NC COOPERATIVE EXTENSION

BACKYARD NATURALIST PROGRAM

Plant Identification

Methods and Resources




Part III

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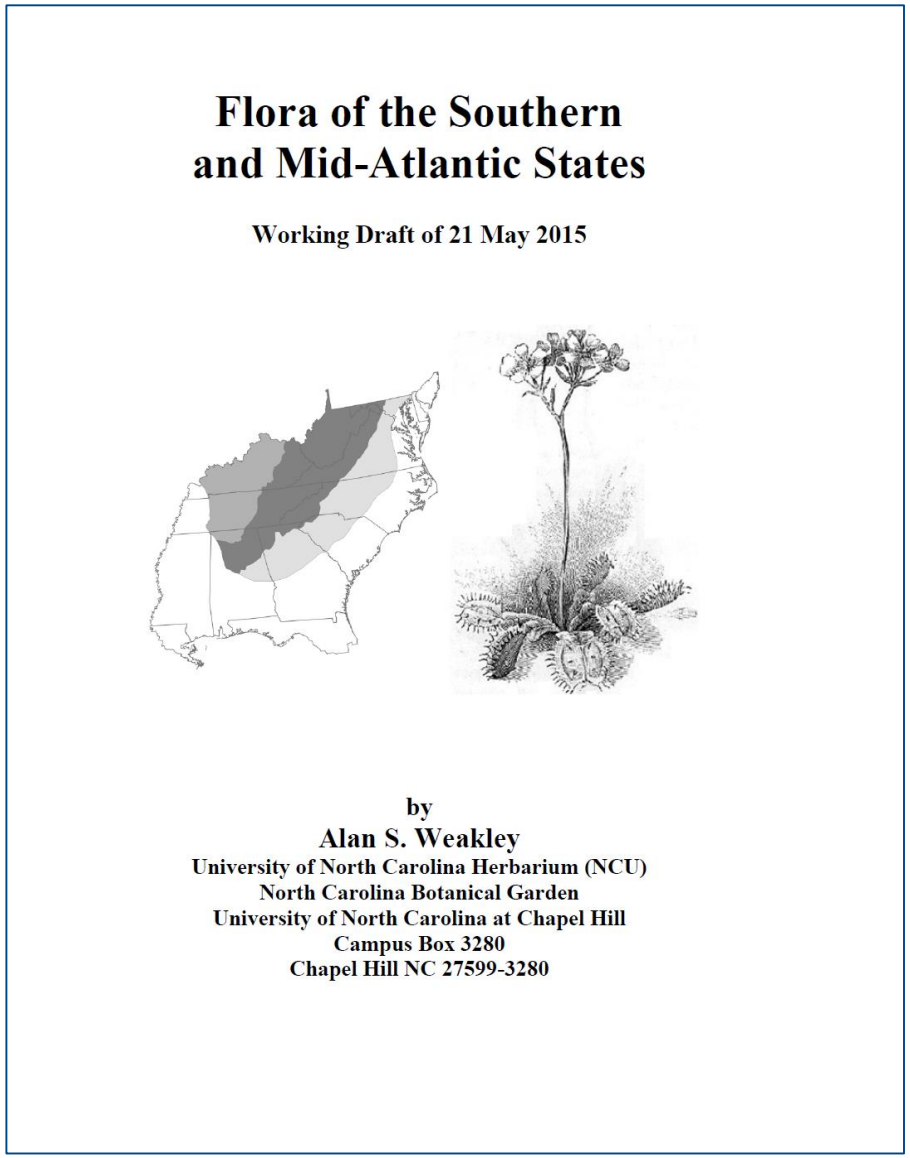
NC STATE UNIVERSITY

Recommended Resources



Flora of the Southern and Mid-Atlantic States

Alan S. Weakley

UNC Herbarium (hardcopies not published yet)

Draft Versions Available (PDF)

http://herbarium.unc.edu/flora.htm

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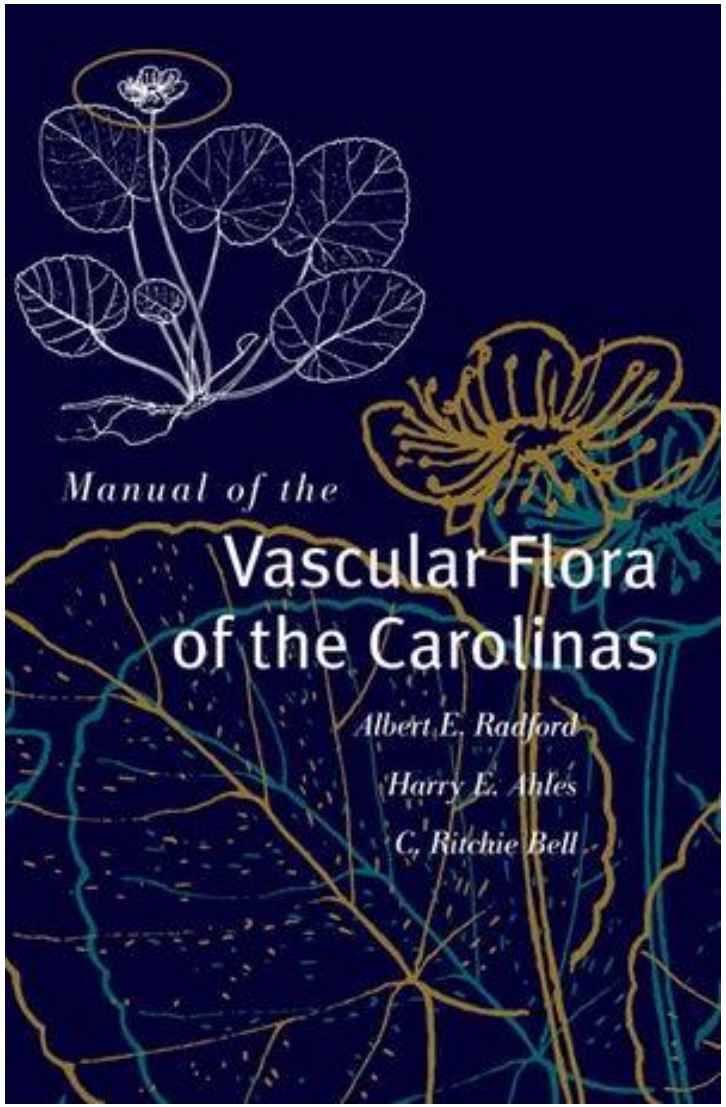
Recommended Resources

