

#### RECOMMENDED READING

*The Living Landscape*. Rick Darke and Doug Tallamy. Timber Press, Portland, Oregon, 2014.

Native Ferns, Moss & Grasses, 2008. Native Trees, Shrubs & Vines, 2002. New England Wildflower Society Guide, 2000. William Cullina. Houghton Mifflin Company.

Native Plants of the Northeast: A Guide for Gardening & Conservation. Donald J. Leopold. Timber Press, 2005.

Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens. Douglas W. Tallamy. Timber Press, 2007.

Native & Naturalized Trees of Massachusetts. Gordon DeWolf. U Mass Extension, AG-1220: 9/96: 2M.

The Encyclopedia of Grasses for Livable Landscapes. Rick Darke. Timber Press, 2007. Look for grasses listed as native and be amazed at the beautiful - especially panicum species listing. Nice combinations of grasses and perennials shown.

Native Alternatives to Invasive Plants. C. Colson Birrell. Brooklyn Botanic Garden, Handbook #185. 2006, 2007. (Look for native plants that grow within zone7 – note growing tips).

The Cape Cod Garden - A Handbook for Successful Planting. C.L. Fornari. Paraphyses Press, 2002. The author has a local radio call in program Saturday morning from 8 to 10 AM - WXTK-FM 95.1.

Armitage's Native Plants for North American Gardens. Allan M. Armitage. Timber Press, 2006.

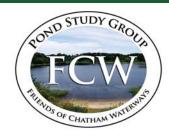
Paul Parent offers a radio program on gardening advice on a wide variety of topics Sunday mornings from 8 to 10 AM on WXTK-FM 95.1.

#### **CREDITS**

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# THE CHATHAM GREEN PAGES

Identification and Control of Invasive Plants and Environmental Stewardship



THE FRIENDS OF CHATHAM WATERWAYS
POND STUDY GROUP
printed 2015

#### INTRODUCTION

The Friends of Chatham Waterways - Pond Study Group - inspired this second 2015 edition of *The Green Pages*. The purpose is to increase reader's ability to identify invasive plants growing in Chatham ponds and landscapes and to further the effort to control or destroy these invasive plants. Both knowledge and action are key elements in mitigating the spread of these harmful plants. This printing includes information about why planting native trees and shrubs is a win for Chatham residents and our environment. In the summer of 2014, pond stewards collected water quality data from Stillwater, Lover's, and Emery, White, Schoolhouse and Barclay ponds. Stewards will continue recording data so that historical comparisons can be made. Recommended best practices and readings that promote protection of our natural environment are also included. FCW hopes that all who love the natural beauty of Chatham will promote environmentally friendly ways to design and care for their landscape. This booklet is meant to be a helpful reference guide to expand your knowledge regarding actions you can take to help maintain the health of our fragile environment.

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Why plant native species? Because they adapt to local conditions, are drought tolerant, require no fertilizer, and are not rampant spreaders. By contrast invasive plants aggressively spread, overtake healthy ecosystems and eventually kill neighboring plants-limiting bio-diversity. The recommended native plants listed are just a few of the beautiful species appropriate for Chatham.

Finally, this booklet includes environmentally friendly practices that conserve water and reduce pollutants seeping into our waters. Cape Cod has a unique sole source aquifer. Our ponds are directly connected to groundwater and the aquifer. In a sense, our ponds are windows to the aquifer. Rainfall and snow replenish ground water in our ponds. Groundwater is subsurface water located beneath the water table, in soils and geologic formations that are fully saturated. Identified threats to our pond health are lawn fertilizer runoff (especially phosphorous), discharge from storm drains, and bird feces (especially Canada Geese). Invasive aquatic species also threaten our ponds. The use of phosphorus around ponds should be regulated. A community-wide effort is needed to make a difference.

Cover photo 2010 – The Jim Nash family - Twins Chloe and Paige with Joyce Williams golden 'Splash' Enjoying the Chatham Conservation Foundation walking trail at Mary's Pond.

#### :::::INTERNET - PRINTED INFORMATION - LOCAL SOURCES

The MA Department of Conservation & Recreation has three booklets on **pond information**. Requests for the booklets can be made by sending an email, including your home address, to: tom.flannery@state.ma.org.

