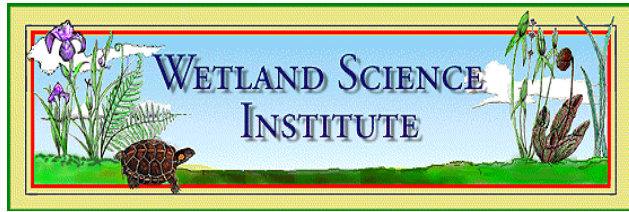


Wetland
Delineation
Technical
Series



Natural
Resources
Conservation
Service

Number 3

Identification of Plant Species' Trinomials with Varying Wetland Indicator Status Designations: NORTHEAST REGION

Purpose: 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 USFWS *1988 National List of Plant Species that Occur in Wetlands* with variable wetland indicator status designations.

Introduction: The wetland provisions in the *National Food Security Act Manual* (NFSAM) and the *1987 US Army Corps of Engineers Wetlands Identification Manual* (1987 COE Manual) both require the use of a three parameter approach when identifying and delineation 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 the *1988 National List of Plant Species that Occur in Wetlands (List88)* and the identification of plant species with trinomials that have been assigned variable wetland indicator status designations. A trinomial (or third name, such as a 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, e.g. *Acer rubrum var. trilobum*. When making a wetland determination it is important to consider these trinomials since their presence in the community and as 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 US Fish & Wildlife Service (USFWS), in cooperation with interagency regional and national plant panels, has developed and published the *National List of Plant Species that Occur in Wetlands (List88)* which is a compilation of 13 Regional editions. This reference lists each of approximately 7000 plant species that are known to occur in wetlands. Each species has been assigned a

Locations:

USGS
Patuxent Wildlife
Research Center
Laurel MD

Dept of Agronomy
Louisiana State
University
Baton Rouge LA

ARS National
Sedimentation
Laboratory
University of
Mississippi
Oxford MS

USFWS
Hadley MA

“wetland fidelity index” or “wetland indicator status” (OBL, FACW, etc.) 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 Plant Species that Occur in Wetlands*.” Species with a distribution that cross the boundaries defined by a regional edition 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 COE memorandum: *Clarification and Interpretation of the 1987 Manual*, 6 March 1992. This clarification cites the “Basic Rule” (i.e., the 50% rule) for determining dominant species, 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** 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 the each plant’s species name and their associated indicator status designation as determined by the regional & 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 synonymy. 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 has 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 *List 88* and elsewhere) are linked together on the PLANTS Web site, you should have no difficulty moving from one to the other on that web site 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 9 of these trinomials with variable indicator status designations. When performing a wetland determination and one of these taxa are 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* 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 but only twice in the second. When using the list to determine the indicator status designation for each of the trinomials, the first variety listed in the first section is considered to be the “typical variety”. It is only listed in the first section. The variants of the species are found in the second section. 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 the *88List*. 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.

FAC

Symbol: ACRUR

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

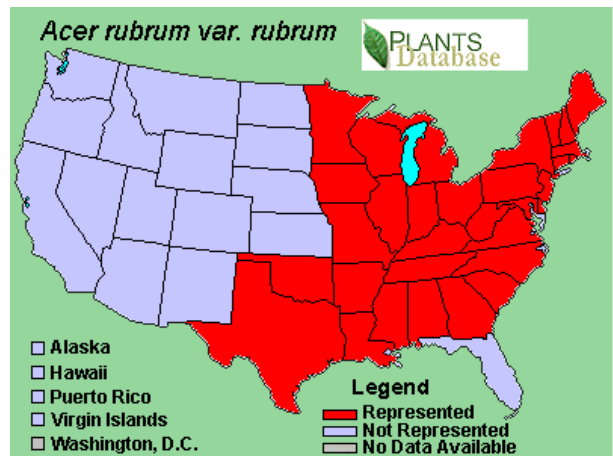
width - 6-15 cm. at the widest point.

Flowering time: March-May.

Fruiting time: May-July.

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

Habitat: Native tree of mesic and low woods.