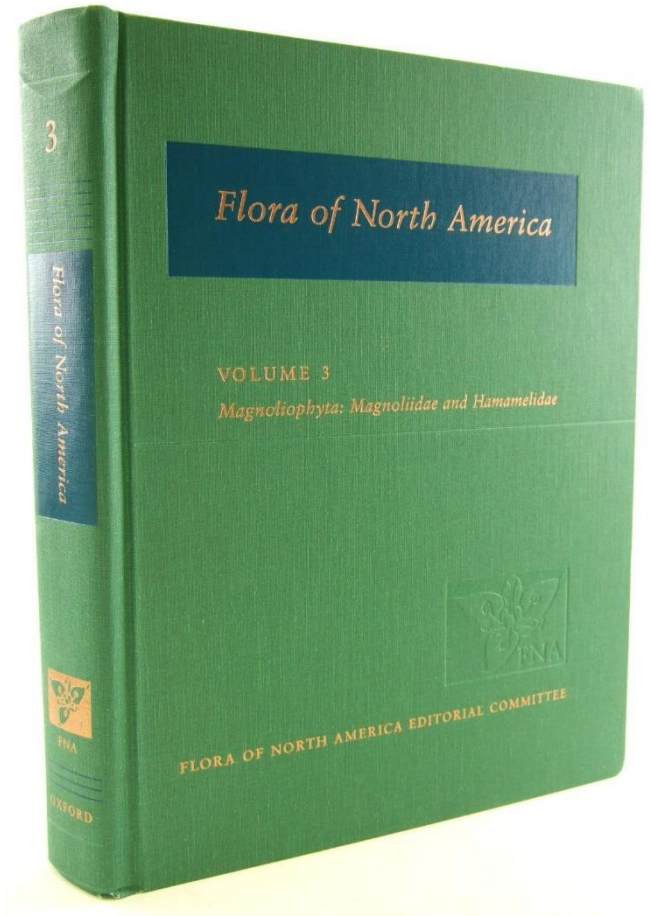


Manual of the Vascular Flora of the Carolinas

Albert E. Radford, Harry E. Ahles, and C. Ritchie Bell

UNC Press (1968)

