Stokes Farm’s Woodland Restoration

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Presented by
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Stokes Tree Farm
Albemarle Co.
Bittersweet & ailanthus infestations existed on farm
Other nonnative invasives on site
Methods of Invasive Control Used
Presentation Focus:

Three of the most heavily invasive infested wooded areas totaling about five acres that have been restored.

Presentation Order:
- Grasses
- Perennials
- Trees & Shrubs

Evidence of bittersweet still persists.
After bittersweet, Japanese honeysuckle, garlic mustard, and smartweed sprayed
Preserve existing natives

Will spread to fill in barren areas
Re-growth after selectively spraying individual plants
Hand weeding bittersweet

Know identification characteristics
Area where nearly all ground vegetation killed by herbicide spraying of invasives
Selecting Plants for Restoration

• Match plants needs to sites soil type, moisture, light, aspect, and root competition
• Utilize natives that can effectively compete with invasives
  – Quickly establish
  – Can grow densely preventing invasive germination
  – Shade out invasives
• Provide diversity to plant community
• Attract wildlife but resist deer browse
• Avoid thorny species
Autumn bentgrass
newly planted foreground, prior year in back
autumn bentgrass
Agrostis perennans

Characteristics
Cool season bunchgrass
Height: 1-3'
Flowers: Jun.-Oct.

Conditions
Light: Open or Light Shade
Moisture: Dry, Moist, Wet
Soil pH: 5.5-7.5
Soil type: Clay, Loamy

Habitat
dry or moist thickets, open woods, unshaded areas
Native to
Region: Coastal, Piedmont, Mountain
autumn bentgrass
full sun or shade
autumn bentgrass

Seeded densely prevents weeds from becoming established.
Volunteer and planted native grasses
After 2 yr. effort to remove invasives

2010
Autumn bentgrass after 10 years

2010

2020
Invasion of Japanese honeysuckle into autumn bentgrass from nearby blackberry patch

2020
Planted autumn bentgrass
Volunteer broomsedge and nimblewill

2010
Volunteer broomsedge and nimblewill
nimblewill
*Muhlenbergia schreberi*

**Characteristics**
Sod forming, roots from stems
Height: 8”-3'

**Conditions**
Light: Open or Light Shade
Moisture: Dry Moist Wet
Soil pH: 4.5-7.5
Soil type: Fine or Medium Texture

**Habitat**
Dry or moist open woods and unshaded areas

**Native to**
Region: Coastal, Piedmont, Mountain
Naturally seeded in nimblewill

Thickly growing among broomsedge
Red fescue
*Festuca rubra*

**Characteristics**
Cool season
Bunch (native), sod (non-native)
Height: 8” to 12”
Flowers: Mid spring

**Conditions**
Light: Best in light shade
Moisture: Dry, Moist
Soil pH: 5 - 7.5
Soil type: Fine or Medium Texture

**Habitat**
dry or moist thickets, open woods

**Native to**
Region: Coastal, Piedmont, Mountain
Red Fescue

2010

3 year old stand never mowed

2020
Volunteer stand of native whitegrass
Whitegrass or Virginia cutgrass
*Muhlenbergia schreberi*
Comparison
Whitegrass vs. Japanese stiltgrass

Japanese stiltgrass has broader leaves closely spaced and projecting outward.
Jewelweed, *Impatiens capensis*

Annual, naturally seeds forming thick masses
Restoration underway with plug and bare root ferns & wildflowers

2010
Oriental bittersweet had dominated site, now thriving with spring wildflowers.
Toadshade (trillium sessile) now reseeding prolifically

2020
Large-flowered trillium (*T. grandiflorum*) with wild stonecrop sedum (*Sedum ternatum*)
Trout lily filled in between clumps of Christmas fern and wild blue phlox already present on stream bank
Most perennials cannot tolerate densely rooted soil of maple and beech
Bare root plantings of Dutchman’s breeches, trout lily, and Virginia bluebells
Spreading Jacob’s ladder under sprawling bottlebrush buckeye
Existing natural stand of hayscented fern resists invasives from establishing
Hayscented fern in restored area

Planted using bare root stock 3 years prior
Planting of Trees and Shrubs

• Types of woody stock utilized
  – Bare Root
  – Tubelings (plugs)
  – Container (advise removal of potting soil)

• Plant when soil will remain moist (fall & spring)

• Mulch if site prone to dryness

• Mark with surveyor tape

• Protect with cage, tube, or stakes if necessary
Existing Winterberry Holly (*Ilex verticillata*) and planted black birch (*Betula lenta*)
Pond edge planted with natives

2010

Planted winterberry, bald cypress, and perennials
Bald Cypress seedlings planted 2005
Planted Swamp White Oak

2020
American Hornbeam or Musclewood
*Carpinus caroliniana*

2020
Existing blackhaw viburnum

*viburnum prunifolium*
Blackhaw viburnum
Other Viburnums planted
Arrowwood (*dentatum*), Naked witherod (*nudum*)
Naked witherod (Viburnum *nudum*)
American bladdernut (*Staphylea trifolia*)

2020

Will spread into a dense thicket
American hazelnut, *Corylus americana*
American hazelnut planted in cages

2010

2020
Existing spicebush \((Lindera benzoin)\)

Denser growth at Woodland edge
Dog hobble, *Leucothoe axillaris*

As an evergreen adds winter interest
Concluding Recommendations

• Keep in place as much of sites desirable native flora as possible and allow it to spread.

• In large barren areas plant quickly establishing & dense ground level plant cover.

• Plant competitive native species already present or well suited for sites conditions.
Planting Material Sources Used

• Seed
  – Ernst Conservation Seeds

• Perennials
  – New Moon Nursery
  – Pinelands Nursery & Supply

• Trees & Shrubs
  – VA Dept. of Forestry’s Augusta Forestry Center
  – Conservation Services, Inc.
  – Musser Forests
  – Alpha Nurseries, Inc.