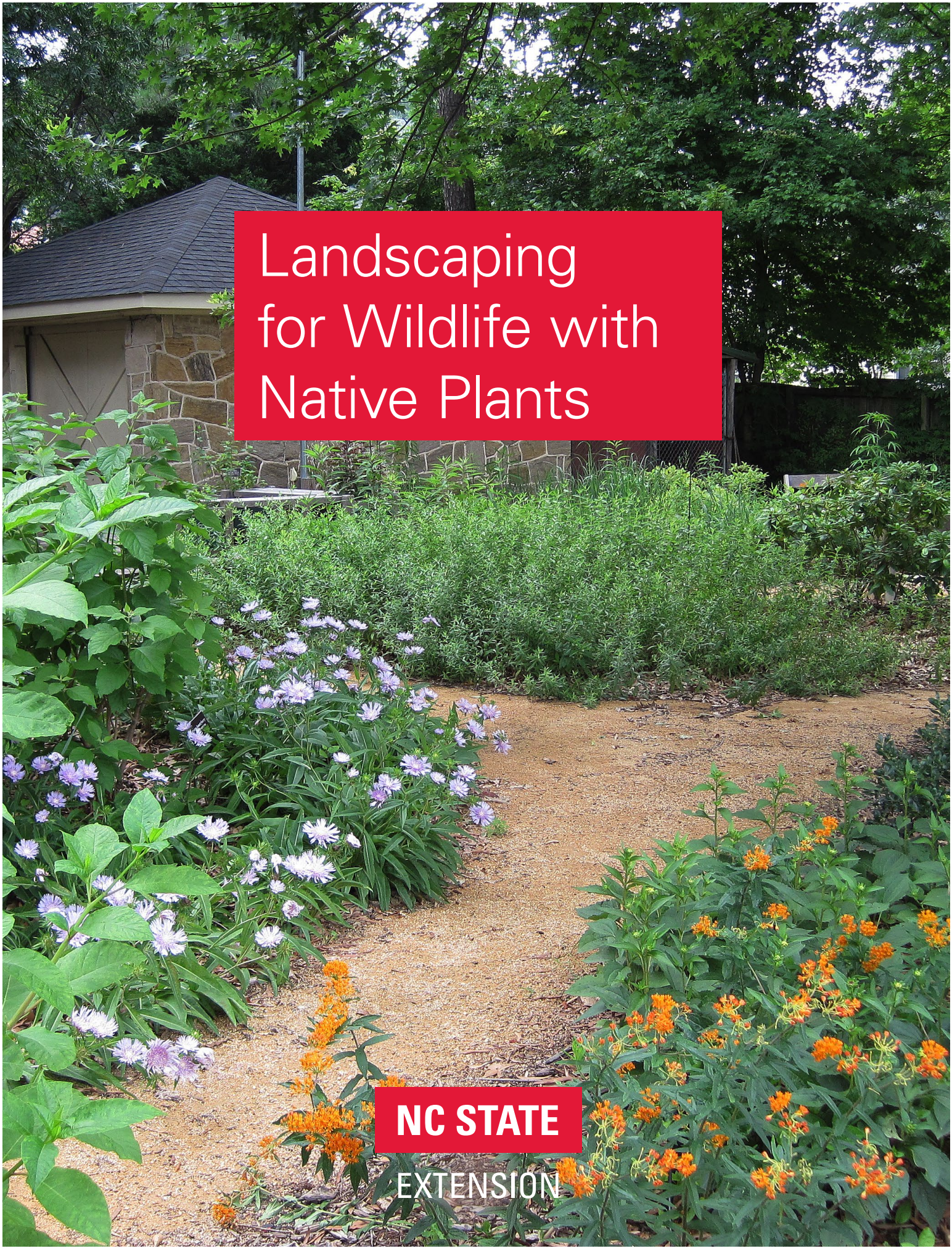

Landscaping for Wildlife with Native Plants

NC STATE EXTENSION

North Carolina's native plants provide well-adapted food and cover for North Carolina's native animals, and a well-planned landscape of native plants can help you attract a diversity of wildlife to your property (Figure 1). Native North Carolina plants also are well-suited to the state's soils and climate and require relatively little upkeep, once established on an appropriate site. However, the spread of non-native plants poses a threat to native plants and animals of North Carolina. This publication describes the problems associated with some non-native, invasive plants and presents a detailed list of native plants that may be used in place of these foreign ornamentals to attract wildlife to your property.

