

Southern Mixed Hardwoods (beech) Indicator Species

Jean Everett, PhD, College of Charleston

Last edited 28 December 2013

Nomenclature from Radford, Ahles and Bell, Manual of the Vascular Flora of the Carolinas; modern nomenclature can be found at the USDA Plants Database, or the UNC herbarium (Weakley). I've translated some that have come into more common usage.

NatureServe Ecological systems are tentative. The parenthetical key references are to the "Key to Ecological Systems (and selected Alliances) of the Francis Marion National Forest – 15 Nov 2012".

NATURESERVE ECOLOGICAL SYSTEM:

CES203.476 – Southern Coastal Plain Mesic Slope Forest

CES203.251 – Southern Atlantic Coastal Plain Mesic Hardwood Forest (better fit but listed as only possible for the Francis Marion)

GENERAL NOTES on beech systems: only this year has the full extent of this system been delineated on the Francis Marion. This author did field delineations, and Steve Simon has trained his ecosystem model to delineate the system with GIS. Most of the Huger Creek drainage basin (excluding only Gough Creek) supports this system. The soils are based on a high calcium-phosphate deposit, and are functionally restricted to the bluffs next to the creek systems, extending slightly on to the flats below and ridge tops above. Beech is occasionally found elsewhere on the Francis Marion; the same is true of some the herbaceous indicators. To my knowledge, only in the Huger Creek drainage basin are all components of the system present. See notes on geomorphology for more information.

Canopy Trees:

Diagnostic indicators

American Beech – *Fagus grandifolia*

White Oak – *Quercus alba*

Tulip poplar – *Liriodendron tulipifera* (found also with shell influences)

Usually present, but also found in other ecosystems

Swamp chestnut oak – *Quercus michauxii*

American holly – *Ilex opaca*

Magnolia – *Magnolia grandiflora*

Spruce pine – *Pinus glabra*

Hickories – *Carya spp.*

Rare, but usually diagnostic

Black walnut – *Juglans nigra* (possibly not natural but indicative of old house sites)

Nutmeg hickory – *Carya myristiciformis* (probably on the wetter edges)

Basswood – *Tilia heterophylla* (found also with shell influences)

Southern sugar maple – *Acer barbatum* (to my knowledge, never seen on the Francis Marion)

Sub-canopy Trees:

Diagnostic indicators

None in particular

Usually present, but also found in other ecosystems

Ironwood – *Carpinus caroliniana*

Redbud – *Cercis canadensis*

Dogwood – *Cornus florida*

Shrubs and Lianas:

Diagnostic indicators

None in particular

Usually present, but also found in other ecosystems

Horsesugar – *Symplocos tinctoria*

Elliot's blueberry – *Vaccinium elliotii*

Hearts-a-bustin – *Euonymus americanus*

Haws – *Viburnum dentatum* and *V. prunifolium*

Carolina jasmine – *Gelsemium sempervirens*

Honeysuckle – *Lonicera sempervirens* (found also with shell influences)

Uncommon, found elsewhere very uncommonly (probably with shell influences)

Witch hazel – *Hamamelis virginiana*

Herbaceous:

Diagnostic Indicators (some also found with shell or other calcium influences):

Coastal Plain mottled trillium – *Trillium maculatum*

Wild ginger – *Hexastylis arifolia*

Christmas fern – *Polystichum acrostichoides*

Wild geranium – *Geranium maculatum*

Violet wood sorrel – *Oxalis violacea*

Beechdrops – *Epifagus virginiana*

Cancer-root – *Conopholis americana*

Green and gold – *Chrysogonum virginianum*

Broad beech fern- *Thelypteris hexagonoptera* (rare)

Wild ginger – *Asarum canadense* (rare)

Mayapple – *Podophyllum peltatum* (rare)

Indian pink – *Spigelia marilandica* (rare)

Bloodroot – *Sanguinaria canadensis* (rare)

Windflower – *Thalictrum thalictroides* (rare)

Crane-fly orchid – *Tipularia discolor* (rare)

Southern twayblade – *Listera australis* (rare)

Spring coralroot – *Corallorhiza wisteriana* (rare)

Pennywort – *Obolaria virginica* (rare)

Green dragon – *Arisaema dracontium* (rare)