***Acer rubrum* var. *trilobum* Torr. & Gray ex. K. Koch**

FACW+

Symbol: ACRUT

Common name: trident red maple, three lobed maple.

Leaves:

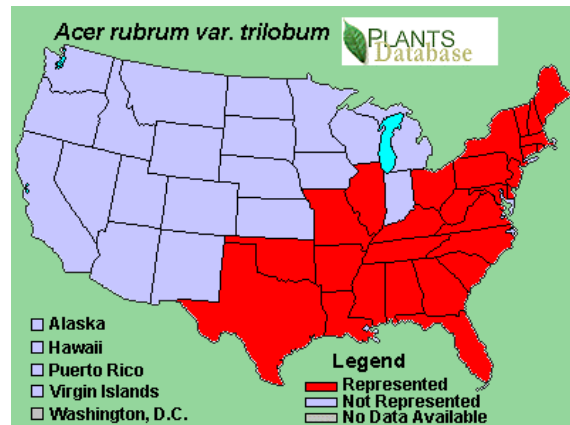
shape – ovate,
base - cuneate to rounded,
lobes - 3 short (to obsolete) small
toothed lobes,
pubescence – variable, glaucous,
glabrous, or hairy beneath at
maturity,
width - 3-10 cm.

Flowering time: March - May.

Fruiting time: May - July.

Range: Canada and south into Texas
and Florida.

Habitat: Native tree of swamps and lowlands.



***Acer rubrum* var. *drummondii* (Hook. & Arn. ex. Nutt.) Sargent FACW+**

Symbol: ACRUD

*Synonym as appears in the 1988 National List: *Acer rubrum* ssp. *drummondii* (Hook. & 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,

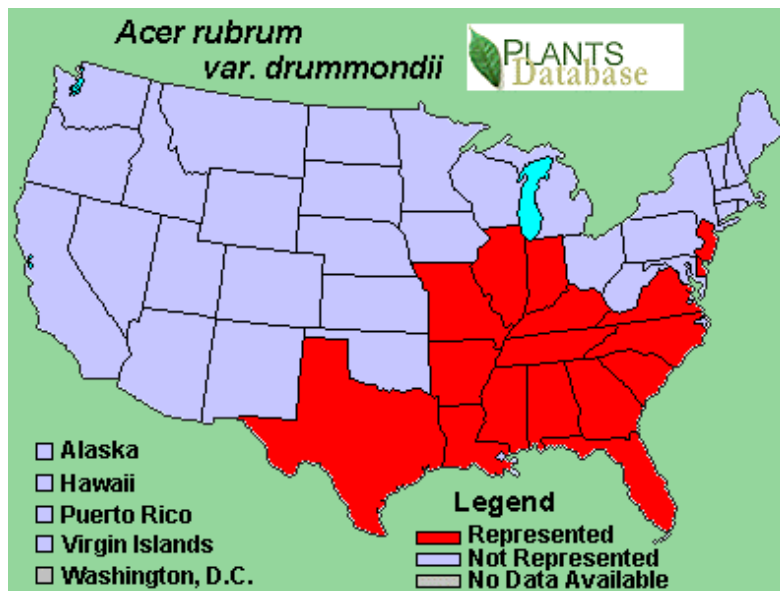
texture - more coriaceous (leathery and dark green) than var. *rubrum*.

Flowering time: March-May.

Fruiting time: May-July.

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

Habitat: Native tree of bottomlands, sandy woods, & swamps.



***Fagus grandifolia* var. *grandifolia* Ehrh.**

FACU

Symbol: FAGR

Common name: American beech.

