

# Engaging Community Through Pollinator Conservation

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Cooperative Extension

03.10.2018

THINK BIG  WE DO™

  
THE XERCES SOCIETY  
FOR INVERTEBRATE CONSERVATION





# Cooperative Extension

*Bringing science-based  
University resources to  
Rhode Islanders  
since 1914.*



# Master Gardeners

*Educating citizens in environmentally-sound gardening practices through the dissemination of factual, research-based information.*



## Learn from us!

- *Gardening & Environmental Hotline*
- *School Garden Mentors*
- *Workshops in the community*
- *Demonstration Gardens*
- *Soil Testing and Informational Kiosks*
- *Educational Events*



# URI Master Gardener Program

## Focus Area: Land Stewardship

### 2017-2019

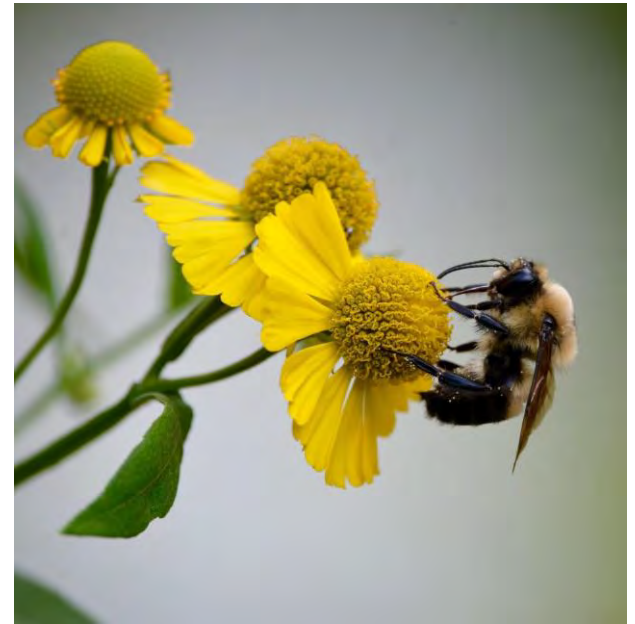


Photo: Sue Dunn



# RI's Pollinator Working Group Recommendations

- Management
  - **Enhance urban habitats** for pollinators.
  - Increase **fall flowering** habitat.
  - Maximize **soil health**.
  - Leave bare ground as habitat for ground **nesting native bees**.
  - Maintain some brushy habitat for bees.
  - **Avoid** practices associated with **high impact lawns**.
  - Incorporate **“weed” diversity**.



# Train the Trainer

Phase 1: Volunteers  
Learn Something New



Phase 2: Teach Others



# Goal: Preserve Biodiversity and Pollinators

Behaviors to promote:

- Plant natives
- Avoid invasives
- Habitat for pollinators and beneficials



# Goal : Reduce Pesticide Use

## Behaviors to promote:

- Identify diseases/pests before taking action
- Right plant for the right place
- Use alternatives to pesticides whenever possible



Photo: Sue Dunn



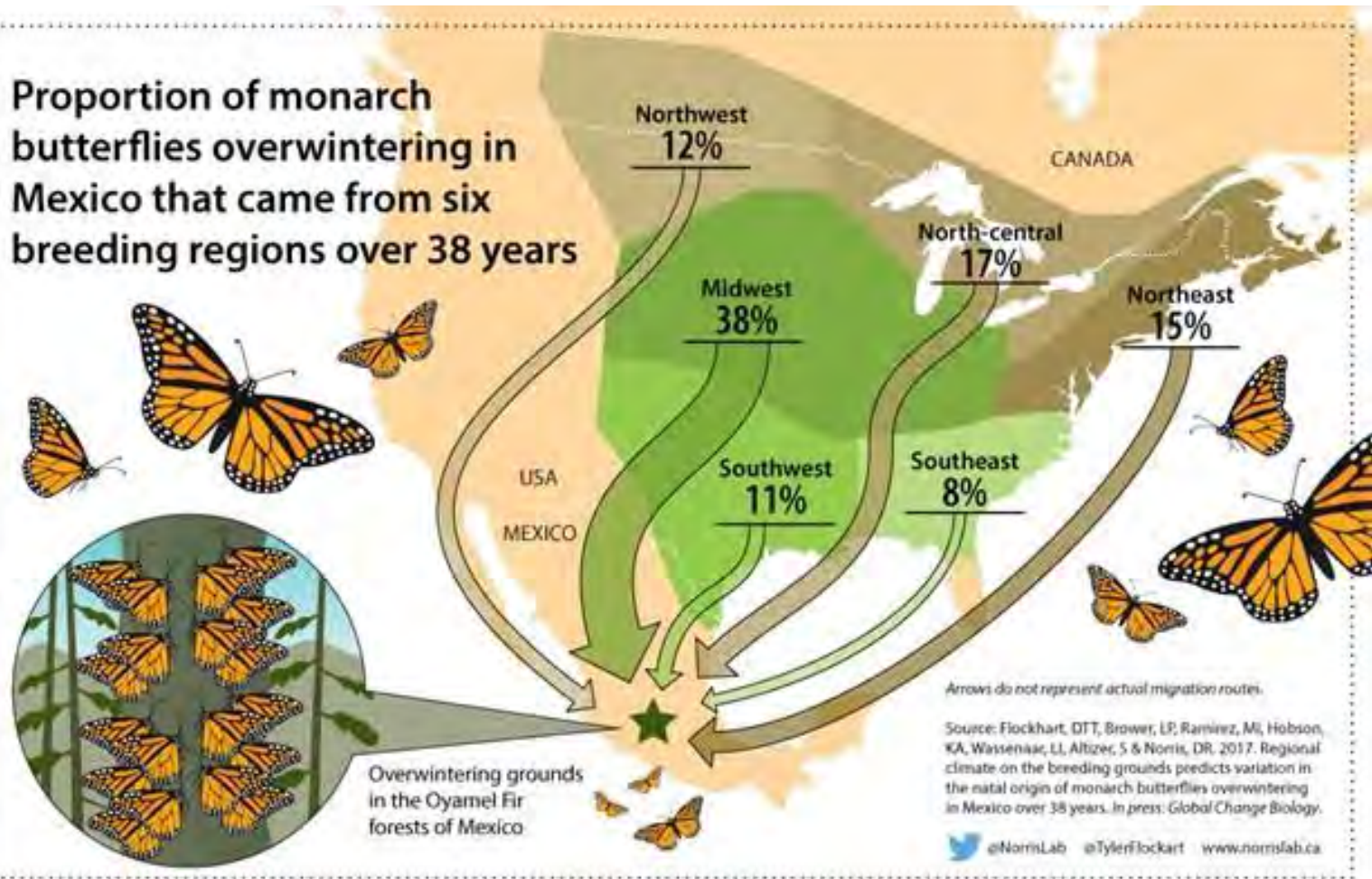


## **Why do we care?**

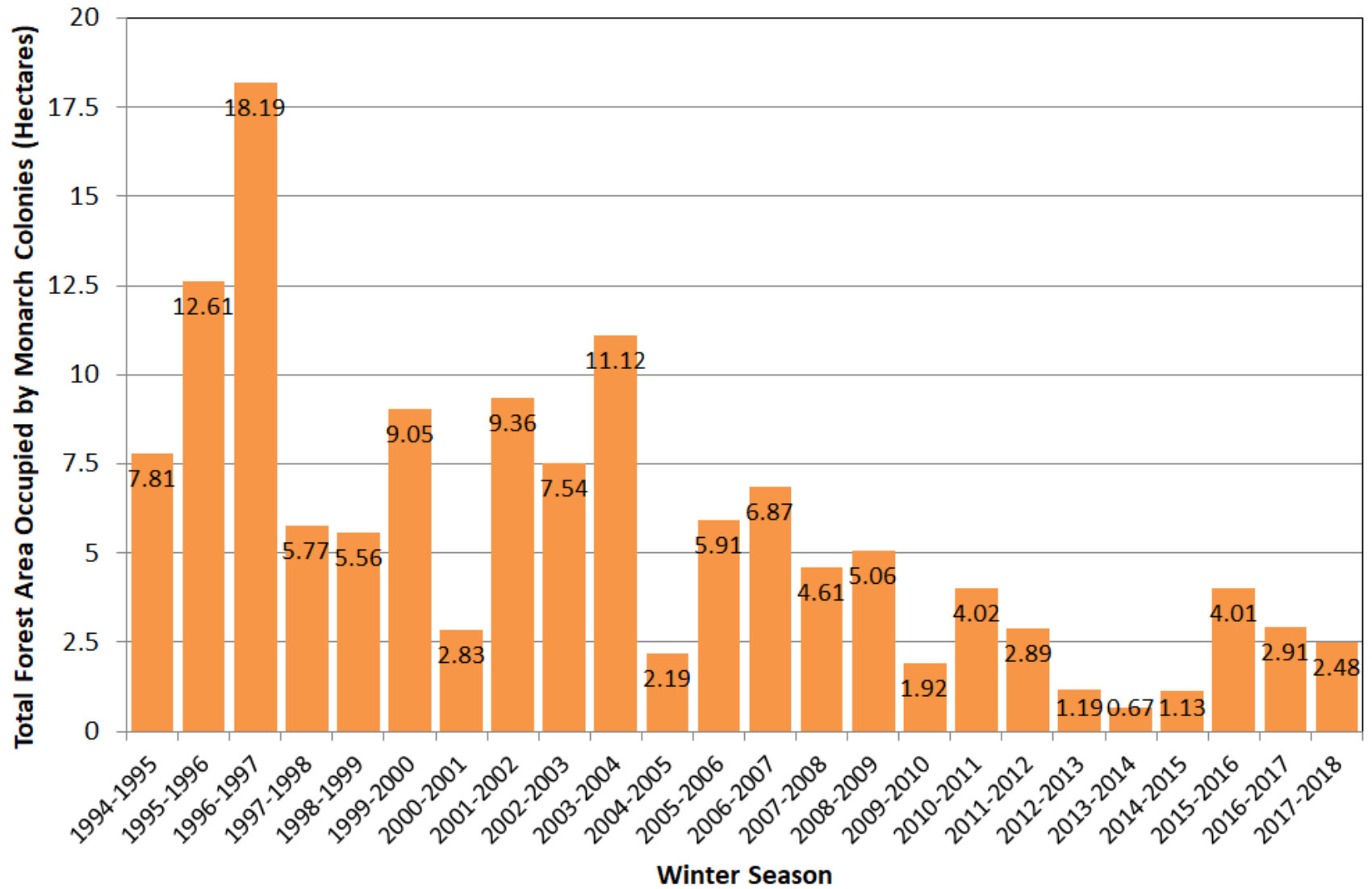
**United States**

- **More than half (749) bee species in decline**
- **1 in 4 increasing risk of extinction**