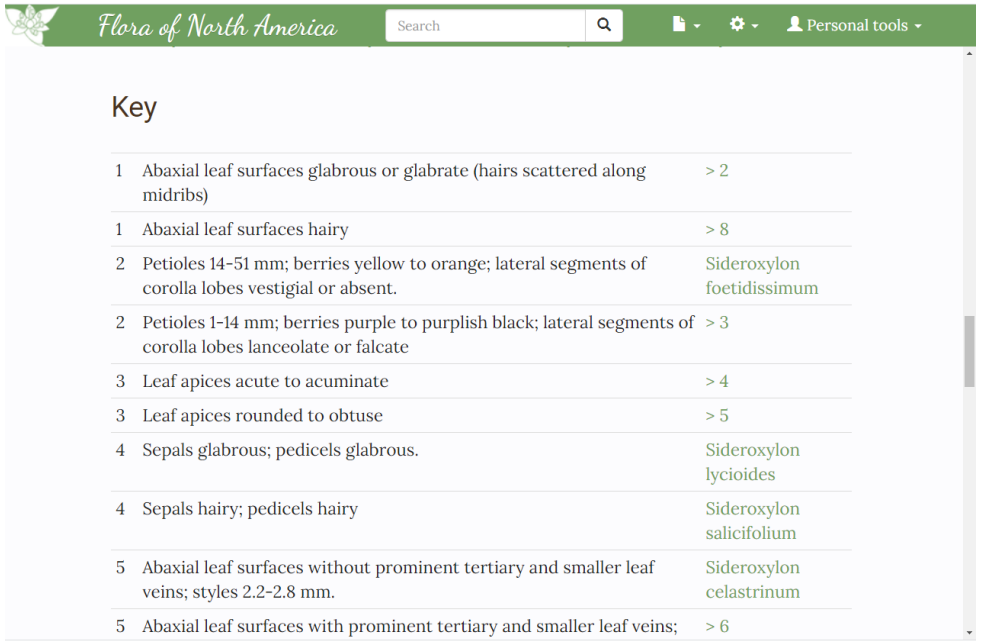
Recommended Resources



Flora of North America North of Mexico

Flora of North America Editorial Committee, eds. 1993+

http://beta.floranorthamerica.org/Main_Page



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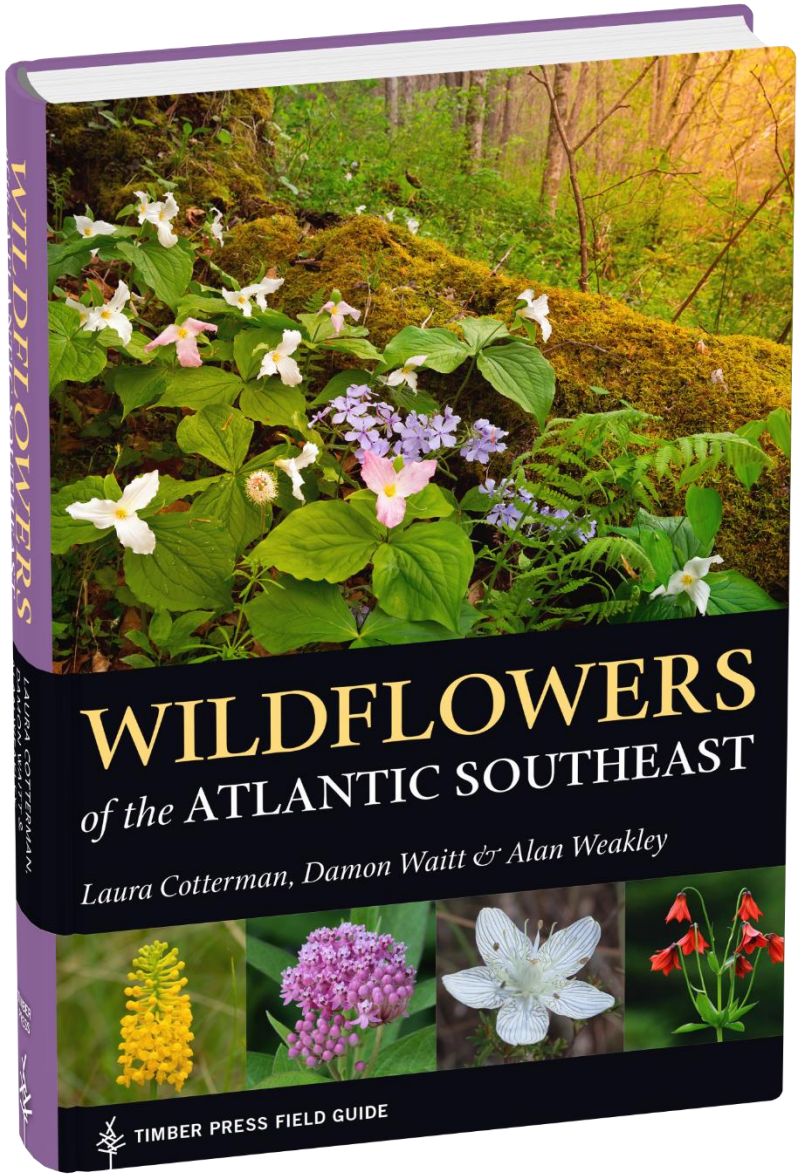
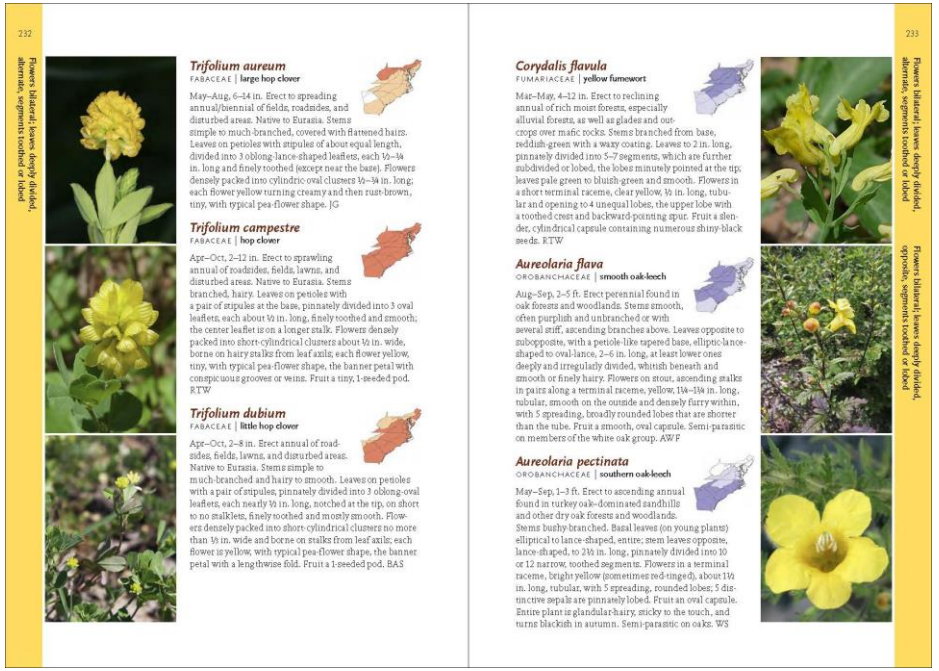


Wildflowers of the Atlantic Southeast

Laura Cotterman, Damon Waitt, & Alan Weakley

Timber Press (2019)



