

Wetland Vegetation and Aquatic Life

Part 303 defines a wetland as an area with the hydrology that can support, and under normal circumstances does support, wetland vegetation or aquatic life. Plant species that occur within wetlands or can tolerate wetland conditions are referred to as hydrophytic or wetland plants. Vegetation is generally described as the sum total of plants growing within a certain area. Administrative Rule R 281.921(1)(g) for Part 303 defines wetland vegetation as “plants that exhibit adaptations to allow, under normal conditions, germination or propagation and to allow growth with at least their root systems in water or saturated soil.” Wetland vegetation is therefore the plant life that occurs in areas where the frequency and duration of inundation or saturation exerts a controlling influence on the plant species.

In accordance with the Part 303 definition of wetland, the presence of aquatic life may also be used to identify a wetland and its boundaries. This is important in areas where wetland hydrology and aquatic life is present, but there is an absence of wetland vegetation.

A. Vegetation as a Wetland Indicator

Many environmental factors, such as light, temperature, soil texture, soil permeability, and the level of disturbance, influence the distribution and abundance of plant species. Hydrology is recognized as exerting the overriding influence on the occurrence and abundance of plant species in wetlands. Wetland plant species often exhibit distinct morphological, physiological, and reproductive adaptations that allow a greater tolerance and survival within wetland areas. Plant species that are common to the wettest environments often exhibit the greatest degree and most effective adaptations to wetland conditions. As hydrologic conditions vary from periodic or seasonal saturation to permanent inundation, the vegetation will also vary from species specifically adapted to wetland areas to a more transitional grouping of species, some of which lack the necessary adaptations or tolerances to wet conditions.

In 1988, the U.S. Fish and Wildlife Service (USFWS) published the National List of Plant Species That Occur in Wetlands. Wetland plant species on the National List are described as “species that have demonstrated an ability (presumably because of morphological and/or physiological adaptations and/or reproductive strategies) to achieve

Figure 3.1 – Plant Indicator Status Categories

<u>Indicator Category</u>	<u>Indicator Symbol</u>	<u>Definition</u>
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands.
Facultative Wetland Plants	FACW	Plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands.
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands.
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1% to 33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands.
Obligate Upland Plants	UPL	Plants that occur rarely (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions.

Source: 1987 USACE Wetlands Delineation Manual and USFWS National Wetland Wetland Inventory; subsequently modified by the National Plant List Panel.

maturity and to reproduce in an environment where all or portions of the soil within the **root zone** become, periodically or continuously, saturated or inundated during the growing season” (USFWS, 1988). The national list has been subdivided into regional lists. Appendix D provides the 1988 List of Wetland Plants for Region 3, which includes the state of Michigan. It is anticipated that an updated List of Wetland Plants will soon be available for each region and each state.

For each plant species on the list, the estimated probability that the species will occur within a wetland habitat (versus non-wetlands) is represented by assignment of a wetland indicator category. These categories were developed to reflect the frequency, from almost always to rarely, that a plant species would occur in a wetland. Figure 3.1 provides a list of the wetland indicator categories and estimated probabilities assigned to each category. In addition to the five main categories, three of the categories (FACU, FAC, and FACW) are further subdivided by modifiers (+, -) which represent the likelihood of occurrence within wetter (+) and drier conditions (-). Listed species having an indicator status of Obligate (OBL), Facultative Wetland plus (FACW+), Facultative Wetland (FACW), Facultative Wetland minus (FACW-), Facultative plus (FAC+), or

Plant species having an indicator status of OBL, FACW+, FACW, FACW-, FAC+, or FAC are considered to be species typically adapted for life in wetland conditions.

Facultative (FAC) are considered to be species **typically adapted** for life in wetland conditions. Species having a Facultative minus (FAC-), Facultative Upland (FACU+, FACU, and FACU-), or Upland (UPL) indicator status are not considered hydrophytic species but are still occasionally found in wetland areas. A NI (No Indicator) is recorded on the list for those species for which insufficient information was available to determine the indicator status. Plant species that have a probability of less than one percent of occurring in wetlands are not included on the list. Figure 3.2 is a sample listing of common plant species found in Michigan, along with their wetland indicator status from the USFWS regional list.

The Michigan Floristic Quality Assessment (Herman et. al., 1996) developed by the Michigan Department of Natural Resources is an additional source of information for plant species. It includes a plant database that lists plant species known to be present in Michigan. This list can be helpful when used as a supplement to the USFWS regional list, because it includes species not on the USFWS regional list and precludes species that are not known to exist in Michigan.

B. Predominance of Wetland Vegetation

Administrative Rule, R 281.924(2) for Part 303 requires that, “a wetland that has not been recently or severely disturbed will contain a predominance, not just an occurrence, of wetland vegetation or aquatic life.” As used in this manual, the term ‘predominance’ refers

Figure 3.2 – Example of Plant Species Found in Michigan that Occur in Wetlands

<u>Scientific Name</u>	<u>Common Name</u>	<u>Region 3 Indicator</u>
<i>Acer rubrum</i>	Red Maple	FAC
<i>Alisma plantago-aquatica</i>	Water-Plantain	OBL
<i>Alnus rugosa</i>	Tag Alder	OBL
<i>Carex stricta</i>	Tussock Sedge	OBL
<i>Cornus foemina</i>	Gray Dogwood	FACW-
<i>Eupatorium perfoliatum</i>	Common Boneset	FACW+
<i>Eleocharis elliptica</i>	Golden-seeded Spike Rush	FACW
<i>Thuja occidentalis</i>	Northern White Cedar	FACW

Source: National List of Plant Species that Occur in Wetlands: Region 3, 1988.

A predominance of wetland vegetation occurs when more than 50 percent of the dominant plant species present have a wetland indicator status of OBL, FACW+, FACW, FACW-, FAC+, or FAC.

to the determination that the vegetation present in the observation area is dominated by wetland plant species. The dominant plant species are those that rank as the most abundant or important species present within the area being evaluated. A predominance of wetland vegetation occurs, and the wetland vegetation parameter is satisfied, when more than 50 percent of the dominant plant species present have a wetland indicator status of OBL, FACW+, FACW, FACW-. FAC+ or FAC.

A list of some morphological, physiological, and reproductive adaptations found in wetlands plants, from the USACE 1987 Wetlands Delineation Manual, can be found in Appendix C. This list may provide additional useful information to strengthen a case for the presence of hydrophytic vegetation once a predominance of wetland vegetation has been found. Technical literature, such as taxonomic references, botanical journals and technical reports, may also provide supporting information that a plant species comprising the predominant vegetation is commonly found in wetland areas.

C. Aquatic Life as a Wetland Indicator

An indicator of aquatic life can either be visual observation of physical features associated with aquatic life or visual observation of aquatic life.

The definition of a wetland in Part 303 allows wetland vegetation or aquatic life to be used to identify a wetland and its boundaries. In some wetlands, water is present at a frequency and duration to support aquatic life even though there is an absence of wetland vegetation. An example of where this might occur is areas with dense overstory that prevent herbaceous growth in the understory, such as forested wetlands or vernal ponds. Other areas which might lack wetland vegetation, but support a predominance of aquatic life, are areas where soil properties limit growth of wetland vegetation or where the soil lacks a seed source of wetland vegetation, such as excavation areas, interdunal wetlands, and tailing basins.

An indicator of aquatic life can either be visual observation of physical features associated with aquatic life or visual observation of aquatic life. Although other indicators may also be used, commonly used field indicators to confirm the presence of aquatic life are crayfish mounds, beaver or muskrat lodges, fish, juvenile reptiles, and amphibians and aquatic invertebrates.