# Proportion of monarch butterflies overwintering in Mexico that came from six breeding regions over 38 years

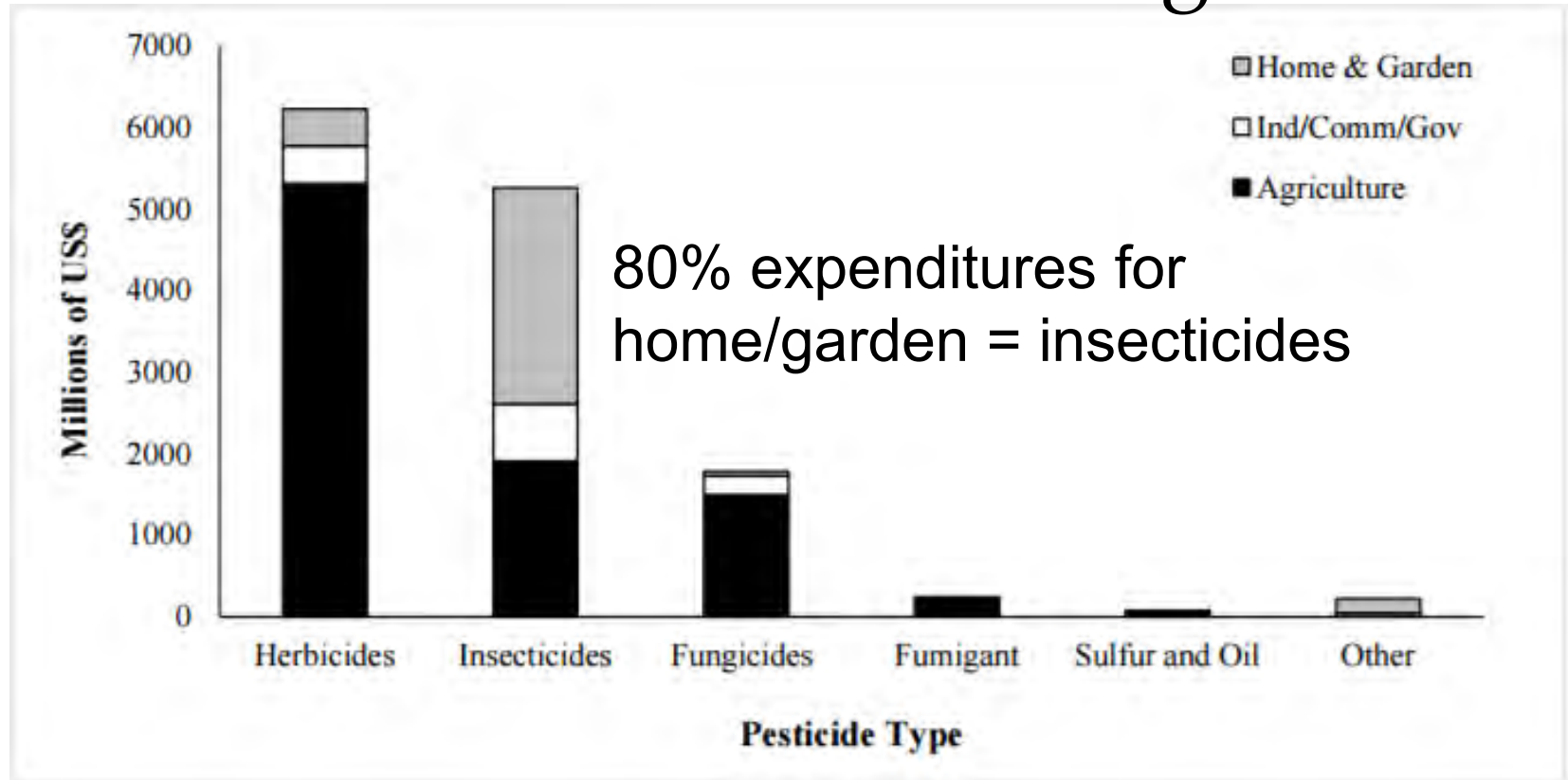


## Total Area Occupied by Monarch Colonies At Overwintering Sites in Mexico 1994/1995 - 2017-2018



Data from 1994-2003 were collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Protected Natural Areas (CONANP) in Mexico. Data from 2004-2018 were collected by the WWF-Telcel Alliance, in coordination with the Directorate of the MBBR. 2000-01 population number as reported by Garcia-Serrano et. al (The Monarch Butterfly : Biology and Conservation, 2004)

# Pesticides Heavily Used in Residential Settings



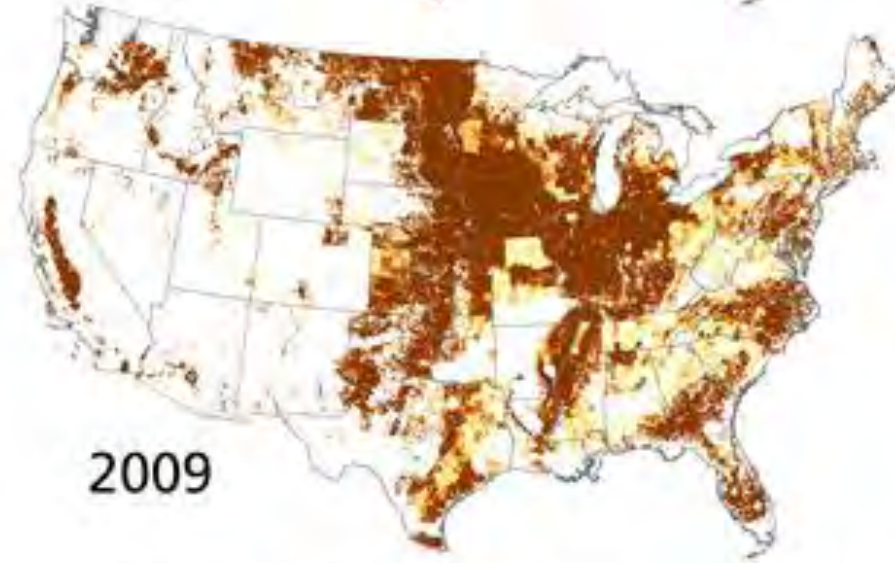
Source: EPA Report: Pesticide Industry Sales and Usage 2008-2012

User Expenditures on Pesticides in the United States by Pesticide Type and Market Sector, 2012 Estimates

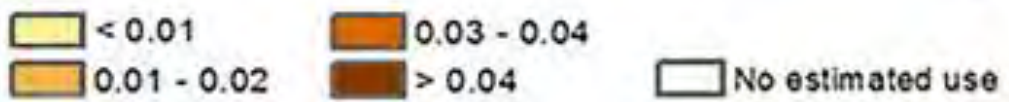
# Even Organic-Approved Pesticides May be Toxic to Bees

PESTICIDE	NON-TOXIC	LOW TOXICITY	HIGHLY TOXIC
<b>Insecticides/Repellants/Pest Barriers</b>			
<i>Bacillus thuringiensis</i> (Bt)	Green		
<i>Beauveria bassiana</i>			Red
Boric Acid		Orange	
<i>Cydia pomonella granulosis</i>	Green		
Diatomaceous Earth			Red
Garlic	Green		
Insecticidal Soap <sup>a</sup>			Red
Kaolin Clay	Green		
Limonene <sup>a</sup>		Orange	
Neem <sup>a</sup>		Orange	
Horticultural Oil <sup>a,b</sup>			Red
Pyrethrins <sup>c</sup>			Red
Rotenone <sup>c</sup>			Red
Ryania/Ryanodine		Orange	
Sabadilla <sup>c</sup>			Red
Spinosad			Red
<b>Herbicides/Plant Growth Regulators/Adjuvants</b>			
Adjuvants		Orange	
Corn Gluten	Green		
Gibberellic Acid	Green		
Horticultural Vinegar		Orange	
<b>Fungicides/Bactericides</b>			
Copper		Orange	
Copper Sulfate			Red
Lime Sulfur <sup>a</sup> , Sulfur <sup>c,d</sup>		Orange	

# USGS Spatial Distribution of Imidacloprid Usage in lbs. a.i./sq. mile (Preliminary E-Pest-High)



Estimated Agricultural Usage  
(lbs. a.i./square mile)



< 1% insects are pests



Photos: Mary Doo

# Gardeners and Land Owners Play a Vital Role – Outreach Potential

## Pollinator Habitat

This area has been planted with pollinator-friendly flowers and is protected from pesticides to provide valuable habitat for bees and other pollinators.

To learn how you can help to bring back the pollinators, please visit [www.xerces.org](http://www.xerces.org).

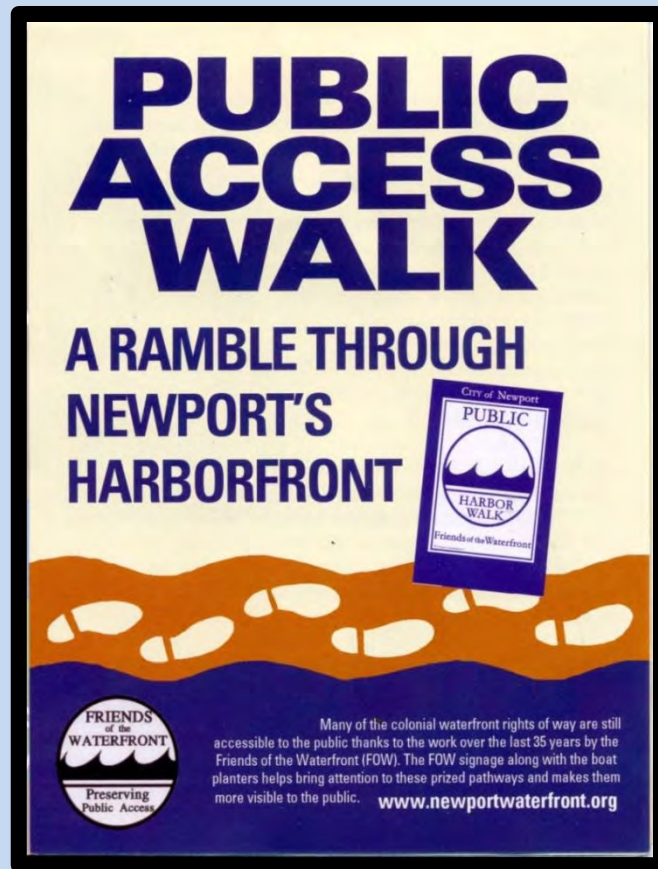


**BRING BACK  
THE  
POLLINATORS**  
A National Science Foundation Campaign

The Xerces Society for Invertebrate Conservation







## Newport Harbor Walk

### URI Master Gardener Project

#### Stewardship of the Historic Newport Waterfront

Creating green space with the use of native plants in an urban setting

# Newport Harbor Walk Dinghy Planter Project

**Friends of the Waterfront in collaboration with URI Master Gardeners launched a plan to educate residents and visitors about public rights-of-way lining Newport's iconic harbor while celebrating the beauty and diversity of native Rhode Island plants.**



CALLING ALL GARDENERS



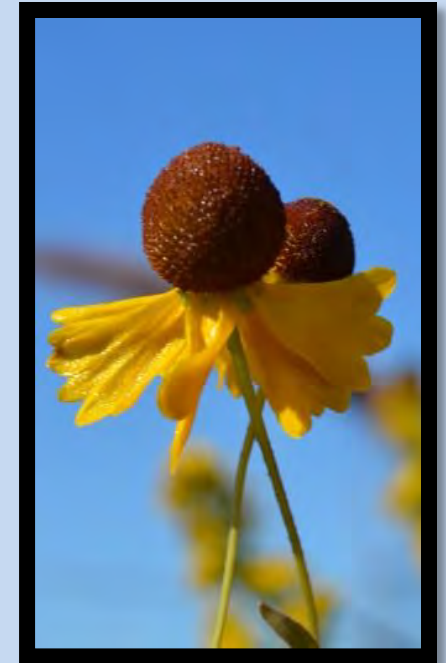
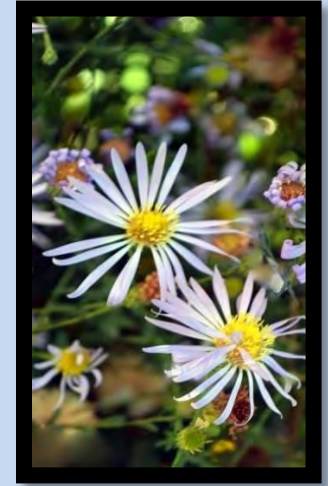
A Science Based Gardening Project Designed for the City by the Sea  
Using Repurposed Dinghies as Large Scale Containers



## Perrotti Park

It is here that the cruise ship, ferry, and sight-seeing vessel passengers disembark and embark, and it is here that these same passengers get their first real view of the city.