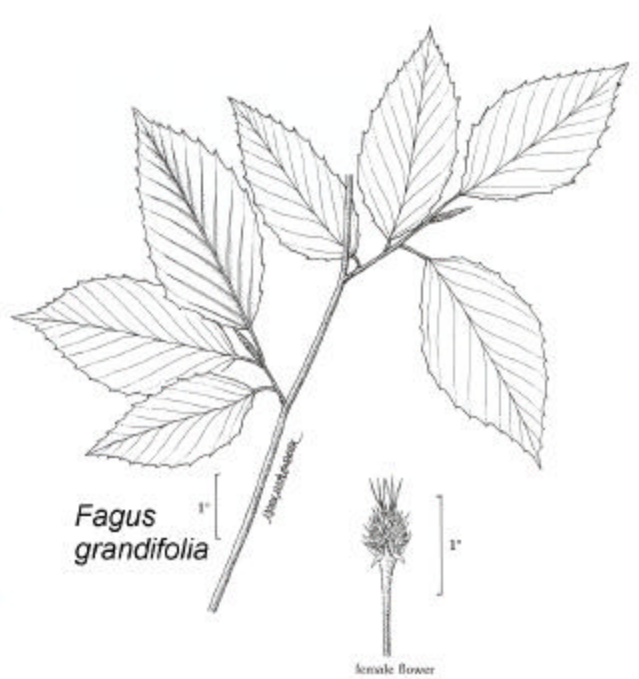
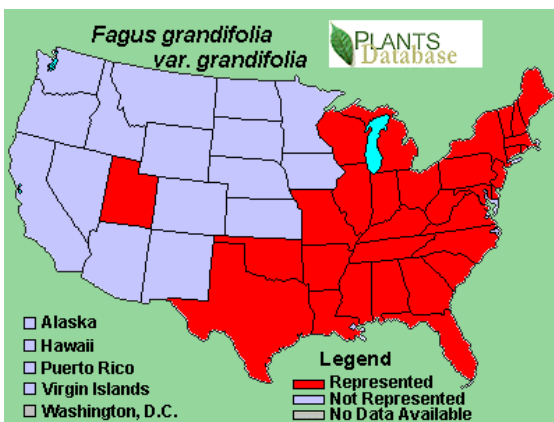
Leaves:

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

Fruit: prickles longer (4-10 mm), spreading, erect, or sometimes recurved.

Range: Nova Scotia to Minn. and south to Texas and Florida.

Habitat: Native tree occurring in rich upland soils and is a more northern variety
eventhough it can be found in the south.



***Fagus grandifolia* var. *caroliniana* (Loud.) Fern. & Rehd. ***

FAC+

Symbol: FAGRC

Common name: Carolina beech, White beech

Leaves:

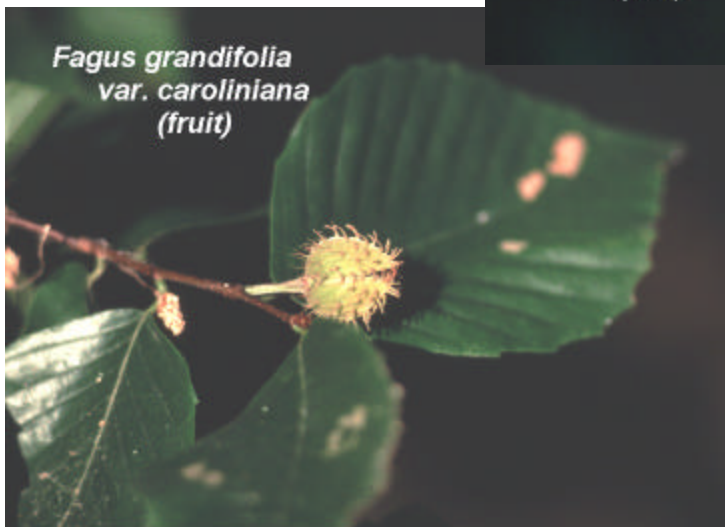
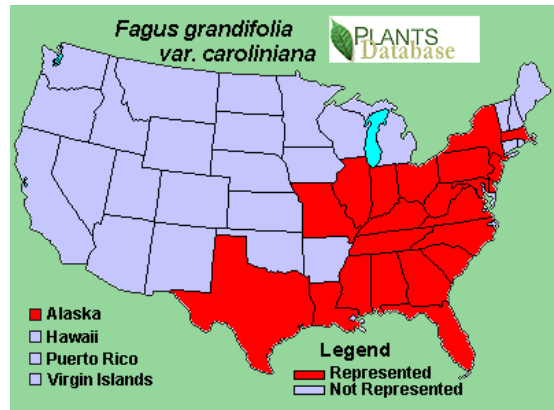
texture - thicker, dark green,
apex - strongly acuminate,
margins - teeth smaller to merely denticulate,
base - rounded or subcordate.