- The Massachusetts Lake and Pond Guide
- A Guide to Invasive Non-native Aquatic Species in Massachusetts
- A Guide to Aquatic Plants in Massachusetts

<u>www.apcc.org/nativeplants/</u> Photos and descriptions of 14 great native plants for your property.

mghelpline@masshort.org Master Gardener Help Line - 617-933-4929

www.onlineplantguide.com Photos and information on about 3,500 plants in all categories.

<u>www.newenglanwild.org</u> New England Wild Flower Society - Photo gallery of invasive plants and a list of native plant alternatives. Nasami Farm Native Plant Nursery

www.ipane.org Invasive Plant Atlas of New England

www.capecodextension.org/horticulture-entomology-ticks/hort-clinic/ Information on soil testing as well as nutrient, organic matter and other soil data

<u>Town of Chatham Conservation Agent</u> - Kristin Andres - 508-945-5164 <u>kandres@chatham-ma.gov</u> Contact to obtain permission for a landscape project less than 100' from a wetland, pond or stream.

Google – How to Grow a Falmouth Friendly Lawn - Read over and/or print the flyer for your records.

 $\underline{\text{Free Soil Test for pH}}$  – Test soil every 3/4 years - Chatham Agway, 1005 Main Street - 508- 945-1555

Local source for native plants, organic fertilizers, insecticides and herbicides and Cape Cod grass seed. Pine Tree Nursery – 200 Route 137, So. Chatham, MA 02659 - 508-422-8878 <a href="https://www.pinetreenursery.com">www.pinetreenursery.com</a>

www.grownativemass.southeasternmassachusettscape&islands Excellent information available

http://www.universityofconneticutalternativesforinvasiveplantspecies/ Inspiration for The Green Pages

#### :::: ENVIRONMENTAL STEWARDSHIP PRACTICES

# LAWN DESIGN AND CARE - Practical Steps to an Environmentally Friendly Landscape.

- 1. Test your lawn soil for pH acidic or alkaline. Lawn soil should be in the 6.5 to 7 range. Using a trowel, scoop soil from several areas, and place in cup size container. If your lawn soil has low pH testing at below 6, nitrogen and phosphorous are not taken up by grass; instead it runs off into ponds or seeps into Chatham's water table.
- Most Chatham lawn soils need additional lime to raise the pH.
   Apply recommended amount and lime in the fall. Chatham
   Agway will test your soil pH for free. Master Gardeners offer soil pH testing for two dollars in the spring. Cape Cod Extension
   Office 508-375-6690 (see p. 15)
- 3. If you fertilize, apply only twice a year, e.g., in the spring after Memorial Day when lawns start greening up and in the fall, after Labor Day to stimulate root growth and strength. Organic Fertilizer which is 100% slow release is best or use 30% to 50% slow release.
- 4. Measure your lawn and determine size in 1000 sq. feet. The rate of application to change the pH level of your soil is then recommended by the supplier or manufacturer.
- 5. To over-seed established lawn use Cape Cod grass seed that contains high % of native fescues and perennial ryegrass.
- 6. Mow at 3"or 3 ½", with a sharp blade often. Use a mulching mower and leave beneficial clippings on the ground. They are a source of slow release nitrogen, help retain soil moisture and choke out weeds.
- 7. If you have a watering system, do not use it if there has been an inch of rainfall within the last week. During drought conditions deep water (30 minutes each zone) once a week to encourage root growth. Do not use your irrigation system daily. A Cape Cod lawn may not remain green all summer, but will green-up with the next inch or more of rain. Deep watering newly planted trees or shrubs with a Ross Root Feeder during drought is more important than watering a lawn.

Other practical steps to take are, scale down the size of your lawn by creating planting beds instead of a large lawn, plant native trees and shrubs that are drought tolerant and require no fertilizer in the beds. If you live on a pond, create a 15/20 foot buffer zone at the pond edge using native plants. Use mulch to limit run-off and retain moisture in planting beds. When raking leaves in the fall, mulch the piles with a mulching mower and use them on footpaths or planting beds. Additional environmentally friendly landscape suggestions are contained in reading material listed on page 15 and 16. For professional advice on designing with native plants, consult with a local landscaper.