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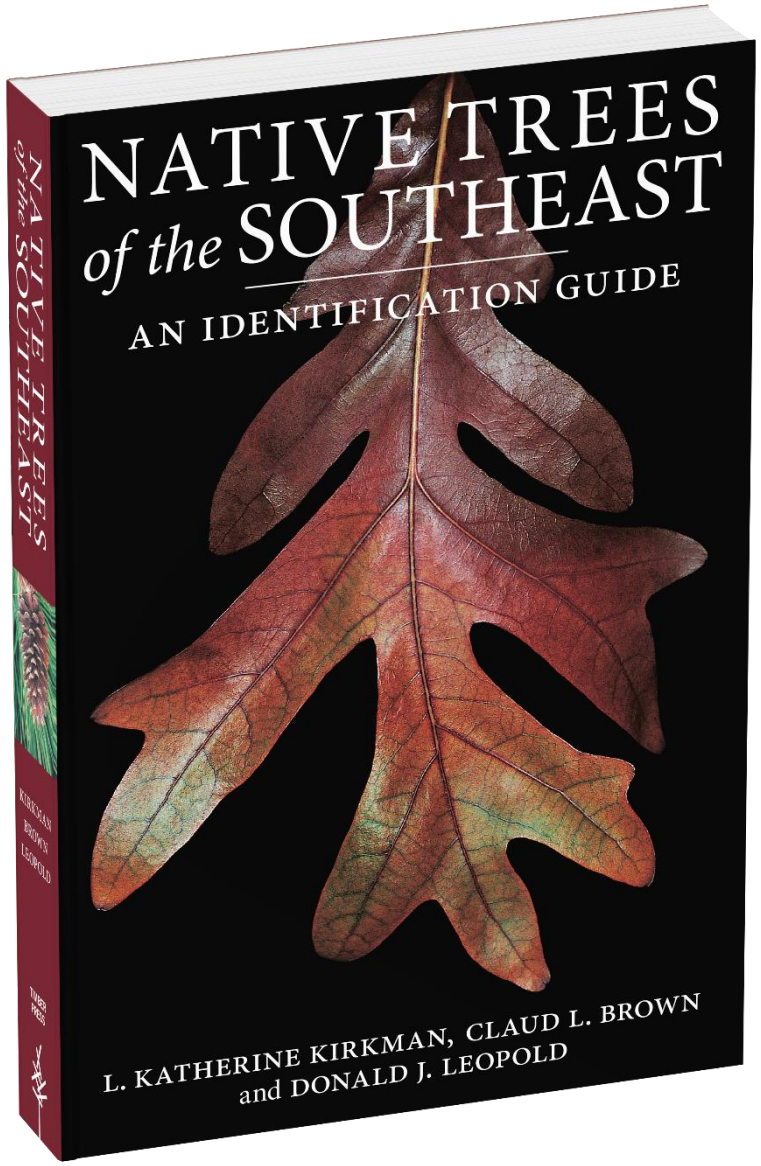

Native Trees of the Southeast: An Identification Guide

L. Katherine Kirkman, Claud L. Brown, & Donald J. Leopold

Timber Press (2007)

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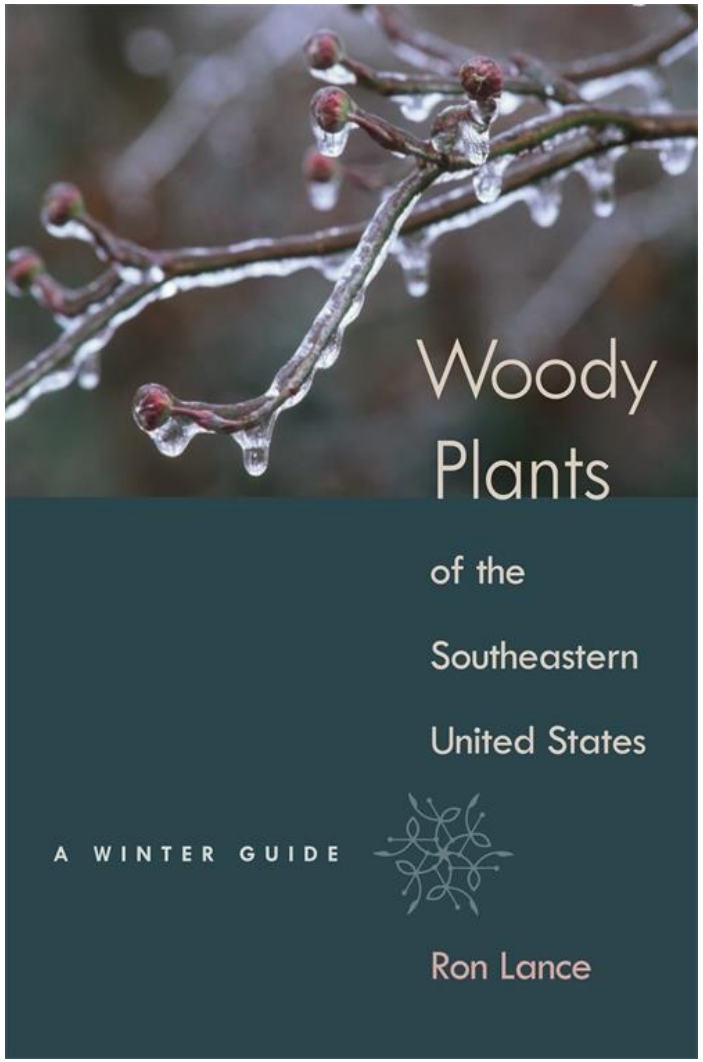

Woody Plants of the Southeastern United States: A Winter Guide

Ron Lance

University of Georgia Press (2004)

