Identification of Plant Species’ Trinomials with Varying Wetland Indicator Status Designations: Northeast Region
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Purpose

The purpose of this document is to transmit information on the identification of plant species that have been ascribed with subspecific taxonomic ranks (subspecies, varieties, or other trinomials) and have been listed in the U.S. Fish and Wildlife Service (USFWS) 1988 National List of Vascular Plant Species that Occur in Wetlands (List88) with variable wetland indicator status designations.

Introduction

The wetland provisions in the National Food Security Act Manual (NFSAM) (http://policy.nrcs.usda.gov/scripts/apsis.dll/MM_180.htm) and the 1987 Army Corps of Engineers Wetlands Delineation Manual (http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf) both require the use of a three-parameter approach when identifying and delineating wetlands. Based upon the guidance contained in these two documents, a site must possess wetland hydrology, undrained hydric soils, and hydrophytic vegetation to be identified as a wetland. This article discusses information critical in the determination of hydrophytic vegetation as it relates to the use of List88 (http://www.nwi.fws.gov/bha/list88.html) and the identification of plant species with trinomials that have been assigned variable wetland indicator status designations. A trinomial (three names; genus, specific epithet, and subspecies or variety) is defined as a taxonomic subdivision of a species based upon heritable differences in morphology, habitat preference, geographic distribution or other trait. These differences are reflected formally in the plant’s name, that is, Acer rubrum var. trilobum. When making a wetland determination, it is important to consider these trinomials since their presence in the community, especially if a dominant, can affect the outcome of the hydrophytic vegetation determination.

By definition, a hydrophyte is a plant growing in water or in a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content (NFSAM § 527.4). These plant species are adapted for life in saturated soil conditions and have developed adaptations (morphological, physiological, or reproductive) that enable them to survive, flourish, and reproduce when anaerobic conditions occur in their root zone. The USFWS, in cooperation with interagency regional and national plant panels, developed and published List88—a compilation of 13 regional editions. This reference lists each of the approximately 7,000 vascular plant species known to occur in wetlands. Each species has been assigned a “wetland fidelity index” or “wetland indicator status” (OBL, FACW, FAC, or FACU) as to its frequency of occurrence in a wetland. It is important to note that the wetland indicator status designation assigned to each species is only an assessment of its frequency of occurrence in a wetland. It is not an assessment of “how wet” or “how deep” a species will tolerate, although it is commonly misconstrued in this way. The NFSAM (§ 527.4) states that “a plant shall be considered to be a plant species that occurs in wetland if such plant is listed in the National List of Vascular Plant Species that Occur in Wetlands. Species with a distribution that crosses the boundaries defined by regional editions of List88 may have more than one indicator status assignment. When this occurs, the indicator status designation assigned to the region where the plant was collected is considered to be the correct designation for determining the presence/absence of hydrophytic vegetation.

Hydrophytic vegetation is generally defined in the plant community context. It is based on the dominant plant species that occur in each community, or by more intensive sampling and using all species encountered. The sampling protocols used to assess the vegetation and make the hydrophytic vegetation determination are described in U.S. Army Corps of Engineers memorandum, Clarification and Interpretation of the 1987 Manual, dated March 6, 1992 (http://www.saw.usace.army.mil/WETLANDS/Policies/clarif_87_man.pdf). This clarification cites the “Basic Rule” (the 50% rule) for determining dominant species, and states that each stratum is to be assessed independently in the assessment and cites the USFWS Regional Plant Lists as the source for determining indicator status designations for the dominants identified.

The Regional Plant Lists (http://www.nwi.fws.gov/bha/list88.html) contain a subset of the species included...
in List88 and include only those species known to occur within the particular geographic region defined by the volume. These regional lists identify the wetland indicator status designation for each species as it occurs in that region. The regional volumes organize the species listings into three separate sections. The first section lists each plant’s species name and its associated indicator status designation as determined by the regional and national interagency plant panels. Other information including the author of the species, one common name, and plant habit information is associated with each species. The third section is a listing of synonyms. The entries in this section include older names that appear in floras and/or botanical manuals but are no longer valid; the species is correctly known by a different scientific name. Associated with each synonym name is the accepted name as identified in List88. To determine the indicator status designation for a species listed in the synonymy, the List88 accepted/correct name associated with that synonym must be cross-referenced back to the first section.

Note: If you are utilizing the PLANTS Web site (http://plants.usda.gov) to determine the wetland indicator status designations, the name identified in List88 may not be the currently accepted name in PLANTS. Since 1988, there have been changes to some plant names, and PLANTS maintains the most up-to-date record of these changes. Since the currently accepted names (in PLANTS) and the synonyms (in List88 and elsewhere) are linked together on the PLANTS Web site, there should be no difficulty in moving from one to the other to find the indicator status designation for your species in question.

