Part 303, defines wetland as:

...land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support wetland vegetation or aquatic life...

Section 30321(3) of Part 303 states, in part, that a person “may request that the department of environmental quality assess whether the parcel of property or a portion of the parcel is wetland.”

Section 30321(3) further provides that the MDEQ shall provide a person requesting this type of assessment with a report identifying the location of any wetland within the area assessed.

In order to implement the statutory requirement of conducting this type of wetland evaluation, the MDEQ developed administrative rules (Appendix B) which further clarify the statute and outline the information that the MDEQ shall rely upon in determining whether a parcel or portion(s) of a parcel of property is wetland. Administrative Rule R 281.924 for Part 303 outlines that, under normal circumstances, the MDEQ shall determine whether a wetland exists based on the hydrology and vegetation of a site. Specifically, the MDEQ shall examine the site for visible evidence that the normal seasonal frequency and duration of water is above, at, or near the surface of the area. Under normal circumstances, the vegetation or aquatic life reflects this hydrology. Thus, the MDEQ shall also look for a predominance of wetland vegetation or aquatic life. The administrative rules further provide that in situations where there is a predominance of wetland vegetation and no direct visible evidence of water at or near the surface, the MDEQ may rely upon the physical and chemical characteristics of the soil as an indicator of the current or recent degree of inundation or saturation. The Part 303 wetland definition and guidance contained in the administrative rules outline the method used in identifying wetlands and their boundaries as described in Chapter 5 of this manual. Portions of the information and field methods in this manual have been adapted from the 1987 Wetlands Delineation Manual developed by the U.S. Army Corps of Engineers (USACE) (hereinafter referred to as the 1987 USACE Wetlands Delineation Manual) and from hydric soil information developed by the NRCS.

Wetland Identification Parameters:

1. *Wetland Hydrology or Hydric Soils*
2. *Wetland Vegetation or Aquatic Life*

An important provision of the Part 303 wetland definition is the presence of “normal circumstances.” Normal circumstances exist

where site conditions have not been recently and/or severely altered by natural or human-induced events. Non-normal circumstances include atypical situations and problem areas. Atypical situations are when the vegetation, soils, and/or hydrology of the site have been altered by some recent or severe change. Problem areas are inherently difficult to evaluate because the vegetation, soils, and/or hydrology of the site are absent or misleading, at least at certain times of the year. The user of the method described in this manual must consider the extent to which normal circumstances exist on the site when identifying wetlands and their boundaries. The majority of the information and procedures in this manual are for routine application where normal circumstances exist. However, the information and field methods contained in Chapter 6 describe various considerations and alternative approaches to be used when confronted with non-normal site conditions.

D. Coordination of State and Federal Wetland Regulation

This manual is intended primarily for the identification of wetlands and their boundaries in accordance with Part 303. A federal permit program defined by Section 404 of the federal Clean Water Act also protects wetlands. In Michigan, the Section 404 Program is administered by the MDEQ under an agreement with the U.S. Environmental Protection Agency. Thus, identification of a wetland and its boundaries under the state program also satisfies Section 404 requirements, except in coastal areas where the USACE retains Section 404 jurisdiction.

Michigan's administration of the federal Section 404 program requires that the state law be consistent with, and at least as stringent as, the federal law. While there are minor differences in the wording of state and federal wetland definitions, areas defined as wetland under the two laws are essentially equivalent. At the present time, federal agencies identify wetlands for purposes of administering the Section 404 program using the 1987 USACE Wetlands Delineation Manual. In the vast majority of cases, the 1987 USACE Wetlands Delineation Manual and this manual will be consistent in the identification of wetland boundaries.



Forested Wetland in Southern Michigan

E. State and Federal Methods of Wetland Identification

The current federal method requires independent evidence of three parameters, hydrophytic vegetation, wetland hydrology, and hydric soils, to verify the presence of wetlands on undisturbed sites. However, as noted by the National Research Council (1995), there are strong causal relationships among these three factors, making the verification of all three parameters both unnecessary and needlessly

time-consuming in many instances. The National Research Council recommends that, in the absence of hydrologic alteration, the presence of field-verified hydric soils or vegetation dominated by wetland species can be used as strong evidence of wetland hydrology. On disturbed sites, particularly where soils, vegetation, or both have been altered, additional informational sources of wetland hydrology may be required.

Michigan's statutory definition of wetland and the associated administrative rules identify two key parameters: wetland vegetation and wetland hydrology. Under normal circumstances, when hydrology is not evident, the presence of hydric soils may be used to indicate wetland hydrology. Thus, the requirements of Michigan's regulations, as reflected in the method outlined in this manual, are consistent with the findings and recommendations of the National Research Council.

The field method described in Chapter 5 of this manual, the Point Determination Method, relies primarily on qualitative procedures. The method is comprehensive, yet it is also cost efficient and can be executed quickly for most sites. If indicators of wetland vegetation and wetland hydrology are readily apparent, execution of the entire method outlined in this manual is not necessary. On the other hand, when more extensive documentation is important or necessary, other methods can be used to supplement the method provided in this manual. The Comprehensive Determination Procedure found in the 1987 USACE Wetlands Delineation Manual, for example, may be used to supplement this manual's method. However, positive indicators for only two parameters, wetland vegetation and wetland hydrology, would be required to confirm the presence of wetlands under Michigan law, not all three parameters as described in the USACE manual.

