

















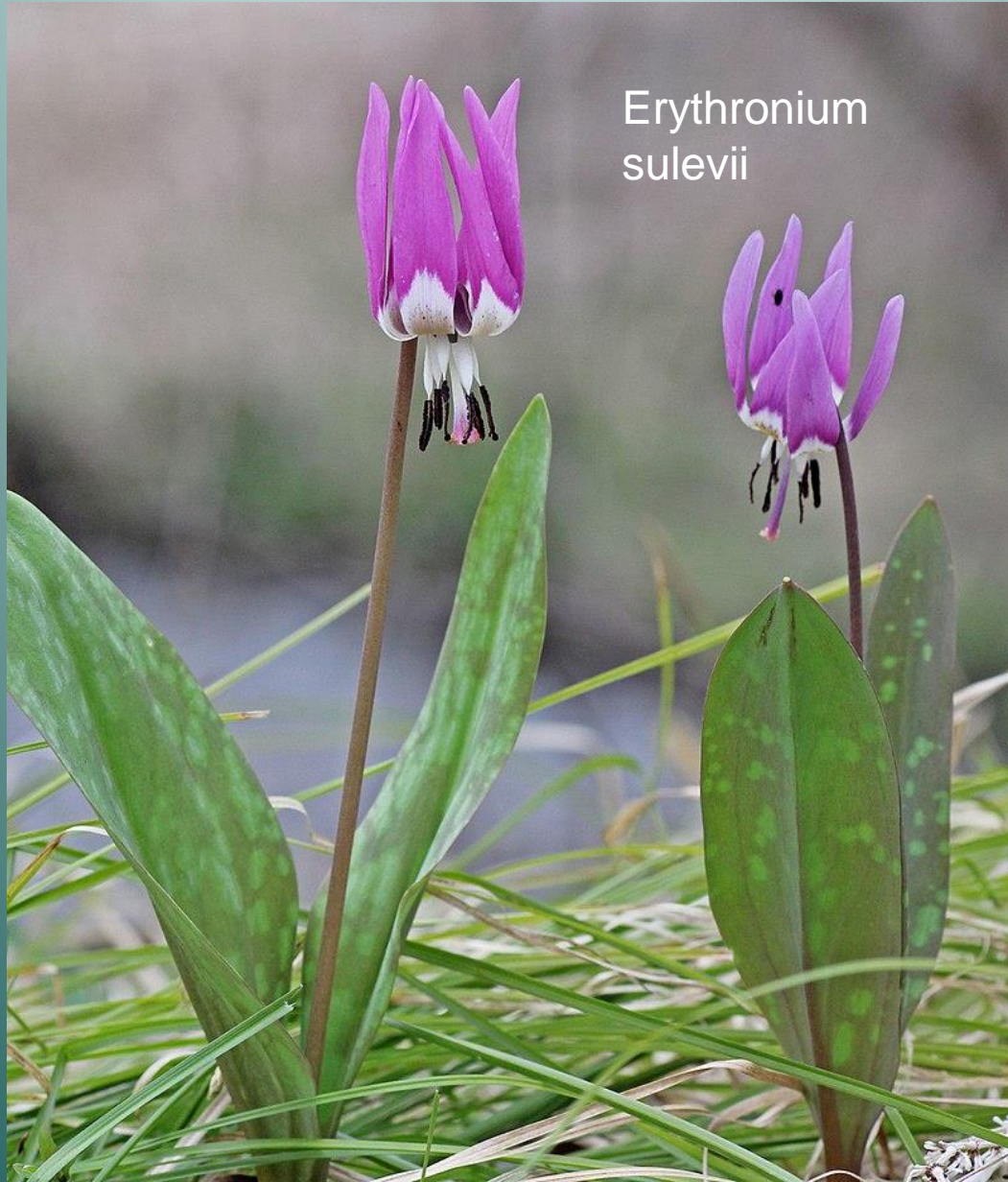
Eocene 50 to 34 million years ago







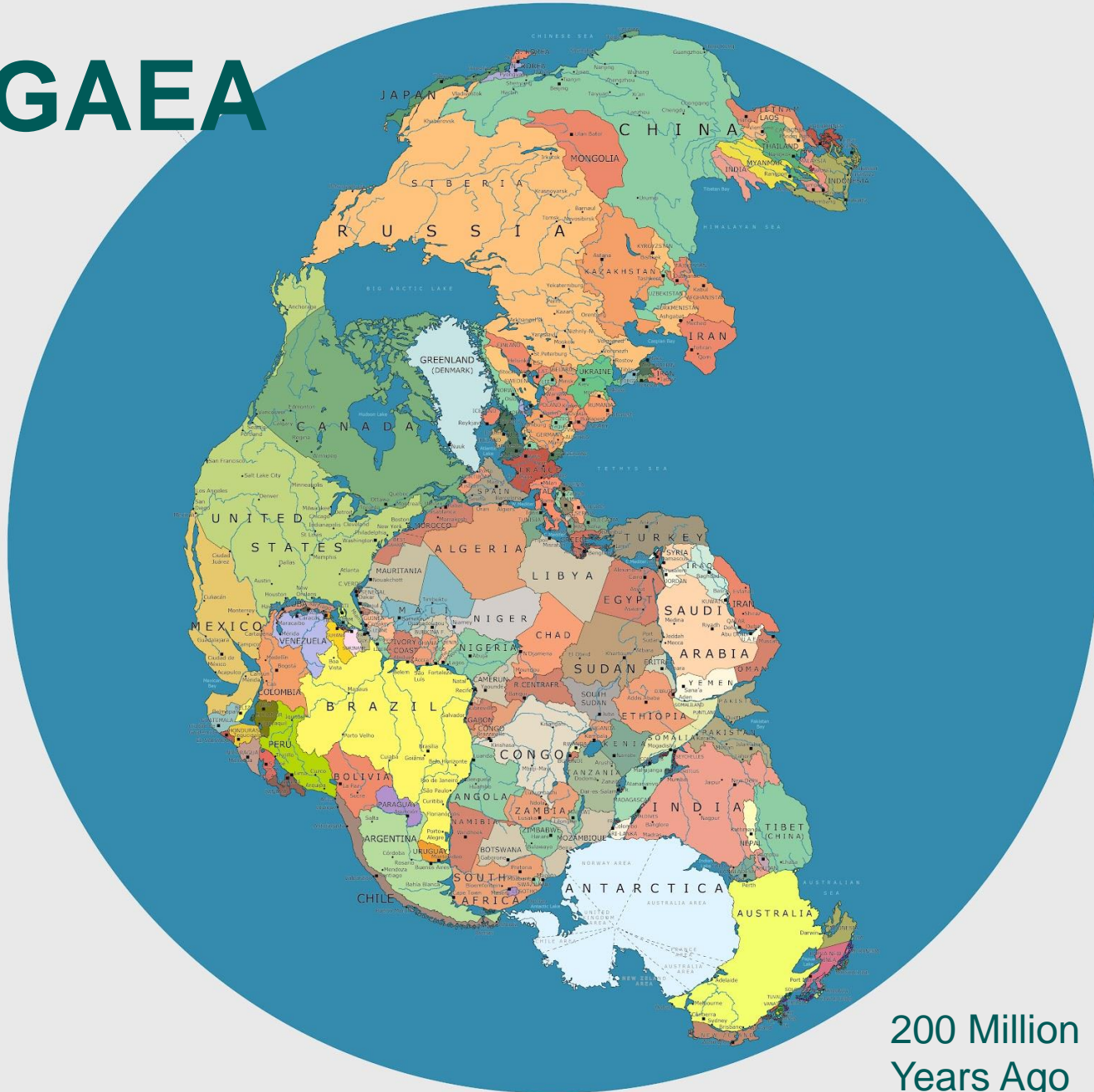
Erythronium
sulevii







PANGAEA



200 Million
Years Ago

Started
12,800 years
ago, ended
11,500 years
ago





Diapensia lapponica

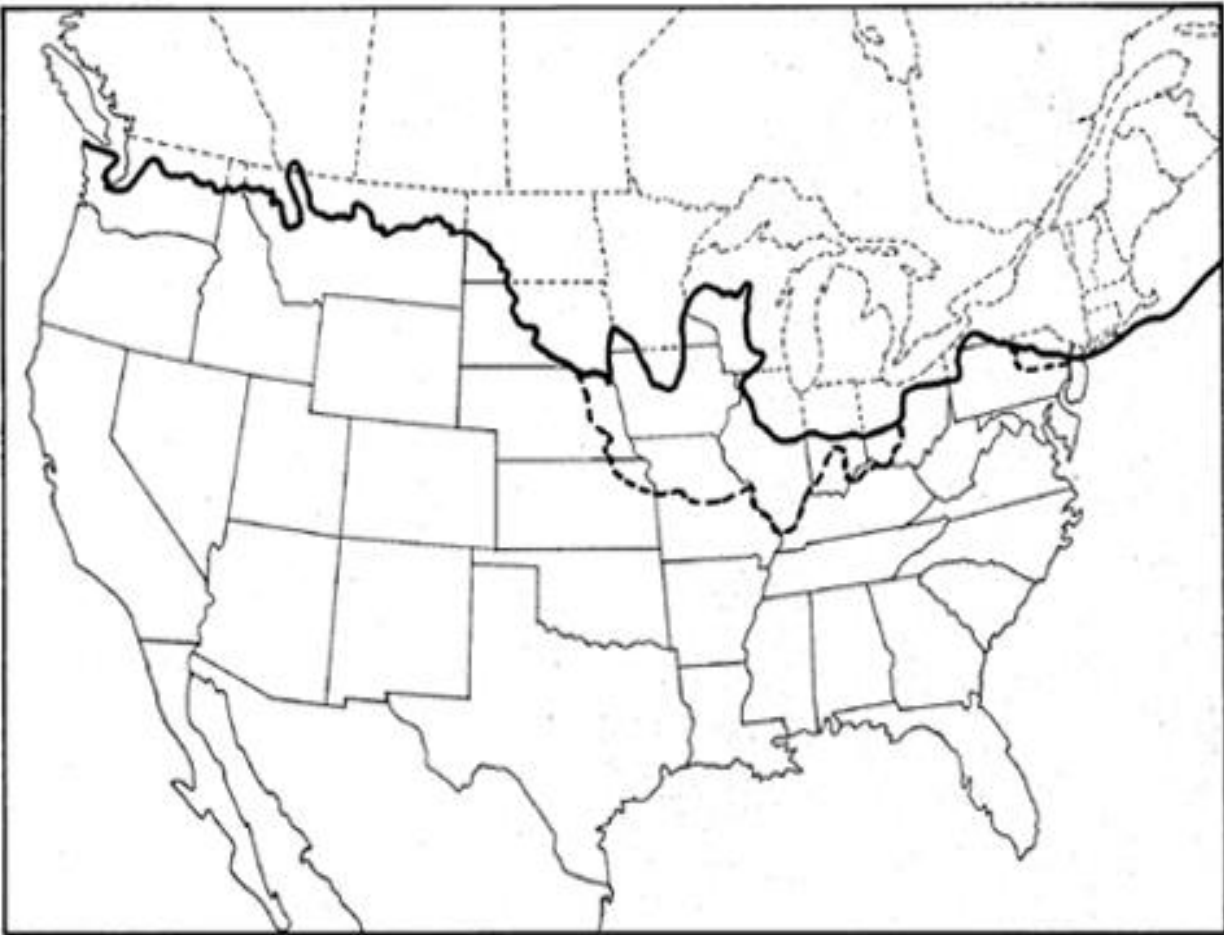
Mountain Azalea
Loiseleuria procumbens
Aka *kalmia procumbens*