It has been estimated that more than **250,000** people visit this park over the course of a year!



**Newport Maritime Center  
RI Native Plant Habitat for Monarch Butterflies**



## Spring Wharf

Casey's Marina ~ International Yacht Restoration School  
**Where the native flowers used to and again grow...**

# Got Milkweed?



## Newport Harbor Walk Dinghy Planter Featured as Success Story On the Monarch Joint Venture Map!

The Collaborative Work of URI Master Gardener's and Friends of the Waterfront  
**Harbor Walk Dinghy Planters Receives National Recognition by MJV**

*The Monarch Joint Venture is a national partnership of federal and state agencies, non-governmental organizations, and academic programs working together to conserve the monarch butterfly migration*



# What Is A Rain Garden?

- A rain garden is a landscaped, shallow depression in your lawn designed to collect stormwater from your roof, driveway, or other impervious surface before it reaches the nearest storm drain or waterbody.
- By trapping stormwater and allowing it to seep naturally into the ground, rain gardens minimize runoff, remove pollutants, reduce flooding, and help recharge groundwater supplies.
- In addition to their value in preventing stormwater pollution, rain gardens are typically planted with native shrubs or perennials, adding beauty to your lawn and providing habitat for birds, butterflies, and beneficial insects.





## **King Park Winter 2017**

- **One small residential rain garden can potentially infiltrate 25,000 gallons of water a year.**
- **40 rain gardens in a community could represent one million gallons of water a year from entering the watershed.**



**Test the Soil**



**Do a Perc Test  
to check for Drainage**



## How to Calculate the Size of Your Garden?

- Width of building X's Length  $14' \times 25' = 350$  sq ft
- Total square feet divided in half = 175 feet
- Divided by 6 inches = 29.17sq ft



**Mark the Garden Shape and Edge**



**Use of Black Plastic to Smother Grass**



**Rogers Horticulture Students Work Alongside URI Master Gardeners**





# The Right Plant for the Right Place



**Think Prairie for Plant Selections**  
**Plants Need Deep Root Systems**  
**Every Plant Used In this Rain Garden**  
**Is a Beneficial Pollinator**





*Pycnanthemum muticum*  
Mountain Mint



This native North American plant is a dependable herbaceous perennial—returning every year. Mountain Mint has been observed hosting every imaginable insect that seeks nectar and pollen—honey bees, bumblebees, soldier bugs, and butterflies. The foliage is highly aromatic, especially when crushed. The flowers are white to barely pink in small clusters at the top of the stem. This is a good plant for an herb garden or informal border. Its leaves are broader and more lustrous, the bracts are silvery and very showy, the flowers are pinkish and its habit is more compact.



*Salvia guaranitica* 'Black and Blue'  
Anise-scented Sage, Hummingbird Sage



*Salvia guaranitica* 'Black and Blue' also called Anise-flowered Sage is a tropical perennial plant from Brazil. A Herbaceous perennial from the Lamiaceae family. This giant salvia grows to 5 feet with a dependably upright habit. The flowers are an extraordinary indigo-blue and bloom from early to late summer. They are extremely attractive to hummingbirds. You may wonder how it came to be called Black and Blue. The flowers have one of the rarest colors in the gardening world -- an old-fashioned cobalt blue that might remind you of an old Milk of Magnesia bottle. The black comes from the truly black calyx surrounding the petals. Drought tolerant



*Gaura lindheimeri*  
Whirling Butterflies



A North American wild flower, a herbaceous perennial highly valued for its long flower display in the garden. Plants bloom for many weeks, with loose sprays of white flowers tinged with pale pink. In the breeze these move constantly, looking like a cloud of small butterflies. White to pink flowers form atop tall spikes on these airy 2½- to 4-foot-tall plants. Deadhead during the flowering season to promote bushier growth and more flower stems. Best used for borders, perennial gardens or naturalized areas



*Eupatorium dubium*  
Joe Pye Weed



This plant thrives in moist, heavy soil commonly found near water sources and in roadside ditches. Pink flower heads attract butterflies and bees as pollinators. Joe-Pye is a good fit for perennial and rain gardens as well as moist meadows and other damp, naturalized areas. (in dry conditions you can expect 3-4 feet in height, depending on soil quality) 16-32" tall, 34" wide. Legend has it that Joe Pye was a New England native American herbalist. The plant was used to treat typhus and fever.





*Asclepias incarnata*  
Swamp Milkweed



Commonly called Red Milkweed, Marsh Milkweed, or Swamp Milkweed. Plant has a vanilla fragrance that comes from the large rosy pink flowers. The flowers also attracts Monarch or Swallowtail butterflies. This deer-resistant plant grows in moist to average soils, and blooms in July and August. Later, large pods form which break open to reveal seeds that will float away in the wind. If growing from seed, try fall planting or if planting in spring be sure to first moist-cold stratify the seeds for a month. Large numbers of Swamp Milkweed can often be seen growing in wetland settings. Plants can grow to 3-5' tall width 2-3 feet in Full Sun or Part Shade



*Solidago sempervirens*  
Seaside Golden Rod



A native perennial plant with large, golden yellow flower clusters at the top of a tall stem that blooms in late summer and autumn. Flower clusters are upright or slightly drooping. Long, waxy, evergreen leaves are arranged alternately along the stem, getting bigger toward the bottom of the stem. Plant grows 3 -6 feet tall. After blooming, flower clusters mature into seed heads filled with fuzzy, nut-like fruit capsules that each contain one seed. Wind spreads the seeds. **For RI Monarchs' long migration south they need high quality nectar and their food of choice has traditionally been the Seaside Goldenrod.** The available nectar for Monarchs from their favorite plants has drastically been reduced.



*Symphotrichum novae-angliae*  
New York Aster



A late blooming native that is large and showy. This aster provides a critical fall nectar source for pollinators, especially Monarchs as they stock up for their fall migration. 'Novae-angliae' has beautiful blueish purple flowers. Plant Height 3-6 feet Plant Width 2-3 feet. Grows in moist to average soils in full sun.



*Asclepias tuberosa*  
Butterfly Weed



The distinctive bright orange, color and the absence of the typical milky sap makes ID easy. Butterfly Weed needs a drier, well-drained location to successfully seed into and grow well. In older mature plants the long tap root can extend down a foot or more. They can be transplanted if dug carefully during dormancy but if enough root material is left behind they will regrow. **The leaves are somewhat narrow, up to 1" and tapered, with no stem. This is a great Milkweed for a sunny location in a dry area. Mature plants in ideal locations can make as many as 20 stems at an average height of 2'. The vivid color, low mounded profile, and ability to attract and sustain butterflies make this plant a well-known favorite for all types of gardens**



*Monarda Jacob Cline*  
Bee Balm



**Bees, butterflies and hummingbirds are attracted to the many colors of bee balm's tubular flowers.** Deadheading these early summer bloomers will encourage repeat blooms. Jacob Cline's deep red flowers, often reported as the best mildew resistant cultivar available. **Bee balms don't require frequent or heavy fertilizer applications. Sprinkling a small amount of an all-purpose garden fertilizer, around each plant in early spring is usually sufficient.** Site should receive at least six hours of direct sun per day. **Plants grown in partial shade won't flower as heavily and are more susceptible to powdery mildew.** Bee balms also prefer moist, well-drained soils.



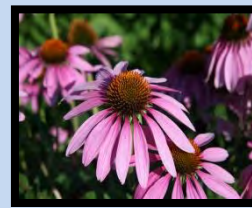
*Rudbeckia Toto Lemon*  
Black-Eyed Susan



A stiff, upright annual or short-lived perennial native to the eastern United States, but has become endemic throughout North America. The Black-Eyed Susan is probably the most common of all American wildflowers. The characteristic brown, domed center is surrounded by bright yellow ray florets. Thrives in most soils in full sun. A true sunshine worshiper that forgives neglect. Black-eyed Susans attract a particularly wide diversity of pollinating insects including flies, beetles, moths, small butterflies, bees, wasps, and sawflies. The Silvery Checkerspot butterfly uses *Rudbeckia* species as a host plant. Seed is consumed by song birds, especially goldfinches.



*Echinacea purpurea*  
Purple Cone Flower



A drought tolerant perennial, native to the midwestern and southeastern US. flowers are arranged individually on sturdy, elongated stems with lavender or purple petals surrounding an iridescent red-orange, coned center. Prefers full sun to partial shade in fertile, well-drained soils. Coneflowers are not heavy feeders. Plant has an upright habit and coarse texture. They will reach up to 4 feet tall and 20 to 28 inches wide depending on species and growing conditions. Proper spacing between plants will increase air circulation between plants to keep leaves dry and help prevent the spread of diseases.



*Vermillionaire*  
Cigar Plant



Plant blooms on and on throughout the summer. It is popular with insects and hummingbirds love them and helps with pollination. There are over 200 species of Cupheas, some are upright and others are low growing. The cigar plant is a nice addition to any landscape. Plants grow no more than about 2-feet-tall and 3-feet-wide and will attract attention in a shrub or perennial border. Many stems arise near the base of the plant but they branch infrequently. Flowers are continually produced on new growth during the warm summer



*Helianthus annuus*  
Sunbright Supreme Sun Flower



Of all crops harvested for seed around the world, only one was domesticated in America — sunflower. Caring for plant is easy. Full sun is necessary for best growth and bloom, and plants should receive an inch of water per week, either from rain or irrigation. They have few diseases or insect pests and their nectar is medicine to all bees.