#### ::::INVASIVE TREE

# NORWAY MAPLE - Acer platanoides

Description - Large deciduous shade tree reaching forty to fifty feet at maturity. This maple is distinguished from others by the milky fluid that oozes from freshly broken leaf petioles (stems). It forms a dense canopy blocking out light and prohibiting growth underneath. It leafs out and forms seeds earlier than other maples. It is tolerant of sandy, hot and dry conditions and tolerates pollutants. The cultivar 'Crimson King' with dark maroon leaves during the growing season is commonly planted .



Zelimir Borzan, Bugwood.org

#### Control - Seeds mature mid-summer.

- 1. Rake up fallen seeds, dry the seeds and then place in plastic bag, bake them in the sun and dispose at the \* recycle center.
- 2. Hand pull small seedlings after a rainfall.
- **3.** Using a trowel or spade dig up saplings removing the entire root system when the soil is dry.
- **4.** A Weed Wrench can be rented to remove large saplings up to three inches in diameter.
- **5.** If over three inches in diameter consider girdling. Using an axe cut a deep notch around the circumference of the trunk about six inches from ground level. This cuts off nutrients and the plant dies.
- **6.** For mature trees to be removed hire a certified arborist.

#### :::: RECOMMENDED NATIVE TREES

Red Maple - Acer rubrum 'Red Sunset' or 'October Glory'

 ${\bf American\ Hornbeam\ -}\ Carpinus\ caroliniana$ 

Red Oak - Quercus rubra

Chestnut Oak - Quercus prinus

Swamp White Oak - Quercus bicolor

American Sweetgum - Liquidambar styraciflua 'Cherokee'

#### :::::INVASIVE TREE

### BLACK LOCUST - Robinia pseudoacacia

**Description** - Large tree growing to sixty feet and giving filtered shade with pinnately compound leaves. Leaves turn yellowish in fall. New stem growth often has spines. White flowers in spring, seed pods mature in October. Self sows readily forming colonies. Native of southern Appala-



James H. Miller, Bugwood.org

chian Mountains where its hardwood is prized. On Cape Cod it has replaced thousands of acres where oaks and pines once grew.

Control - See Control for Norway Maple

#### :::: RECOMMENDED NATIVE TREES

Thornless Honey Locust - Gleditsia triacanthos 'Shademaster'

Basswood - Tilia americana

White Oak - Quercus alba

Red Oak - Quercus rubra

American Yellowwood - Cladrastis kentukea 'Rosea'

#### Medium Height

Carolina Silverbell - Halesia tetraptera 'Wedding Bells'

Dogwood - Cornus alternifolia

Fringetree - Chionanthus virginicus

Ironwood - Carpinus caroliniana

Franklinia Tree - Franklinia alatamaha

Shadbush - Amalanchier x grandiflora 'Autumn Sunset'

**Note:** To avoid cedar/apple rust disease, do not plant shadbush near Eastern Red Cedar.

# SWITCH GRASS - Panicum virgatum 'Shenandoah'

Four feet tall by eighteen inches wide. Noted for its red tipped foliage in summer and its red and orange blades in the fall. The plant is drought tolerant once established.

### SWITCH GRASS - Panicum virgatum 'Northwind'

Height, four to five feet. Spread, two to three feet. Blue/green summer color blades, silvery flowers in late summer. In late fall blades turn yellowish wheat color. This grass remains upright through any winter weather and is drought tolerant once established.

# SWITCH GRASS - Panicum virgatum 'Cloud Nine'

Height, six feet with a spread of two to three feet. Large vase-shaped form, late summer blooms in clouds of silvery fawn color that remain attractive in winter. Severe weather will knock down this grass.

# DUNE GRASS - Panicum amarum 'Dewey Blue'

Similar to beach grass pictured below, but bluer and more upright. Three feet high by one foot wide. Tolerant of salt, heat, drought, wind, and humidity. The Blue gray color in summer turns wheat color in the fall. Excellent for dune plantings.