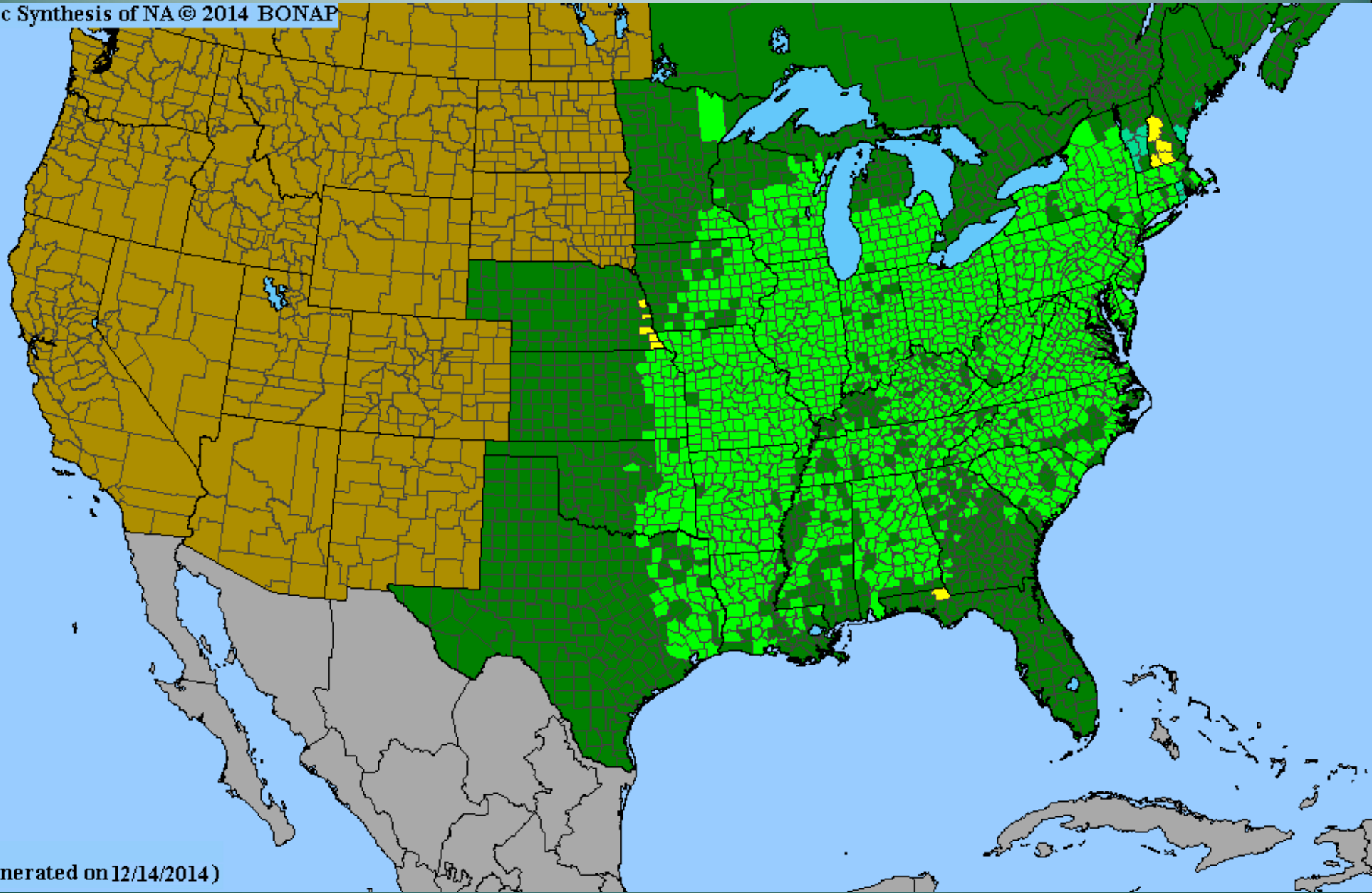
Mountain Heath
Phyllodoce caerulea

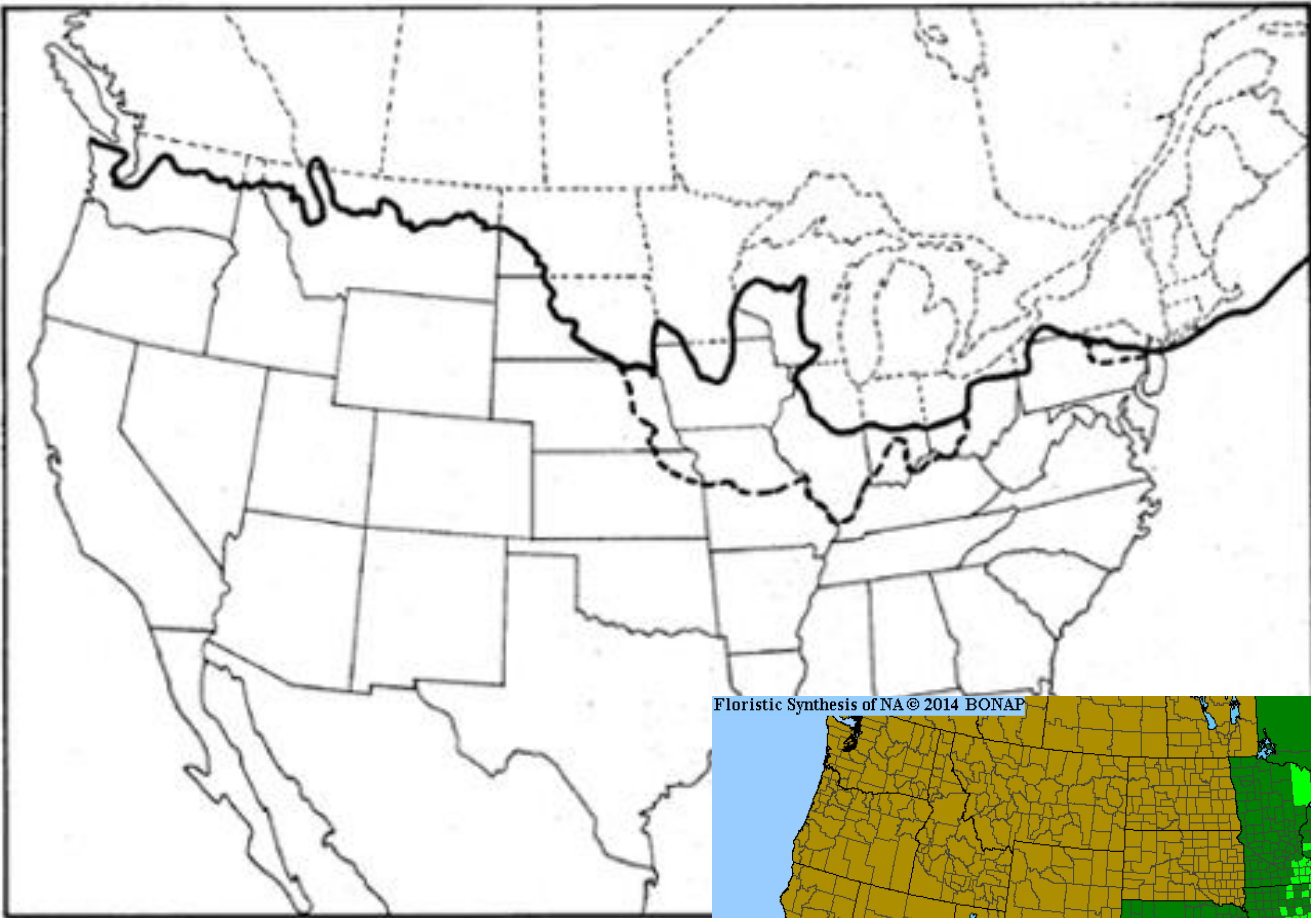




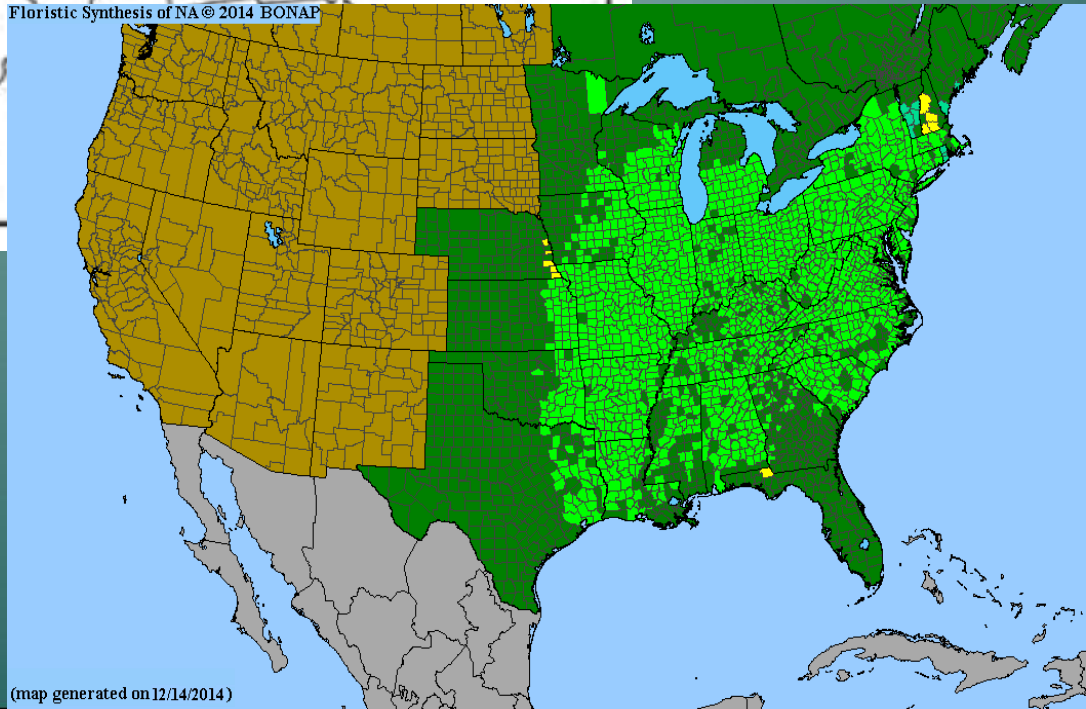






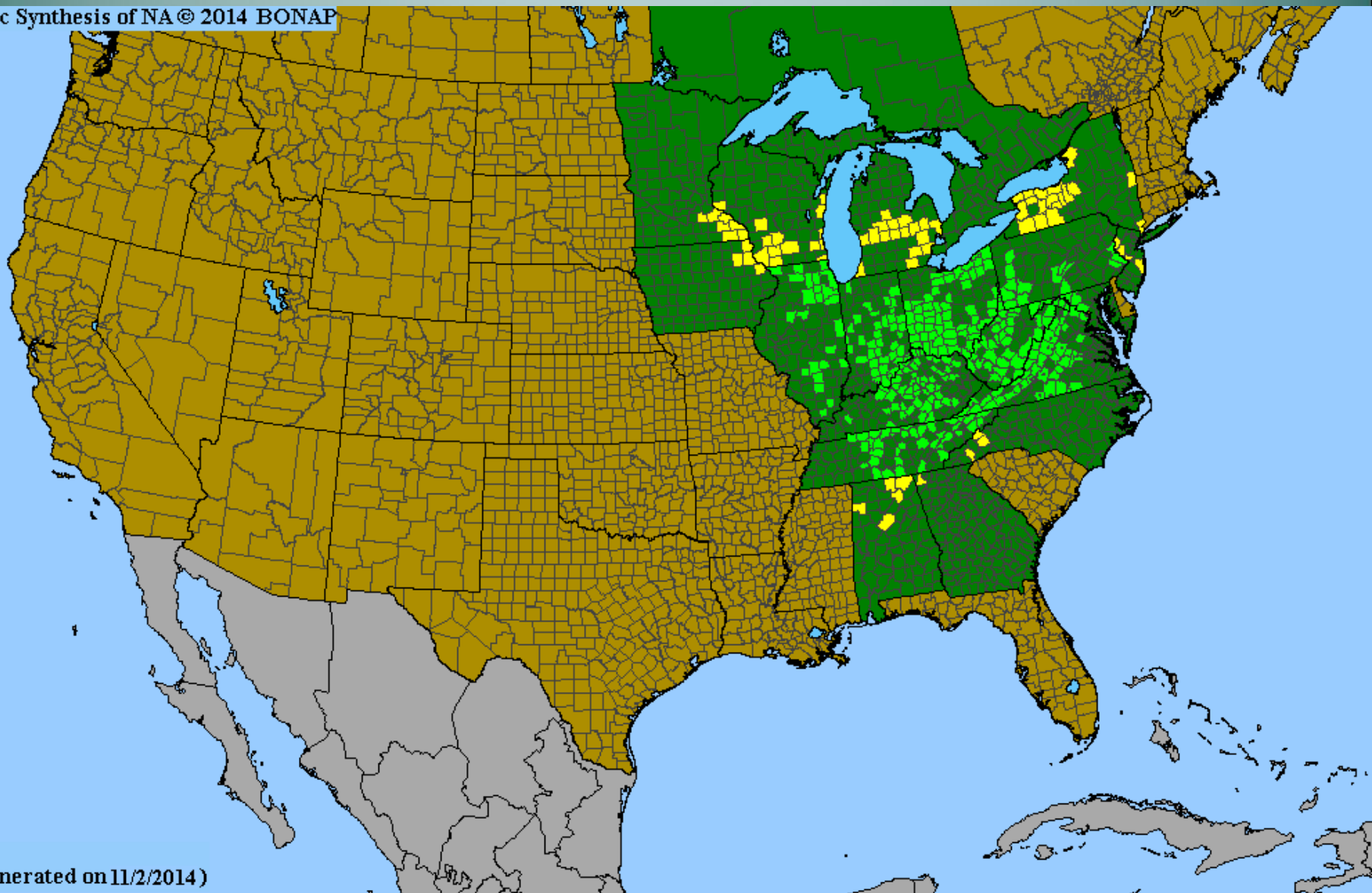


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(map generated on 12/14/2014)





-What is Native?

What is Native?

1- Locally Native

Level III and IV Ecoregions of New England

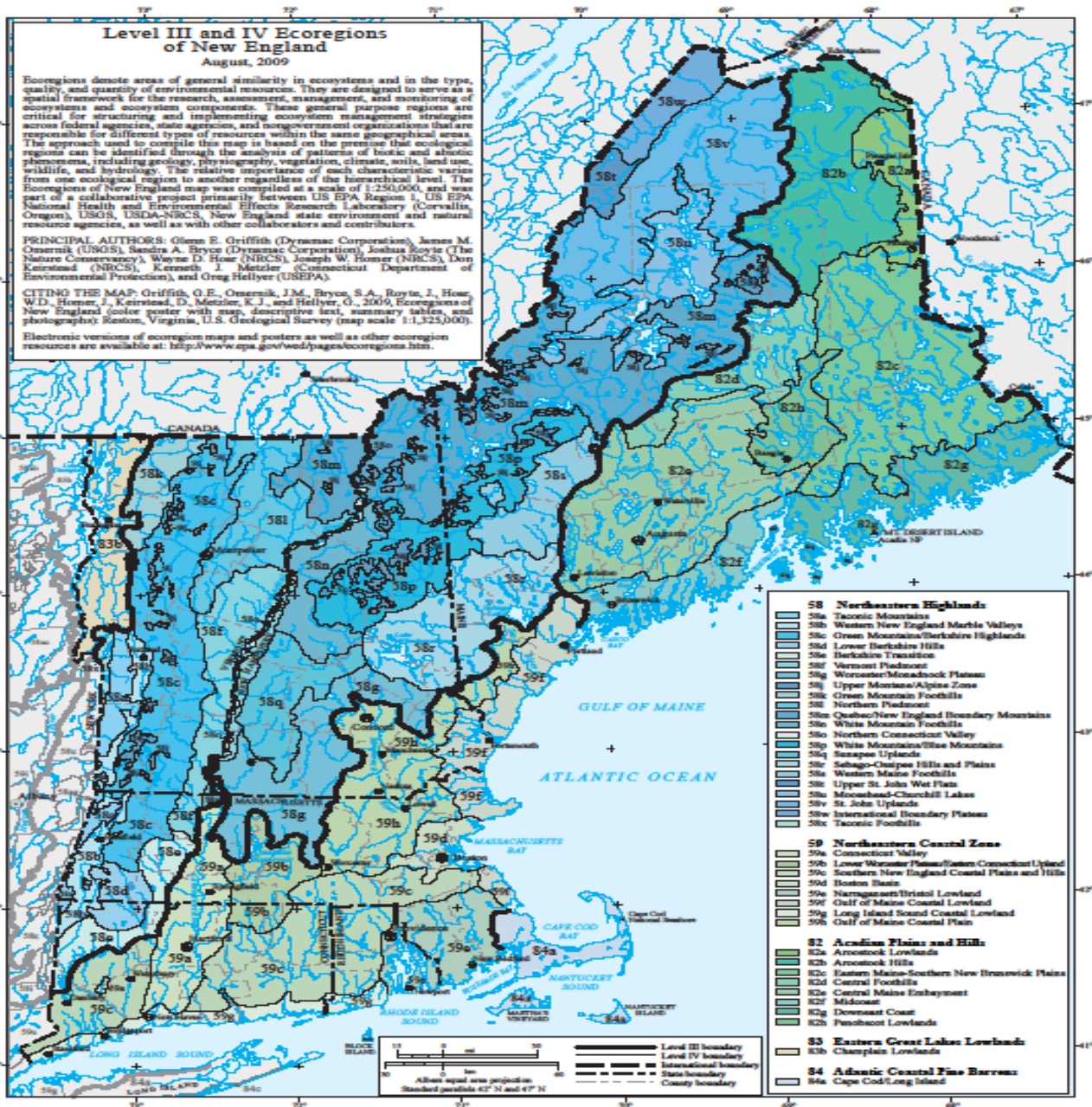
August, 2009

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas. The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of patterns of biotic and abiotic phenomena, including geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. The Ecoregions of New England map was compiled at a scale of 1:250,000, and was part of a collaborative project primarily between US EPA Region 1, US EPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), USGS, USDA-NRCS, New England state environment and natural resource agencies, as well as with other collaborators and contributors.

PRINCIPAL AUTHORS: Glenn E. Griffith (Dyrnasmac Corporation), James M. Omernik (USGS), Sandra A. Bryce (Dyrnasmac Corporation), Joshua Royte (The Nature Conservancy), Wayne D. Hoar (NRCS), Joseph W. Homer (NRCS), Don Keirstead (NRCS), Kenneth J. Metzler (Connecticut Department of Environmental Protection), and Greg Hellyer (USEPA).

CITING THE MAP: Griffith, G.E., Omernik, J.M., Bryce, S.A., Royte, J., Hoar, W.D., Homer, J., Keirstead, D., Metzler, K.J., and Hellyer, G., 2009, Ecoregions of New England (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,325,000).

Electronic versions of ecoregion maps and posters as well as other ecoregion resources are available at: <http://www.epa.gov/wed/pages/ecoregions.htm>.



- 58 Northeastern Highlands**
 - 58a Taconic Mountains
 - 58b Western New England Marble Valleys
 - 58c Green Mountains/Berkshire Highlands
 - 58d Lower Berkshire Hills
 - 58e Berkshire Transition
 - 58f Vermont Piedmont
 - 58g Worcester/Meadow Brook Plateaus
 - 58h Upper Mountains/Alpine Zone
 - 58i Green Mountain Foothills
 - 58j Northern Piedmont
 - 58k Quebec/New England Boundary Mountains
 - 58l White Mountain Foothills
 - 58m Northern Connecticut Valley
 - 58n White Mountains/Blue Mountains
 - 58o Saragamoque Highlands
 - 58p Sebago-Catapaus Hills and Plains
 - 58q Western Maine Foothills
 - 58r Upper St. John Wet Plains
 - 58s Moosehead-Churchill Lakes
 - 58t St. John Uplands
 - 58u International Boundary Plateaus
 - 58v Taconic Foothills
- 59 Northeastern Coastal Zone**
 - 59a Connecticut Valley
 - 59b Lower Worcester Plateau/Southern Connecticut Upland
 - 59c Southern New England Coastal Plains and Hills
 - 59d Boston Plains
 - 59e Narragansett/Providence Lowland
 - 59f Gulf of Maine Coastal Lowland
 - 59g Long Island Sound Coastal Lowland
 - 59h Gulf of Maine Coastal Plain
- 62 Acadia Plains and Hills**
 - 62a Acadian Lowlands
 - 62b Acadian Hills
 - 62c Eastern Maine-Southern New Brunswick Plains
 - 62d Central Foothills
 - 62e Central Maine Embayment
 - 62f Midcoast
 - 62g Downeast Coast
 - 62h Panabquot Lowlands
- 63 Eastern Great Lakes Lowland**
 - 63a Champlain Lowlands
- 64 Atlantic Coastal Fine Barren**
 - 64a Cape Cod/Long Island

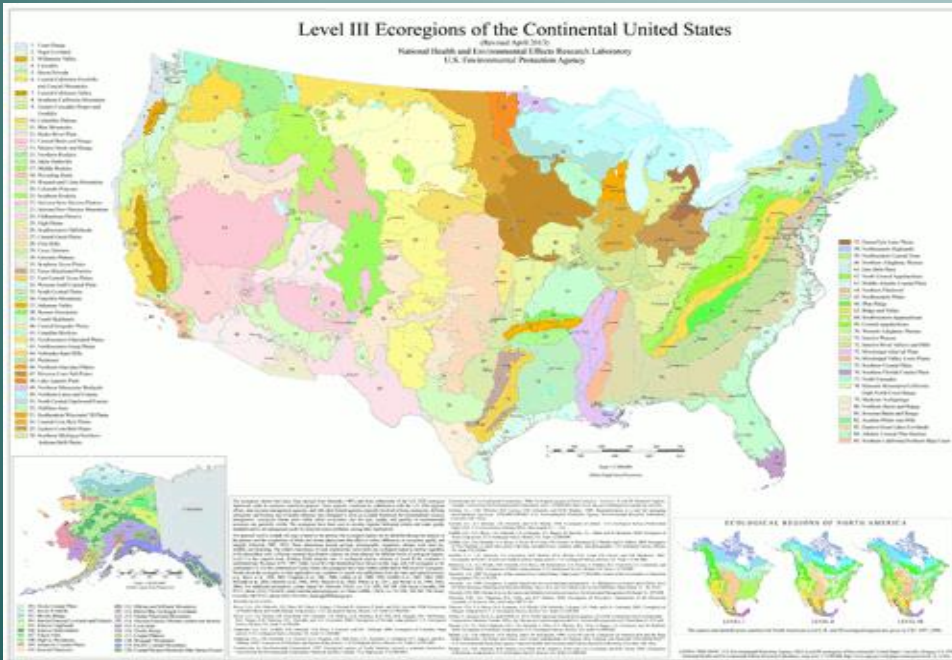
Native Plant Trust



What is Native?