# Muscle Men Needed







**During a heavy rain storm,  
each downspout on a house  
can deliver 12 gallons of rainwater  
a minute to the sewer system.**

**A consumer rain barrel only  
holds 55 gallons of water.**





## Be a Bay Friendly Property Owner Install a Rain Garden



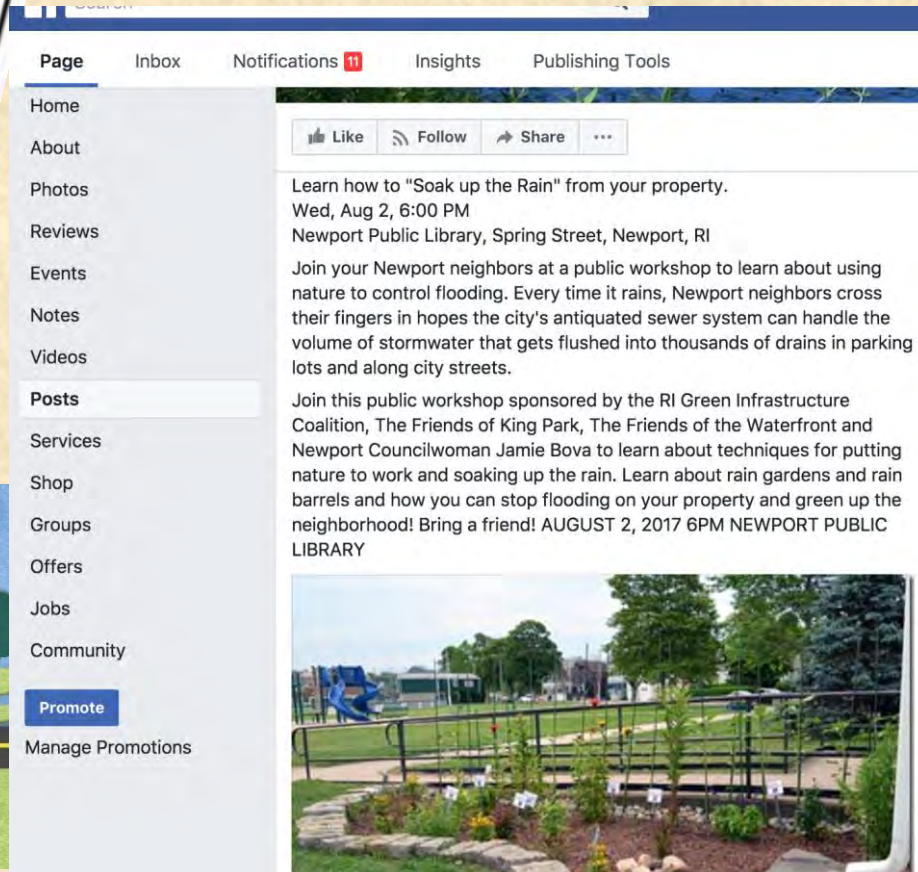
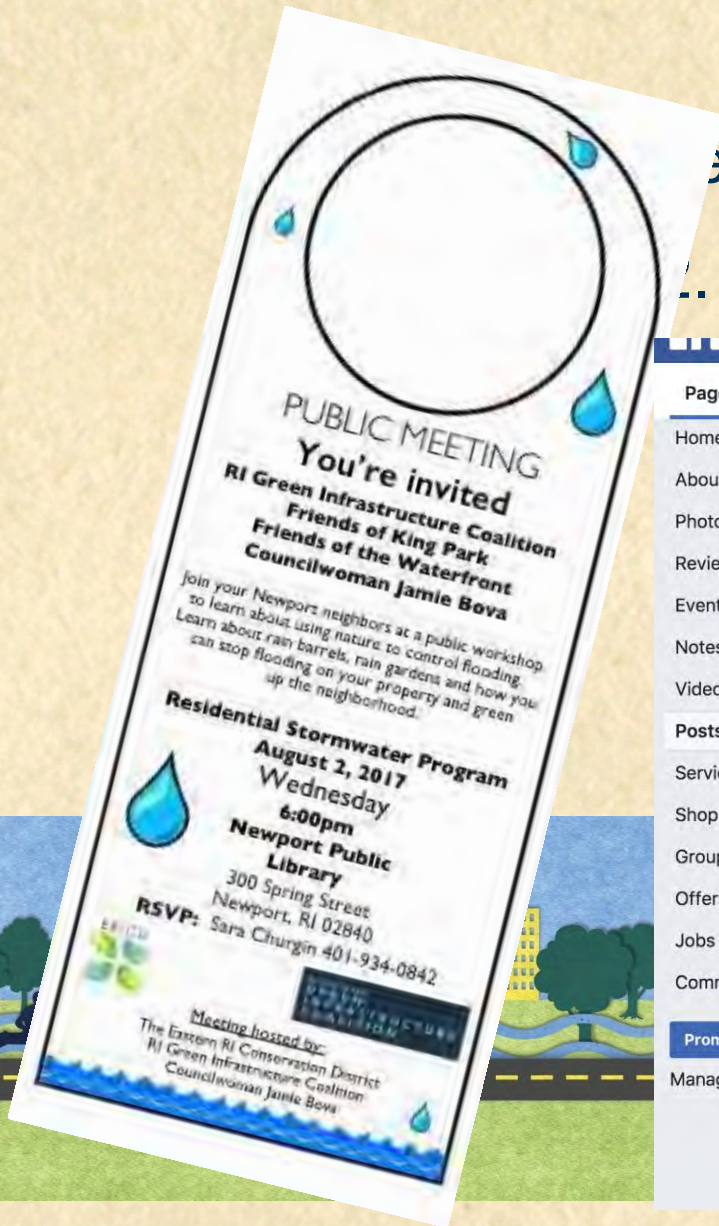




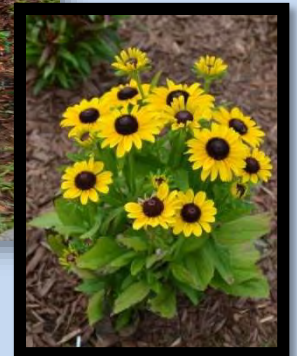
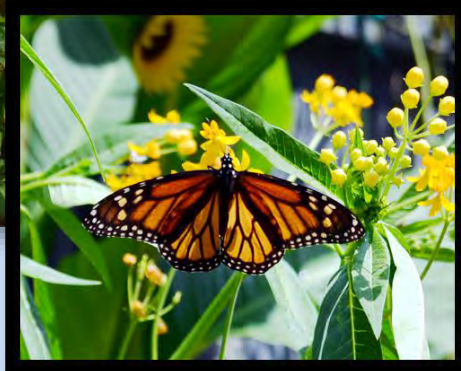
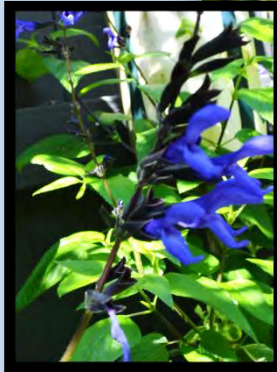
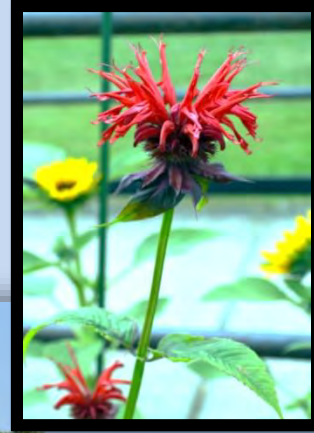
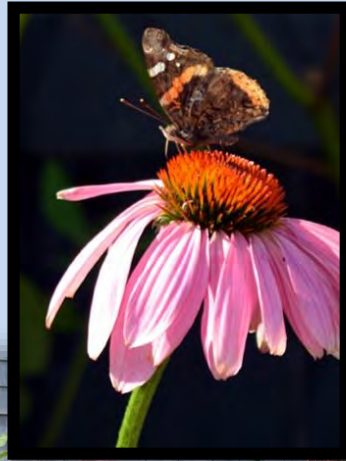
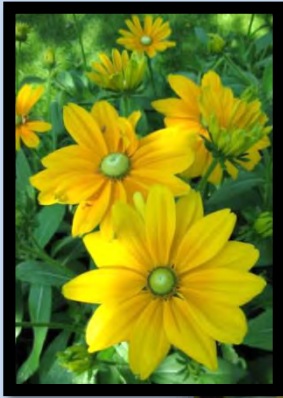
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## Meeting

## Project Information - Facebook



# 2017 King Park Rain Garden ~ Newport, Rhode Island





# King Park Rain Garden



- **Collects and filters downspout's runoff**
- **Protects waterways from pollutants**
- **Serves as a habitat for butterflies and other pollinators**

*A rain garden allows water to soak into the ground - the way nature intended!*

**Sponsored by Friends of the Waterfront  
University of Rhode Island Master Gardener's Project**



*Made possible by a 2017 green infrastructure legislative grant*



[www.newportwaterfront.org](http://www.newportwaterfront.org)

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# The Waterfront has always unified Newport-



