


Bee Friendly Flowers

Charlotte Glen
Horticulture Agent
NC Cooperative Extension,
Pender County Center



Review Presentation

<http://pender.ces.ncsu.edu/pollinators/>

NC STATE UNIVERSITY
**NC COOPERATIVE EXTENSION**
State University
A&T State University
Empowering People • Providing Solutions

Search below or *ask an expert*

[Home](#) | [About](#) | [Contact Us](#) | [Meet Our Staff](#) | [Events](#) | [NC A&T](#) | [Our County Centers](#)

**PENDER**
County Center

4-H Youth Development

Agriculture & Food

- Animal Agriculture
- Commercial Horticulture,
Nursery & Turf
- Farm Health & Safety
- Field Crops
- Food Safety & Processing
- Local Foods
- Pest Management
- Specialty Crops

Community

Forest Resources

Health & Nutrition

Home & Family

Lawn & Garden

Soil, Water & Air

Pollinator Resources

Print Content Only 



A honey bee gathers nectar and pollen from a late blooming native aster.

Why Do We Want Bees?

- **Three fourths of the flowering plants** on earth rely on animal mediated pollination to reproduce
 - Food webs and ecosystems depend on native plants
- **1/3 of the world's crop production** relies on pollination!
 - \$15 billion annually in US alone!
- **Bees are the most efficient pollinators**
 - Only animals that purposefully collect pollen



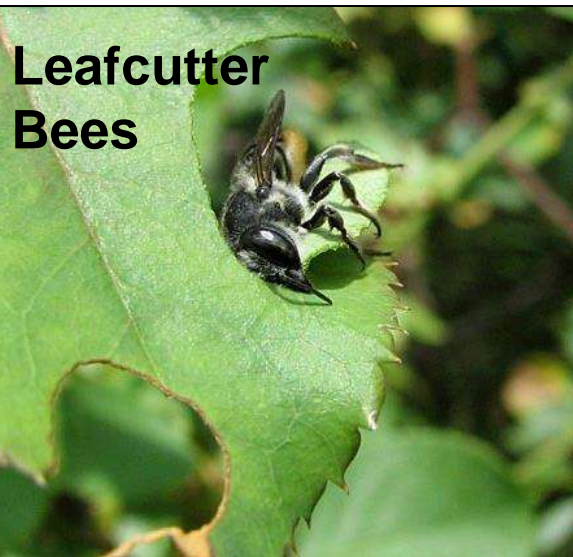
There are many types of bees

- **Honeybees** are the most well known
 - Native to Europe
 - Managed for pollination services: fruits and vegetables
- Over 4000 species of **native bees** in the US!
 - Also valuable crop pollinators – active even when cool and wet
 - Plus pollinate wild plants; Sustain native ecosystems



Native Bees

Bumble Bees



Leafcutter Bees



Digger Bees



Mason Bees



Squash Bees



Sweat Bees

Why Do Bees Visit Flowers?

For Food!

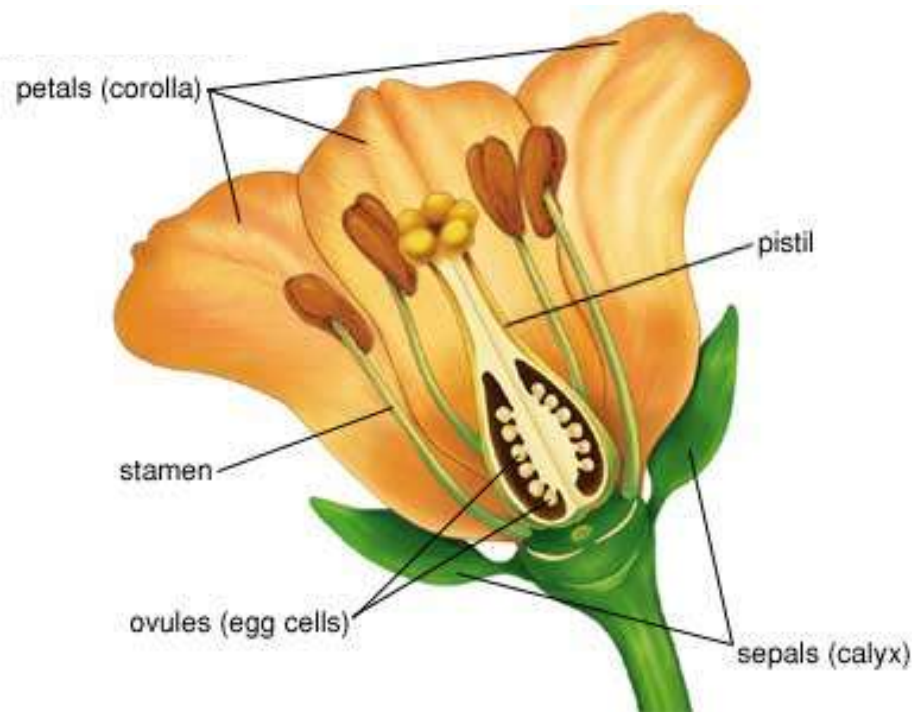
- **Pollen** = protein
 - Fashioned into 'bee bread', fed to immature bees
- **Nectar** = carbohydrates
 - Consumed for energy and turned into honey

Pollination is a by-product!



What Makes A Flower Bee Friendly?

- **Ample supply of easily accessible pollen and nectar**
 - **Pollen:** stamen (male)
 - **Nectar:** nectaries, usually within pistil (aka carpel) (female)
- **Not contaminated with pesticides**



Will Planting Flowers Make a Difference?

- One of leading causes of bee decline is poor nutrition caused by a dysfunctional food system
 - **Lack of diversity**
 - Large fields of one species: monocultures
 - Flowerless landscapes
 - Overzealous weed control
 - Destruction of native plant communities
 - Lack of meadows and cover crops
 - **Lack of year-round food source**
 - **Pesticide contamination**



Before fertilizers, farmers and gardeners relied on flowering cover crops such as buckwheat to build soil fertility

Do All Flowers Have Nectar and Pollen?

- No!
- Some plants are **wind pollinated**, no nectar
 - oaks, pines, grasses, corn, wheat, rice
- What else is missing from these flowers?



Some flowers are bred to be pollenless, eg. Sunflowers for cutting



Lacecap



Others are bred or selected to be sterile –
eg. Mophead hydrangeas;
lacecap have fertile and sterile
flowers



- **Pollen and nectar are less accessible or absent in double forms of flowers**
 - ‘Old fashion’ single types are best for pollinators



Zinnia

Flowers That Are Most Attractive to Bees

- **Colors:** White, yellow, blue, purple, violet
- **Fragrance:** floral or herbal
- **Shapes:** daisy/coneflower/sunflower; shallow tubular; legume (bean/clover); or lots of small flowers together
- **Open:** during daytime



Daisy/Coneflower Shape



Purple Coneflower

Black Eye Susan



Shallow Tubular: Penstemon



NC Cooperative Extension



Legume: Baptisia

Empowering People • Providing Solutions



Lots of Small Flowers



Joe Pye Weed



Goldenrod



Anise Hyssop



Will Bees Find My Garden?

- **If you plant it, they will come!**
 - Just don't spray it!
- **Honeybees forage 2-4 miles from hive,** when temps over 55
 - Exhibit flower constancy
- **Native bees forage shorter distances from their nest**
 - Most are solitary ground dwellers
 - Preserving native habitat critical to protecting native bees



Planting for Bees: Maximize What You Have

- **Allow crops to bloom** – broccoli, mustard, kale
- **Leave weeds to bloom when possible** – clover, henbit, dandelion
- **Identify ‘dearth’ times (no blooms)** – plant to fill these times



Honeybee on broccoli flower

Pollinator Habitat

This area has been planted with a range of flowering native plants to provide high quality habitat for native bees and other pollinators.

To learn how you can create good habitat for pollinators, please visit www.xerces.org

A weedy lawn is a pollinator paradise!

Henbit



Dandelion



Clover



Planting for Bees: Design

- **Masses** – at least 4' diameter clump of each species
- **Diversity** - 10+ different species
- **Sun**: at least 6 hrs/day



Mass plantings are easier to find and increase forage efficiency

Planting for Bees: Rule of 3

- Plant for **3 seasons**, spring – fall
- Aim to have at least **3 different species** in bloom each season
- Plant **at least 3** of each variety



At least 3 species in bloom:
Bee balm (rear); Black-eye Susans (left);
Phlox (right)

Planting for Bees

- Favor **perennials and woody plants** over annuals
 - Richer nectar
 - Dependable source year after year
- **Honeybees love herbs!**
 - **Annual:** basil, parsley, dill, cilantro
 - **Perennial:** rosemary, chives, oregano, thyme, sage, Texas tarragon/mint marigold

Let some of your basil plants bloom or plant
'African Blue' basil just for the bees!



Planting for Bees

- These practices also create perfect habitat for **beneficial insects, birds, and other wildlife**



The hover fly is a bee-mimic. Adults feed on nectar (above); larvae feed on aphids (left).



Planting for Bees: Native Plants

- **Native bees prefer native plants**
 - Native plants 4 times more likely to attract native bees
 - Some native bees feed exclusively on certain plants; Time their emergence to these plants bloom period
- **Including native plants in your landscape will support a greater diversity of pollinators**



Southeastern Blueberry Bee



Bee Friendly Flowers: Spring

- Early spring bloomers are especially critical for early emerging bees
- Cool season annuals are among the earliest bloomers
 - Plant in fall, examples: Pansies and violas, wallflower, sweet williams

Wallflower



Sweet
William

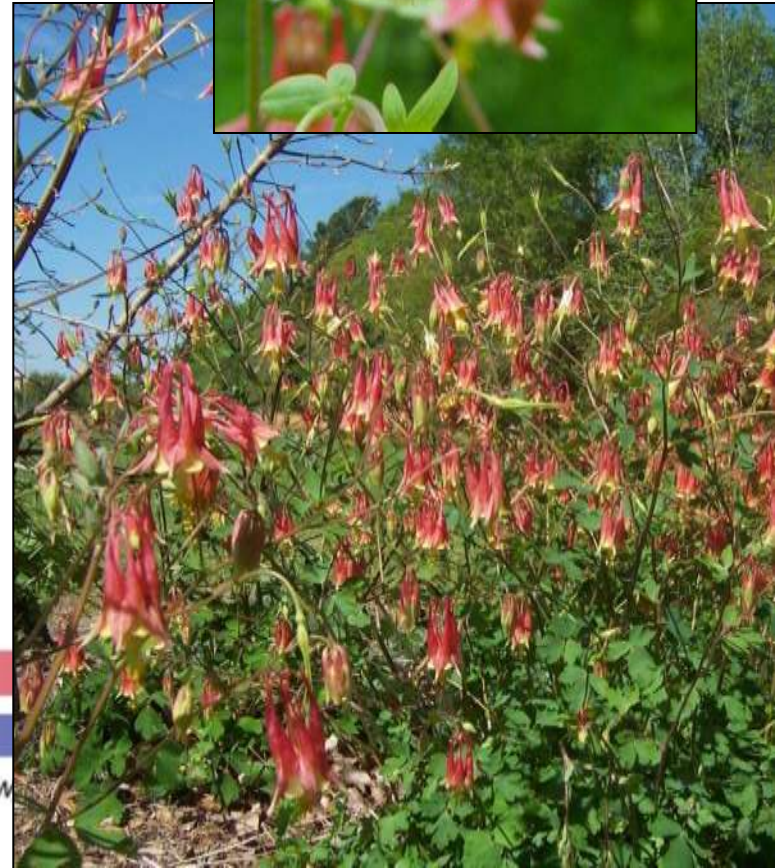


Johnny
Jump Up

Eastern Columbine

Aquilegia canadensis

- Native
- Blooms lt. March - May
- Sun or shade, well drained soil
- 12" – 24" tall in bloom
- Also attracts butterflies and hummingbirds
- Will naturalize in the garden by self seeding



Green and Gold

Chrysogonum virginianum

- Native
- Sun to part shade
- Moist or well drained soil
- 1' x 2'
- Evergreen foliage
- Early spring flowers



Bluestar

Amsonia tabernaemontana

- Native
- Tough, long lived clumping perennial
- Pale blue flowers, early-mid spring
- Grows 2' tall and wide
- Glossy green foliage, turns clear yellow in the fall
- Sun to part shade
- Wet to well drained soil



Eastern Beardtongue

Penstemon laevis

- White to amethyst flowers, mid-spring
- Evergreen leaves
- 1 ft. wide and 3 ft. tall in flower
- Well drained to moist soil
- Sun to part shade
- Other SE native species:
 - *Penstemon smallii*
 - *Penstemon digitalis*, 'Husker's Red' variety more common



Wild Indigo

Baptisia species and hybrids

- Native
- Tough, long-lived, clumping perennial
- Flowers in mid-spring
- 4 to 5 ft. tall and wide
- Sun to part shade
- Moist to dry soil
- Drought tolerant!



Baptisia australis



'Carolina Moonlight'



Baptisia alba

Bee Friendly Flowers: Summer

- Easily seeded summer annuals:
 - Sunflower
 - Mexican Sunflower, *Tithonia*
 - Cleome
 - Cosmos
 - Zinnias and Melampodium
 - Gomphrena



Agastache x 'Blue Fortune'

- Long lived variety of anise hyssop
- 3'-4' tall, 2'-3' wide
- Sun, well drained soil
- Drought tolerant
- Blooms early-mid summer
- A bee favorite!



Purple Coneflower

Echinacea purpurea

- Native to E. US
- Sun – light shade
- Well drained soil
- Early-mid summer blooms
- Also attracts butterflies
- Leave seed heads for birds (winter)



Rudbeckia 'Goldsturm'

Rudbeckia fulgida var. *sullivantii*

- “Black-Eyed Susan”
- SE Native
- Sun – pt. shade
- Average to moist soil
- 30” tall, spreading
- Deer love it!
- Leave seed heads for birds (winter)



Mountain Mints

Pycnanthemum species

- Several coastal plain native 'mountain' mints
- Blooms mid-late summer
- Sun to light shade
- Moist soil
- 3' tall and wide
- The best pollinator plants!



Pycnanthemum loomisii



Pycnanthemum tenuifolium

Georgia Savory

Clinopodium georgianum

- Native
- Shrubby perennial with evergreen leaves
- Pink flowers mid-summer through fall
- 1 ft. tall and 2 ft. wide
- Sun to light shade
- Well drained soil
- Drought tolerant!
- Minty fragrant leaves



Coastal Joe Pye Weed

Eutrochium dubium

- Native
- Sun to light shade, wet to moist soil
- 4'-5' tall x 3'-4' wide
- Blooms Aug-Sept.
- Deer resistant



Bee Friendly Flowers: Fall

- Fall bloomers bolster food stores for overwintering bumble bee queens and honey bee colonies

Late blooming goldenrods are an important food source for bumble bee queens



‘Fireworks’ Goldenrod

Solidago rugosa

- Native
- Sun to part shade
- Well drained to moist soil
- 3' tall, spreading mat
- Yellow flowers, Aug. – Oct.
- An insect ecosystem!
Attracts many pollinators and beneficials



Mexican Bush Sage

Salvia leucantha

- 4' x 6' tall and wide
- 'Santa Barbara' - 3' tall and wide
- Sun
- Well drained soil, drought tolerant
- Fall blooming
- Loves heat!
- All salvias are great for bees!



Narrow Leaf Sunflower

Helianthus angustifolius

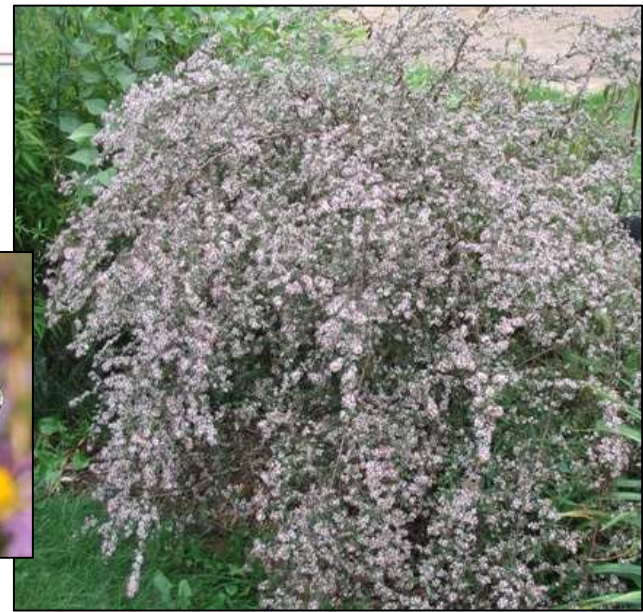
- Native
- Sun, moist to well drained soil
- Clump forming perennial
- 5'-8' tall, 5' wide
- Blooms late Sept.-Oct.
- Butterflies also love it!
- *H. floridanus* = Swamp Sunflower, rhizomatous



Calico Aster

Aster lateriflorus

- Native
- Sun to light shade, moist to wet soil
- Bloom Sept.-Oct.
- 4' tall and wide
- Attracts many pollinators and butterflies



Aromatic Aster

Aster oblongifolius

- NC native
- One of the best asters for the coastal plain
- Drought tolerant
- Full sun
- Flowers Oct – Nov
- 'October Skies' – 2' x 3'



More Plant Suggestions

- **Pollinator Paradise Garden**
 - www.protectpollinators.org
 - Chatham County Cooperative Extension
- **NC Extension: Going Native**
 - Landscaping for wildlife with native plants
 - <http://www.ncsu.edu/goingnative/>
- **Regional native plant guide** from Pollinator Partnership
 - <http://www.pollinator.org/guides.htm>
 - We are the Outer Coastal region



Pollinator Paradise Garden



Many Excellent Learning Resources!

THE XERCES SOCIETY
FOR INVERTEBRATE CONSERVATION

[about](#)[programs](#)[publications](#)[news](#)[invertebrates](#)[our work](#)[get involved](#)

Pollinator Conservation

Pollinators are essential to our environment. The ecological service they provide is necessary for the reproduction of nearly 70 percent of the world's flowering plants, including more than two-thirds of the world's crop species. The United States alone grows more than one hundred crops that either need or benefit from pollinators, and the economic value of these native pollinators is estimated at \$3 billion per year in the U.S. Beyond agriculture, pollinators are keystone species in most terrestrial ecosystems. Fruits and seeds derived from insect pollination are a major part of the diet of approximately 25 percent of all birds, and of mammals ranging from red-backed voles to grizzly bears. In many places, the essential service of pollination is at risk from habitat loss, pesticide use, and introduced diseases.

Learn About Your Landscape:

Find conservation information specific to your area of care.

Agriculture
Gardens
Natural Areas
and Rangelands

Organic Farms
Parks and Golf
Courses
Roadsides
Schools



Learn about pollinators!
[Find out more information here.](#)

DONATE

to protect invertebrates!

Newsletter

Sign up for our newsletter to receive up to date information about our programs and events.

Search this Site

Contact Us

<http://www.xerces.org/>

Master Gardener Spring Plant Sale

Pender Extension Center

801 S. Walker St., Burgaw

Fri., April 11, 12:00pm – 6pm

Sat., April 12, 8:30am – Noon



Many varieties of vegetables and herbs, blueberries, and perennial flowers for pollinators, as well as “Master Gardener” grown plants

Upcoming Classes:

Presented by Pender Extension Master Gardener Speakers' Bureau

April 1, 11am, Hampstead Library
“**Composting**” by Maureen Spataro

May 6, 11am, Hampstead Library
“**Lawns**” by David Hull



Gardening News by Email

Pender Gardener – Sustainable lawn and landscape care, great plants, and pest management

- **To Subscribe:** send an email to **mj2@lists.ncsu.edu**
 - Leave the subject line blank
 - In the body of the message put: **subscribe pendergardener**

Food Gardener - When to plant herbs, vegetables and fruits and sustainable pest management

- **To subscribe:** send an email to **mj2@lists.ncsu.edu**
 - Leave the subject line blank
 - In the body of the message put: **subscribe foodgardener**



Join the Year Round Gardening Challenge

Sign Up:

<http://pender.ces.ncsu.edu/>

- Get weekly email updates on when to plant, pest alerts, upcoming classes and more!
- 3, Zone 8 planner winners chosen each month!

NC STATE UNIVERSITY
NC COOPERATIVE EXTENSION
State University
A&T State University
Empowering People • Providing Solutions

Celebrate 100 Years of Extension

Search below or ask an expert
Enter Your Keywords Here

Home | About | Contact Us | Meet Our Staff | Events | NC A&T | Our County Centers

PENDER County Center

4-H Youth Development
Agriculture & Food
Animal Agriculture
Commercial Horticulture, Nursery & Turf
Farm Health & Safety
Field Crops
Food Safety & Processing
Local Foods
Pest Management
Specialty Crops
Community
Forest Resources
Health & Nutrition
Home & Family
Lawn & Garden
Soil, Water & Air

Pender County Center
801 South Walker St.
Burgaw, NC 28425 [Map](#)
(910) 259-1235
(910) 259-1291 fax
Office Hours: 8-5 Mon-Fri

ask an Expert

FEATURED CONTENT

Year Round Gardening Challenge
The "Year Round Gardening Challenge" dares you to grow vegetables outdoors throughout the year. Participants can sign up to receive gardening updates by email throughout the year. Each month, three participants will be selected at random to win a \$2000.
[READ THE REST »](#)

FEATURED EXTENSION VIDEOS

Controlling Red Imported Fire Ants
Aisle by Aisle: Choosing Dairy

NEWS [View All](#)

Growing Flowers and Vegetables From Seed [popular](#)
If you have never grown plants from seed let this be the year you start. You do not need a greenhouse to grow healthy transplants and many varieties can be started indoors over [MORE »](#)
Posted: 3/1/14

Applying Pre-Emergent Herbicides To Lawns [popular](#)
Early March is the time to apply pre-emergent herbicides to lawns in southeastern North Carolina. These products are usually applied as a granular and then watered in to the lawn. If you summer [MORE »](#)
Posted: 3/1/14

EVENTS [View All](#)

Seed Starting Workshop
Thu Mar 13, 2014
1:30 PM - 3:30 PM
Where:
Westleyan Chapel, United Methodist Church, 10255 U.S. 17, Wilmington
— 23 hours away

Seed Starting Workshop
Sat Mar 15, 2014
10:00 AM - 12:00 PM
Where:
Pender County Cooperative Extension Center, 801 S. Walker St., Burgaw
— 3 days away

Become an Extension Master Gardener!

- **Volunteer Program** – EMG's help with educational outreach
- **Next training class** begins August 20
- **Classes meet 9:30 to 1:00** at Extension office every Wednesday through end of October
- **Fee: \$75**
- **Volunteer 40 hours** within 1 year of completing training





**Extension
Master
Gardener**

NC COOPERATIVE EXTENSION

‘Ask an Extension Master Gardener’

Ask questions, bring samples for id, soil test supplies, pick up information

- **Poplar Grove Farmer’s Market**, 2nd Wed of each month, April – October (9am – 1pm)
- **Hampstead Library**, 3rd Monday of each month, April - October (10:30am – 1pm)
- **Extension Office, Burgaw**, Mondays 1pm – 4pm; Thursdays 9am – Noon, April – October; 259-1238
- **Events:** Poplar Grove Herb Fair, Burgaw Springfest



North Carolina Cooperative Extension

We have an Extension center in every county!

<http://ces.ncsu.edu>



to submit questions to our '**Ask an Expert**' widget and
to find your local Extension center

Pender County Center

<http://pender.ces.ncsu.edu>

801 S. Walker St., Burgaw

259-1235 (general)

259-1238 (hotline)