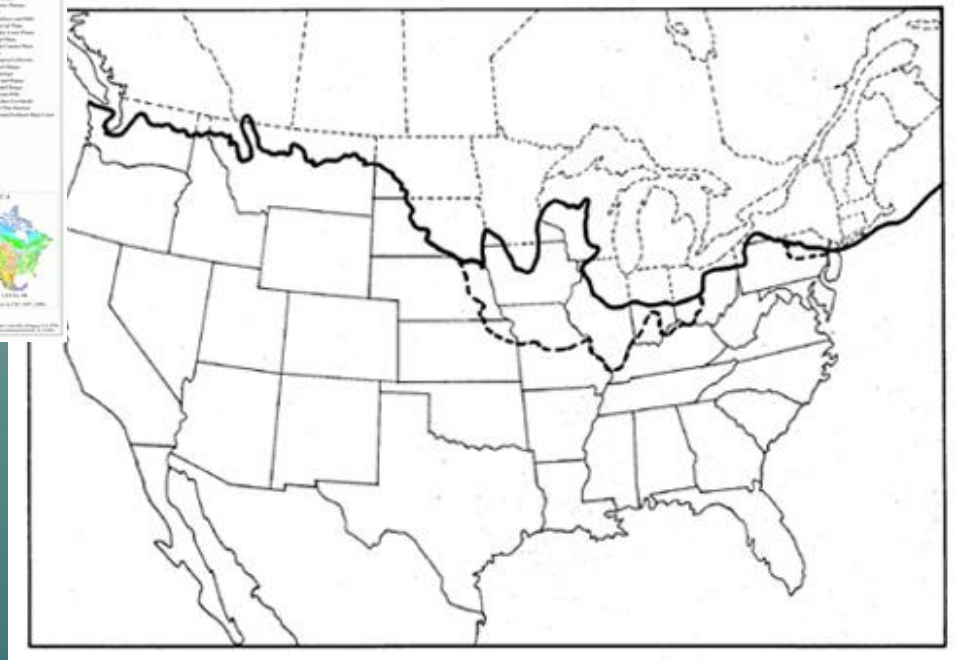
1- Locally Native

2- Regionally Native



Extent of Glaciation in North America

(Links to other maps below)

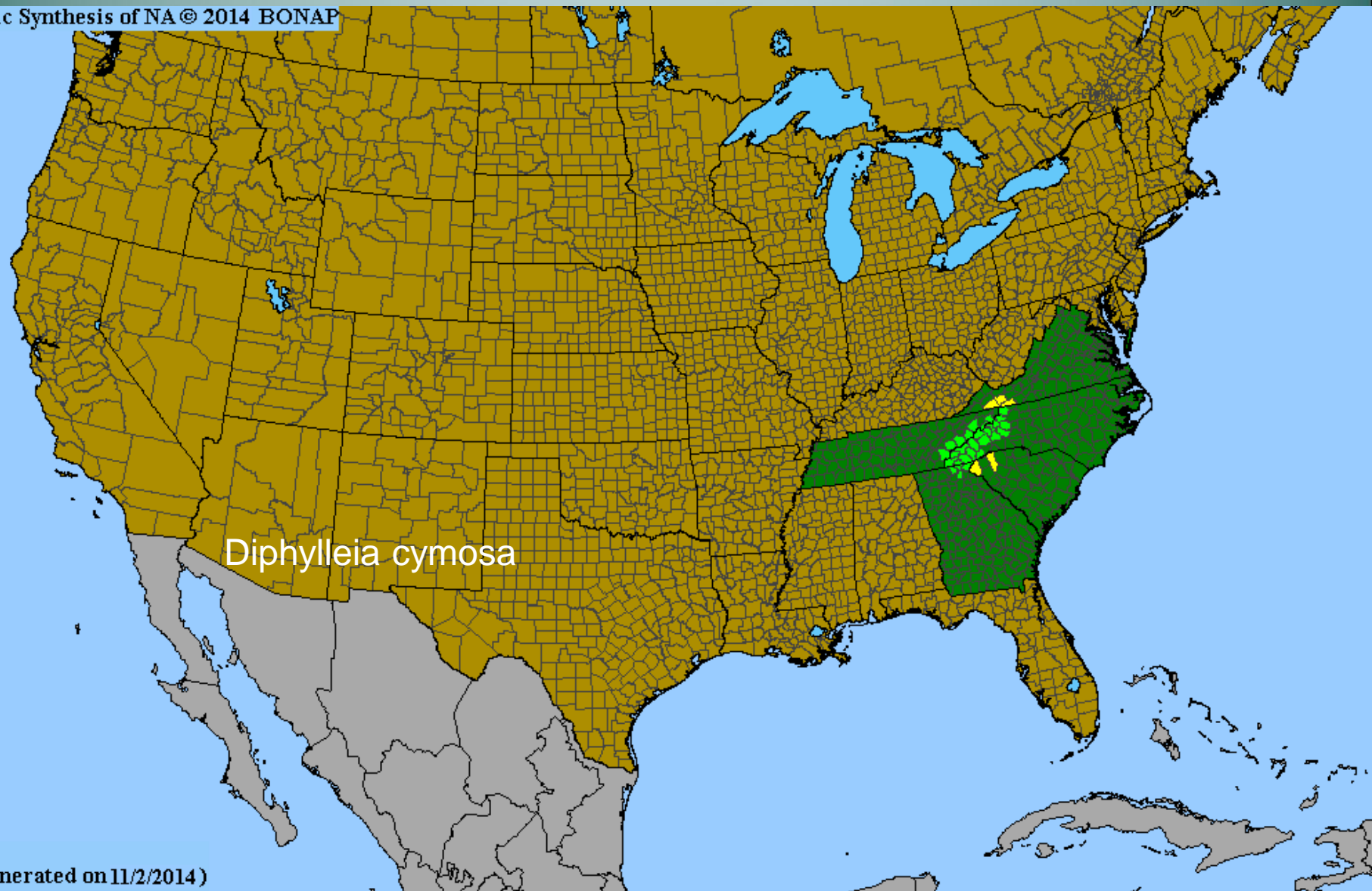












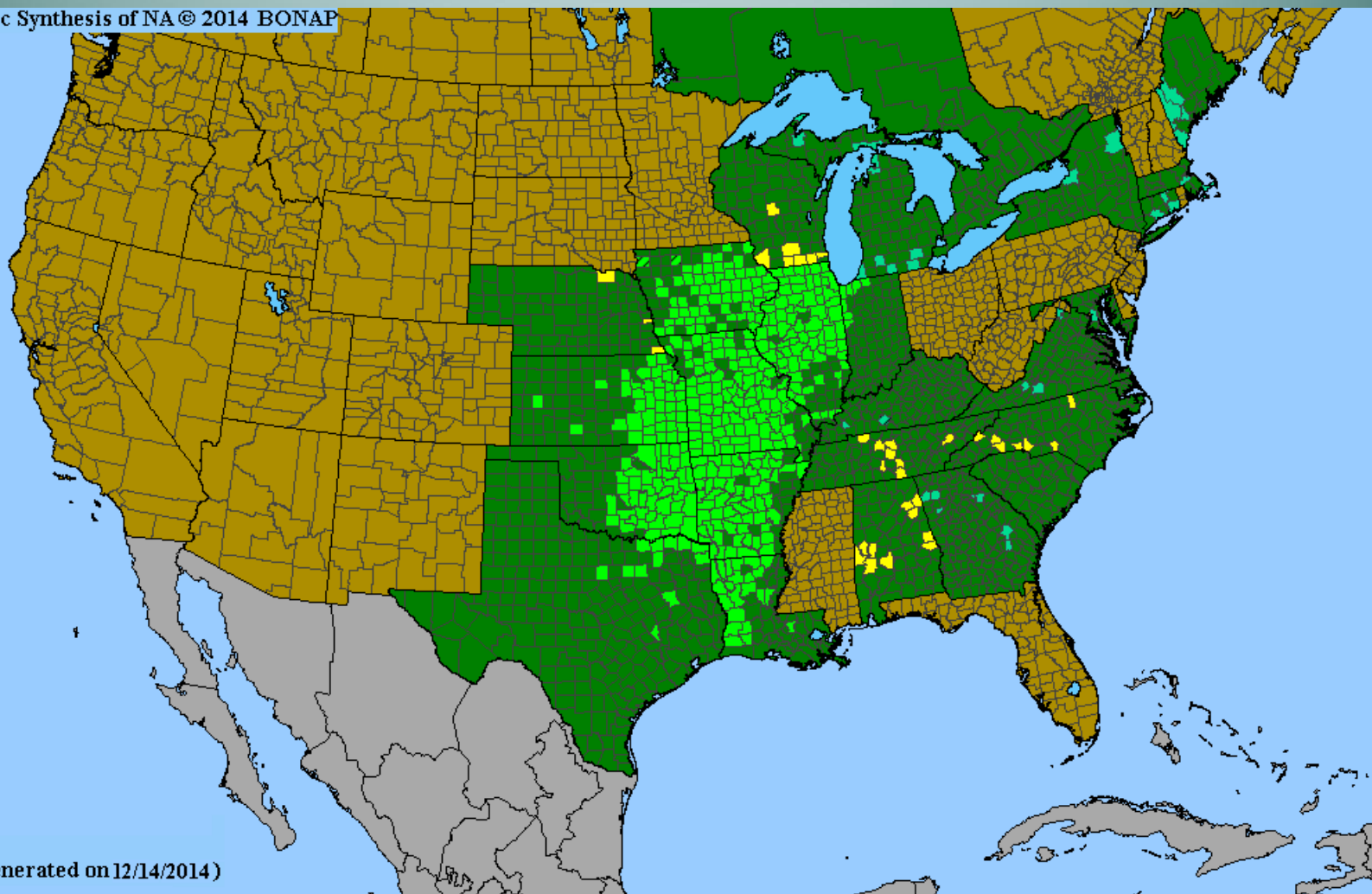
Diphylleia cymosa

What is Native?

- 1- Locally Native
- 2- Regionally Native
- 3- Continentally Native

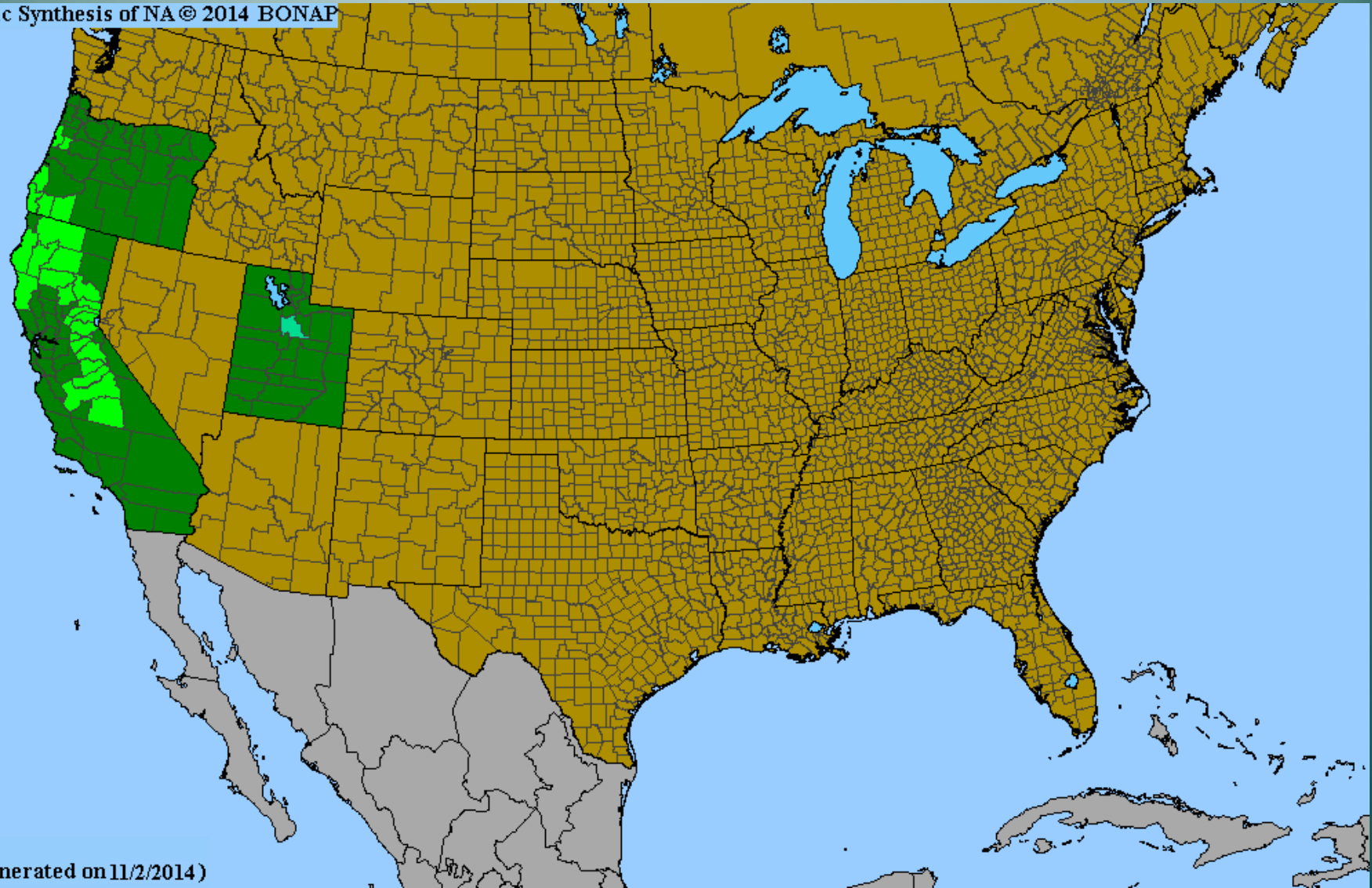


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(map generated on 12/14/2014)





**FLORA OF
THE NORTHEAST**
*A Manual of the Vascular Flora
of New England and
Adjacent New York*

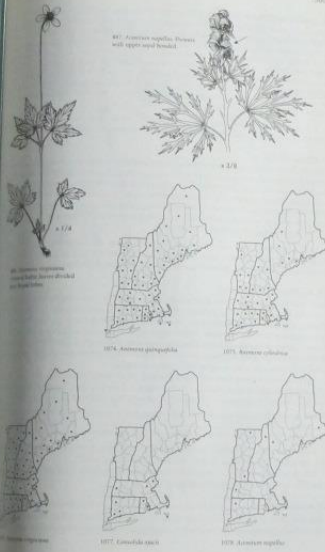


DENNIS W. MAGEE
AND
HARRY E. AHLES

Drawings by Abigail Rorer

RANUNCULACEAE

503



NEW ENGLAND WILD FLOWER SOCIETY'S

**FLORA
NOVAE
ANGLIAE**

A MANUAL FOR THE IDENTIFICATION OF NATIVE AND
NATURALIZED HIGHER VASCULAR PLANTS OF NEW ENGLAND

ARTHUR HAINES

ILLUSTRATED BY ELIZABETH FARNSWORTH
AND GORDON MORRISON

- Species, open pollinated
- Variety
- Cultivar/ Nativar
- Hybrids

The Noble Beagle



Meat-eating mammals

Canidae

Fox-like animals



South American canids



Wolf-like animals

CANIS

Jackals



Wolves



Gray Wolf
CANIS LUPUS

Coyotes



Domestic Dog
CANIS LUPUS FAMILIARIS

Canis lupus Familiaris



These puppies are open pollinated



Aster novae-
angliae

Canis lupus



SPECIES

- a group of organisms that can reproduce with one another in nature and produce fertile offspring.



VARIETY

A photograph showing several large trees in full bloom with white flowers, likely cherry blossoms, in a park-like setting. The trees are the central focus, with their branches heavily laden with small white blossoms. The background features a green lawn, a paved path, and other trees with green foliage. The sky is clear and blue. The overall scene is bright and sunny.

Cercis canadensis var. *alba*

Cultivar versus Variety

By Cindy Haynes, Department of Horticulture

Varieties often occur in nature and most varieties are true to type. That means the seedlings grown from a variety will also have the same unique characteristic of the parent plant. For example, there is a white flowering redbud that was found in nature. Its scientific name is *Cercis canadensis* var. *alba*. The varietal term "alba" means white. If you were to germinate seed from this variety, most, if not all would also be white flowering.



A Variety, comes true
from seed, slight variation



Echinacea p. Magnus





CULTIVAR

Usually doesn't come true
from seed





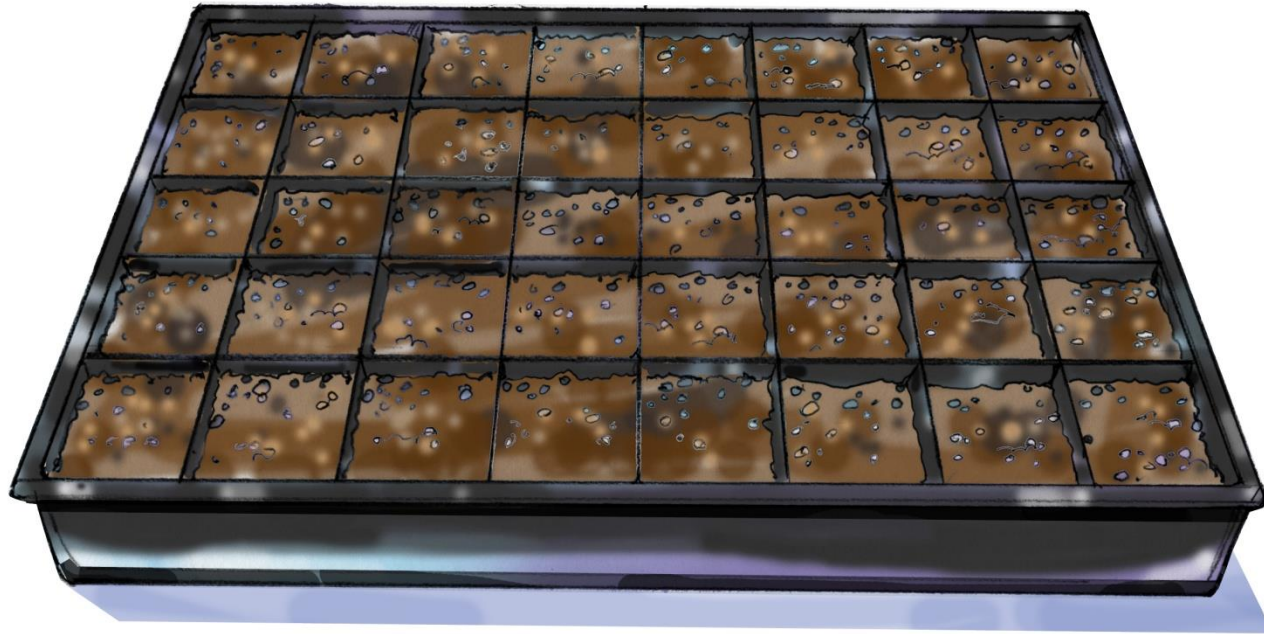


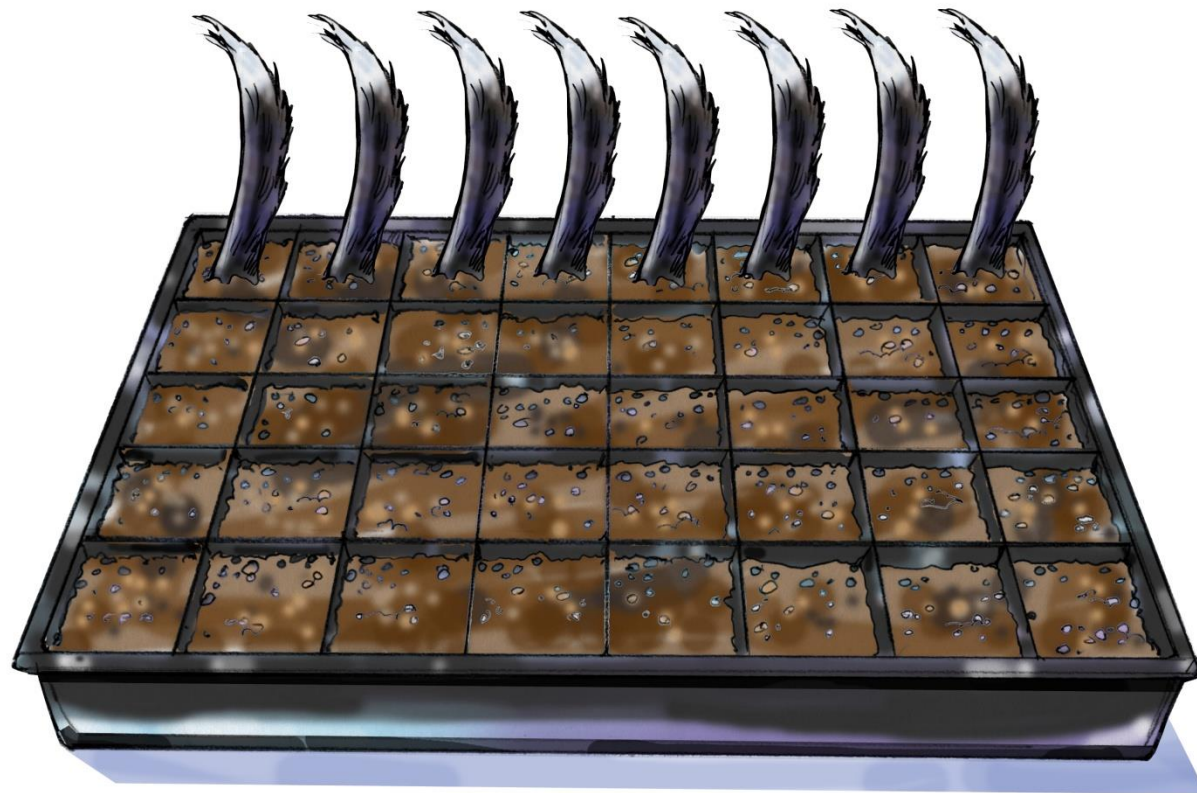


Zizia aptera
'Crazy Quilt'
heart-leaved golden Alexanders
APIACEAE

Aha, a Black Beagle. Everyone
will want one, how do we get
more???