## Friends of King Park



THE PRESERVATION SOCIETY  
OF NEWPORT COUNTY

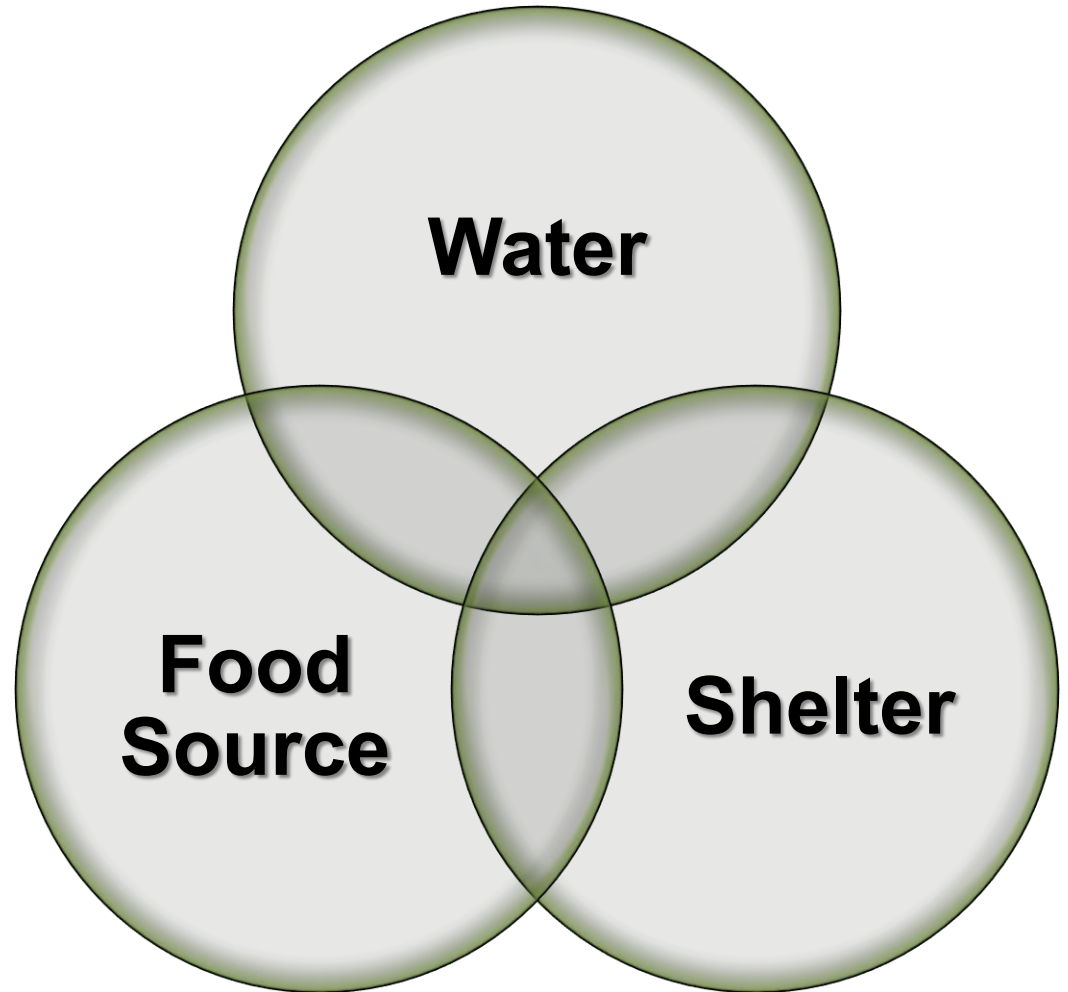


# Still working to keep it that way!



**Engage Your Community Through Pollinator Conservation**

# Pollinator Habitat | *Supports Biodiversity*



# THREE WAYS TO HELP POLLINATORS

1. Provide Season-Long Bloom
2. Select Native Plants
3. Avoid Pesticides



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# **1. PROVIDE SEASON LONG BLOOM**



**Provide season-long sources  
of pollen and nectar.**



**Aim for year-round flowers, including early and late season bloom to provide a food source.**



Photos: Denise Ellsworth

**Include at least 3 species in bloom during the growing season**

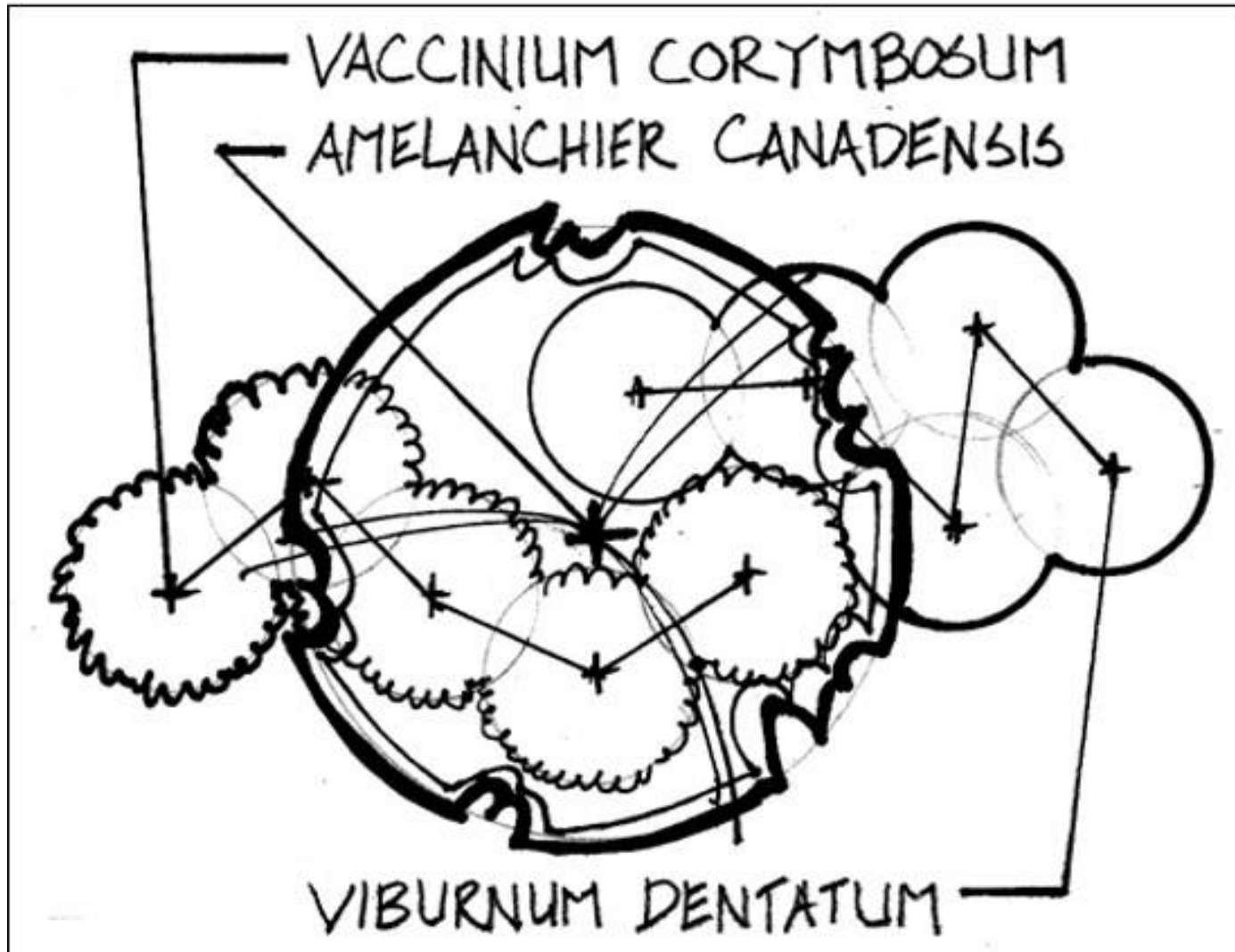


**Use masses of color to attract pollinators.**



**3 foot clumps**

In small areas, plant single species together to increase visibility to pollinators and increase foraging efficiency.



**Create habitat close to crops  
and gardens.**





## **2. INCORPORATE NATIVE PLANTS**

# Native Plants are Host Plants



**Butterfly:**  
Spicebush Swallowtail

**Host Plant Family:**  
*Lauraceae*, (Magnolia Order)

**Host Plants:**  
Spicebush (*Lindera bezoin*)  
Sassafras (*Sassafras  
albidum*)  
Sweet Bay (*Magnolia  
virginiana*)



**Pussy Willow**  
*(Salix discolor)*

**Tall Shrub / Small Tree**

**Height:** 20 feet

**Blooms:** Early

Good pollinator plant

Host plant for viceroy mourning cloak



# Native shrubs: Rhode Island

Blueberry (*Vaccinium*)  
Chokeberry (*Aronia*)  
Dogwood (*Swida*)  
Elderberry (*Sambucus*)  
Holly (*Ilex*)  
New Jersey Tea (*Ceanothus*)  
Spirea (*Spirea*)  
Summersweet (*Clethra*)  
Viburnum (*Viburnum*)  
Willow (*Salix*)




# Native Perennials: Grasses



Red Columbine  
(*Aquilegia canadensis*)





**Mountain mint**  
*(Pycnanthemum muticum)*

**Perennial wildflower**

**Height:** 2-3 feet

**Blooms:** Mid summer, Silvery foliage

**Pollinator plant – butterfly gardens**







URI MASTER GARDENERS

*Cultivating the future*

# 2018 Master Gardener Plant of the Year

Cardinal Flower  
(*Lobelia cardinalis*)

Photo: Sue Dunn



locally sourced | locally grown



URI Master Gardener Program

# 2018 Native Plant System

Attracts Pollinators & Monarchs - Drought Tolerant - Full Sun

## HABITAT VALUE

This summer and fall blooming native plant system supports monarch butterflies all season long, tolerates drought conditions, and full sun exposure.

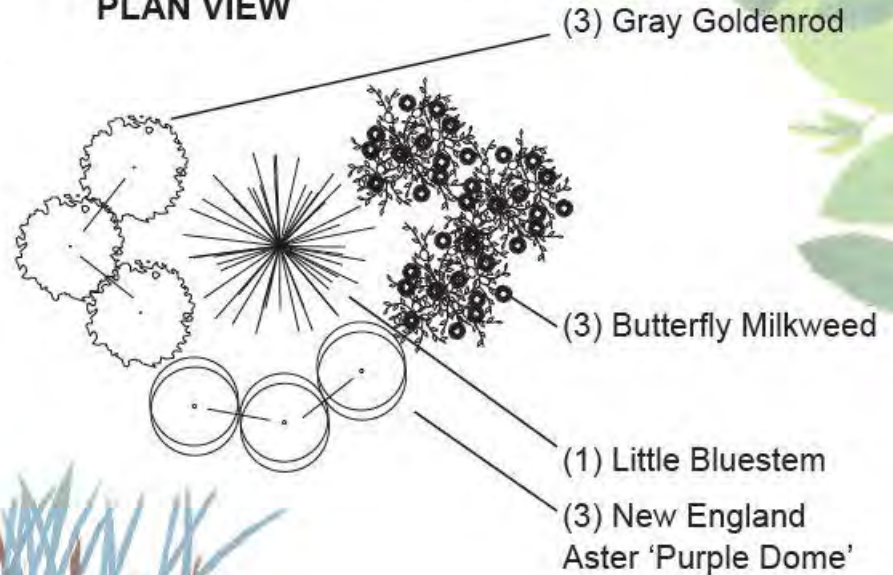
**Spring:** The butterfly milkweed feeds very hungry monarch caterpillars, while the clumping grasses serve as nesting sites for bumblebees and ground nesting pollinators.

**Fall:** With a splash of purple and yellow, the aster and goldenrod provide nectar to fuel both the long journey of monarchs back to Mexico and the overwintering of native bees.

