Growing Native Plants From Seed

Cornell Plantations and the Finger Lakes Native Plant Society
What IS a native plant?

- A plant that grows in the same habitat in which it originated.
- Plants can be native to a continent, state, or region.
Why plant native plants?

• Well adapted to local habitats and conditions
  – Can be easy to maintain if planted in appropriate setting

• Attractive
  – Diverse forms and colors
    • Wildflowers, shrubs, vines, trees, ferns, mosses

• Manage biodiversity
Plant Habitats aka Vegetable of the Cayuga Lake Basin

(Mohler, Marks and Gardescu 2006 “Guide to Plant Communities of the Central Finger Lakes Region”)

Dry Uplands: e.g., Oak Forest
Moist Uplands: e.g., Hemlock-Beech-Birch Forest
Floodplain Forest: e.g., Sycamore-Cottonwood Forest
Swamp Forests: e.g., Red/silver Maple Swamp
Wetlands: e.g., Cattail wetlands, Rich Fens
Bogs: e.g., Leatherleaf Bog
Old Fields
Unique habitats: e.g., Lake Cliffs
1. Harvest seeds
2. Sow and stratify
3. Ensure heat and light
4. Pot up or transplant out
5. Clean and store
Harvest seeds when ripe

- look 4-6 weeks after peak bloom
- how do I know if they are ripe?

Capture seeds

Label

- name
- place
- date
Cautions and Exceptions

• Harvest only with permission
• Take only 10% from a healthy population
• Some seeds are harvested slightly green
  – *Trillium*
  – small tree/shrub fruits
• Moist seeds require special treatment
  – harvest in plastic bag and keep moist
Cleaning and Storage of Dry Seeds

• Dry seeds in paper bags >5 days
• Find seeds in bottom of bag or in seed head
• Separate seeds from chaff
• Use regular household items for screening
  – colanders and strainers
Cleaning and Storage of Dry Seeds

- Put seeds in containers
  - jars, cans, paper envelopes
- Store on shelf or in fridge
Cleaning & Storage of Moist Seeds

(berries and most spring ephemerals)

• Remove fleshy covering or pods ASAP
  – soak berries
• Put in plastic bags or jars with moist medium
• Keep warm or refrigerate
  – spring ephemerals are kept warm for 30-90 days
Eliasomes

Sanguinaria canadensis
Bloodroot

photos: Patrick Coin
Seed Stratification

Stratification mimics the natural temperature cycle of warm & cold, moist conditions.

• Most native plant seeds require cold/moist followed by warming (CW)
  – “Cold” = ~40º  “Warm” = ~65-70º (room temp)
  – Some grasses (warm season) require 75-80º

• Seeds that ripen in early summer need warm, then cold, & back to warm (WCW).

• Some native plant seeds require multiple cycles.
Seed Sowing

- Use trays, flats, or pots that are ~ 3-4” deep
- Moisten mix
- Spread potting mix evenly and tamp to ½ ” below rim
Seed Sowing, cont.

• Spread seeds evenly over top of flat and cover lightly or leave open
  – large seeds - press in to depth of seed size
  – seeds that require light – no cover or cover with small amount of sand.

• Water in & cover with plastic bag to keep moist

• Place in fridge, cold frame or shelf (but not in sun)
Add Light and Heat

• After cold/moist treatment is finished
• Put flats in direct sunlight or under lights
  – 16 hours, 2-3” from light
  – Gro-lights or 1 warm & 1 cool fluorescent OK
  – leave plastic bag partly open or perforate
• Keep warm and moist
  – 70º is best for germination
  – not too wet or too dry
• Slowly open plastic bag after germination to acclimate
• Dilute fertilizer about 4 weeks after germination
  – no fertilizer for spring ephemerals
Pot Up or Transplant Out

Which one depends on plant and your time frame

• Look at size of plant and root growth
  – Plants need transplanting or potting up if they are too big or if roots are growing out of flat

• Wait to transplant
  – if they are tiny
  – if they are slow to germinate
  – if they are developing roots and not shoots

• Examples: *Smilacina, Actaea, Arisaema, Trillium, Lilium*
Cultural Conditions

• Sun, Shade
• Wet, Dry
• Soil Type
  – Acid, Basic (limey)
  – Drainage
Sanguinaria canadensis, Bloodroot

Grows in shade or part sun, in moist to dry soil. Prefers alkaline soils. Height 6".
Early April

*Trillium erectum* Wet Dog Trillium

Moist soil, shade. Ht. 8-24”
Asarum canadensis, Wild Ginger Grow in shade. Ht. 3-5".

Mid-April
Jeffersonia diphylla

Twin Leaf

Grow it in part sun or full shade in moist to dry soil. Height ~ 2’.

Mid-April
Caltha palustris, Marsh Marigold grows in moist to wet soil. It likes wet feet; do not allow it to dry out. Ht. 2’.
Late April

*Trillium grandiflorum*, Large Flowered Trillium grows best in part to full shade in a moist woodland setting.
Mertensia virginica, Virginia Blue Bells naturally grow on shady stream banks. They grow well in shade or part sun. Height ~ 18".
Late April to May

*Geranium maculatum*, Wild Geranium
Grow in part sun or full shade.
Height 2’.
Aquilegia canadensis, Wild Columbine is easy to grow in full sun or shade and moist or dry soil. The height (18-36”) depends on the amount of light and moisture.
May

*Arisaema triphyllum*,
Jack in the Pulpit grows in part to full shade in moist soil. Ht. 2’. 
Actaea rubra, Red Baneberry grows in full shade in well drained soil. Height ~ 2’.
Actaea pachypoda, Doll’s Eyes grow in full shade and well-drained soil. Height ~ 2’.