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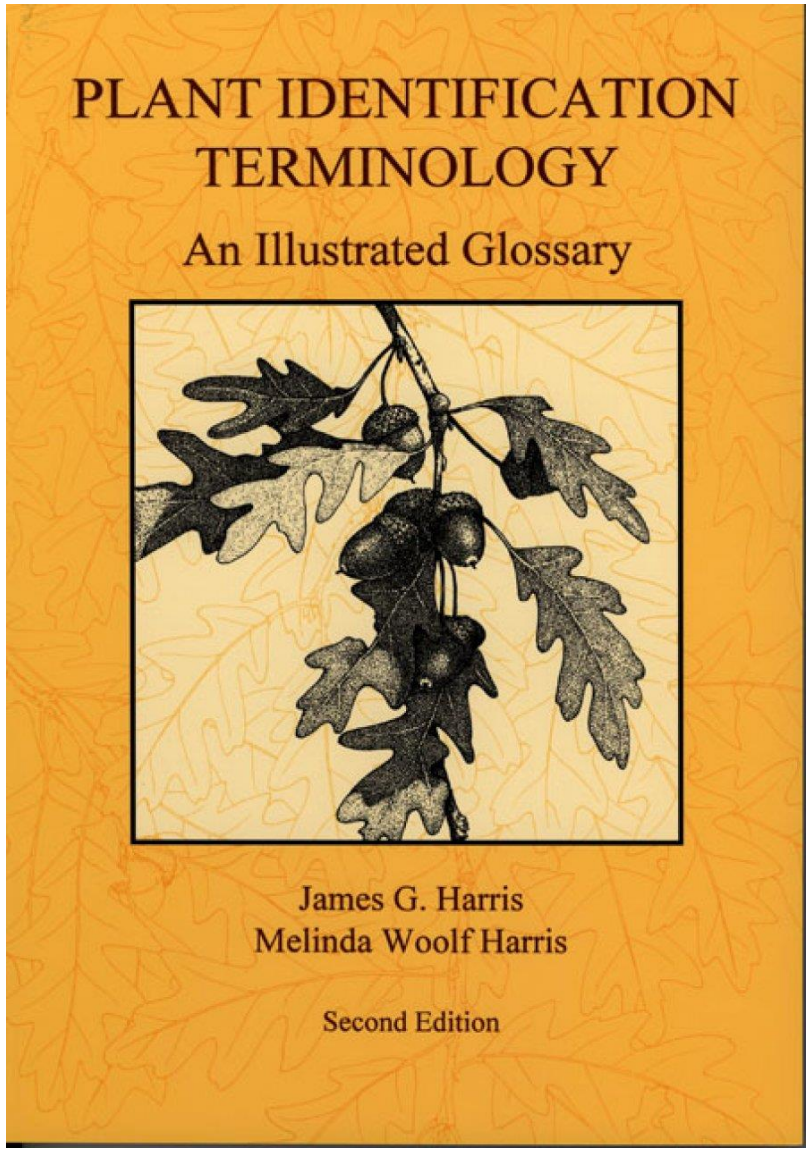

Plant Identification Terminology: An Illustrated Glossary

James G. Harris & Melinda Wolf Harris

Spring Lake Press (2001)

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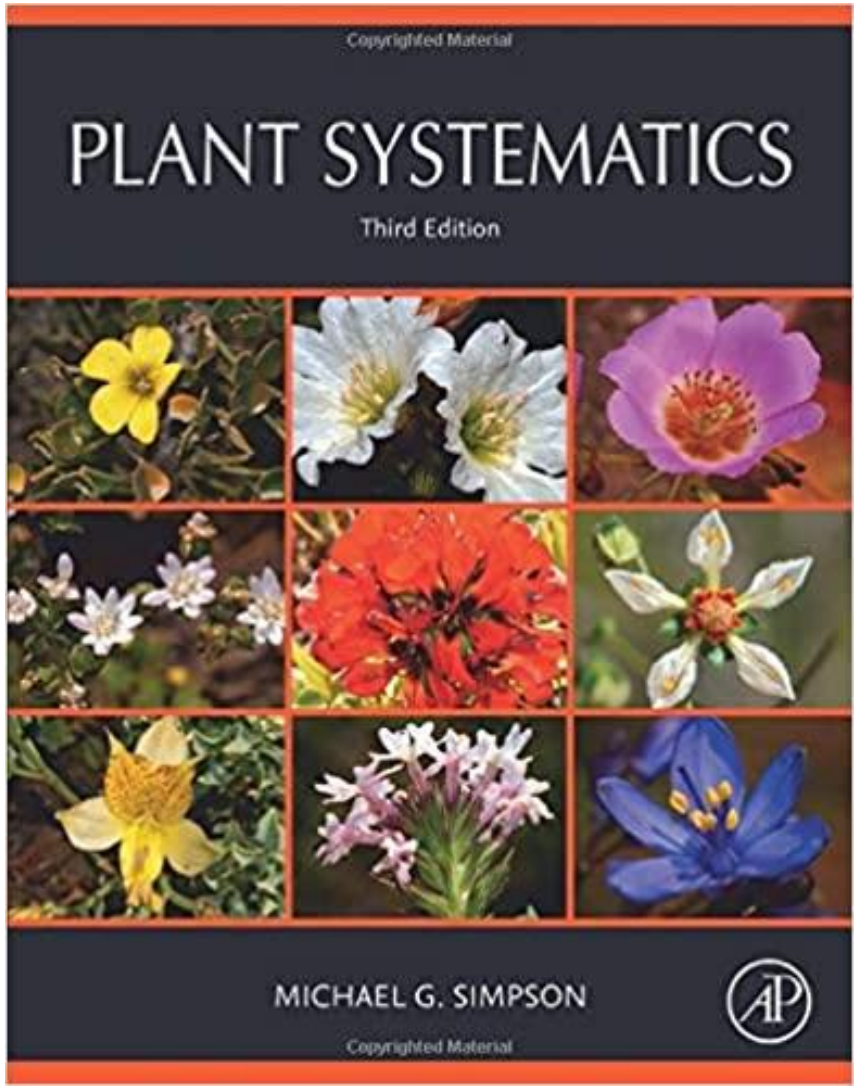

Plant Systematics (3rd Ed.)