## SECTION VIEW



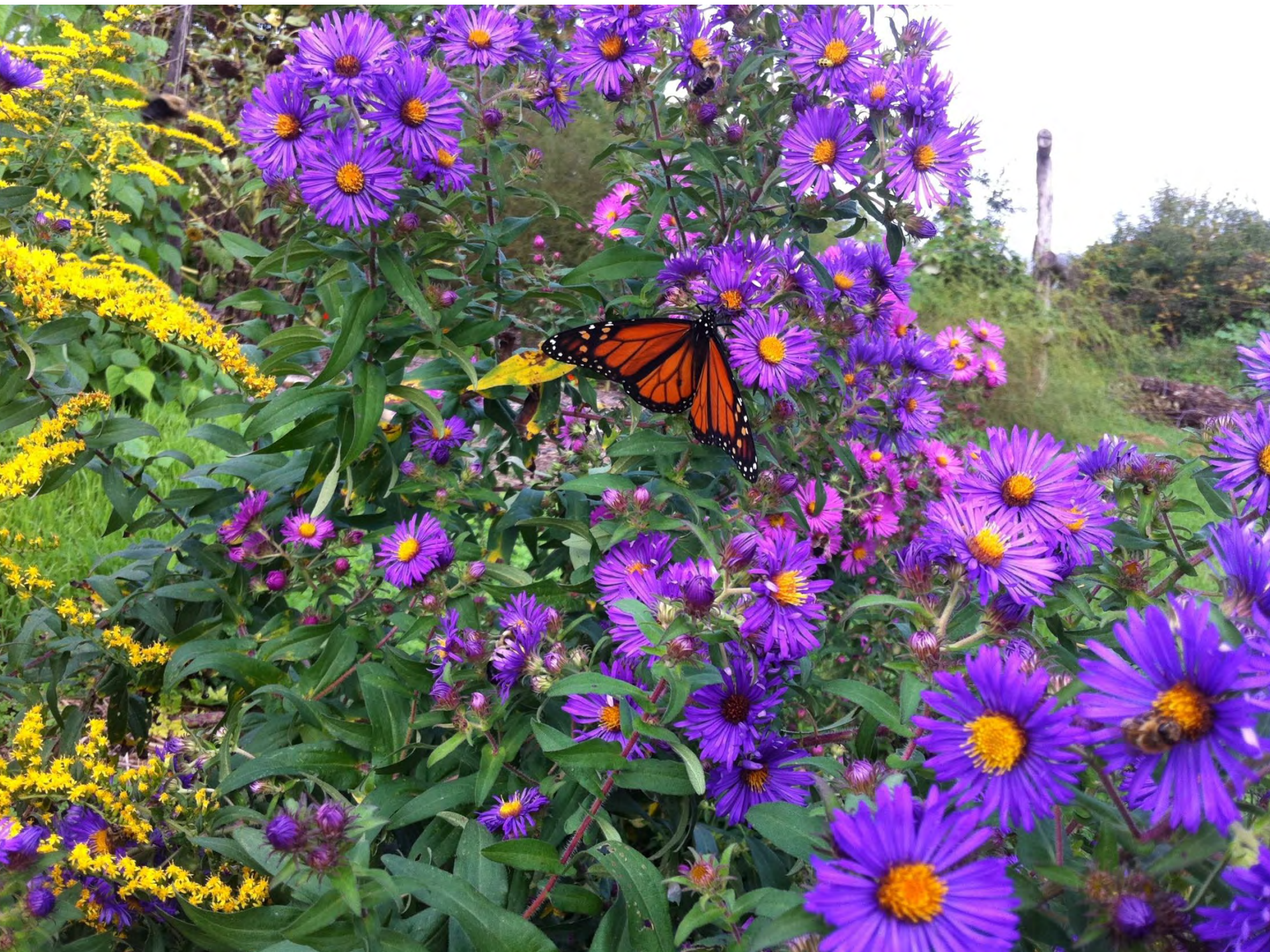
## PLAN VIEW











THE  
UNIVERSITY  
OF RHODE ISLAND  
COOPERATIVE  
EXTENSION

THE URI MASTER GARDENER PROGRAM PRESENTS  
**SPRING PLANT SALE**

*Vegetables, Herbs, Perennials and more!*



**FREE SOIL  
TESTING!**

*Bring your soil  
samples and get them  
tested for FREE!*

**GARDENING  
QUESTIONS?**

*Learn from the  
URI Master Gardeners*

**SATURDAY, MAY 5, 2018**

**9 A.M. – 1 P.M. • AT THE BOTANICAL GARDENS, URI KINGSTON CAMPUS**

This annual spring plant sale, formerly part of the URI Spring Festival, features vegetables, herbs, annual, native perennials and ornamental plants grown by URI Master Gardener volunteers. Our largest fundraiser of the year, this plant sale supports our demonstration gardens and school gardens throughout Rhode Island.

**For more information please visit [uri.edu/mastergardener](http://uri.edu/mastergardener).**

# Native Plants for POLLINATORS

## GRASSES + PERENNIALS

*Anemone quinquefolia*  
*Aquilegia* spp.  
*Asclepias tuberosa*  
*Baptista tinctoria*  
*Caltha palustris*  
*Chelone glabra*  
*Coreopsis rosea*  
*Eupatorium perfoliatum*  
*Eutrochium (Eupatorium) spp.*  
*Geranium maculatum*  
*Helentium flexuosum*  
*Hibiscus moscheutos*  
*Ionactis linartifolia*  
*Liatris novae-angliae*  
*Lobelia cardinalis*  
*Lupinus perennis*  
*Monarda fistulosa*  
*Opuntia humifusa*  
*Packeria aurea*  
*Penstemon digitalis*  
*Ptyopsis falcata*  
*Pycnanthemum spp.*  
*Rudbeckia laciniata*  
*Schizachyrium scoparium*  
*Solidago spp.*  
*Symphotrichum (Aster) spp.*  
*Thalictrum spp.*  
*Vernonia noveboracensis*  
*Viola pedata*  
*Zizia aurea*

## Shrubs, Vines, + Trees

*Amelanchier spp.*  
*Aronia spp.*  
*Benthamida (Cornus) florida*  
*Betula spp.*  
*Ceanothus americanus*  
*Cephalanthus occidentalis*  
*Clethra alnifolia*  
*Hamamelis virginiana*  
*Ilex spp.*  
*Lindera benzoin*  
*Lonicera sempervirens*  
*Morella (Myrica) carolinensis*  
*Myrica gale*  
*Parthenocissus quinquefolia*  
*Prunus spp.*  
*Rhododendron spp.*  
*Rhus hirta (typhina)*  
*Rosa spp.*  
*Salix discolor*  
*Spiraea spp.*  
*Swida (Cornus) spp.*  
*Vaccinium spp.*  
*Viburnum dentatum*  
*Vitis aestivalis*



Eutrochium (Eupatorium)



Swida (Cornus)



Liatris



Aquilegia



Lobelia



Symphotrichum (Aster)



Solidago



Lupinus



Pycnanthemum

RHODE ISLAND

**Wild  
Plant** SOCIETY

in collaboration with:



locally sourced | locally grown



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## RI NATIVE PLANT GUIDE

COLLEGE OF THE ENVIRONMENT AND LIFE SCIENCES



[www.web.uri.edu/rinativeplants/](http://www.web.uri.edu/rinativeplants/)

Search:

scientific or common name

Type (T):

All

Exposure:

All

Moisture:

All

Wildlife:

All

Uses:

All

Height:

All

Coastal (CT):

Rhody Native™ (RN):

Search

Clear Filter





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Search:

scientific or common name

Type (T):

All

Exposure:

All

Moisture:

All

Wildlife:

All

Uses:

All

Height:

All

Coastal (CT):

Rhody Native™ (RN):

Search

Clear Filter



Choose the *Right Plant* for the *Right Place*.

Search:

Type (T):

Exposure:

Moisture:

Wildlife:

Uses:

Height:

Coastal (CT):

Rhody Native™ (RN):



**Example:** Drought Tolerant Perennials for Full Sun conditions along the Coast that are most attractive to our local Pollinators

Database Search Results:

Latin Name	Common Name	I	ES	SU	ED	MD	BD	PL	DT	WT	CT
<u><i>Asclepias tuberosa</i> ssp. <i>tuberosa</i></u>	butterfly milkweed	P	X			X		X	X		X
<u><i>Baptisia tinctoria</i></u>	yellow wild indigo	P	X			X		X	X		X
<u><i>Chrysopsis mariana</i></u>	Maryland golden-aster	P	X					X	X	X	X
<u><i>Eupatorium hyssopifolium</i></u>	hyssop-leaved thoroughwort	P	X	X				X	X		X
<u><i>Euthamia caroliniana</i></u>	slender goldentop	P	X					X	X		X
<u><i>Liatris novae-angliae</i> var. <i>novae-angliae</i></u>	northern blazing star	P	X					X	X		X
<u><i>Oenothera biennis</i></u>	common evening-primrose	P	X		X	X	X	X	X		X
<u><i>Opuntia humifusa</i></u>	eastern prickly-pear	P	X		X			X	X		X
<u><i>Pseudognaphalium obtusifolium</i> var. <i>obtusifolium</i></u>	blunt-leaved rabbit tobacco	P	X					X	X		X
<u><i>Pycnanthemum muticum</i></u>	broad-leaved mountain-mint	P	X		X			X	X	X	X
<u><i>Solidago sempervirens</i> var. <i>sempervirens</i></u>	seaside goldenrod	P	X					X	X	X	X
<u><i>Symphotrichum ericoides</i></u>	heath American-aster	P	X					X	X		X



Here are a dozen perennials suitable for those specific conditions.

***Asclepias tuberosa ssp. tuberosa* (butterfly milkweed)**

Plant Type:	Perennial	Coastal Tolerant:	Yes
Full Sun:	Yes	Height:	1-2.5'
Shade Tolerant:	No	Width:	1-1.5'
Dry/Drought Tolerant:	Yes	Rhody Native™:	Yes
Wet Sites:	No	Status:	Concern

**Available at:**

**Nursery/Garden Center**

Blue Moon Farm Perennials	<a href="#">info</a>
Chase Farms Inc.	<a href="#">info</a>
Evergreen Tree & Landscape	<a href="#">info</a>
the Farmer's Daughter	<a href="#">info</a>
Pleasant Acres Nursery	<a href="#">info</a>

**Photo Gallery:**



... “mmm, I recognize this plant. If you plant some of these, you just might find me (and my beautiful mother) in your garden.”

## Blue Moon Farm Perennials

173 Saugatucket Road, Wakefield, RI 02879

Website: [www.bluemoonfarmperennials.com](http://www.bluemoonfarmperennials.com)

Phone: 401-284-2369

### Native species in stock (please call to confirm availability):

Latin Name	Common Name
<u><a href="#">Adiantum pedatum</a></u>	northern maidenhair fern
<u><a href="#">Andropogon gerardii</a></u>	big bluestem
<u><a href="#">Aquilegia canadensis</a></u>	red columbine
<u><a href="#">Asclepias incarnata</a> var. <i>pulchra</i></u>	swamp milkweed
<u><a href="#">Asclepias purpurascens</a></u>	purple milkweed
<u><a href="#">Asclepias syriaca</a></u>	common milkweed
<u><a href="#">Asclepias tuberosa</a> ssp. <i>tuberosa</i></u>	butterfly milkweed
<u><a href="#">Caltha palustris</a></u>	marsh-marigold
<u><a href="#">Carex pensylvanica</a></u>	Pennsylvania sedge
<u><a href="#">Carex platyphylla</a></u>	broad-leaved sedge
<u><a href="#">Carex stricta</a></u>	tussock sedge
<u><a href="#">Chelone glabra</a></u>	white turtlehead
<u><a href="#">Eupatorium hyssopifolium</a></u>	hyssop-leaved thoroughwort
<u><a href="#">Eupatorium sp. aff. <i>latifolium</i></a></u>	hyssop-leaved thoroughwort



*Blue Moon Farm Perennials* is just one of over 20 nurseries that has begun to list their native plant availability in the guide.