The second section of each of the Regional Lists includes a few individuals that are varieties or subspecies (i.e., trinomials) of a species, and the indicator status designation for these subspecific taxa are different than the typical variety. In the Northeast, there are a total of nine of these trinomials with variable indicator status designations. When performing a wetland determination and one of these taxa is encountered, the indicator status designation assigned to that trinomial is the correct one to use in the determination of hydrophytic vegetation. For example, Northeast, Region 1, (http://www.nwi.fws.gov/bha/download/1988/region1.txt) lists Acer rubrum three times in the first section. Each time it is listed, the common names and indicator status designations are different. This triplicate listing signifies that Acer rubrum has three varieties or subspecies (i.e., trinomials) with indicator status designations that are different from one another. In the Northeast, many other wetland plant species have trinomials ascribed to them; however, if the indicator status designations for all the trinomials of a species are the same, the Regional List does not list them out separately as in the example of Acer rubrum. To confuse matters (and to continue with the example), Acer rubrum is listed three times in the first section of List88 but only twice in the second section. When using the list to determine the indicator status designation for each of the trinomials, the first variety listed in the first section of List88 is considered to be the “typical variety.” That name is only listed in the first section. The variants of the species are found in the second section of List88. Continuing with the example, Acer rubrum var. rubrum (red maple) is considered the typical variety and is designated as FAC for Region 1, Northeast. Acer rubrum var. trilobum (trident red maple) and A. rubrum var. Drummondii (Drummond’s red maple) are listed with designations of FACW. In the Northeast Regional List, these two trinomials are listed in the second section since they are not considered the typical variety.

In addition to Acer rubrum, the Region 1, Northeast volume lists three other species in the second section as having trinomials with a wetland indicator status different than the typical variety. These other taxa are for trinomials of American beech (Fagus grandifolia), black gum (Nyssa sylvatica), and southern red oak (Quercus falcata).

So what does all this mean and what are the implications for wetland identification and delineation? When identifying the vegetation leading toward a presence/absence determination of hydrophytic vegetation, it is important that the trinomials of these species are correctly identified and the wetland indicator status designation ascribed to each trinomial is correct. When a species is listed with trinomials having varying indicator status designations, the indicator status designation for that trinomial is the one that should be applied in the vegetation determination. It is important to apply the correct indicator status and, thus, make the proper determination.

The following section is a listing of the species and their trinomials as appear in the USFWS Region 1, Northeast volume of List88. With each trinomial listed are morphological and habitat characteristics that will help in distinguishing the typical variety from the other taxa.
Plants with Multiple Wetland Indicator Status Designations: Northeast Region

*Acer rubrum* var. *rubrum* L

**Symbol:** ACRUR

**Common names:** red maple, soft maple, scarlet maple

**Leaves:**
- shape – subcordate, suborbicular, to deltoid-ovate
- base – slightly cordate to rounded
- lobes – (3) 5 acuminate, coarsely toothed, ascending lobes
- pubescence – young leaves hairy on the lower surface but becoming glabrate (hairless) with age
- width – 6 to 15 cm at the widest point

**Flowering time:** March to May

**Fruiting time:** May to July

**Range:** Quebec to Manitoba and south into Texas and Florida

**Habitat:** Native tree of mesic and low woods
**Acer rubrum var. trilobum Torr. and Gray ex. K. Koch**

**Symbol:** ACRUT

**Common name:** trident red maple, three lobed maple

**Leaves:**
- shape – ovate
- base – cuneate to rounded
- lobes – 3 short (to obsolete) small toothed lobes
- pubescence – variable, glaucus, glabrous, or hairy
  - beneath at maturity width—3 to 10 cm

**Flowering time:** March to May

**Fruiting time:** May to July

**Range:** Canada and south into Texas and Florida

**Habitat:** Native tree of swamps and lowlands
**Acer rubrum** var. **Drummondii** (Hook. and Arn. ex. Nutt.) Sargent

Symbol: ACRUD

*Synonym as appears in the 1988 National List:*

*Acer rubrum* ssp. *drummondii* (Hook. and Arn. ex. Nutt.) E. Murray

**Common name:** Drummond’s red maple

**Leaves:**
- shape – (similar to var. *rubrum*) subcordate suborbicular, to deltoid-ovate
- base – (similar to var. *rubrum*) slightly cordate to rounded
- lobes – 5 coarsely toothed ascending lobes but with deeper clefts (or sinuses) than in var. *rubrum*
- pubescence – white tomentose (thickly hairy) beneath and remaining with age (this is a very good identifying characteristic)
- texture – more coriaceous (leathery and dark green) than var. *rubrum*