Michael G. Simpson

Academic Press (2020)

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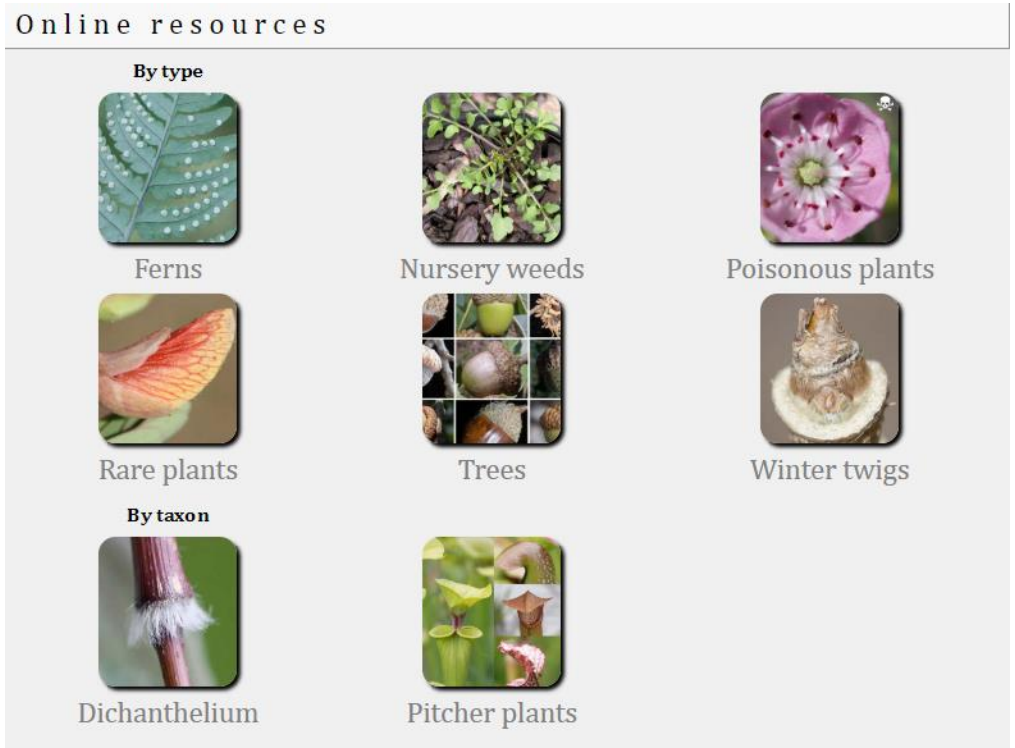
NC State Herbarium

Dichotomous Keys and ID Tools

Google: NCSU Botanist's Little Helper

Dr. Alexander Krings
Assoc. Prof. of Plant Biology
Director, NC State University Vascular Plant Herbarium
https://projects.ncsu.edu/cals/plantbiology/ncsc/