# Plant Selection and Design Review

**Goals: Diverse flower color, shapes  
3 ft + Swaths of like species  
3 plants in bloom at all times  
Incorporate native plants**

May – June – July – August – September - October



Butterfly milkweed  
(*Asclepias tuberosa*)



Wild Indigo  
(*Baptisia tinctoria*)



Cardinal  
flower (*Lobelia  
cardinalis*)



Boneset  
(*Eupatorium  
perfoliatum*)



Sweet Goldenrod  
(*Solidago odora*)



### **3. AVOID PESTICIDE USE (AND OTHER GARDENING TIPS)**

# Identify Problem Before Taking Action

## We are here to help!

Gardening and Environmental Hotline





# Right Plant, Right Place



**Limit pesticide use in the landscape.**



Photo: NRCS/Toby Alexander

# Even Organic-Approved Pesticides May be Toxic to Bees

PESTICIDE	NON-TOXIC	LOW TOXICITY	HIGHLY TOXIC
<b>Insecticides/Repellants/Pest Barriers</b>			
<i>Bacillus thuringiensis</i> (Bt)	Green		
<i>Beauveria bassiana</i>			Red
Boric Acid		Orange	
<i>Cydia pomonella granulosis</i>	Green		
Diatomaceous Earth			Red
Garlic	Green		
Insecticidal Soap <sup>a</sup>			Red
Kaolin Clay	Green		
Limonene <sup>a</sup>		Orange	
Neem <sup>a</sup>		Orange	
Horticultural Oil <sup>a,b</sup>			Red
Pyrethrins <sup>c</sup>			Red
Rotenone <sup>c</sup>			Red
Ryania/Ryanodine		Orange	
Sabadilla <sup>c</sup>			Red
Spinosad			Red
<b>Herbicides/Plant Growth Regulators/Adjuvants</b>			
Adjuvants		Orange	
Corn Gluten	Green		
Gibberellic Acid	Green		
Horticultural Vinegar		Orange	
<b>Fungicides/Bactericides</b>			
Copper		Orange	
Copper Sulfate			Red
Lime Sulfur <sup>a</sup> , Sulfur <sup>c,d</sup>		Orange	

# Bee smart about pesticide decisions.



Keep in mind:

Time of day

Formulation

Inert ingredients

Herbicides and fungicides

**Avoid neonicotinoids-  
imidacloprid**



# Use Low Input Grasses

## Fescue to the rescue:

- Tolerates drought
- Fine fescues are shade tolerant

## Consider clover

Legumes fix Nitrogen from the air and make it available to plants



# Use Alternatives to Pesticides (Row Covers)



**Tolerate some plant damage.**



Photo: Denise Ellsworth

**Develop a tolerance for weeds to  
reduce herbicide use.**



Photo: Denise Ellsworth



# Invite beneficial insects to help manage pests.



- Many of the garden changes that support pollinators also support predatory and parasitic insects.



**Soldier beetle**



**Syrphid fly drinking raspberry nectar**



**Parasitoid wasp**



**Ladybird beetle**

# Preserve Nesting Sites

70% native bees nest in patches of sandy soil in full sun  
Conserve this habitat or plant clumping grasses to allow for reproduction



# Develop new nest habitat for bumble bees.

## Bumble bees build nests in:

- Cavities such as old rodent holes
- Overgrown areas
- Under brush piles
- Under bunch grasses
- Artificial nests are generally ineffective

## Conserve un-mowed areas

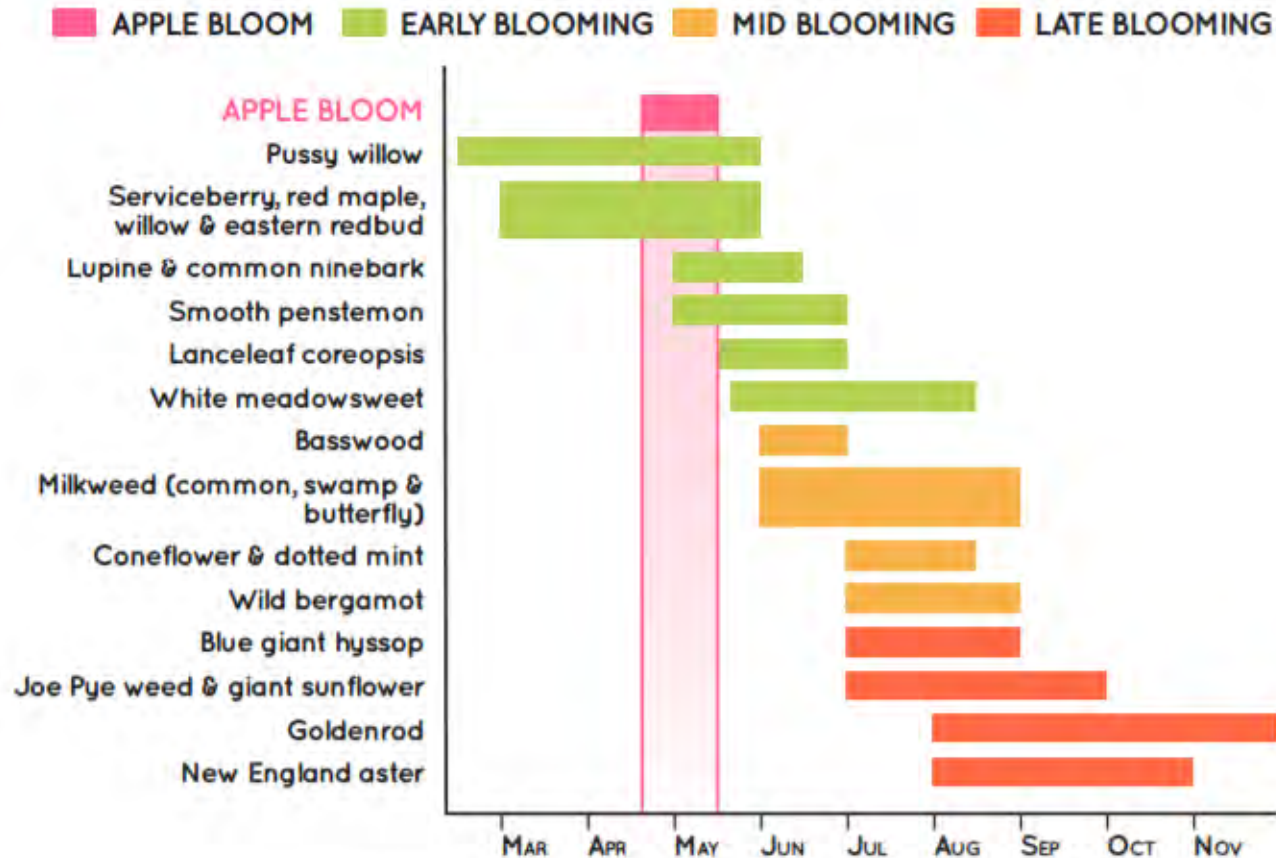


# Recognize habitat: wood-nesting bees



# Clean Up Garden after Apple Bloom in Spring

## FORAGE PLANTS FOR POLLINATORS BLOOM TIMES\*



\* Timing is generalized for the eastern U.S. and will vary according to your latitude and microclimate.

# Protect Overwintering Insects

At the end of summer, bumble bee queens burrow just below the soil to wait out winter. Give them the extra protection they need.

LEAVE THE  
LEAVES



# LEAVES ARE NOT LITTER

THEY 'RE FOOD AND SHELTER FOR  
BUTTERFLIES, BEETLES, BEES, MOTHS, AND MORE.  
TELL FRIENDS AND NEIGHBORS TO JUST

## #LEAVETHELEAVES



xerces.org

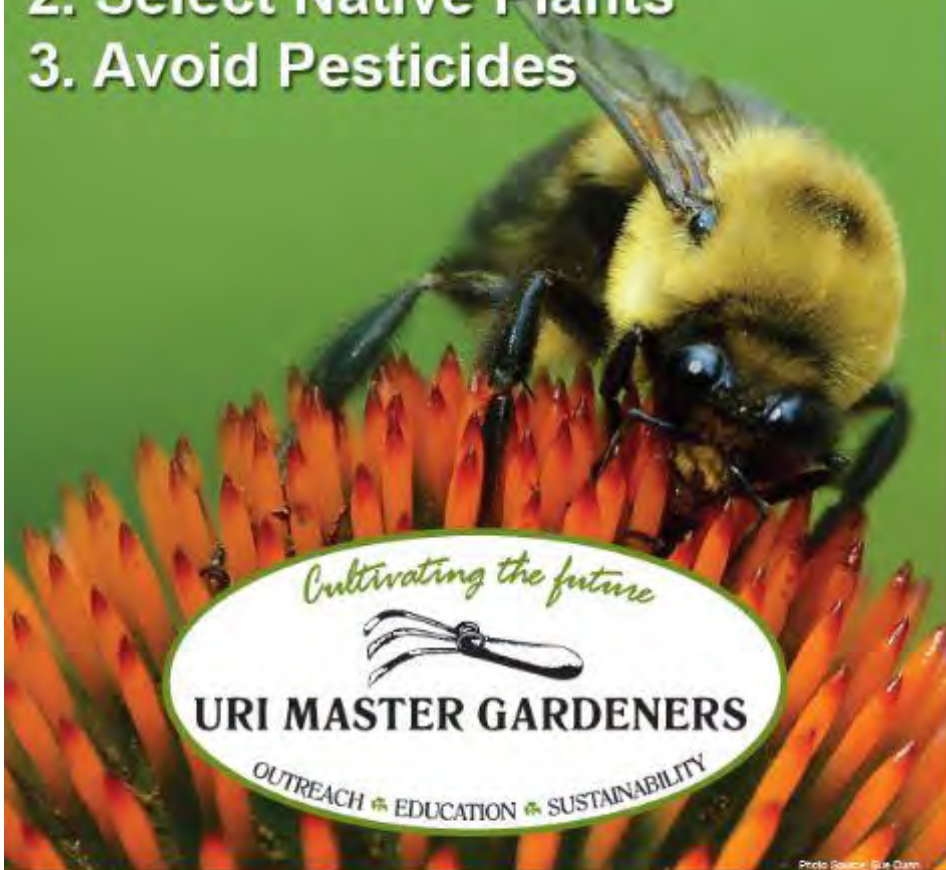
# URI Master Gardener Pollinator Public Education





# THREE WAYS TO HELP POLLINATORS

1. Provide Season-Long Bloom
2. Select Native Plants
3. Avoid Pesticides



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401.874.2900   
3 East Alumni Avenue, Kingston, RI 02881 