# PRAIRIE DROPSEED - Sporobolus heterolepis

One and a half feet tall by one foot wide. Fine textured clump forming warm season grass with green arching foliage. Flowers are pinkish/tan in late summer on stalks to three feet tall. Foliage turns golden/orange in late fall. Tan all winter. Good for dry hot areas. Slow to establish, then very long lived. Tolerates a wide range of soils but prefers dry rocky soil. Good for edging a garden or planting a hillside. At Oyster Pond in Chatham, Prairie Dropseed edges the right side entrance.



B. Cotnam Chatham Fish Pier ('Northwind')



J.Page Chatham Lighthouse Beach (Beach Grass)



B. Cotnam Chatham Marconi Site (Switch Grass)

#### EVERGREEN WILD GINGER - Asarum shuttleworthii

Six inches high by one foot spread. Woodland plant with heart shaped often marbled leaves. Purple flowers hide beneath leaves in spring.



B. Cotnam. FCW

#### ALUMROOT - Heuchera americana, H. villosa and H. sanguinea

Two foot height by one and a half foot spread. Clump forming plant that grows on sunny edges of the woodland. White flowers appear in early summer. Many cultivars are available in the trade.

#### WILD GERANIUM - Geranium maculatum

A woodland flower found in sunny moist or dry shaded sites. One foot height by one and a half foot spread. Pink to lavender flowers in early summer with 5 petals. Nice companion plant to the Christmas Fern.



Prairie Moon Nursery

#### :::: RECOMMENDED NATIVE GRASSES

# PENSYLVANICA SEDGE - Carex pensylvanica

Height, eight to ten inches. Spread, one foot. Delicate, arching, semievergreen blades. Does well in full sun but tolerant of shady conditions. Often found in dry woods among oaks. Use as a border or groundcover in shady areas. Deer will not dine on this plant.

#### BLAZE LITTLE BLUESTEM - Schizachyrium scoparium 'Blaze'

Two to three feet tall by fifteen inches wide. Vivid red fall foliage, fades to deep pink in winter. Easily grown and tolerant of a wide range of conditions. Useful in a native wildflower garden.

# LITTLE BLUESTEM - Schizachyrium scoparium 'Prairie Blues'

Three feet tall by fifteen inches wide. Silver blue blades and upright growth habit.. Turns orangey-red in the fall. Looks nice planted with Sedum 'Autumn Joy'.

#### :::::INVASIVE TREE

### SYCAMORE MAPLE - Acer pseudoplatanus

**Description** - Large tree to sixty feet with grey bark, flaking to expose orange/brown inner bark. Fall leaf color is brownish/yellow.

**Control** - Seeds mature in September. See Norway Maple control.



Zelimir Borzan, Bugwood.org

#### :::: RECOMMENDED NATIVE TREES

Black Gum or tupelo - Nyssa sylvatica

Eastern Red Cedar - Juniperus virginiana

Sassafras - Sassafras albidum

Pin oak - Quercus palustris

Sorrel Tree - Oxydendron arboreum

#### :::::INVASIVE SHRUB

# BURNING BUSH - Euonymus alatus

**Description** - Height up to twenty feet. Easily pruned. Known for its bright red fall leaf color.

Control - Prune late spring before the shrub sets seed. Bag clippings. Bake in sun and dispose at the \* recycle center. Also See Norway Maple control - #1 through #5



B. Cotnam, FCW

#### :::: RECOMMENDED NATIVE SHRUBS

Chokeberry - Aronia arbutifolia 'Brilliantissima' related species are Aronia melanocarpa and Aronia x prunifolia

Summersweet Clethra - Clethra alnifolia 'Hummingbird' and cultivar C. 'Ruby Spice'

Cinnamon Clethra - Clethra acuminata

#### :::::INVASIVE SHRUB

### JAPANESE BARBERRY - Berberis thunbergii

**Description** - Many small and large cultivars are available. All have thorns. Leafs out early in the spring. Small yellow flowers in spring. Leaf color green or maroon and some varieties variegated. Usually bright reddish foliage in the fall with vivid red berries. It is one of the most widespread invasive plants in New England and should not be planted, although many cultivars are still commercially available.



B.Cotnam. FCW

**Control**- Remove plant and roots with a spade before fruit is set. Bake the plant in the sun, bag and dispose of at the \* recycle center.