https://go.ncsu.edu/botanistlittlehelper

NC STATE **Herbarium Dichotomous Keys and ID Tools**

Common Ferns of North Carolina

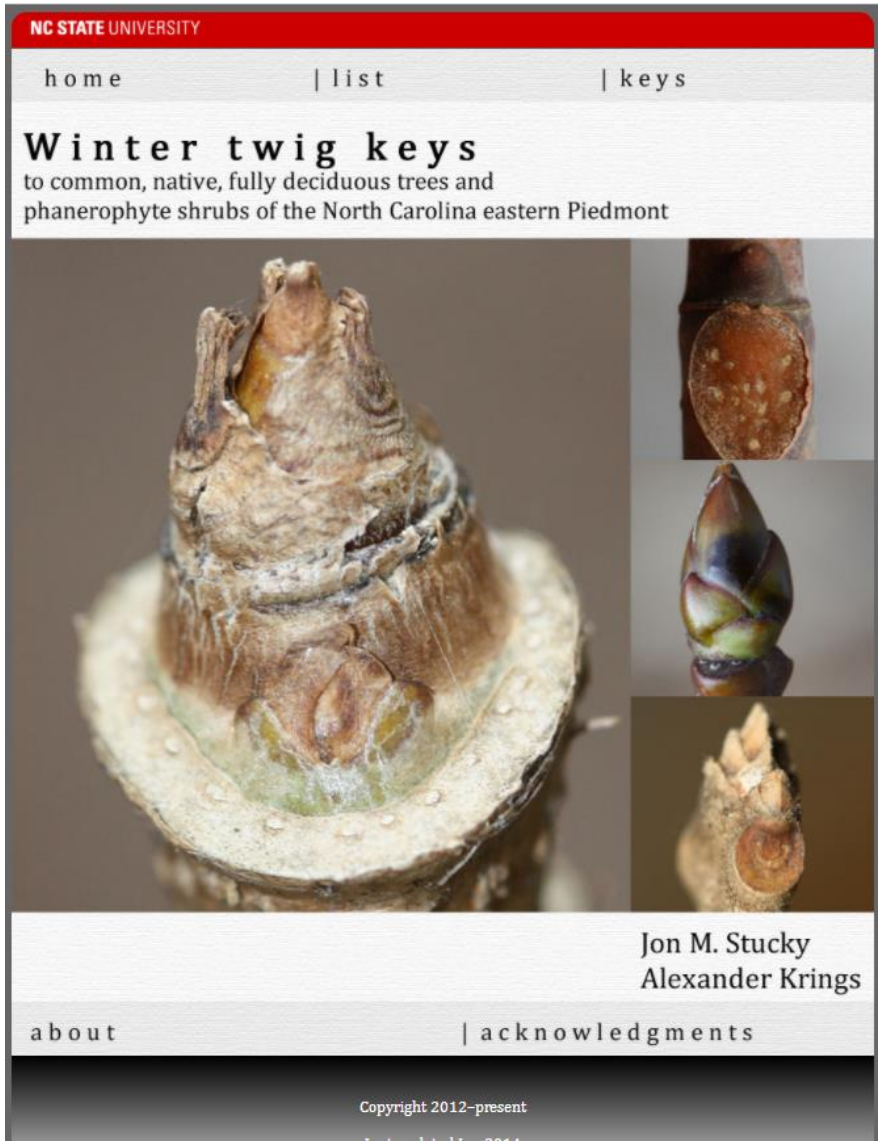
https://go.ncsu.edu/fernid

NC STATE **Herbarium Dichotomous Keys and ID Tools**

Trees of North Carolina

https://go.ncsu.edu/nctreeid

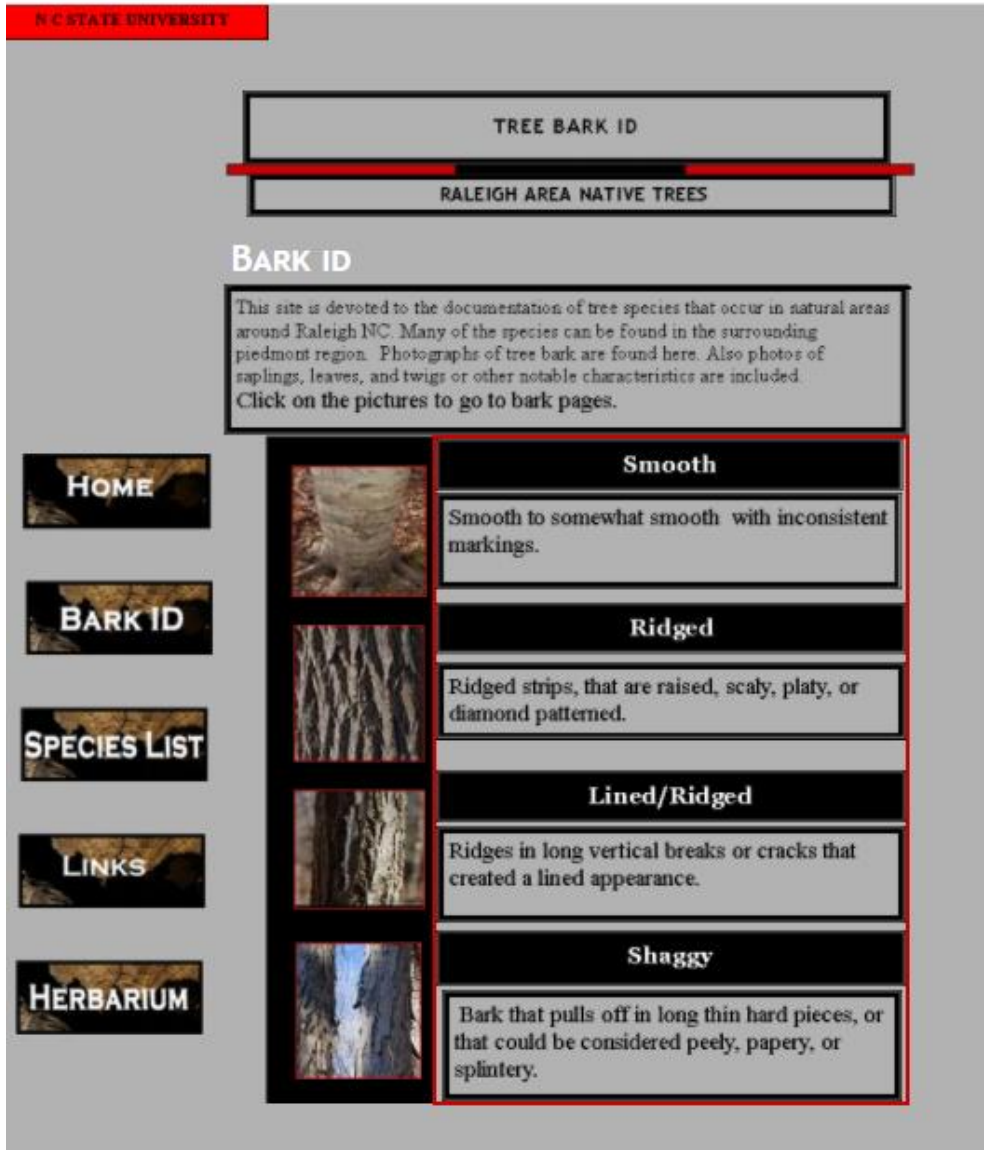
NC STATE **Herbarium Dichotomous Keys and ID Tools**