Late May
Iris versicolor
Blue Flag Iris
grows in full sun
to part shade in
moist to medium
soil. It flowers
best in part to full
sun. Height 2½’.

Late May
Figuring out the Solomon’s Seal

*Polygonatum biflorum var. commutatum*, Great Solomon’s Seal

A Non-native that grows well in the garden with protection from deer. Height 2-3’. This is a large variety of *P. biflorum* that is sold in nurseries and planted in the WFG.

Our locally native *Polygonatum* species are shorter in stature. *Polygonatum pubescens* has downy hairs covering the underside of the leaf. It occurs naturally in the WFG on the steep woodland slopes.

*Polygonatum biflorum var. biflorum*

Leaves have smooth or glabrous undersides. It does not occur in the WFG, but is found locally in nearby natural areas.
Penstemon hirsutus, Hairy Beardtongue grows in full sun or part shade in well-drained soil or gravel. Naturally a west facing cliff dweller, but it adapts well to the garden if given a sunny spot and space. Ht. 1-3 ft.
Sambucus canadensis, American Elderberry
This fast growing large multi-stemmed, shrub is an excellent wildlife habitat plant.
Height 7-15’.
Asclepias tuberosa, Butterfly Weed is easy to grow in full sun and well-drained sand, gravel, or good garden soil. Height: ~1-2.5 feet.
Anemone virginiana
Thimbleweed
Easy to grow in dry shade.
Height 1-2.5’.

July
Mid-July

*Monarda fistulosa*, Wild Bergamot or Lavender Bee Balm grows best in dry, well-drained sites in full sun to part shade. Ht. 1-4 ft.
Lobelia siphilitica, Great Blue Lobelia is a biennial that grows in sun or shade and moist to dry soil, but is best in moist soils. Height 18-36". Late July
Lobelia cardinalis, Cardinal Flower grows in sun or shade and moist to dry soil, but is best in evenly moist soils and full sun. Height 2-4’.
Rubus odoratus, Purple Flowering Raspberry is a small shrub with edible fruits and beautiful flowers that makes excellent ‘wildlife habitat’. It prefers a rocky, well drained, partly sunny site. Mature height 6’ x 6’.
Late June

Monarda didyma, Bee Balm is a good tea plant due to its fragrant oils of bergamot. Grow in moist soils, in sun or shade. Height 3-4’.
Chelone glabra, White Turtle Head Grow in full sun or part shade in moist to wet soil. Height 2-3’.

Chelone lyonii, Pink Turtle Head is native farther south, but grows in gardens in the Finger Lakes.
Clematis virginiana

Virgin’s bower

Sun to part shade, moist

Vining-- use as screen or ground cover

Late-August
Fall Asters & Grasses and Goldenrods
Aster novae-angliae, New England Aster An easy to grow violet-blue, purple, or pink aster with a large inflorescence. Grows best in moist soil in full sun, but will tolerate part shade and drier sites. A tall plant; to keep short cut back by half mid-season. Height 3-5’.

September
Fall
Cool Season Grasses

**Elymus canadensis**, Canadian Wildrye has bluish foliage & fruit. Grow in sun and dry soil. Height 2 to 4’.

**Elymus hystrix**, Bottlebrush grass grows in part shade to sun and dry to moist soil. Height 18-30”.

FALL

**Solidago species**

- *Solidago juncea*
  - Early Goldenrod

- *Solidago caesia*
  - Wreath Goldenrod

- *Solidago sempervirens*
  - Seaside Goldenrod

- *Solidago bicolor*
  - Silver rod

- *Solidago nemoralis*
  - Gray Goldenrod

- *Solidago flexicaulis*
  - Zig-zag Goldenrod
Shrubs

Think about using native shrubs in a mixed border or thicket.
Cornus sericea
Cornus racemosa
Cornus alternafolia
Cornus amomum

have nice fall color & provide wildlife food.

Shrubs/small trees 5-20 ft.
Viburnum lentago and Lindera benzoin
Lindera benzoin, Spice bush is a slow growing, medium sized shrub. It grows best in alkaline soil in a moist to dry site. Mature height 8-10’.
Learn Native Plants and Habitats

• FLNPS: Walks, Talks and People
• Petersons: A Field Guide to Wildflowers of the Northeast and North Central North America
• Cornell Plantations Mundy Wildflower Garden
• Finger Lakes Land Trust walks
• Lime Hollow Nature Center
Sources

• Plant Sale in May
• October: FLNPS seed collecting
• December: FLNPS Seed Exchange
• Local nurseries:
  – Plantsmen www.plantsmen.com
  – White Oak Nursery www.whiteoaknursery.biz

• *Remember:* Choose native species that have been propagated from seed. Do not dig plants from the wild!
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