#### ::: RECOMMENDED NATIVE SHRUBS

Dwarf Fothergilla - Fothergilla gardenii 'Mt. Airy', 'Woodbridge Elite'

Hydrangea arborescens 'Annabelle' - white or pink

Hydrangea quercifolia - 'Pee Wee', 'Munchkin', 'Little Honey', 'Snowflake'

American Beautyberry - Callicarpa americana

# :::::INVASIVE SHRUB

# $AUTUMN\ OLIVE\ -\ Elaeagnus\ umbellata$

**Description** - Large shrub. Leaves are green with pale green undersides often with spines on the branches. Flowers are light yellow in spring. Numerous large clusters of small red berries in mid summer-ripen in the fall. Rapidly spread by seed. Fixes nitrogen and able to grow in adverse conditions including saline.

**Control** - Cut down shrub in spring before flowers bloom. Remove entire root system, repeat throughout growing season. The plant is tenacious and to eradicate, one must be vigilant.



Chris Evans, Bugwood.org



Nancy Loewenstein, Bugwood.org

#### :::: RECOMMENDED NATIVE GROUND COVERS

# BEARBERRY - Arctostaphylos uva-ursi

Evergreen leathery leaves in the heath family. Likes sun and sandy nutrient-poor soil. Benefits from a symbiotic association with mycorrhizal fungi in the soil by an ability to use available nitrogen. Two to four inches high and two feet or more spread. White flowers in spring and red berries in the fall. Drought tolerant once established.



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#### BROOM CROWBERRY - Corema conradii

Likes sun. Ten to twenty inches high by one to three feet wide. Evergreen stiff needle-like leaves. Dark red small blooms in early spring that resemble heath. Bearberry is a good companion groundcover.

# TRAILING ARBUTUS - Epigaea repens

Two to three inches high by one foot spread. Evergreen leaves. Spring flowers are white or pink. A woodland plant in the heath family. It is the Massachusetts state flower.



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# CLIFF GREEN - Paxistima canbyi

Likes part shade. One foot high by three foot spread. Small evergreen. Leaves are lustrous dark green. A carefree woodland plant native to Virginia.



B.Cotnam, FCW

# CHRISTMAS FERN - Polystichum acrostichoides

Likes part sun or shade. One foot high by two foot spread. Evergreen woodland ground cover. Adaptable to wet or dry conditions once established.



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#### :::::INVASIVE PERENNIAL

### DAME'S ROCKET - Hesperis matronalis

**Description** - A showy biennial or short-lived perennial, two to three feet tall. Resembles a garden phlox but has toothed leaves and flowers with four petals rather than five. Blooms May to August with white, pink or lavender flowers. Be wary of wild flower seed mixes they may contain Dame's Rocket.



Rob Routledge, Bugwood.org

**Control** - Hand dig removing the entire root system. Bake in the sun, bag and dispose of at the \* recycle center.

#### :::: RECOMMENDED NATIVE PERRENIALS

Checkerbloom, Malva - Sidalcea malviflora

Carolina Phlox - P. carolina or

Wild Blue Phlox - P. divaricata

#### :::::INVASIVE PERRENNIAL

#### YELLOW FLAG, YELLOW IRIS - Iris pseudacorus

**Description** - Showy European native grows along pond edges, stream banks and moist areas. It has colonized in wild wetlands where it can displace native irises. Distinguished because it readily spreads both from seed and division.



Todd Pfeiffer, Bugwoodorg

**Control** - This plant may still be commercially sold. Avoid the

plant. If you have yellow flag in your yard, dig up the entire plant, dry in the sun, bag and dispose of at the \* recycle station.

# :::: RECOMMENDED NATIVE PERRENNIALS

Northern Blue Flag Iris - Iris versicolor, 'Kermesina'

# ::: RECOMMENDED NATIVE SHRUBS

Large Fothergilla - Fothergilla major

Highbush Blueberry - Vaccinium corymbosum

Hydrangea quercifolia - 'Oak Leaf Hydrangea', 'Alice' and 'Snow Queen'

Coastal leucothoe - Leucothoe axillaris

Fragrant Sumac - Rhus aromatica

# :::::INVASIVE SHRUB

# BORDER PRIVET Ligustrum obtusifolium

**Description** - Twelve feet tall. Used for screen or hedge row. Flowers in mid-June. Small dark berries ripen in September and persist in winter.

