

**MANAGING IN AND AROUND WETLANDS**  
**64th Annual Michigan Turfgrass Conference**  
**Lansing, Michigan**  
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**USGA Green Section**  
**Far Hills, New Jersey**

Historically, wetlands had been considered wastelands, but now they are recognized for providing environmental and economic benefits, including wildlife and fish habitat, shoreline and erosion control, flood protection, improved water quality, storm water management, aquifer recharge, and valuable recreation areas. Wetlands are protected by law, and golf courses are required more frequently than ever to file wetland permit applications. The wetland regulatory process is complicated! There are a number of things you should be familiar with when managing in and around wetlands.

### **HOW TO RECOGNIZE WETLANDS ON THE GOLF COURSE**

Wetlands are transitional zones between upland and aquatic habitats. A number of different names are used to describe wetlands, such as marshes, swamps, bogs and fens.

When analyzing the golf course to determine if a wetland environment exists there are 3 basic things to look for listed below. The Federal EPA Technical Delineation Manual entitled "Federal Manual for identifying and delineating jurisdictional wetlands" refers to these "3 H's" for wetland delineation, as do many state regulations including Michigan Wetland Regulatory Program:

1. Water at or near the surface (hydrology);
2. Saturated soils that often (but not always) display gray-green colors (hydric soils);
3. Plants that are typically water tolerant (hydrophytic vegetation).

These three simple indicators represent the basics for the layman to identify areas of wetland concern on the golf course. It is important to recognize that when analyzing these parameters, it is often necessary to look below the surface (at an average depth of 0 - 18") to determine the presence or absence of water or saturated soils. Wetlands do not have to exhibit all three parameters to meet the regulatory regulations (as is the case with many drained farm lands) nor are all three indicators always present throughout the year. These basics to wetland identification are not sufficient guidelines for do-it-yourself wetland delineation. They are presented to help the golf course superintendent recognize a wetland environment and the potential need to consult a local wetland expert.

Information helpful in determining wetlands includes aerial photos, soil surveys and wetland maps. It is important to note that wetland maps help to identify approximate wetland boundaries. Field verification is required for permit applications.

Wetland Inventory Information Sources:

Wetland Maps:

Michigan Resource Information System (MIRIS) - Available from local county agencies or Michigan Department of Natural Resource Inventory programs, P.O. Box 30028, Lansing, MI 48909 (517/373-1170).

National Wetland Inventory (NWI)

Michigan Distribution Center - Outreach Communications, Distribution Center, Michigan State University, 10B Ag. Hall, East Lansing, MI 48824-1039 (517/353-6740). Cost: \$5.00/map, \$15 minimum.

## **WETLAND VEGETATION**

National List of Plant Species that Occur in Wetlands: Michigan, by Porter Read, Jr. U.S. Fish and Wildlife Service, National Wetland Inventory, 9720 Executive Center Drive, Suite 101 Monroe Building, St. Petersburg, FL 33702.

## **SOILS**

### **County Soil Surveys:**

County office of U.S. Department of Agriculture Soil Conservation Service (SCS).

### **Hydric Soils List:**

County list available from county or state SCS offices.

### **Aerial Photographs:**

MDNR, Michigan Resource Inventory Program, P.O. Box 30028, Lansing, MI 48909 (517/353-1170).

## **WHO REGULATES WETLANDS?**

The most broadly recognized wetland regulatory program is the Section 404 Program of the Clean Water Act. This program is administered on a Federal level by the U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency. The U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) have important advising roles in the 404 Program. Section 404 Program, however, is not a comprehensive wetland protection program, it does not regulate all activities which harm or affect wetlands. The Federal 404 Program regulates only the discharge of dredged and fill materials into waters of the U.S. (which includes wetlands).

Additionally, 28 states currently have separate wetland legislature. The important word here is separate! A project which involves an impact to a wetland must satisfy both the Federal Wetland 404 Program and any state or local wetland regulations. These independent state and local programs (sometimes county and local authority) vary in requirements and strictness, but in many cases they regulate activities which go beyond permit applications for discharge of dredged and fill materials into wetlands (the scope of the 404 Program), but other activities such as ditching and cutting vegetation which adversely affect wetlands. Transition areas adjacent to wetlands are also regulated by various state acts which protect wetlands above and beyond the highly recognized Section 404 Program.

Michigan is unique! The state regulatory law is known as The Goemaere-Anderson Wetland Protection Act (P.A. 203). It requires that persons planning to do certain activities in wetlands must first apply for and receive a permit from the Michigan Department of Natural Resources (MDNR). The following activities require permit authorization from MDNR:

- Deposit or placement of fill in a wetland (ex., construction of tees, cart paths, greens that can result in materials placed in wetland areas).
- Dredge or removal of soil or minerals from a wetland (ex., pond construction in wetlands).
- Operate or maintain any use or development in a wetland (ex., clearing vegetation from wetland to allow for the flight of a golf ball).
- Drain surface water from a wetland (ex., water withdrawal for irrigation that results in draining of surface water from wetland).

Michigan is the only state which has assumed the Federal 404 Program from the Federal government. Assumption means that MDNR has been given the authority to administer its own wetland permit program. This

makes permit applications easier for those in the state of Michigan. Other areas of the nation deal with joint-jurisdictional requirements which require submittal to both Federal 404 Program administrators and to their state wetland regulatory program administrators.