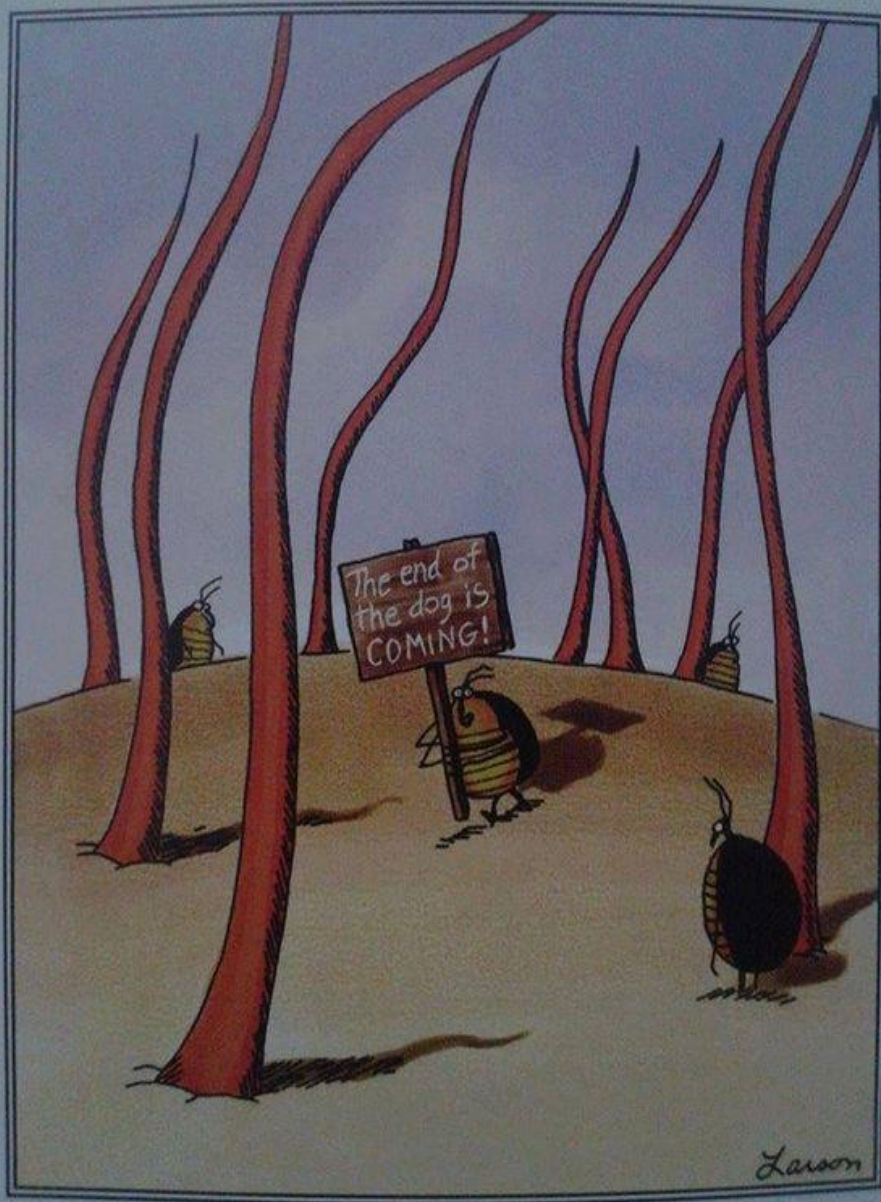






Asexual Propagation

12/20/85















10/11/17 30/17
Cystopteris W.

Cystopteris W.
10/11/17 30/17

Cystopteris W.
10/11/17 30/17

10/11/17 30/17
Cystopteris W.









GERANIUM
SARAZI
MAY 1988

9-10-88
117





Crossing for new characteristic





Hybrid



WHY CULTIVARS









**Monarda
punctata**

Rudbeckia subtomentosa



Rudbeckia subtomentosa Henry Eilers





Rudbeckia subtomentosa Little Henry



- Disease and insect resistance
- Flower or Foliage Color
- Height
- Better leaf form
- Uniformity



ARE
NATIVARS
NATIVE???

Pollinators



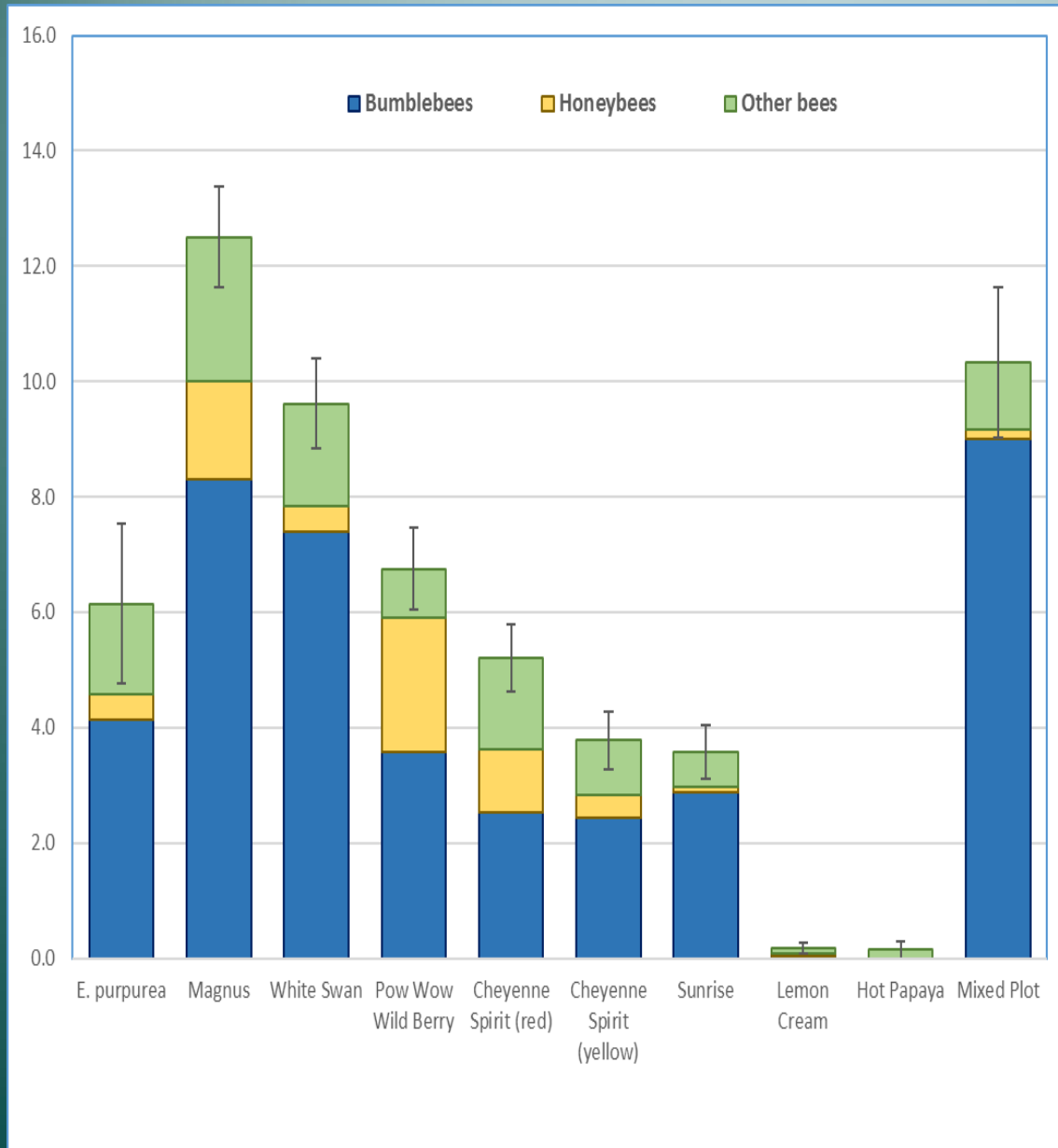
Food for native larvae







Average number of bee visits in 5 minutes



Bumble bees preferred

Magnus
White Swan
Mixed cultivars
E. purpurea

Honey bees preferred

Pow Wow Wild Berry
Magnus

Nobody liked

Lemon Cream
Hot Papaya

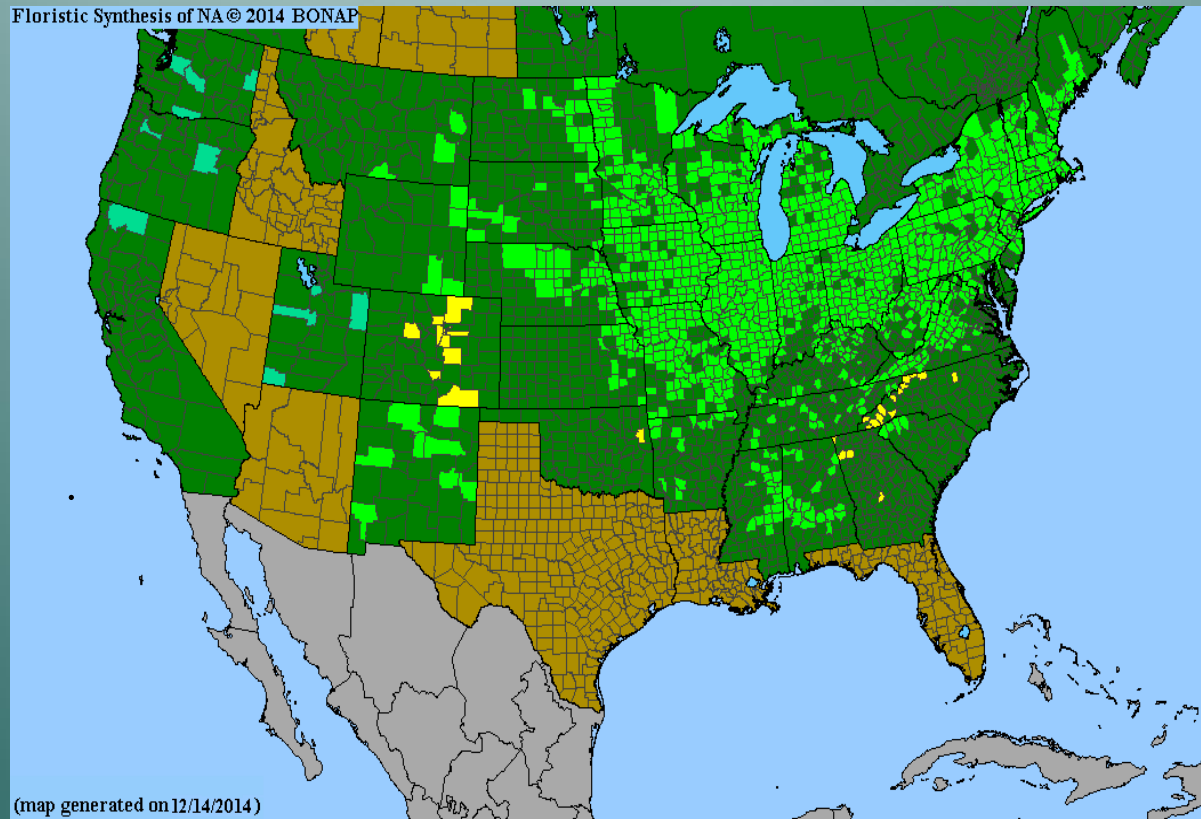




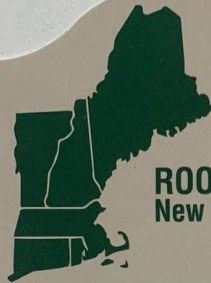




- New England Aster



PROVENANCE



**ROOTED IN
New England**

**LOCAL ECOTYPE
New England Native**

NATIVE. LOCAL. RUGGED.



- Plant native to New England.
- Seed must be Collected from wild populations in New England
- Or Seed collected from stock (founder) beds grown from locally collected seed
- no cultivars of any kind, all open pollinated