**Control** - See Norway Maple control - #1 through #5.



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#### :::: RECOMMENDED NATIVE SHRUBS

Arrowwood Viburnum - Viburnum dentatum, 'Autumn Jazz'

Eastern Red Cedar - Juniper virginiana

Common Hornbeam - Carpinus betulus

Spicebush - Lindera benzoin 'Green Gold', 'Xanthocarpa'

Inkberry - Ilex glabra, 'Cape Cod'

Red Chokeberry - Aronia arbutifolia, 'Brilliantissima'

Winterberry - Ilex verticillata, 'Red Sprite', 'Berry Nice', 'Winter Red'

Northern Bayberry - Myrica pensylvanica

Witchhazel - Hamamelis virginiana - flowers late fall,

'Autumn Embers' is a colorful cultivar

Witchhazel - Hamamelis vernalis - flowers late February/March

#### :::::INVASIVE VINE

JAPANESE HONEYSUCKLE - Lonicera japonica **Note:** Both shrub & vine honeysuckles are invasive. L. morrowii, L. x bella, L. Maackii, L. Tatarica.

**Description** - Leaves opposite, fast growing woody vine up to thirty feet. White flowers bloom in the spring. Leaves stay green well into winter. Berries ripen in September.

Control- Cut off vines at ground level and cut again at arms reach. When vine dies off, pull down and dispose of at the \* recycle center. Also see Norway Maple control - #1 through #4.



J. H. Miller & T. Bodner, Bugwood.org



Charles T. Bryson, Bugwood.org

#### :::: RECOMMENDED NATIVE VINES

Virginsbower - Clematis virginiana

Rock Clematis - Clematis columbiana

Climbing Hydrangea - Decumaria barbara

# :::::INVASIVE VINE

#### ORIENTAL BITTERSWEET - Celastrus orbiculatis

**Description**- Twining vine climbing to thirty feet or higher. Yellow fruits open to reveal red seeds in August and September. Roots are orange colored. The vine strangles, deforms or kills host trees.

Control - Cut off vines at ground level and cut again at arms reach. When vine dies off, pull down and dispose of at the \* recycle center. Also see Norway Maple control - #1 through #5.





#### :::: RECOMMENDED NATIVE VINES

Clematis texensis 'Duchess of Albany'

Leatherflower - Clematis viorna

American Wisteria - Wisteria frutescens

#### :::::INVASIVE PERENNIAL

# PURPLE LOOSESTRIFE - Lythrum salicaria, L. virgatum

**Description**– Two to three feet tall purple spikes of long blooming flowers all summer. Each plant can produce up to two million seeds. Once established in wetlands it is difficult to control. Grows in shallow fresh water. Once commercially available and popular because of its long bloom period. Do not purchase the so-called sterile varieties!

Control - If you have this plant in your yard, remove it, roots and all! Bake in the sun, bag it and dispose of at the \* recycle center. Researchers are testing biological controls.



Linda Wilson, Bugwood.ord

#### :::: RECOMMENDED NATIVE PERENNIALS

Spike Gayfeather - *Liatris spicata*, many cultivars available.

Milkweed - Asclepias syriaca or A. specios

Phlox - *Phlox carolina* - Two to three feet high by one and one half foot wide. Resistant to powdery mildew and spider mites and one of the best phlox for hot climates. Pink flowers in summer.

Obedient Plant - Physostegia virginiana - Height, three to four feet and a spread of one foot. A clump forming plant with spreading roots. Flowers with spikes of snapdragon-like flowers in late summer and early autumn.

Wild Lupine - Lupinus perennis - Height, two and a half feet by a spread of one and a half feet. An erect plant with fanlike leaves divided into leaflets. Blue or pink flowers appear on tall spikes in early summer.

\* At the recycle center, dispose of invasive perennial clippings in the grass and leaves area. Woody material disposal is at the branch and twigs area. A fee for woody plant material will be collected at the gatehouse.