# After Learning from MGs in 2017...

21% avoid invasive species

32% began to improve habitat for wildlife, pollinators

31% began to choose native plants



# Reduce Pesticide Use

**29% chose right plant for right place**

**44% began to identify plant problem before taking action**

**42% began to use alternatives to pesticides**



# Partner with us on your next event!

## Demonstration Gardens (Pollinators)

### Southern RI

- East Farm Demonstration Garden, Pollinator Meadow
- Canochet Farm Habitat Restoration
- Charlestown Schoolhouse Garden
- Kettle Pond Fish and Wildlife Center

### Eastern RI

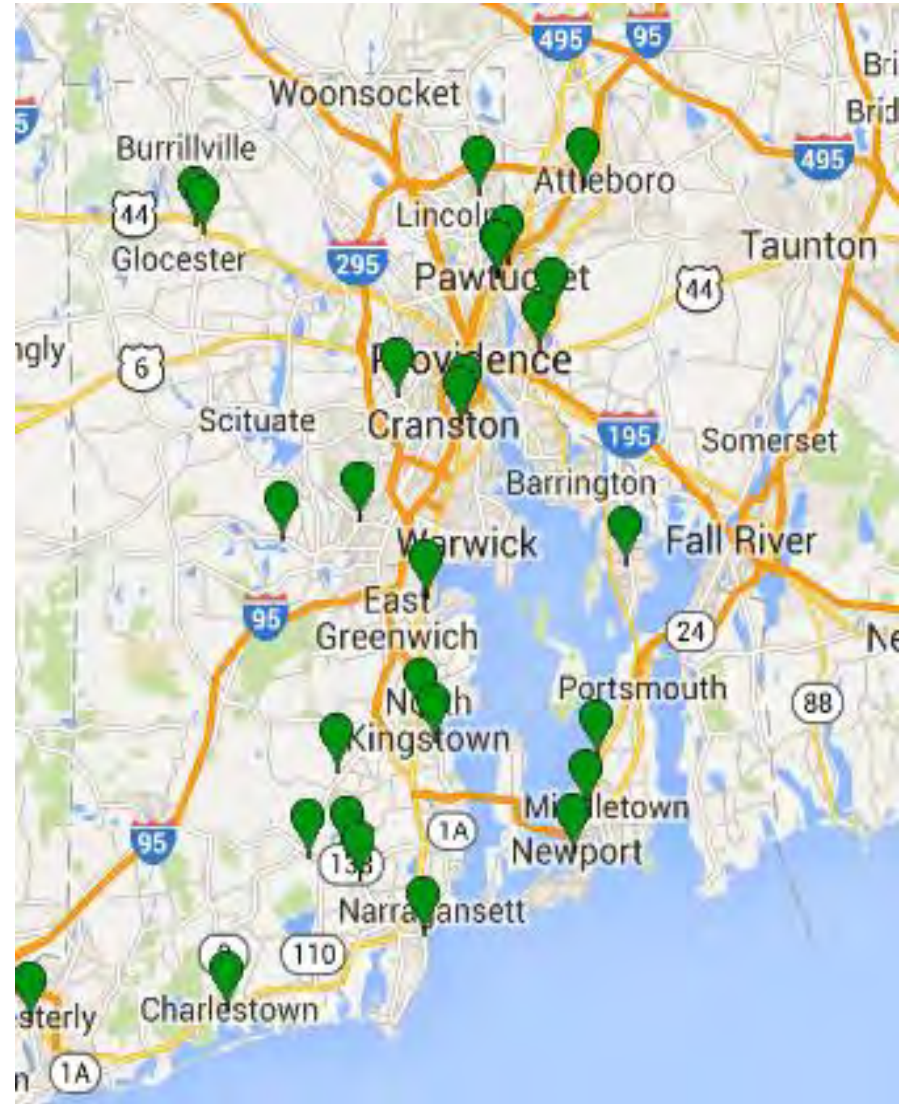
- Mount Hope Farm
- Newport Harbor Walk
- Norman Bird Sanctuary
- Prescott Farm
- Taylor Point Restoration

### Central RI

- Roger Williams Park Botanical Center
- Beechwood Senior Center

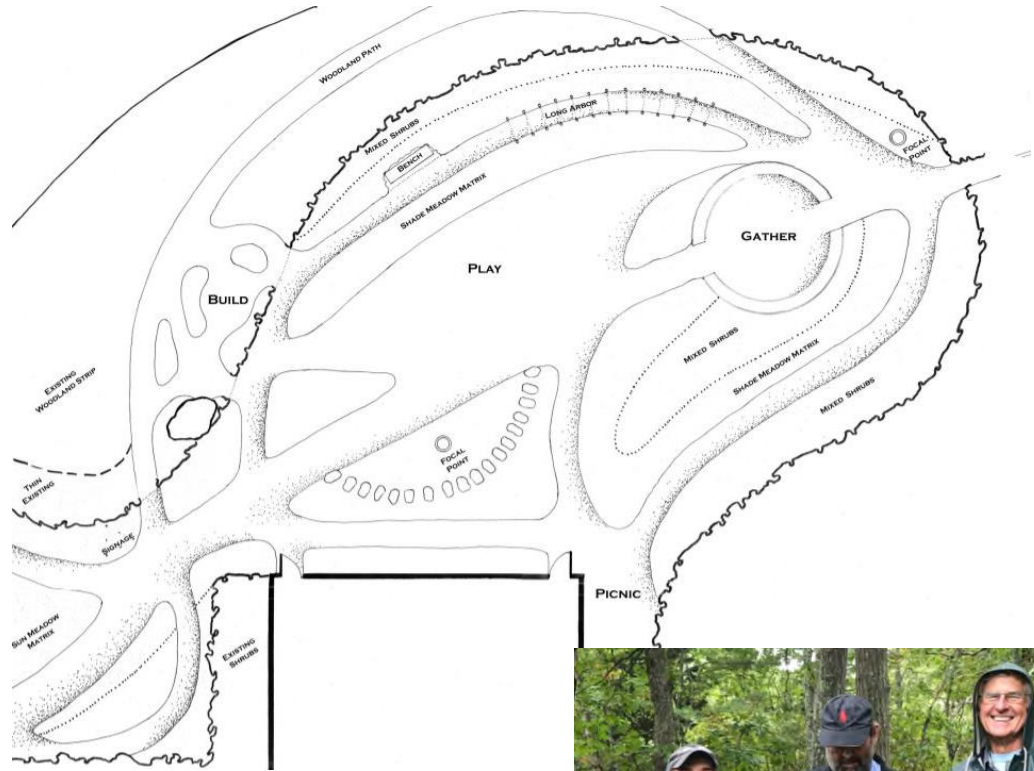
### Northern RI

- Slater Mill
- Cumberland Monastery





**Wilcox Park, Westerly  
Pollinate New England Site  
New England Wildflower Society**



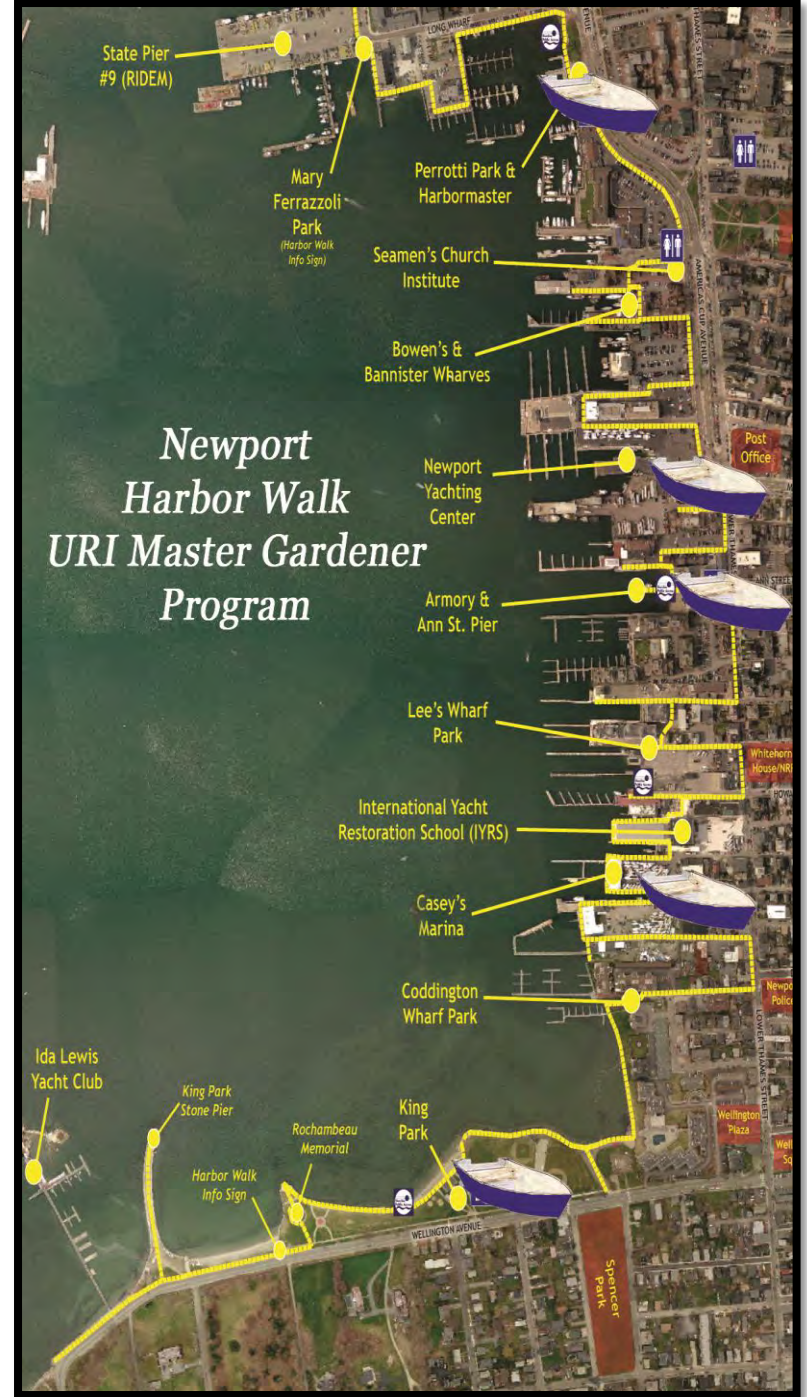
# Kettle Pond USFWS Visitor Center Native Demonstration Garden, Charlestown RI





**Beechwood Senior  
Center, North Kingstown**

# Newport Harbor Walk Demonstration Garden







**Saturday, June 23, 2018**

Visit 16+ Demo Gardens

Free, Open to Public



# Funding for Pollinator Projects See Handout



Environmental Quality  
Incentives Program



**United States Department of Agriculture**  
Natural Resources Conservation Service

## URI Plant Protection Clinic



## RI Native Plant Guide



[uri.edu/rinativeplants](http://uri.edu/rinativeplants)

# Cooperative Extension

*Gardening Resources*

[uri.edu/coopext](http://uri.edu/coopext)

## Gardening and Environmental Hotline



(401) 874-4836 –or– [gardener@uri.edu](mailto:gardener@uri.edu)

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