Winter Twig Keys

https://go.ncsu.edu/winterbotany

NC STATE Herbarium Dichotomous Keys and ID Tools



Tree Bark ID

https://go.ncsu.edu/bark-id

Dichotomous Keys

Decision ‘tree’ for identification

1. Given a *couplet* of two *leads* with contrasting, mutually exclusive characters (qualitative and/or quantitative)
2. Choose characters that better match your specimen
3. Proceed to the next couplet based on your selection
4. Repeat until final *lead* is a species name

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Simple Dichotomous Key

1. Leaves usually without teeth or lobes: 2
1. Leaves usually with teeth or lobes: 5
    2. Leaves evergreen: 3
    2. Leaves not evergreen: 4

3. Mature plant a large tree — Southern live oak *Quercus virginiana*
3. Mature plant a small shrub — Dwarf live oak *Quercus minima*
    4. Leaf narrow, about 4-6 times as long as broad — Willow oak *Quercus phellos*
    4. Leaf broad, about 2-3 times as long as broad — Shingle oak *Quercus imbricaria*

5. Lobes or teeth bristle-tipped: 6
5. Lobes or teeth rounded or blunt-pointed, no bristles: 7
    6. Leaves mostly with 3 lobes — Blackjack oak *Quercus marilandica*
    6. Leaves mostly with 7-9 lobes — Northern red oak *Quercus rubra*

7. Leaves with 5-9 deep lobes — White oak *Quercus alba*
7. Leaves with 21-27 shallow lobes — Swamp chestnut oak *Quercus prinus*

Typical Dichotomous Key

Flora of the Southern and Mid-Atlantic States
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239. ANACARDIACEAE R. Brown 1818, nom. cons. (Cashew Family) [in SAPINDALES]

A family of about 70-81 genera and about 800-875 species, trees, shrubs, lianas, and rarely herbs, of tropical, subtropical, and temperate regions. Our representatives are all classed in subfamily Anacardioideae (Pell et al. 2011). References: Pell et al. in Kubitzki (2011); Barkley (1937).

1 Leaves simple ..... ***Cotinus***
1 Leaves compound.
  2 Leaves even-pinnate ..... ***[Pistacia]***
  2 Leaves odd-pinnate.
    3 Fruits both red and glabrous ..... ***Schinus***
    3 Fruits not simultaneously red and glabrous.
      4 Fruits red, glandular pubescent; foliage and stems lacking contact poisons; inflorescences dense, either terminal or lateral on last year's growth; sepal margins ciliate ..... ***Rhus***
      4 Fruits white or yellow, glabrous or puberulent (the hairs not glandular); foliage and stems containing contact poisons; inflorescences openly branched, axillary; sepal margins entire ..... ***Toxicodendron***

Typical Dichotomous Key

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Toxicodendron P. Miller 1754 (Poison Ivy, Poison Oak, Poison Sumac)

A genus of about 10-15 species, trees and shrubs, primarily temperate, of North America, n. South America, Indonesia, and e. Asia. References: Gillis (1971)=Z; Pell et al. in Kubitzki (2011).

1 Leaflets 7-13, entire; small tree ..... ***T. vernix***
1 Leaflets 3, toothed, lobed, or entire; shrub or vine.

2 Fruits pubescent or papillose; leaflets entire, coarsely toothed, undulate, or round-lobed; lower surfaces of leaflets either velvety puberulent, sometimes becoming glabrate in age (*T. pubescens*) or glabrous (glabrescent or rarely pilose beneath) but with prominent tufts of tannish hairs present in the vein axils (*T. radicans* var. *radicans*).
3 Leaves sparsely pubescent (rarely pilose beneath), the apex and the lobes (if present) generally acute to acuminate; drupes papillose, scabrous or puberulent; plant a high-climbing vine or stoloniferous shrub; [of mesic, swampy, or dry habitats] ..... ***T. radicans var. radicans***
3 Leaves velvety puberulent (sometimes becoming glabrate in age), the apex and the lobes (if present) generally obtuse to broadly acute; drupes pubescent (becoming glabrate); plant a stoloniferous shrub; [of dry habitats, especially sandhills] ..... ***T. pubescens***
2 Fruits glabrous (or very sparsely pubescent); leaflets coarsely toothed or notched (rarely entire); lower surfaces of leaflets glabrous to pubescent, but without tufts of tannish hairs in the vein axils.
4 Leaves densely pilose and velvety on the lower surface; leaves pubescent on the upper surface; pubescence of the leaves erect ..... ***T. radicans var. pubens***
4 Leaves glabrous to sparsely strigose on the lower surface; leaves glabrous on the upper surface; pubescence of the leaves appressed.
5 Leaflets suborbicular or broadly ovate, nearly as wide as long; petiole glabrous (rarely glabrescent); plant a shrub, the stems upright, entirely lacking aerial roots, not vining; fruits (3-) 4-7 mm in diameter ..... ***T. rydbergii***
5 Leaflets ovate to lanceolate; petiole puberulent to densely pubescent; plant a shrub or vine, the stems upright or twining; fruits 2.5-5.5 mm in diameter ..... ***T. radicans var. negundo***

Dichotomous Key Tips

- Know what species your key covers!
- Look at several specimens and several parts of specimens.
- Look carefully, but don’t ‘see’ something that isn’t there!
- Know your path to backtrack if needed
- This will be a learning process:
  - Getting frustrated and making mistakes is part of learning!

Using a Hand Lens

Also know as…

- Hasting's Triplet
- Jeweler's Loupe

High magnification

- Short focal length
- Hold close to subject and your eye

Questions?

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