**Flowering time:** March to May

**Fruiting time:** May to July

**Range:** New Jersey to Illinois and south to Texas and Florida

**Habitat:** Native tree of bottomlands, sandy woods, and swamps
**Fagus grandifolia var. grandifolia Erhr.**

Symbol: FAGR

Common name: American beech

Leaves:
- texture – thin, pale to yellowish green
- margins – sharply to coarsely serrate
- base – mostly cuneate, rounded to subcordate

Fruit: prickers longer (4–10 mm), spreading, erect, or sometimes recurved

Range: Nova Scotia to Minnesota and south to Texas and Florida

Habitat: Native tree occurring in rich upland soils and is a more northern variety even though it can be found in the south
Fagus grandifolia var. caroliniana (Loud.) Fern. and Rehd.*  

Symbol:  
FAGRC

Common name: Carolina beech, white beech

Leaves:
- texture – thicker, dark green
- apex – strongly acuminate
- margins – teeth smaller to merely denticulate
- base – rounded or subcordate

Fruit: prickers fewer and shorter (1–3 mm) abruptly reflexed from the base

Range: Massachusetts to southern Illinois and Missouri and south to Florida and Texas

Habitat: Native tree occurring in moist or lowland woods, bottomlands, and margins of swamp boarders. It is a more southern variety as compared to the typical var. grandifolia.

* Note on taxonomy: Recent changes in taxonomy have submerged (i.e., lumped) var. caroliniana into F. grandifolia. Although var. caroliniana is no longer viewed taxonomically as a variety distinct from F. grandifolia, populations displaying the greater hydrology tolerances represented by the former var. caroliniana exist and can be identified morphologically. The map shown represents the distribution of Fagus grandifolia var. caroliniana.
**Nyssa sylvatica Marsh**

**Symbol:** NYSY

*Synonym as appears in the 1988 National List:*  
* Nyssa sylvatica var. typica Fern

**Common names:** black gum, sourgum

**Leaves:**
- shape – obovate to widely elliptic
- texture – thin and membranous
- apex – short acuminate
- base – acuminate to cuneate
- margins – with one or more small, dentate teeth

**Fruit:** (2) 3 to 4 fruits clustered at the end of the peduncle

**Fruiting times:** August to September

**Range:** Maine to Missouri, south into Texas and Florida

**Habitat:** Native tree growing solitary to widely spaced in uplands and low woods
**Nyssa biflora Walt.**

**Symbol:** NYBI

*Synonym as appears in the 1988 National List:*

* Nyssa sylvatica var. biflora (Walt.) Sarg.

**Common name:** swamp tupelo

**Leaves:**
- shape – elliptic to lance-elliptic (oblanceolate)
- texture – thick and stiff, coriaceous, nonmembranous
- apex – acute to obtuse or rounded
- base – cuneate
- margins – entire (one or two small dentate teeth may be found on seedlings and stump sprouts)

**Fruits:** 2 (3) in a cluster at the ends of the peduncle

**Fruiting dates:** August to September

**Range:** Texas to Florida and north into New Jersey

**Habitat:** Native tree of inundated swamps, low woods, and wet areas
**Quercus falcata** Michx.

Symbol: QUFA

*Synonym as appears in the 1988 National List:
Quercus falcata var. falcata (Michx.) Nutt*

**Common name:** southern red oak, red oak, Spanish oak, southern bell

**Leaves:**
- shape – variable but usually with 3 to 5 main lobes and with additional shallow lobes toward the tip, often resembling a bell
- lobes – falcate and irregular, the apical lobes abruptly smaller than the main lobes
- texture – leaf undersurface densely gray tomentose
- base – rounded

**Terminal buds:** gray tomentose

**Twigs:** gray tomentose

**Trunk:** dark brown to nearly black

**Flowering:** March

**Range:** New Jersey to Missouri and south to Texas and Florida

**Habitat:** Native tree of sandy plains
**Quercus pagoda Raf.**

Symbol: QUPA5

*Synonym as appears in the 1988 National List: Quercus falcata var. pagodifolia (Michx.) Ell.

Common name: cherrybark oak, pagoda oak

Leaves:
- shape – broader than *Q. falcata* and with more blade tissue, somewhat resembling *Q. rubra* (red oak)
- lobes – regularly 7 to 11 single-pointed lobes at right angles to the midvein, diminishing in size toward the apex in a regular and gradual pattern, not strongly falcate
- texture – leaf undersurface only pubescent and not densely tomentose
- base – sharply angled

Trunk: reddish brown to nearly black

Flowering: April to May

Range: North Florida to Louisiana and north to Missouri and Maryland

Habitat: Native tree of rich, moist areas and bottomlands
References

The following references were used to develop morphological, habit, and habitat data for the species trinomials:


