



UNIVERSITY OF
GEORGIA

State Botanical Garden
of Georgia

CONNECT TO PROTECT
GARDEN GUIDE

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INTRODUCTION

At its core, the Connect to Protect program is designed to connect people, plants and animals through gardening. The State Botanical Garden of Georgia offers this program as its signature pollinator garden certification program to support and recognize the network of pollinator gardens across the state. As a unit of Public Service and Outreach at the University of Georgia, the State Botanical Garden of Georgia serves as an important resource for connecting people with plant options and sources, best practices and educational tools. This relation to UGA strengthens Connect to Protect and sets us apart as we apply institutional knowledge and research to address critical conservation needs in Georgia.

The primary focus of this program is to facilitate the creation of beautiful and botanically rich gardens that support the entire life-cycle of native insects and the natural food web. Healthy ecosystems depend on native plants. The animal food web starts with the smallest among us: insects. Most plants depend on insects for pollination. Insects specifically require native plants to eat. Without native plants woven in urban and suburban landscapes, biodiversity declines at all levels. Studies have shown that adding regionally native plants to landscapes significantly improves beneficial insect, bird and other biodiversity.

Environmental education lies at the heart of Connect to Protect. The State Botanical Garden creates opportunities for people of all ages to understand and appreciate the connections between plants, animals and people. It is often stated that people will care about preserving biodiversity only once they understand its importance. Educational programming offered by the garden ranges from the formal Certificate in Native Plants course and annual Native Plant Symposium to informal garden rambles.

Connect to Protect gardens are found statewide in a variety of settings and sizes. Parks, universities, elementary schools, municipalities and home gardens can all benefit from these native plant gardens. Gardens planted many years ago, or newly established gardens are all eligible for joining the Connect to Protect network if the following requirements are met:

- Planting includes three different larval host plants
- Three native species blooming in spring, summer and fall (minimum nine total)
- Commitment to the entire life cycle of native bees
- Free of broad-spectrum insecticides
- Free of planted exotic invasive plants
- Commitment to the long-term maintenance of the garden

This guidebook aims to facilitate the creation of biodiversity-supporting plantings statewide. In this document, you will find helpful information to guide the planning, planting and maintenance of your Connect to Protect garden. Additionally, the garden provides training through the Certificate in Native Plants course, contract grown plant material and interpretive signage. The application for Connect to Protect can be found online at <https://botgarden.uga.edu/conservation-science/connect-to-protect/>.



NAME AND TERMINOLOGY

Q: What makes the State Botanical Garden of Georgia's Connect to Protect program unique from other pollinator garden programs?

A: Our gardens are not just for pollinators. Our focus is on native plants that support the entire food web for all wildlife, including pollinators.

Q: What does it mean to "Connect to Protect?"

A: The program connects people and wildlife to native plants and connects patches of native plants throughout our landscape for the protection and conservation of Georgia's biodiversity.

CONNECT TO PROTECT GARDEN CRITERIA

1. Three native nectar and pollen sources per spring, summer and fall seasons. Long blooming plants that bloom through more than one season may count for each bloom season.
2. At least three native insect larval host plants.
3. A commitment to avoid broad-spectrum insecticides.
4. Interpretive sign to spread the word.
5. Include one garden element to support the entire life-cycle of native bees.
6. Commit to maintaining your Connect to Protect garden by keeping it mulched, weed-free and groomed to dispel the notion that native gardens are inherently messy.

COMMONLY ASKED QUESTIONS

Q: Can I have a Connect to Protect garden at my home?

A: Yes, simply apply the six criteria in your garden. Signs are available for home gardens.

Q: How much money does a Connect to Protect garden cost?

A: That's up to you. Total costs vary, but generally, the low end would be about \$80, including your sign and small plants. Growing your own plants from seed requires practice and patience but can save a lot of money.

Q: How can I apply for my garden's Connect to Protect certification?

A: Once the six criteria are met in your garden, visit the Connect to Protect webpage at <https://botgarden.uga.edu/conservation-science/connect-to-protect/> and find the button to "Apply for certification." Fill out the linked electronic form, and you will hear back from botanical garden staff soon about your application and ordering your sign.

Q: Are non-native plants appropriate for my Connect to Protect garden?

A: Non-native plants will not exclude your garden from consideration as long as they aren't invasive, but they do not qualify for meeting the Connect to Protect criteria. Refer to <https://www.gaeppc.org/list/> for lists of invasive plants that should be avoided and eliminated from the landscape whenever possible.

Q: How can the State Botanical Garden of Georgia help me with my Connect to Protect garden?

A: The garden offers a Connect to Protect training class annually through the Certificate in Native Plants Program. You will learn all about garden planning, site prep, design and Connect to Protect advocacy through this four-hour program. The garden can also contract grow native plants for special public projects, or plants can be purchased from the garden's annual Native Plant Sale each fall. We also assist in printing custom Connect to Protect signs for each garden installed.



PLANNING YOUR GARDEN

A person wearing a white baseball cap, a red t-shirt with a circular logo, and grey cargo pants is walking through a field of young plants in black nursery containers. They are holding a black tray filled with green seedlings. The background shows a grassy field and trees under bright sunlight.

It's important to think through your garden plan before breaking soil. A well-planned and designed Connect to Protect garden will incorporate ecological and horticultural principles to create a garden that is as pleasing to the eye as it is to wildlife. Walk through the following steps to guide your planning process.

FUNDING

Captain Planet Foundation: Funding for educators engaging students in solution-based environmental projects. <https://captainplanetfoundation.org/grants/>

Kids Gardening: Multiple grant opportunities for nonprofit organizations, schools or youth programs that are planning or expanding garden programming. <https://kidsgardening.org/garden-grants/>

Home Depot Community Impact Grants: Up to \$5,000 to nonprofit organization and public service agency projects connecting volunteers to community improvement projects. <https://corporate.homedepot.com/foundation/communityimpactgrants>

Fiskars Project Orange Thumb: Supports school and community garden projects with Visa gift cards and Fiskars items. <https://www.fiskars.com/en-us/special-feature/project-orange-thumb>

Seedmoney: Challenge grants offered on a sliding scale to community garden projects. <https://seedmoney.org/apply/>

Monarch Watch: Free milkweed plugs for schools and nonprofits. <https://monarchwatch.org/bring-back-the-monarchs/milkweed/free-milkweeds-schools-nonprofits/>

LANDSCAPE BASICS

We recommend UGA Extension's online publication, Landscape Basics: Success with Herbaceous Perennials, for guidance on bed preparation, design, soil preparation, fertilization, planting and more. Soil testing services are offered through most county Extension offices. For a more thorough assessment of your site, use the Xerces Society Habitat Assessment Guide to numerically score the quality of habitat in your yard or garden before and after planting.

CHOOSING YOUR PLANTS

Variety is key in selecting native plants to include in your garden design. Your garden should be diverse in the number of plant species, flower type and color, bloom time and height. Aim for clumps of single plant species that fill at least three square feet in area to attract and maintain pollinator activity. These elements will create a structurally diverse garden that will provide food and nesting sites throughout the year.

Keep in mind that not all native plants are well suited for a formal garden and may spread aggressively or get too tall. This Guide to Propagation of Favorite Georgia Natives, <https://t.uga.edu/7Sw>, showcases plants that perform well in Georgia gardens and provides detailed instructions on how to grow each plant. The Georgia Pollinator Plants of the Year program also offers suggestions for outstanding pollinator plants chosen annually by a selection committee of conservation professionals, horticulturists, entomologists and green industry experts.





SOURCING NATIVE PLANTS

The State Botanical Garden of Georgia proudly offers a spring and a fall plant sale with native plant experts available to assist with plant selection and offer helpful tips and tricks. You may consult the Georgia Native Plant Initiative nursery list for growers who specialize in native plants throughout the southeast.

YOUR BUDGET

Before designing your garden, make a wish list of what you will need before you start planting. This list may include hardscaping, raised beds, irrigation and, of course, plants. Measure the size of your planting bed and figure that you will need about one plant per 1.5 to 3 square feet. If you are working with a tight budget, take a phased approach and plant in stages. Purchasing smaller plugs is a more cost-effective option, but the plants will take longer to reach maturity. See appendix for a sample budget for a garden.



GARDEN DESIGN

The overall design of your garden can be tailored to suit you and your gardening style. A Connect to Protect garden may be as wild and free as a grassland or neatly manicured. The following tips are helpful in the design process.

- Find inspiration in your site analysis. Do site conditions lend themselves to a dry meadow, woodland or forest? Distill the essence of the right habitat type into your design.
- Creating defined borders with pavers, stones or bricks creates a sense of intentionality to the garden and gives it a more tidy or formal appearance.
- Planting groups of the same species adds legibility to the design and can benefit pollinators as they forage.
- Structural complexity adds visual interest to the garden and creates microhabitats and cover for wildlife, but too much variety can look chaotic.
- Know your plant's growth habit. Tall or shrubby plants serve as a good backdrop for shorter plants in the foreground of a perennial border.
- Use compact plants for container gardens or more formal spaces.
- Interplant small sedges and grasses throughout your design as a weed-suppressing "green mulch."



- Get inspiration from books, your local botanical garden or your neighbor's yard.
- Layer the timing of peak performance plants. If a plant tends to look ragged during the summer, plant it next to a species that thrives in the summer to fill the gap.
- Include spring bulbs or cool season annuals to add visual interest in the winter when many natives are dormant.

STARTING YOUR GARDEN

SITE PREP

Proper site prep is important for the successful establishment of your Connect to Protect garden. Ensure that your garden is free of undesirable plants. Invasive plants and weeds compete with your newly planted natives for sun, water and nutrients. Some sites may need to be amended. Add soil conditioner or composted pine bark to improve soil texture without adding excess nutrients that can make natives grow tall and floppy. Be aware that tilling the soil provides new opportunities for weed seeds in the seed bank to germinate. The goal is to choose the right plants for the site. Doing so will result in a successful planting without drastically altering the existing soil.

PLANTING TIPS

Timing

Fall is the best time to plant most native species because the soil is still warm, and the air is cool. These conditions help plant roots establish without stress from heat and water loss. Planting early in the spring can also be successful before the weather gets too hot. Generally, avoid summer planting.

Spacing

Use the mature width of each plant to determine adequate spacing. Planting too densely may result in disease issues; however, planting too sparsely may result in a design that doesn't look fluid or cohesive.

Technique

Start by planting into a properly prepared site, free of weeds and into amended soil—if necessary. Lay your plants on top of the soil according to the design plan and spacing, fine-tuning the layout to the actual site. If your plants are rootbound, gently tease the roots to help them "knit" in with the native soil. As you plant, avoid burying the crown of the plant, which may cause plant death. The crown is located where the roots meet the shoots. You should also avoid stomping down on the soil around your freshly planted plants. This compacts the soil and reduces drainage. Finally, generously water your new garden after planting.

GARDEN MAINTENANCE

A proper maintenance plan for a Connect to Protect garden will integrate horticultural practices with ecological stewardship. The goal is to keep the garden looking tidy while also ensuring that pollinators, birds and other wildlife are supported throughout their lives. This can mean altering our perceptions of how a garden should look and behave. Accepting imperfections and appreciating a certain level of wildness in our garden can reduce the workload on the gardener and promote healthier habitat for insects and wildlife. Use the following seasonal activities as a framework for your garden's maintenance, but know that caring for a garden is an art, not a science.

For additional information, the “Landscape Basic: Success with Herbaceous Perennials” Extension publication can help you navigate seasonal garden upkeep.



SPRING

- Keep the garden well-weeded and apply pre-emergent herbicide granules (if desired).
- Add mulch where needed—this keeps the garden neat, retains moisture and helps prevent weed seeds from germinating. Know that leaving some areas un-mulched will benefit native ground-nesting bees.
- Plant perennials early.
- Trim back any remaining perennial stems and grasses from the previous growing season.
- Keep newly planted plants well-watered; the first growing season is critical for plant establishment.
- Perennials that become overly tall or flop over by late summer can be trimmed in May by one to two-thirds their current height to result in a more compact specimen with delayed flowering for fall.
- Feed potted displays with a slow-release fertilizer. Don't feed in-ground plantings as the excess nutrition can make some natives too tall and leggy.

FALL

- Plant perennials as the weather becomes cooler and rainfall increases.
- Water new plants weekly until they go dormant unless it rains.
- Add mulch where needed. Keeping mulch neat can prevent cool-season weed seeds from germinating.
- Cut back perennial stems if needed, but know that strategically leaving some stems standing will benefit overwintering pollinators, and the seeds will feed birds in the winter.
- Leave the leaves. Many insects like queen bumblebees will overwinter in leaf litter.
- Make notes on plant performance. What worked and what didn't? This information is all part of adaptive management.

SUMMER

- Water newly planted plants once a week unless it rains. Watering early in the morning allows the plant to absorb more water and reduce water loss by evaporation.
- Continue to watch out for plant pests and diseases, but try to develop a higher tolerance for insect damage. A Connect to Protect garden is designed to provide food for a variety of insects, meaning that some leaves will be nibbled by beetles or caterpillars. These insects are important food sources for birds.
- Keep the garden well-weeded.

WINTER

- Plan next year's additions or changes using notes from the previous growing season. Which plants performed well? Did any species struggle to survive? Which attracted the most pollinators?
- Keep the garden well-weeded.
- Cut back sedges to a third of their original height.

COMMON GARDEN WEEDS



Asiatic Hawksbeard



Bedstraw



Chamber Bitter



Chickweed



Crabgrass



Florida Pusley



Geranium



Henbit



Hop Clover



Hophornbeam Copperleaf



Horsenettle



Lambsquarters



Mulberry Weed



Pigweed



Purple Deadnettle



Ragweed



Spurge



Yellow Woodsorrel



EDUCATION IN THE GARDEN

Connect to Protect gardens are designed to connect plants to the pollinators and wildlife they support and help connect people to the native plants found in their region. Each garden offers many opportunities for learners of all ages. Every stage presents a new possibility for garden-based learning and environmental education, from planning to planting. We must bridge the gap between people and the natural world. By teaching communities about the earth's natural systems and the interconnectedness between plants, animals and people, we also are creating the framework needed to inspire environmental stewardship. Interpretive signs, community science projects and lesson plans in the garden all provide excellent education opportunities.

GARDEN INTERPRETATION

Interpretive signs in the garden help draw attention to its ecological value, invite visitors to learn more about plants and pollinators, and inspire them to create their own Connect to Protect garden. There are multiple versions of Connect to Protect interpretive signs available for purchase, and all can be customized with partner logos. You can reach out to garden staff at garden@uga.edu to begin customizing your garden's sign.

COMMUNITY SCIENCE

Your garden can serve as a valuable source of data on plants and pollinators for researchers. Providing community science data can help increase your environmental awareness and understanding of your Connect to Protect garden's impact. The following programs allow you to contribute to ongoing community science projects:

[Great Georgia Pollinator Census](#) - Collect data on the abundance and diversity of flowering plants in your garden during this two-day event every August.

[Journey North](#) - Track migrating monarchs and milkweed emergence every spring.

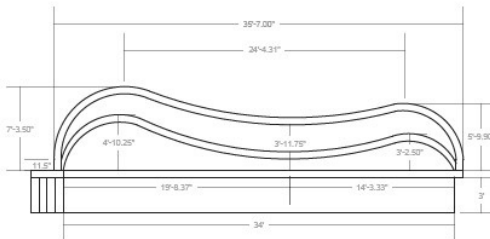
[Budburst](#) - Monitor the lifecycle of plants and track plant phenology.

APPENDIX


SAMPLE BUDGET

Qty	Description, container size	unit price	Extended Price
3	Wooly Ragwort 4"	\$5.00	\$ 15.00
3	Hairy Spiderwort 4"	\$5.00	\$ 15.00
3	Blue Star 4"	\$5.00	\$ 15.00
3	Blueberry	\$12.00	\$ 36.00
3	Coreopsis grandiflora, 4"	\$5.00	\$ 15.00
3	Butterfly Milkweed 4"	\$5.00	\$ 15.00
3	Carolina Lupine, 4"	\$5.00	\$ 15.00
3	Purple Coneflower 4"	\$5.00	\$ 15.00
3	Wild Bergamot 4"	\$5.00	\$ 15.00
3	Little Bluestem 'Standing Ovation' 4"	\$5.00	\$ 15.00
3	Solidago petiolaris 4"	\$5.00	\$ 15.00
3	Conradina 5"	\$5.00	\$ 15.00
3	Wild Quinine qt	\$6.00	\$ 18.00
3	Clinopodium georgianum (Calamintha), gal	\$7.00	\$ 21.00
1	Sign post and sign	\$60.00	\$ 60.00
43			
	Subtotal		\$300.00
	Sales Tax		\$24.00
	Total		\$324.00

RENDERING



INTERPRETIVE SIGN



Connect to Protect

-- Supporting pollinators in small spaces, one planting at a time--


According to the National Academy of Sciences' Report on the Status of North American Pollinators, trends indicate serious declines in our wild native pollinators. Their findings show that providing small pockets of habitat can provide forage and corridors through which pollinators can move.

Want to learn more about these fabulous native plants and how you can get your own?

CONTACT garden@uga.edu

Pollinators and Plants tell a story!

- ⦿ Black cherry trees serve as a nursery for over 400 species of caterpillar.
- ⦿ Monarch Butterflies rely on milkweed plants to lay their eggs. The toxic sap eaten by the larvae protect them from predation.
- ⦿ The Yucca plant and Yucca Moth cannot survive without one another. Yucca moth larvae feed exclusively on the plant's seeds. In return, the moth collects pollen in a ball and manually pollinates a yucca flower. The moth cannot reproduce without the yucca and the yucca cannot reproduce without the moth.
- ⦿ Joe-Pye-Weed blooms in July and August and serves as an important nectar source for the ruby tiger moth in the late summer.
- ⦿ Incorporating plants that bloom at different times in your garden will ensure a variety of pollinators throughout the growing season.
- ⦿ Allowing parts of your garden to remain bare helps support a variety of non-aggressive solitary ground nesting bees.
- ⦿ Creating a multilayered landscape with plants of varying height adds visual appeal as well as shelter for pollinators.



State Botanical Garden of Georgia
UNIVERSITY OF GEORGIA

CONNECT TO PROTECT

Supporting wildlife in small places, one native planting at a time



CATERpillARS SELECTIVELY FEED ON THE LEAVES AND STEMS OF NATIVE PLANTS. IT TAKES MORE THAN 6,000 CATERpillARS TO RAISE ONE NEST OF CHICKADEES!

INCORPORATING NATIVE PLANTS THAT BLOOM AT DIFFERENT TIMES IN YOUR GARDEN WILL ENSURE A VARIETY OF POLLINATORS AND OTHER WILDLIFE THROUGHOUT THE GROWING SEASON.

NATIVE MILKWEEDS ARE AN IMPORTANT FOOD SOURCE FOR MONARCH BUTTERFLY CATERpillARS.

LOCAL BATS ARE ALL INSECTIVORES AND CAN EAT THOUSANDS OF INSECTS A NIGHT.

LIATRIS SPECIES, OR BLAZING STARS, CAN FEED THE LARVAE OF MANY BUTTERFLY AND MOTH SPECIES, INCLUDING TIGER MOTHS.

CREATING A MULTILAYERED LANDSCAPE WITH NATIVE PLANTS OF VARYING HEIGHT ADDS VISUAL APPEAL AS WELL AS SHELTER FOR SMALL WILDLIFE, INCLUDING LIZARDS AND TOADS.

ATHENS  CONNECTICUT



Restoring wildlife in small
places, one native planting
at a time

connect to protect



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