New England Ecotype



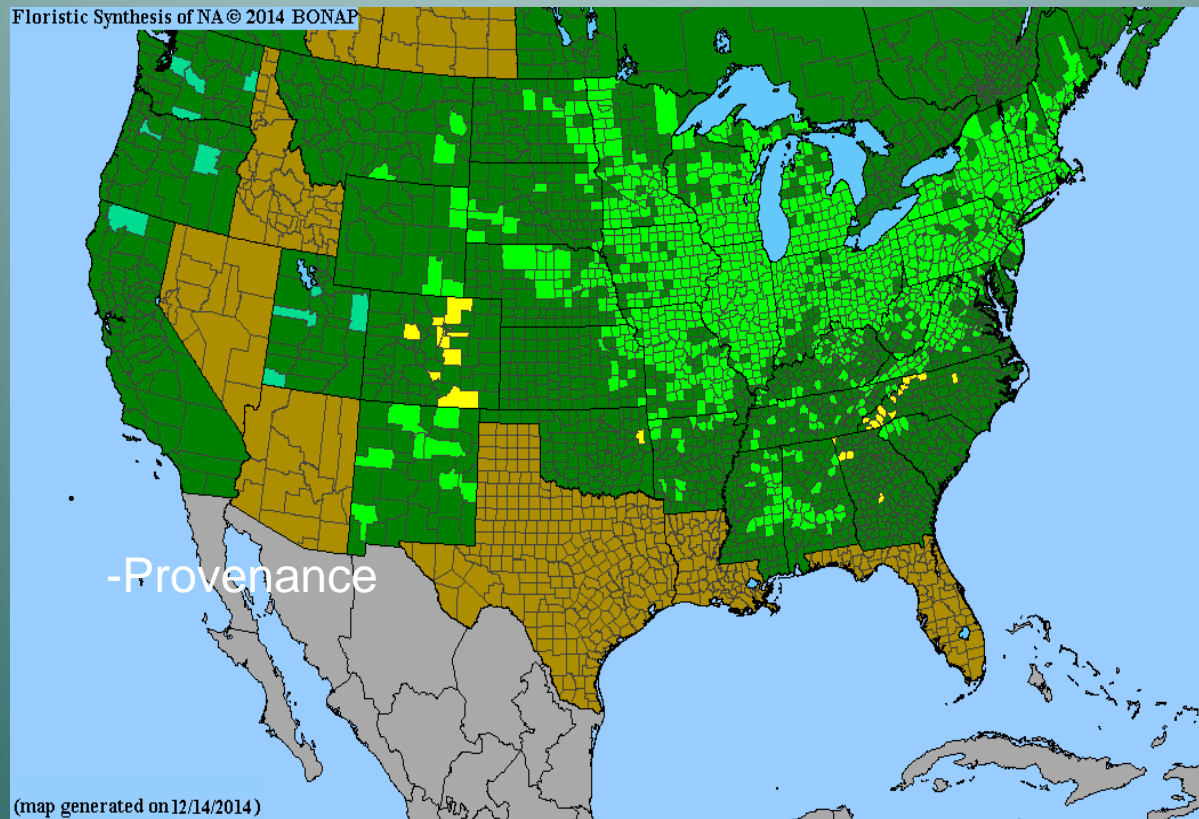




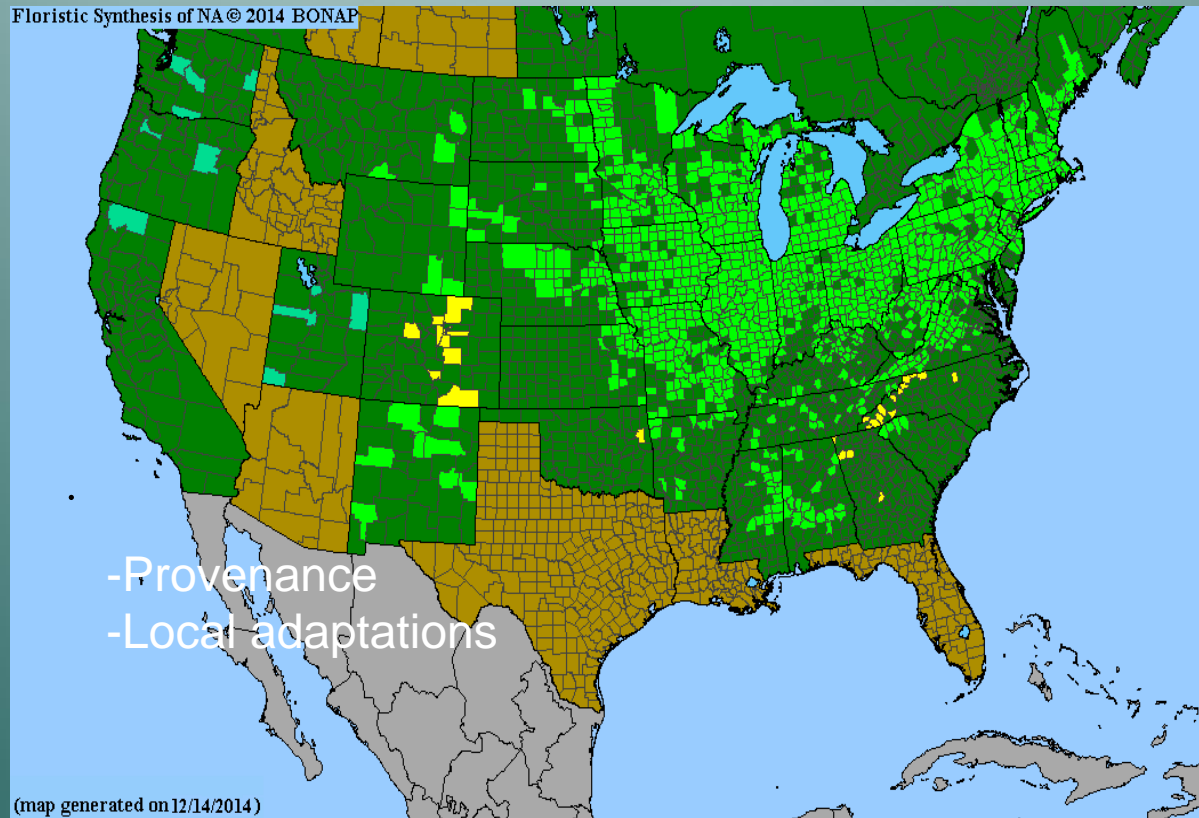




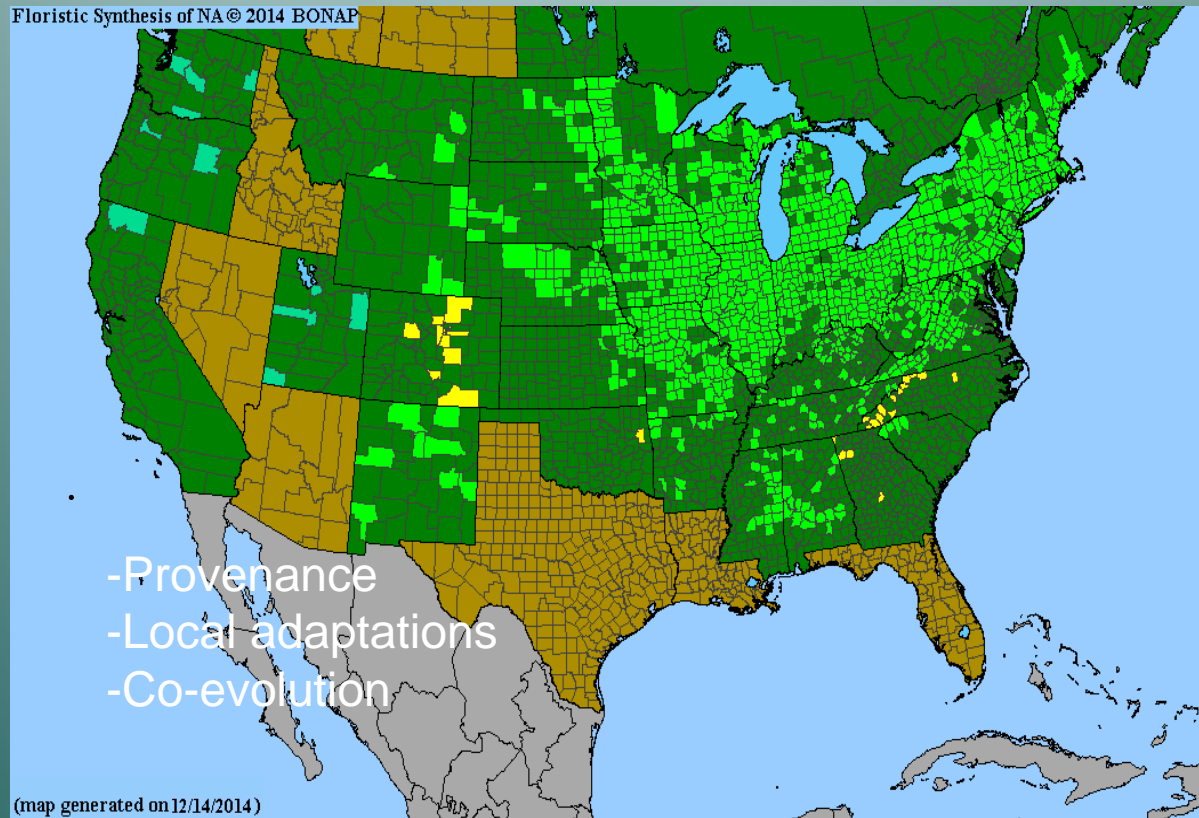
- New England Aster



- New England Aster



- New England Aster





Aralia racemosa
American Spikenard





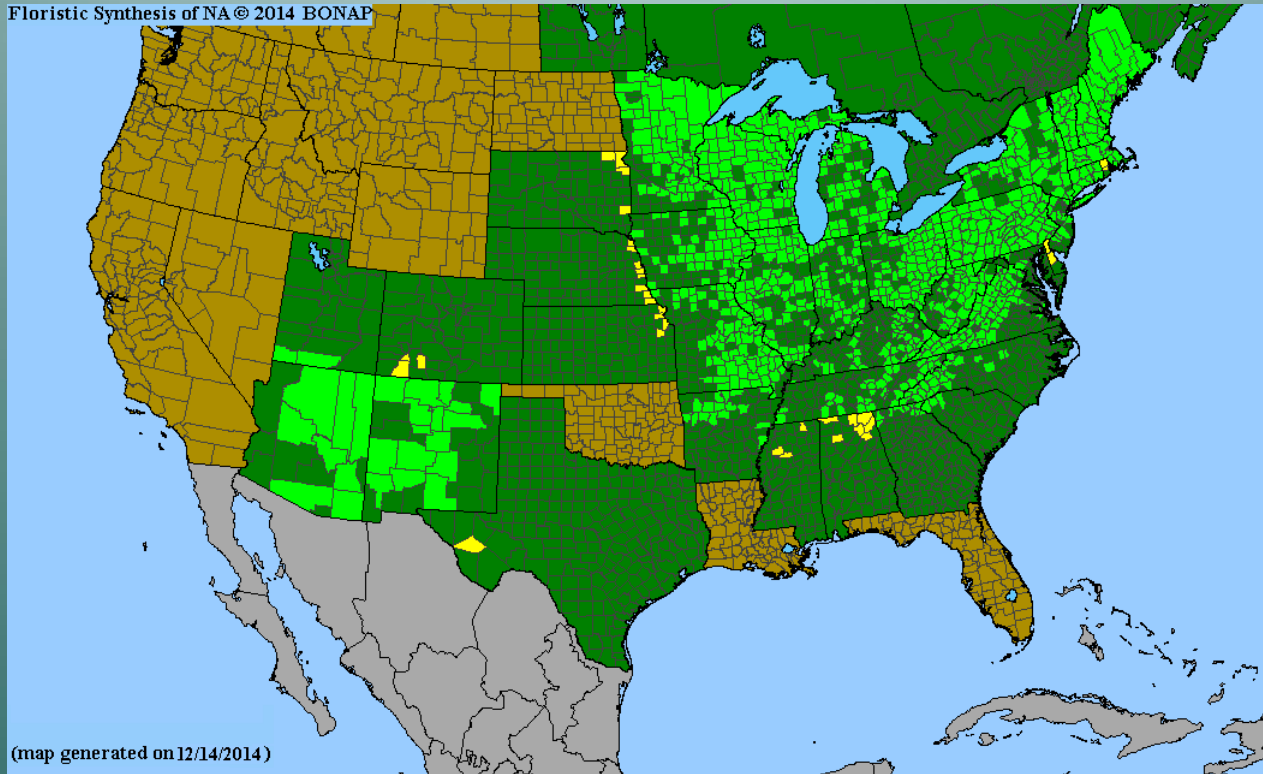








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Aralia racemosa
American Spikenard



Penstemon digitalis
Foxglove Beardtongue

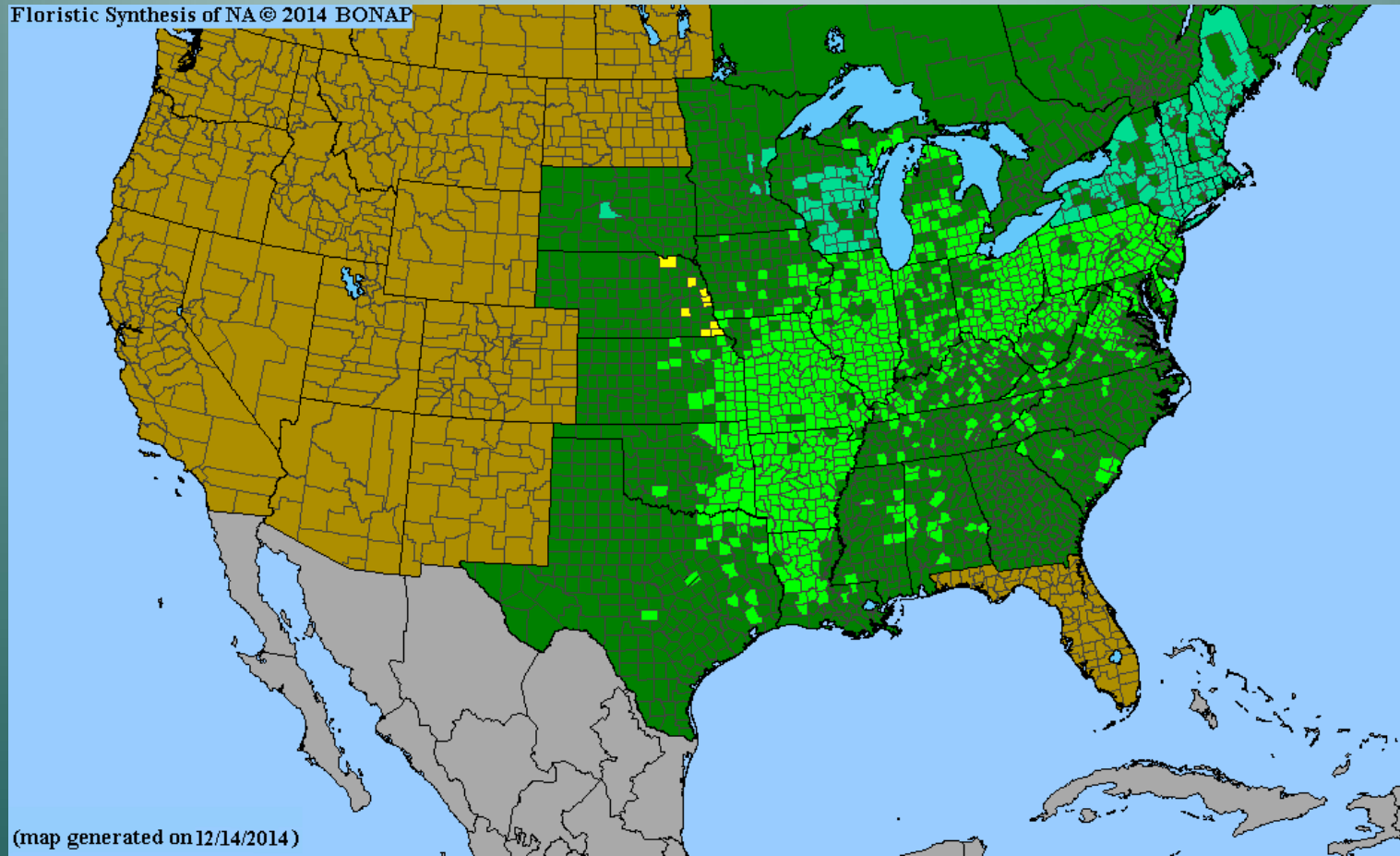








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Penstemon digitalis
Foxglove Beardtongue

Penstemon
hirsuitus









Fragaria virginiana
Virginia Strawberry



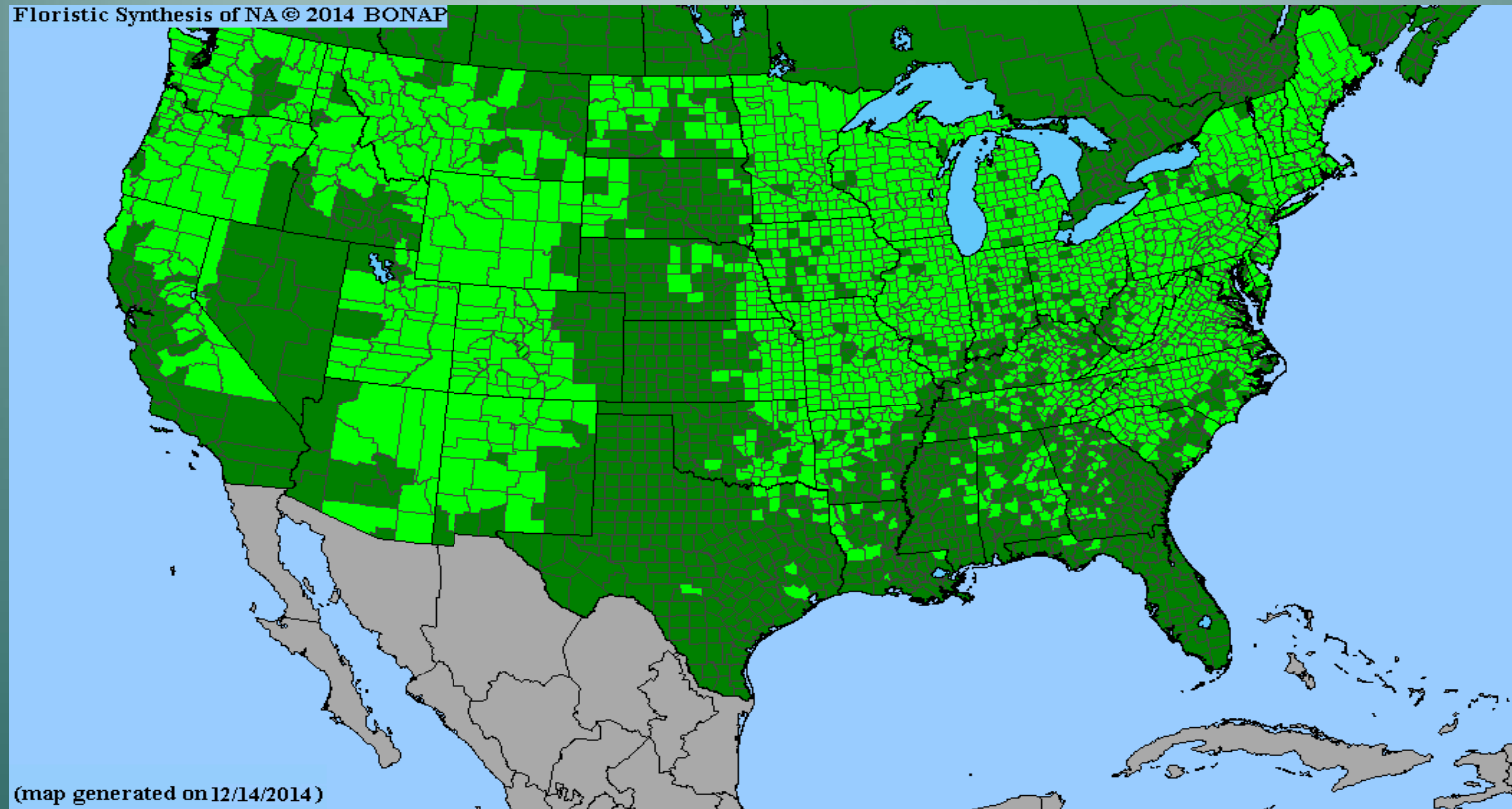








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Fragaria virginiana
Virginia Strawberry



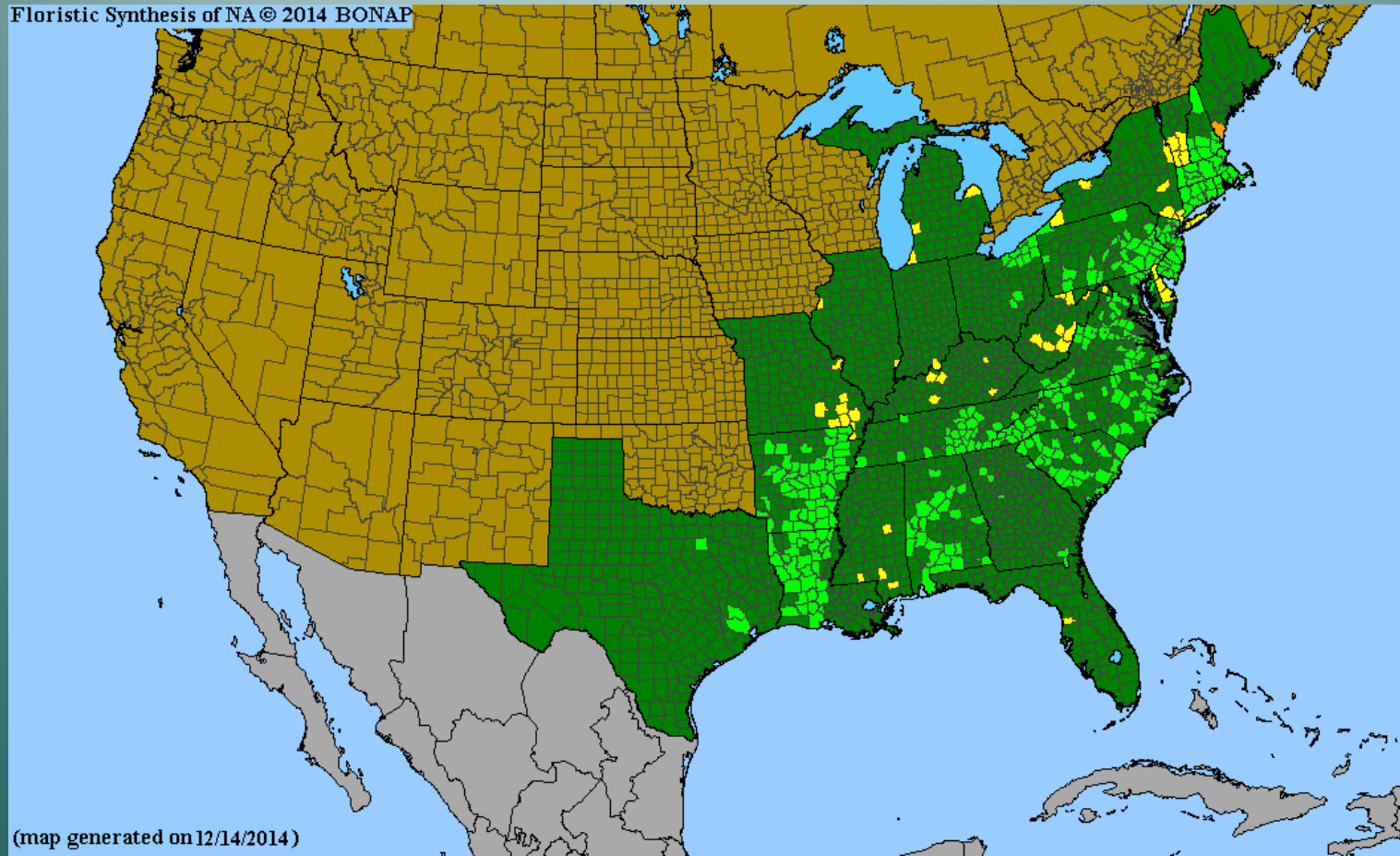
Pycnanthemum muticum
Mountain Mint







Floristic Synthesis of NA © 2014 BONAP



Pycnanthemum muticum,
Mountain Mint



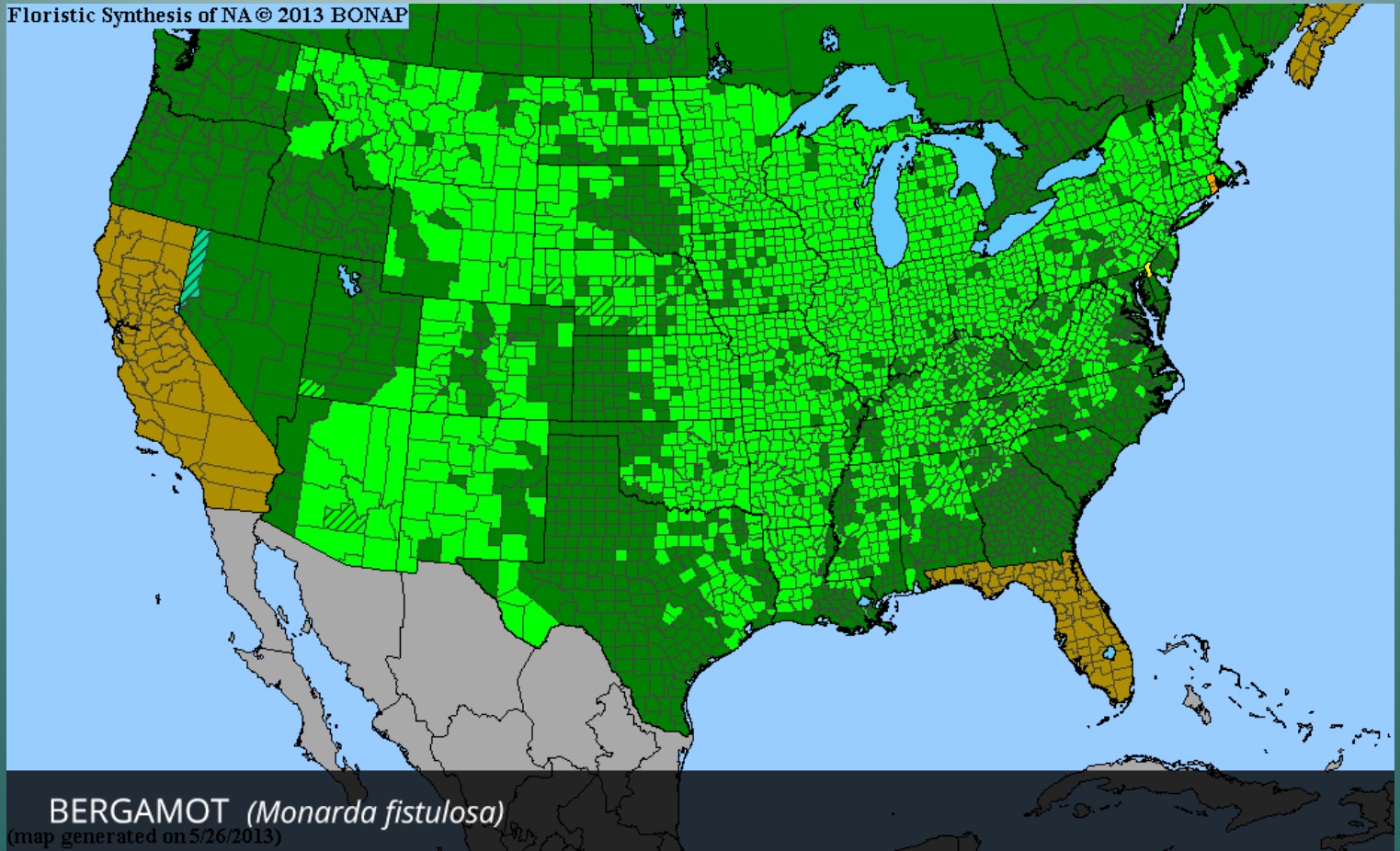
Monarda fistulosa
Wild Bergamot







Floristic Synthesis of NA © 2013 BONAP



BERGAMOT (*Monarda fistulosa*)
(map generated on 5/26/2013)



Rudbeckia laciniata
Cutleaf Coneflower

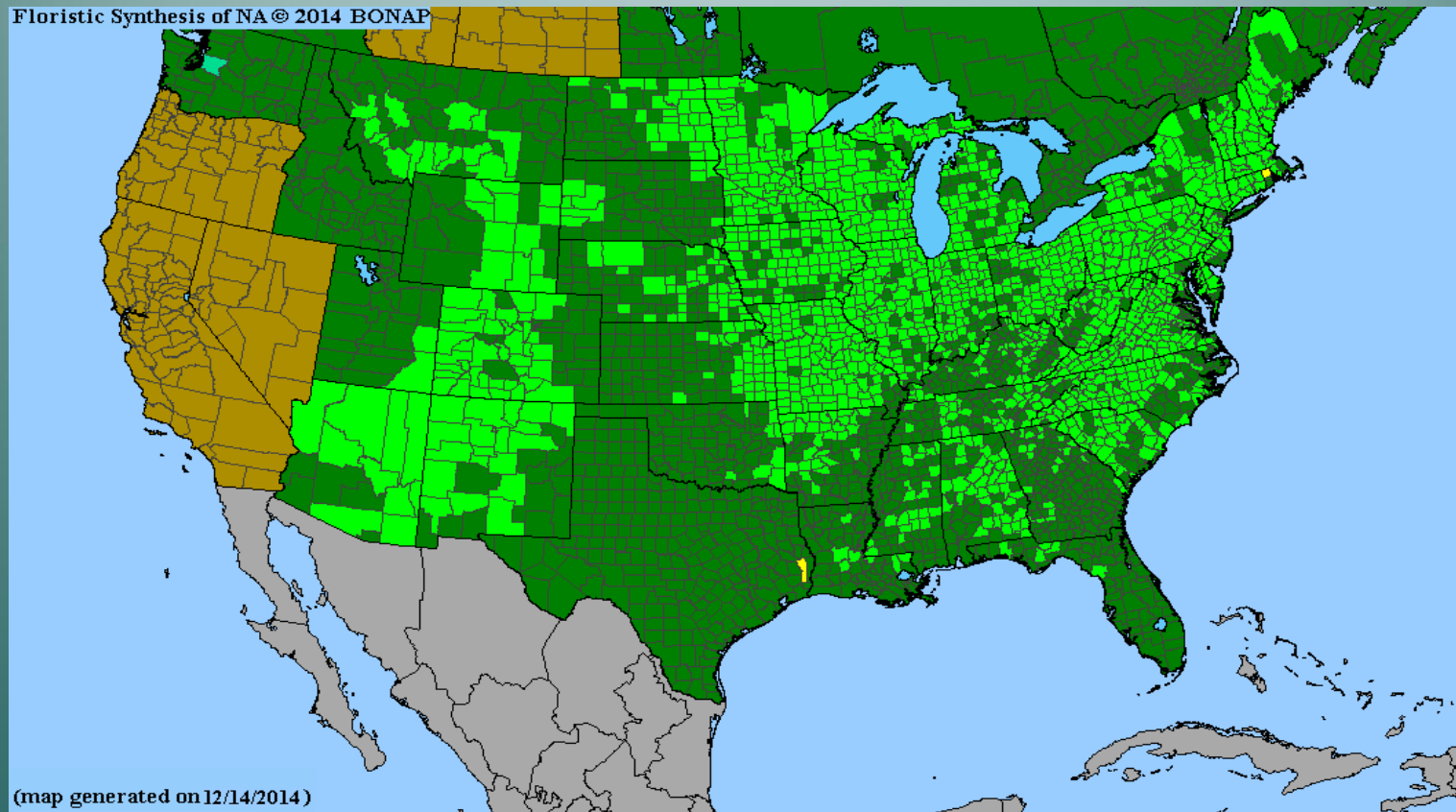








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Rudbeckia laciniata
Cutleaf Coneflower



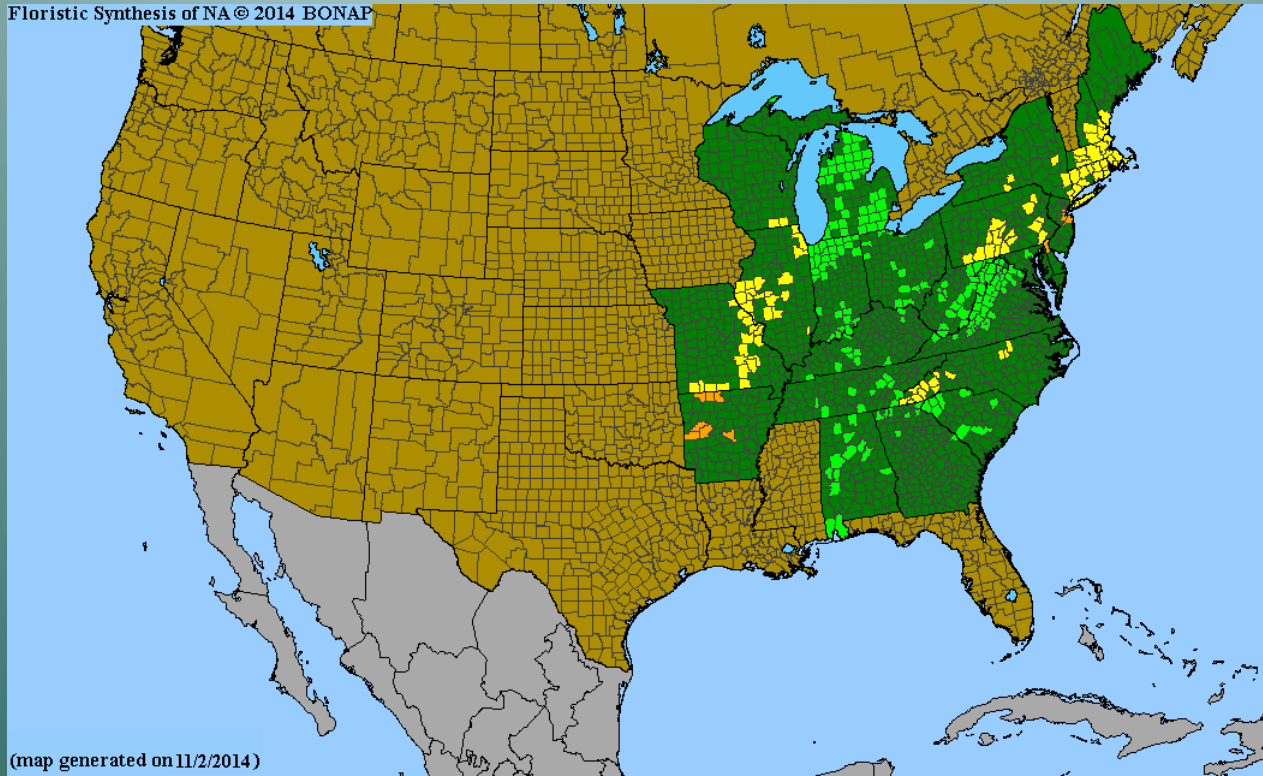
Liatris novae-angliae
Northern Blazing
Star







Floristic Synthesis of NA © 2014 BONAP



Liatris novae-angliae
Northern Blazing Star



Clematis virginiana
Virgin's Bower

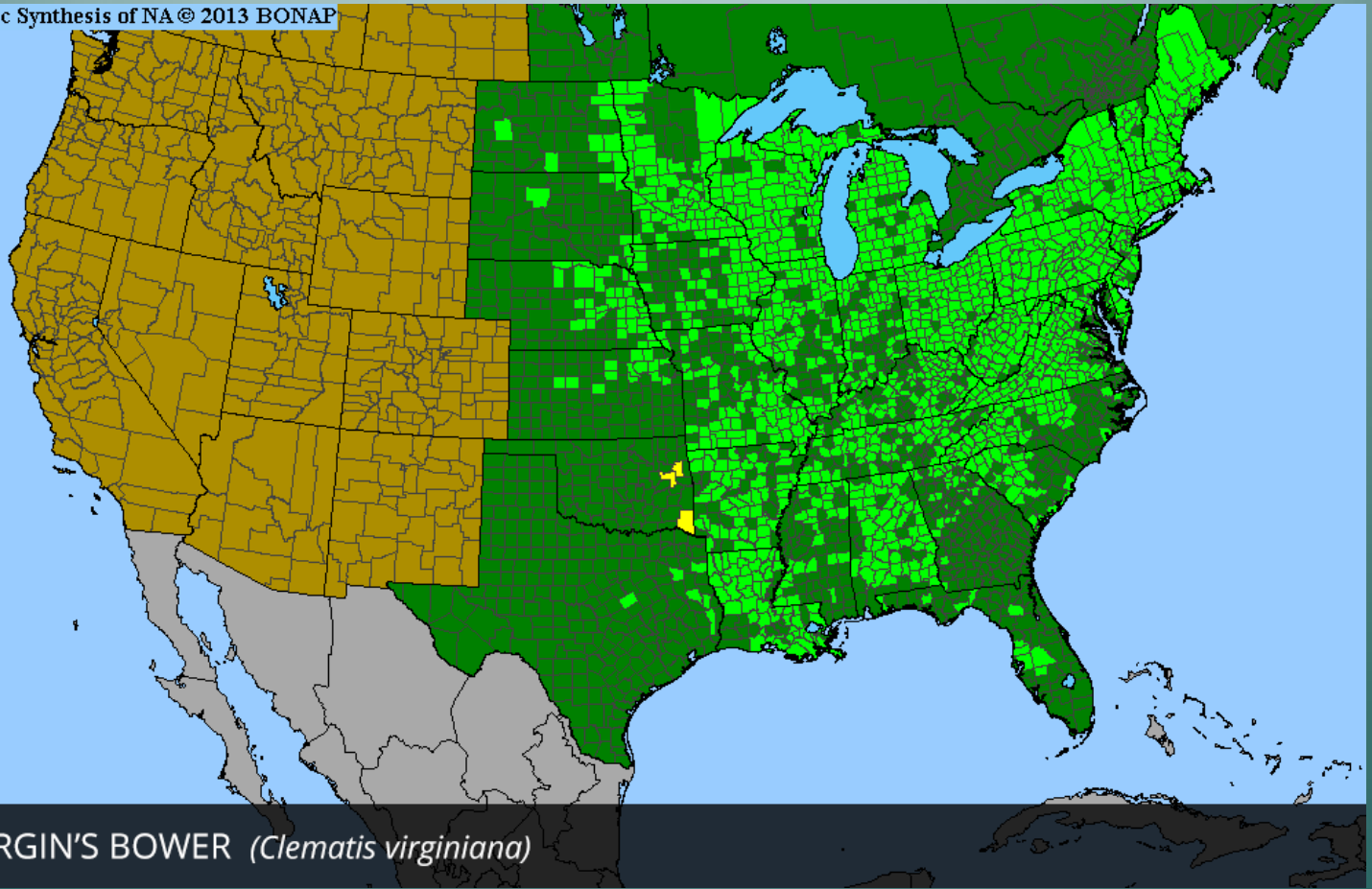








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VIRGIN'S BOWER (*Clematis virginiana*)



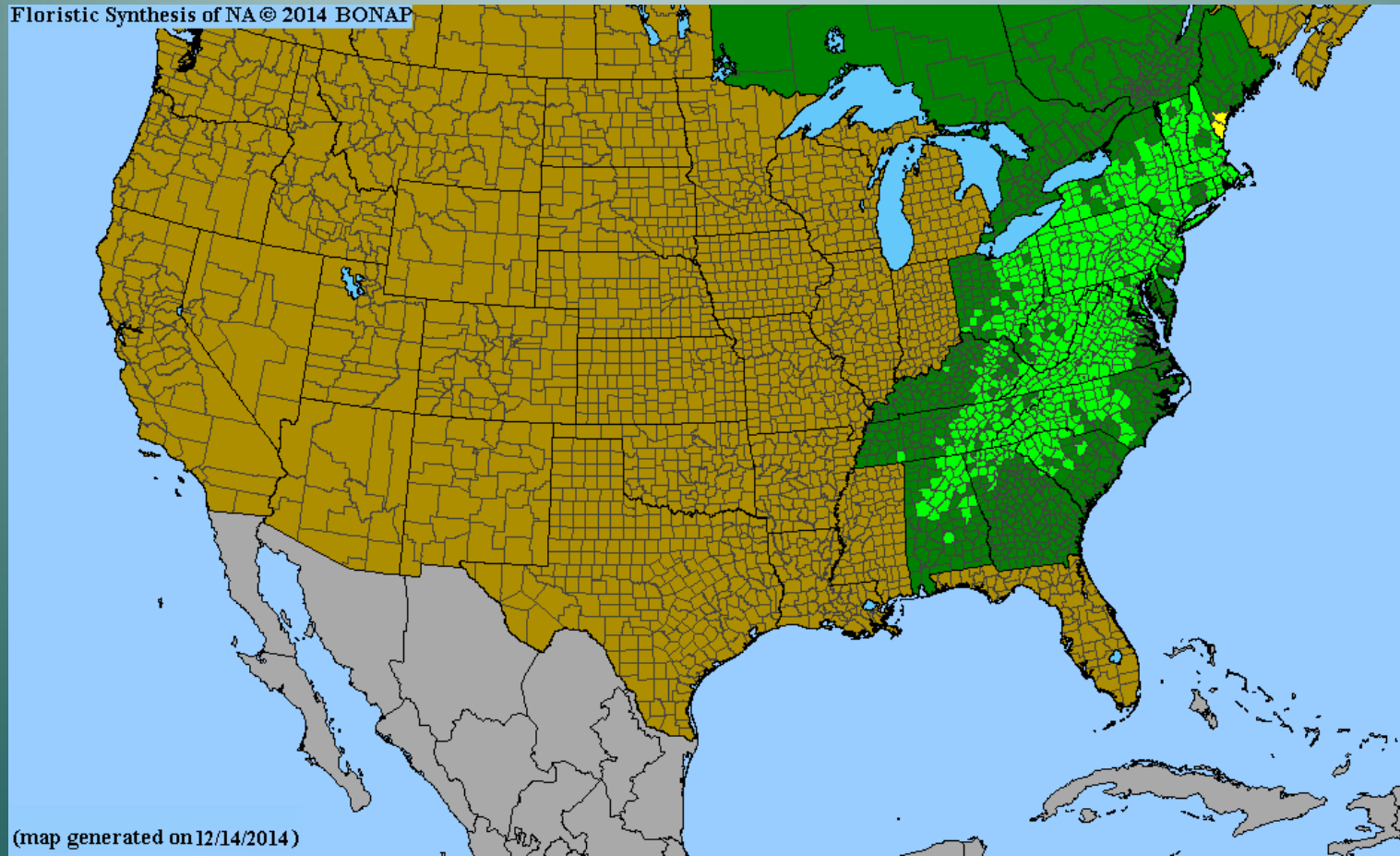
Aster divaricatus (*Erybia divaricata*)
White Wood Aster







Floristic Synthesis of NA © 2014 BONAP



Aster divaricatus (*Erybia divaricata*)
White Wood Aster



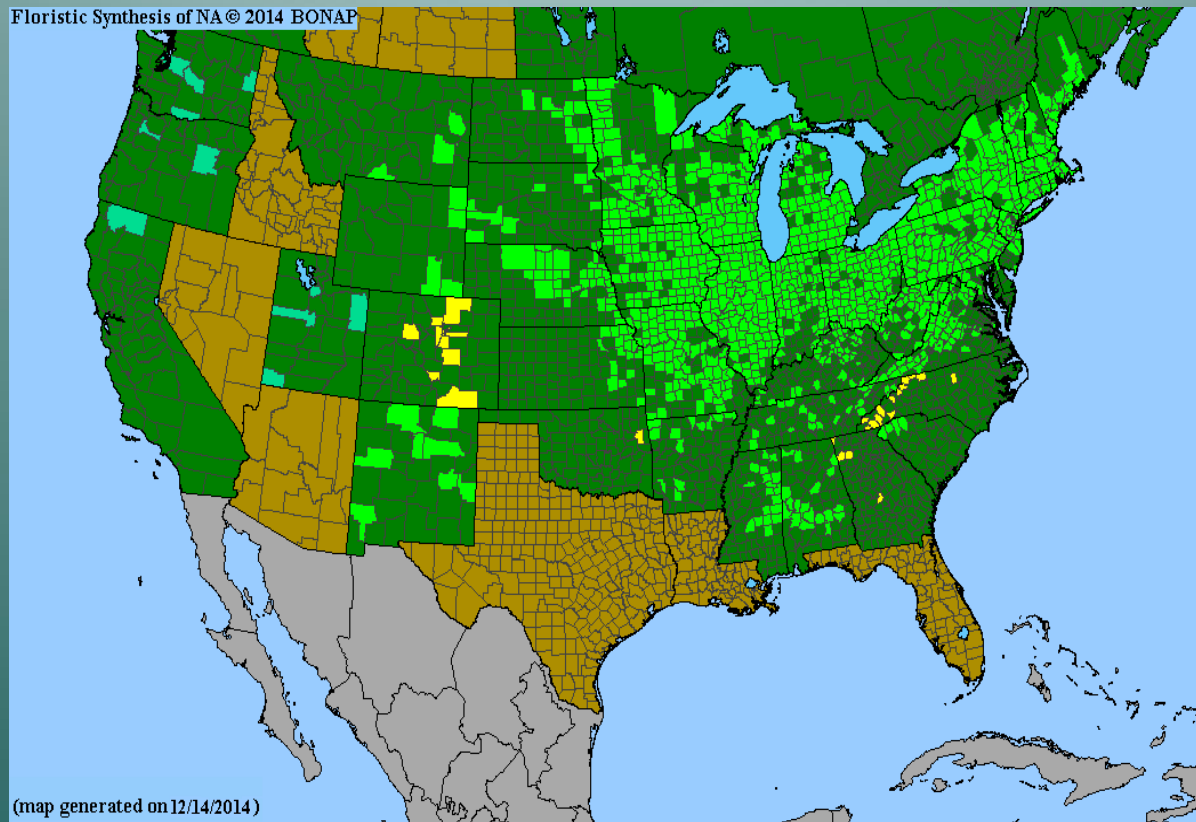
Aster novae-angliae (*Symphyotrichum novae-angliae*)
New England Aster







Aster novae-angliae (*Symphyotrichum novae-angliae*)
New England Aster





Aster umbellatus
(Doellingeria unbellata)
Flattop White Aster



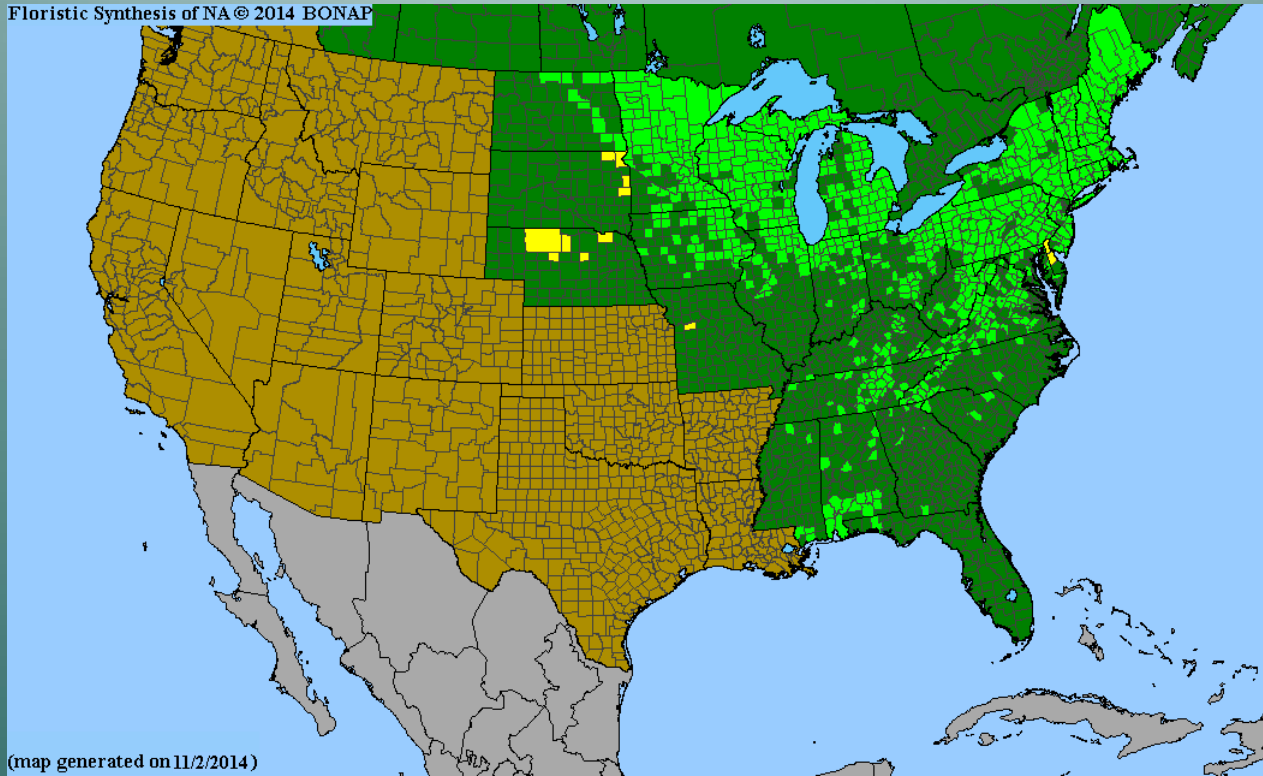




<http://northernontarioflora.ca>

©2014 s.j.m.
Doellingeria umbellata

Floristic Synthesis of NA © 2014 BONAP



Aster umbellatus (*Doellingeria unbellata*)
Flattop White Aster

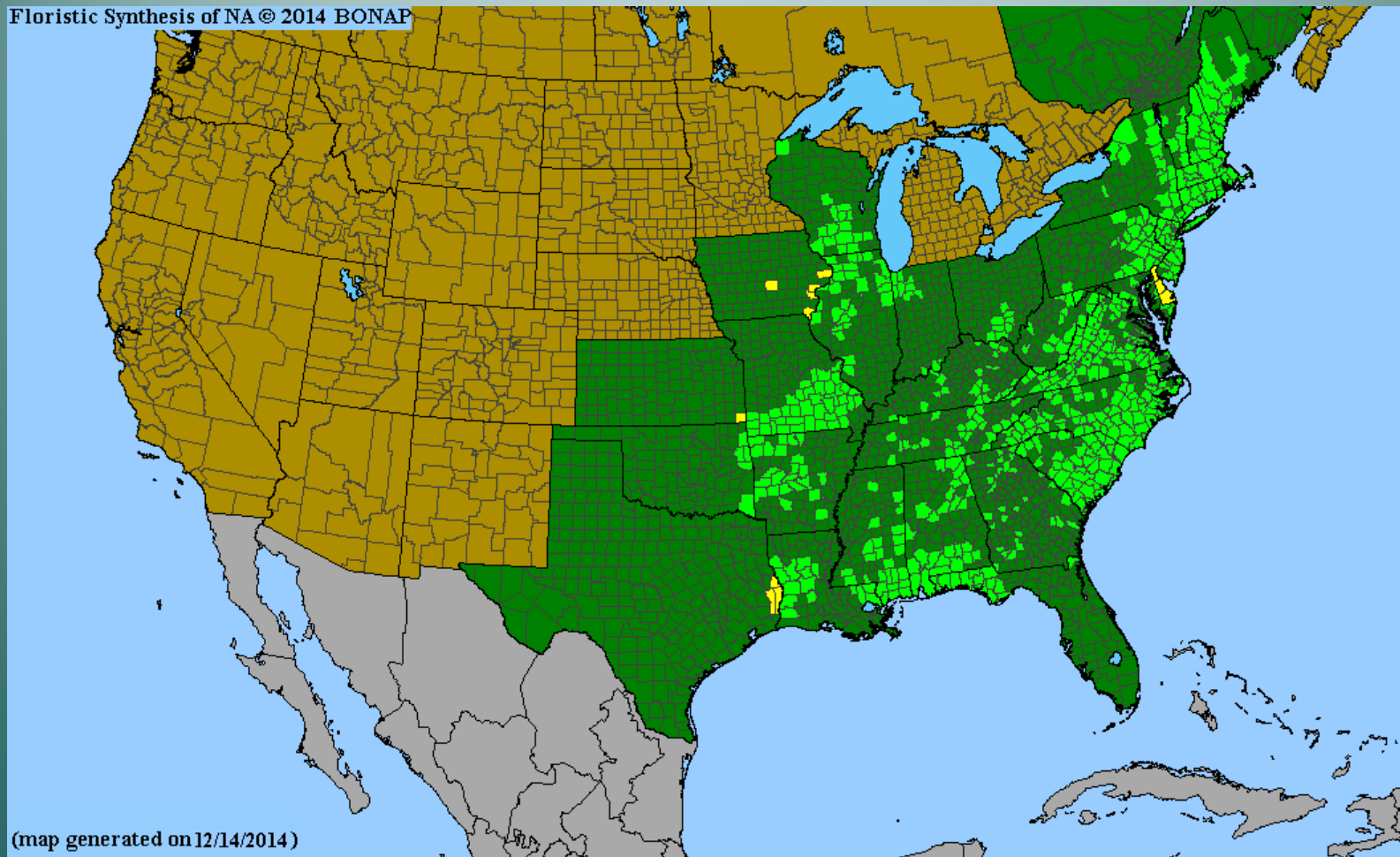


Aster linerifolius
(Ionactis
linarifolia)
Stiff-Leaved Aster





Floristic Synthesis of NA © 2014 BONAP



Aster linerifolius (*Ionactus linarifolia*)
Stiff-Leaved Aster



Solidago caesia
Blue-stemmed
Goldenrod



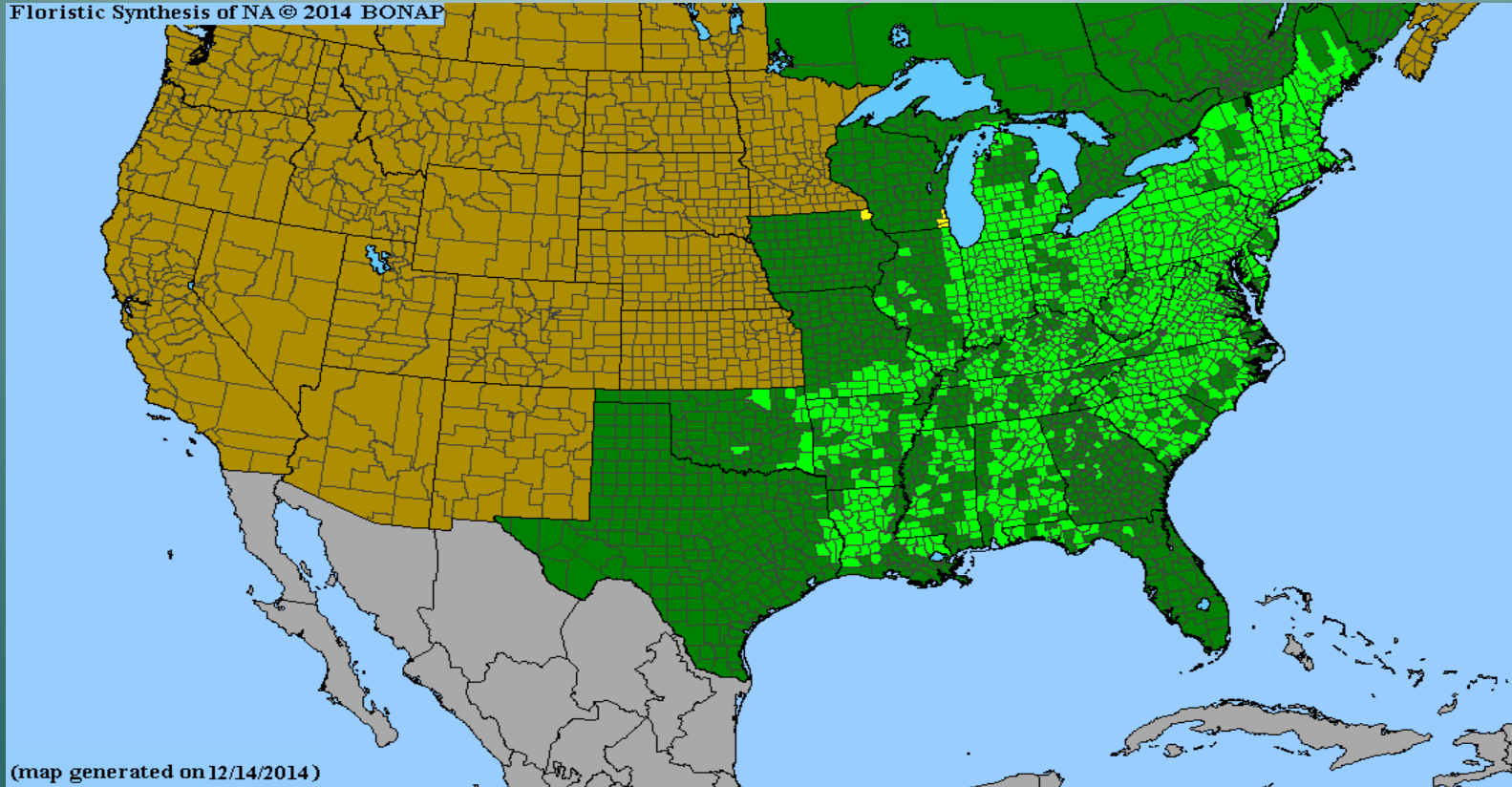








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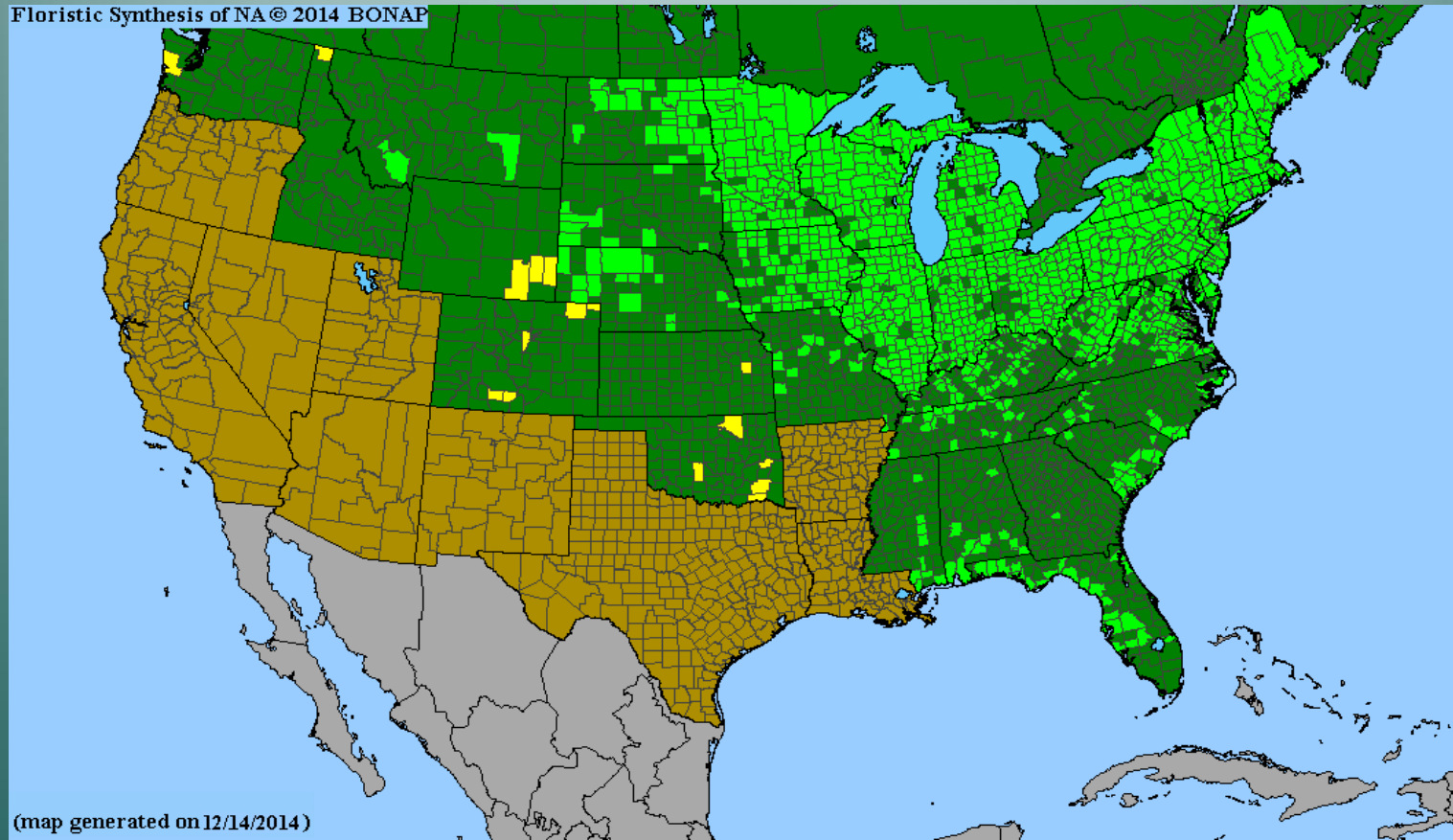
Solidago caesia
Blue-stemmed Goldenrod