Fruit: prickles 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 borders. 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.



***Nyssa biflora* Walt.**

FACW+

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, coreaceous, nonmembranous,

apex - acute to obtuse or rounded.

base - cuneate,

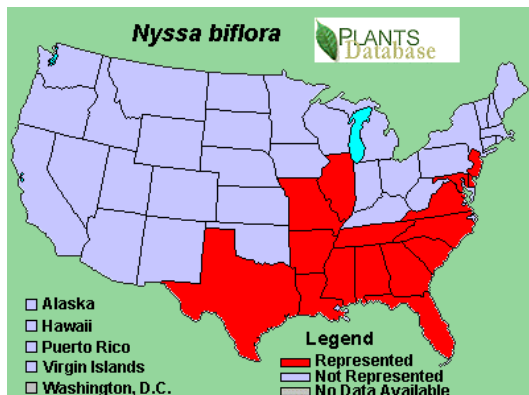
margins - entire (one or two small dentate teeth may be found on seedlings and stump sprouts).

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.**

FACU-

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 3-5 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.

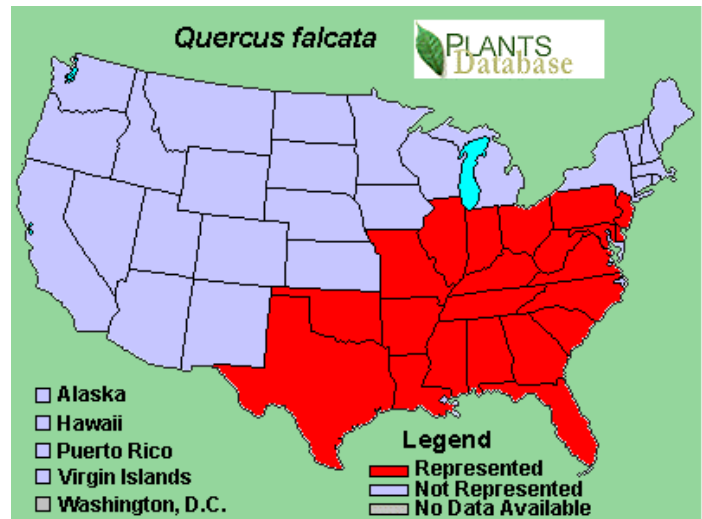
Twigs: gray tomentose.

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.**

FACW

Symbol: QUPA5

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

Common name: cherrybark oak, pagoda oak.

Leaves:

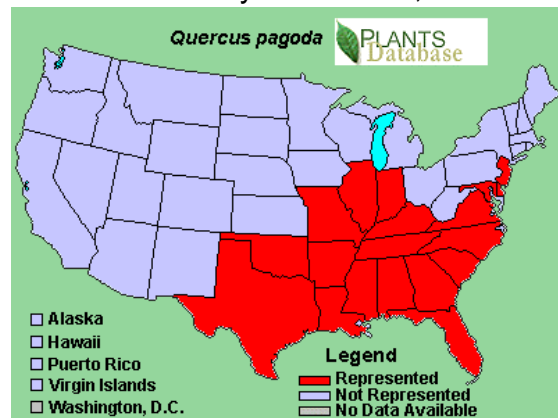
- shape - broader than *Q. falcata* and with more blade tissue, somewhat resembling *Q. rubra* (red oak),
- lobes - regularly 7-11 single pointed lobes at right angles to the midvein, diminishing in size toward the apex in a regular and gradual pattern, not strongly falcate,
- texture - leaf undersurface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

Trunk: reddish brown to nearly black.

Flowering: April-May.

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

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



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USDA-NRCS-National Plant Data Center: distribution maps, line art, *Fagus grandifolia* leaf and *Nyssa sylvatica* flower photographs.

Norman C. Melvin, Ph.D., USDA-NRCS-Wetland Science Institute: all other photographs & text.

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