It is important to note that even though MDNR is the primary contact and regulatory authority in Michigan, EPA maintains oversight authority to review all permits processed by the state and maintains veto power. In addition to this, the ACOE has retained jurisdiction (regulatory power) over certain authorities with the Great Lakes coastal areas of the state, including the connecting waterways and major tributaries which impact Federal navigability. EPA veto and ACOE interference is a rarity in Michigan, but it can happen as is evidenced by the landmark case known as "The Homestead Case."

It is imperative to understand that there are many different players in wetland regulation and to identify all regulatory agencies prior to proceeding with any activity in or near wetlands.

In 1988 problems for the Homestead golf course proposal began with a dispute between Michigan Department of Natural Resources and EPA Region #5 over whether to issue a wetland permit to the developer proposing a golf course next to Crystal River. The historical struggle to obtain a legal wetland permit is as follows:

1986	Golf course proposal and public meetings on original plan.
January 1988	Wetland permit request to Michigan Department of Natural Resources.
July 1988	Michigan Department of Natural Resources denied permit application; EPA recommended denial.
February 1989	Michigan Department of Natural Resources denied second permit application with revisions to plan. Applicant appealed decision.
August 1989	Public hearing on permit denial; introduction of citizen group objection. One hundred changes to the plan proposed and accepted by developer. Thirty scientists involved in the project preparing reports and answers to objections.
November 1990	Michigan Department of Natural Resources permit approved with following conditions: 3.6 acres of wetland to be filled; 0.28 acres to be restored; 6.63 acres to be created; and 72 acre preserve to be left undisturbed; 10-year monitoring program and environmental management program.
November 1990	Citizen's appeal Michigan Department of Natural Resources wetland permit approval.
April 1992	EPA Region #5 stripped of regulatory authority; authority reassigned to EPA Washington office.
May 1992	EPA Washington office recommends withdrawal of EPA Region #5 objection.
May 1992	Citizen group sue on basis that EPA action to withdraw objection was submitted too late and is illegal under statute; District Court agrees and reserves the right to rule on other citizen objections at later date.
October 1992	Homestead golf course developer submits appeal.
January 1994	Project still in litigation.

The Homestead Case illustrates the difficulties which can arise when proposing to impact wetlands.

Wetlands are unique environments that are protected by all levels of government. While the Homestead Case is an exception, it is wise to remember that veto power and oversight of wetland permit activities approved by the MDNR still remains with the Federal government (EPA) and opinions may vary. It is best to avoid impacts to wetlands wherever possible.

**NATIONAL CASE STUDIES - WETLANDS AND GOLF COURSES**

Golf course designs and operations have been uniquely impacted by various wetland regulations across the country. Some examples include the following:

Course Name	ST	Regulation	Issues/Comments
Homestead GC	MI*	Fed. ACOE (404) Michigan DNR	EPA veto regulatory control, Env. activist group
Elk Ridge Golf Course	MI	MDNR	Preservation of wetland areas
Bear Creek/Fox Hollow Golf Resort	CO	Fed. ACOE (404) USF&WS	Water depletion issue, Endangered Whooping Crane habitat offsite, Env. activist group
Commonwealth CC	PA	Fed. ACOE (404)	Unique tee box solutions to minimize within nationwide permit guidelines of 404 Program
The Links of Spanish Bay	CA	Fed. ACOE (404) ECC - CA coastal commission	Coastal dune restoration; wetland habitat restoration; forest edge preservation
Metedoconk CC	NJ	Fed. ACOE (404) NJDEP	Adjacent nature preserve, altered course design, long boardwalk
Atlantic GC	NY	Fed. ACOE (404) NYDEC	Wetland protection & mitigation, native grass restoration
Whitefish Lake GC	MT	Fed. ACOE (404)	9 hole expansion limit
Hyannisport CC	MA	Fed. ACOE (404) Mass DEC Local Reg	Cart path crossing and expansion of green limited by local concerns
Bridgehampton CC	NY	Fed. ACOE (404) NYDEC	Pond restoration project success

\* Michigan is the only state in which EPA has given jurisdiction to administer the 404 permit program. EPA retains veto right.

**SUMMARY**

- Remember that wetlands are a valued environment that is often found on the golf course. Most wetlands can be simply recognized by identifying areas that have water periodically at or near the surface, saturated soils, and water loving vegetation.
- Detailed identification of the wetland environment, its type, boundary limit and values have become a very complicated process. This scientific process referred to as wetland delineation is constantly being technically challenged and revised. It is a good investment for the golf course to have a wetland delineation done for the entire property and have it approved by the federal government (ACOE) and/or state regulatory authority.
- Wetland regulation, often involves every level of government including Federal regulation (ACOE and EPA), state regulation (DEP), and sometimes municipal regulation. Identification of agencies that regulate wetlands in your district is critical. Even if your state does not have a separate Wetlands Protection Act, state agencies such as Division of Fish & Game often become involved via a provision in the 404 permit program. Be informed! Ignorance is not excused by regulatory authorities and there can be serious consequences.

4. Permits for wetland impacts associated with maintenance dredging or filling are possible. However, the following actions in sequence order are advised by regulatory authorities (MDNR, ACOE):
  1. Avoidance - stay out of wetland areas
  2. Minimize Impacts - keep disturbances within parameters of nationwide permits of the 404 program, or general permits of state programs considered to have minimum environmental impacts.
  3. Mitigation - not an automatic option, usually expensive; allowed only after regulatory agency is convinced there is no other practical alternatives.
5. Proposed changes to wetland legislature so often highlighted in the press often have a long way to go before they are adopted and incorporated into the regulatory quagmire process. It is best to concentrate on wetland regulations in place. That is difficult enough!