Solidago graminifolia (*Euthania graminifolia*)
Grass-Leaved Goldenrod



Floristic Synthesis of NA © 2014 BONAP



Solidago graminifolia (*Euthania graminifolia*)
Grass-Leaved Goldenrod



Solidago sempervirens
Seaside Goldenrod

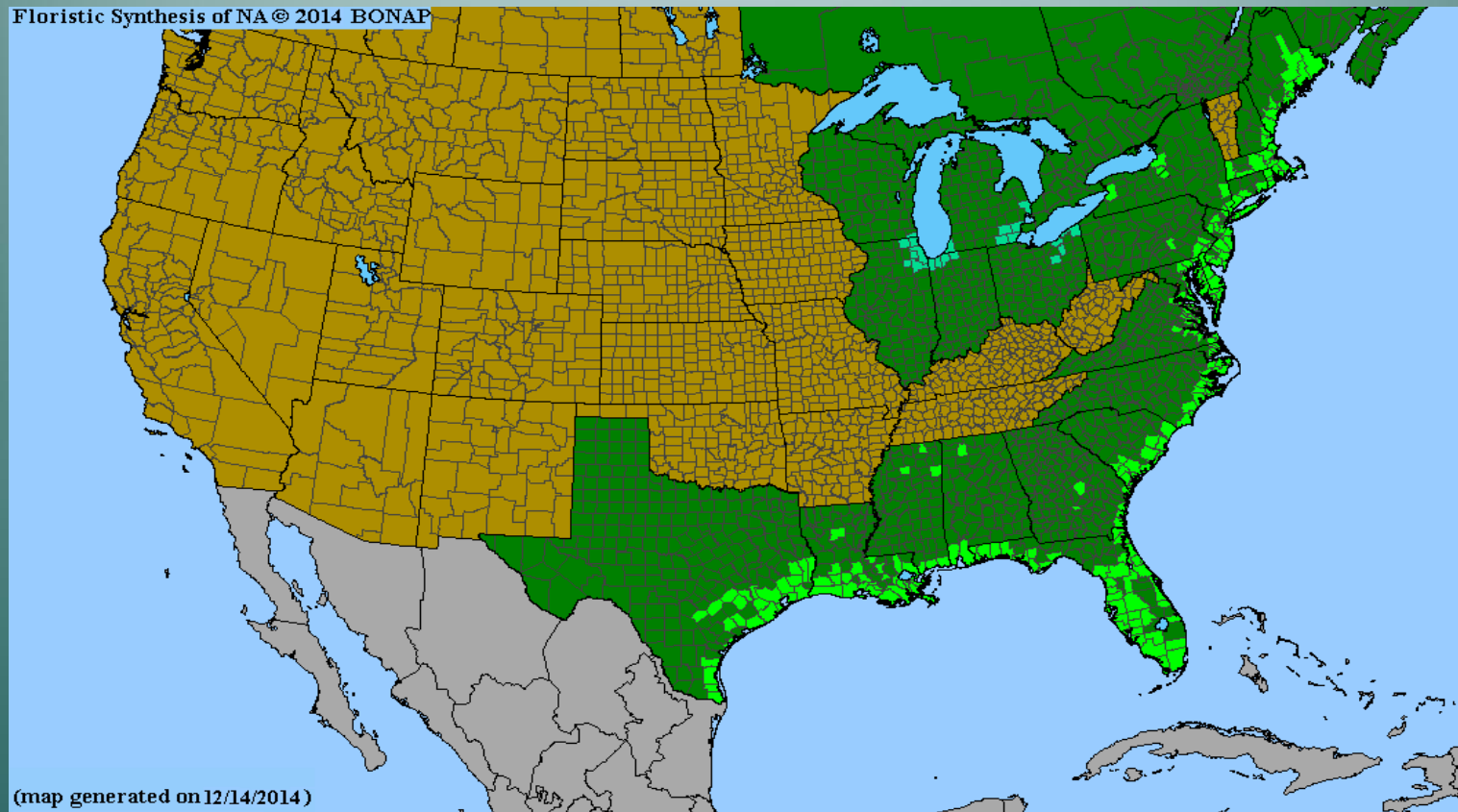








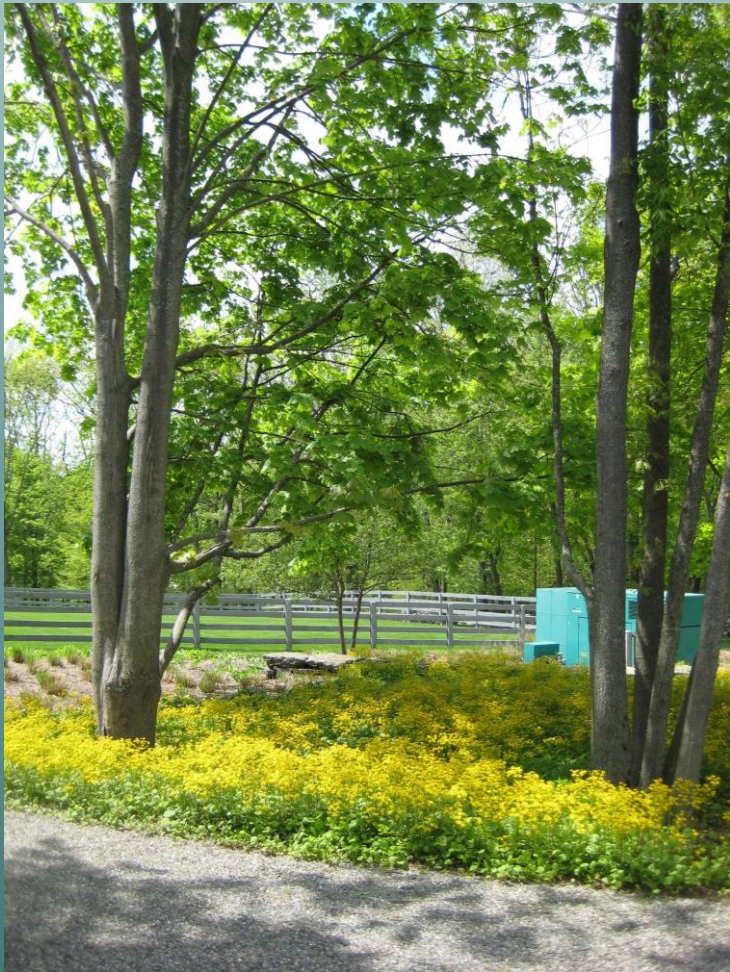
Floristic Synthesis of NA © 2014 BONAP



Solidago sempervirens
Seaside Goldenrod



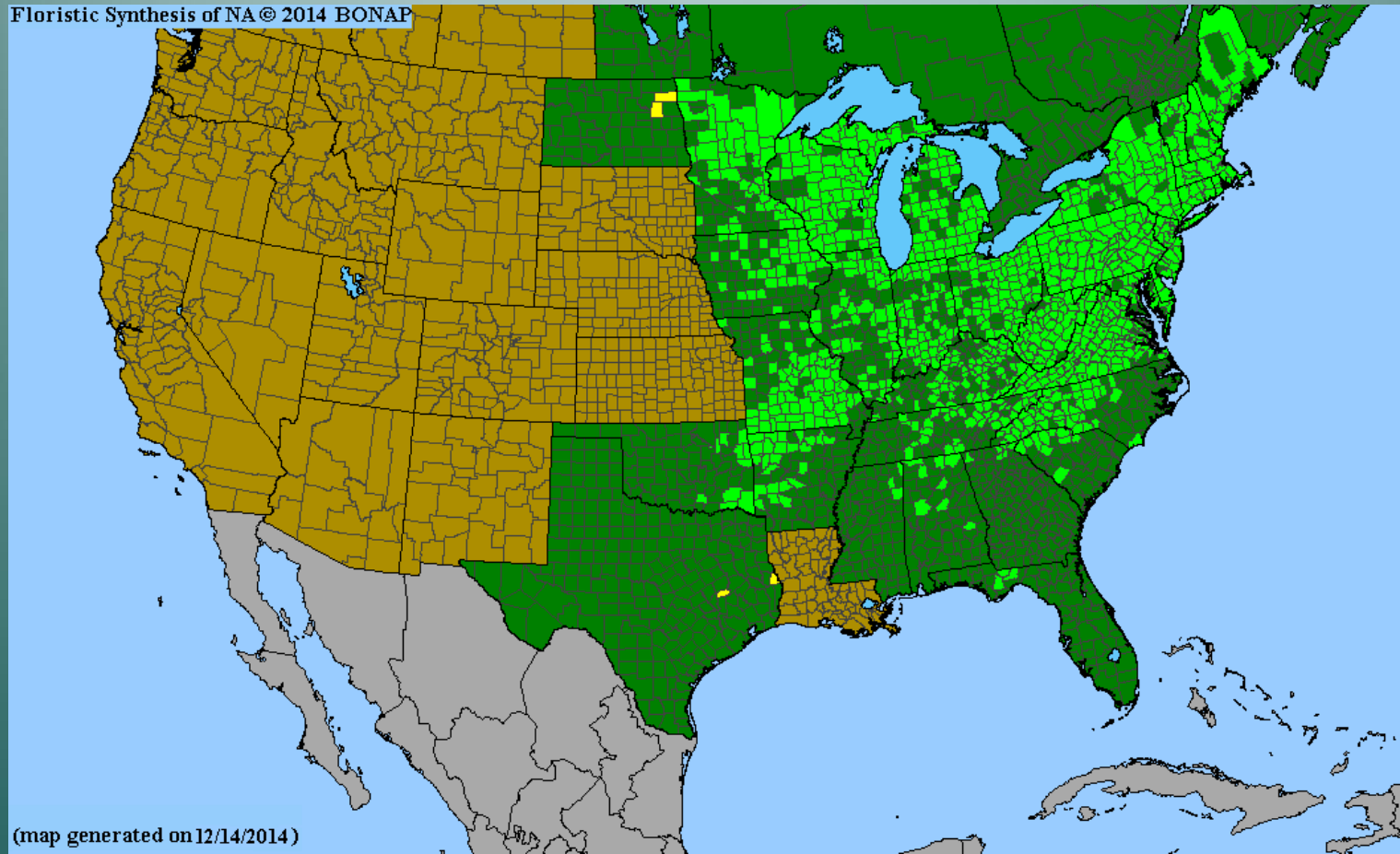
Packera aurea
Golden Ragwort







Floristic Synthesis of NA © 2014 BONAP



Packera aureus
Golden Ragwort



Schizachyrium scoparium
Little Bluestem





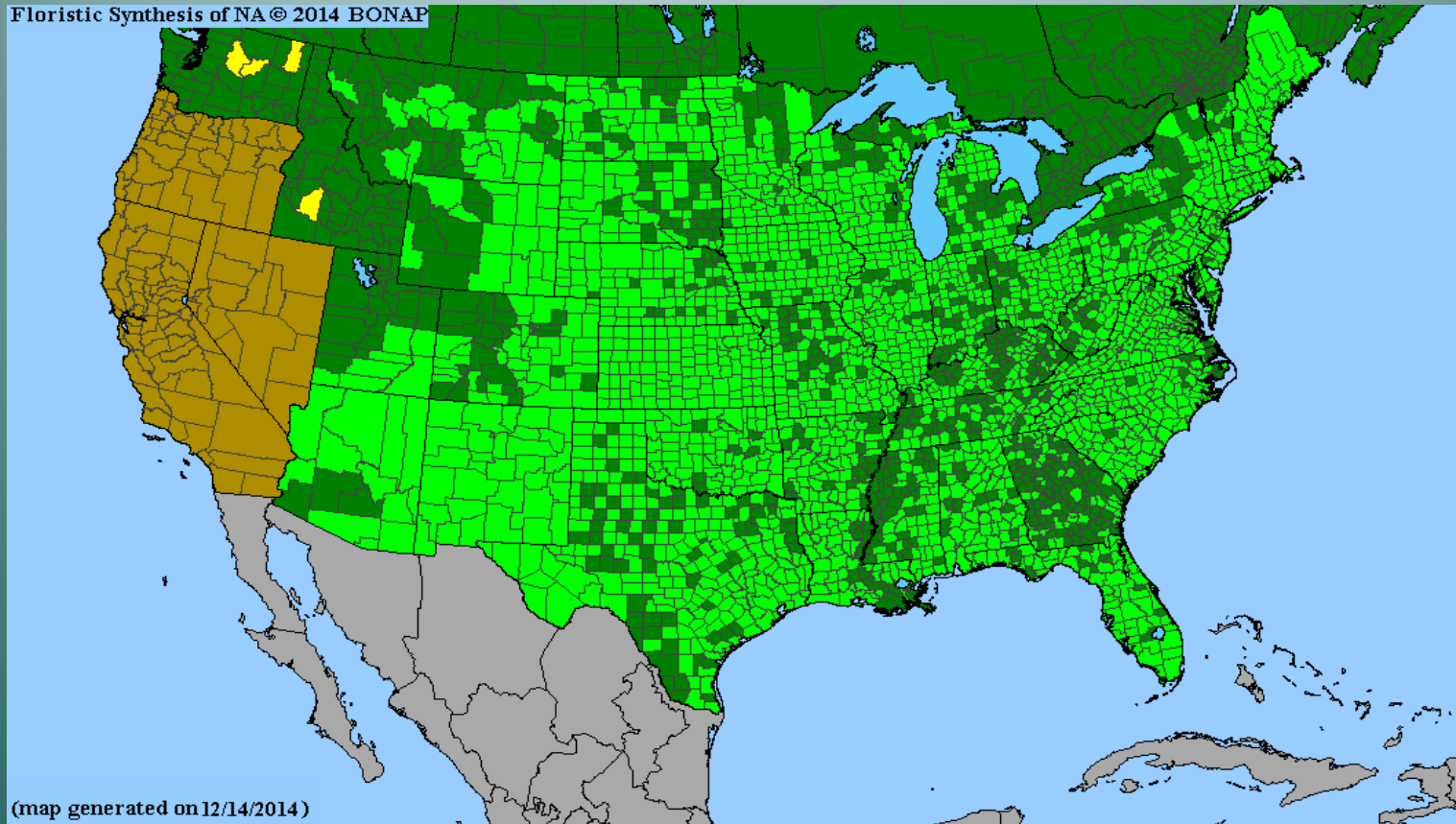






Norcross Wildlife Foundation

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Schizachyrium scoparium
Little Bluestem



Panicum virgatum
Switch Grass

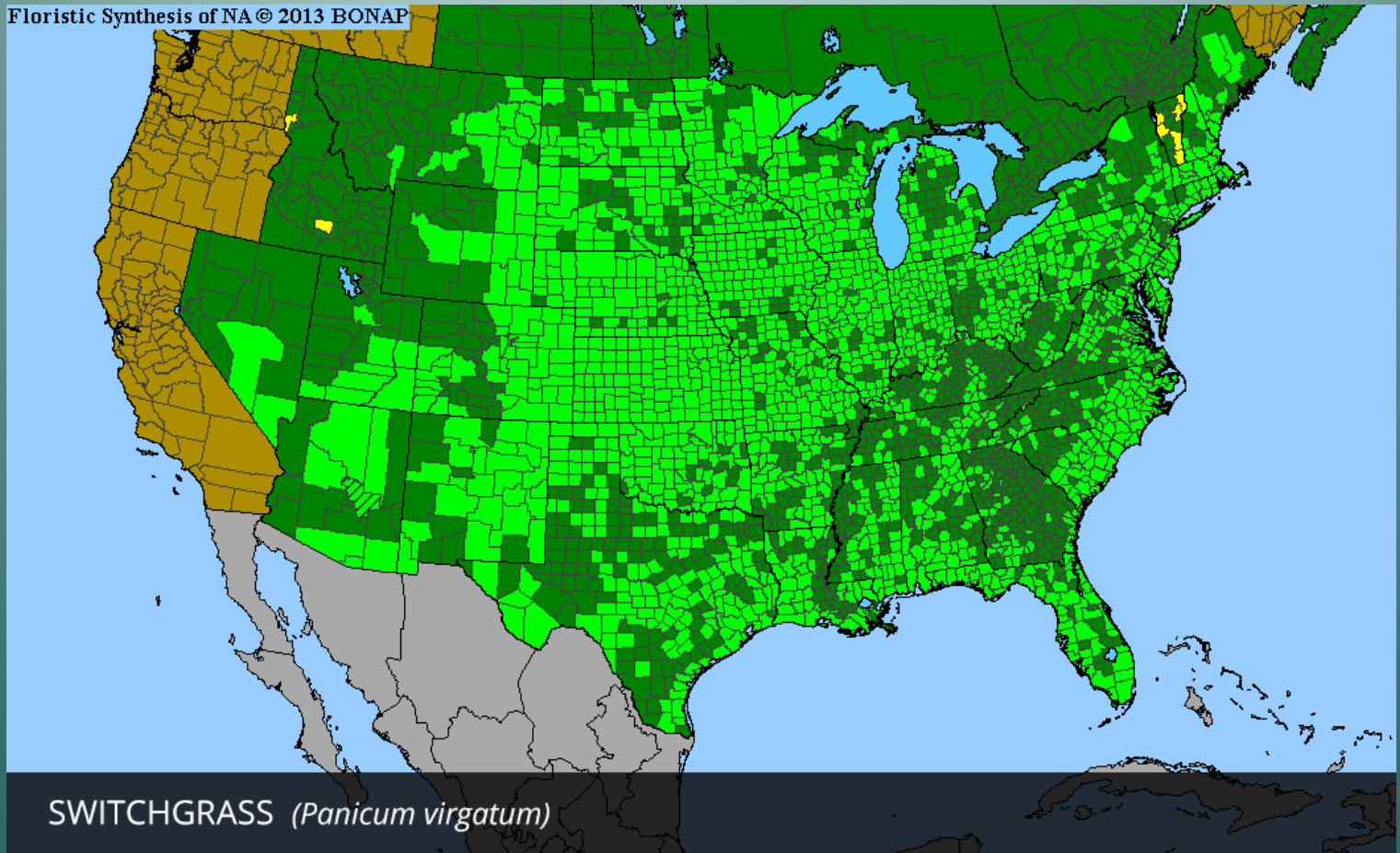








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SWITCHGRASS (*Panicum virgatum*)