Why use native plants?

Biologists and other scientists consider invasion by non-native plants to be one of the most serious problems facing native plant and wildlife populations in the United States. For example, multiflora rose, bicolor lespedeza, Japanese honeysuckle, and autumn olive are examples of non-native plants introduced into North Carolina—all for the purpose of promoting "wildlife habitat." However, each introduction has proven detrimental to North Carolina's native plants, pushing them out of their traditional habitats; and recent research indicates that many invasive plants may be harmful to local wildlife as well.

- *Native* plants generally are defined as those that occurred in North America before European settlement.
- *Non-native* plants are those not native to an area. In North Carolina, non-natives usually come from Asia or western Europe, regions that have similar climate and environmental conditions to those in this state.
- Some non-natives are planted intentionally as lawn or garden ornamentals or as plants to attract wildlife, but other non-native plants were introduced accidentally.
- Many non-native species become *naturalized*, which means they are able to survive, spread, and reproduce on their own.
- Approximately 25 percent of the plants growing wild in the United States are naturalized non-natives, some of which have become *invasive*, that is, they grow unabatedly where native plants otherwise would occur.

Invasive non-native plants are those that pose the greatest risk to the native plants and animals of North Carolina. Competitors, diseases, and insects control a plant's growth and dispersal in its native range. Over thousands of years, natural checks and balances develop, which greatly reduce the chance that a single species will increase in number to completely dominate a plant community. However, when a non-native plant is introduced to North Carolina, it escapes its natural controls and can become invasive (Figure 2). The characteristics that make many non-native plants attractive as ornamentals (colorful berries, pest resistance, tolerance of harsh conditions) also increase their potential for invasiveness and make them difficult to contain. Prolific growth by a single plant species can be harmful because forests with a limited number of plant species provide very poor habitat for wildlife.

All non-native plants do not become invasive, and most can safely be planted as ornamentals. However, it takes scientists many years or even decades to fully understand an introduced plant's potential invasiveness. New information is being gathered continually, and you should check with your local nature center, botanical garden, conservation organization, or Cooperative Extension agent about a plant's invasiveness before introducing it to your property.

Figure 1. American goldfinches commonly feed on the seeds of orange coneflower in the fall and winter. Photo by Chris Moorman

Figure 2. Non-native invasive plants, including mimosa, kudzu, Queen Anne's lace, and sericea lespedeza, have taken over this vacated suburban lot. Photo by Chris Moorman

Figure 3. Sawtooth oak, a tree native to Asia, continues to be recommended as a wildlife plant, despite the availability of many native oak species. Photo courtesy of Alice B. Russell, NC State University retired

Ironically, non-native plants that are attractive to birds and other wildlife often are the most invasive because animals serve as great dispersers of their fruits and seeds. Autumn olive is a non-native plant that produces fruits favored by birds, but the plant grows and often spreads quickly where the seeds are defecated. Native fruit-producing plants may succumb to the competition from this type of invasive plant, thereby reducing the diversity of foods available to birds. In addition, research from the midwestern United States suggests birds that nest in some non-native shrubs experience poor nesting success. Lower nest height, the absence of sharp thorns on the non-native plants, and a branching pattern that allows predators easier access to nests built in non-native plants all could contribute to the increased nest predation. Despite the growing base of knowledge related to the potential problems of non-native plants, species like sawtooth oak (*Quercus acutissima*) continue to be recommended as plantings to encourage wildlife (Figure 3). Until adequate information on the invasiveness of such plants exists, native alternatives should be used (Figure 4).

Reversing the trend

You can help stop the non-native plant invasion by using and nurturing native plants around your home and on your property. Native plants generally grow well and require less care than non-native species when grown on the proper soils under the right environmental conditions. Additionally, North Carolina's native wildlife has become adapted to using native plants over thousands of years. Therefore, native plants meet the needs, including food and cover, of North Carolina's native wildlife without causing long-term damage to local plant communities.

Figure 4. Native plants are attractive additions to any property. Both American beautyberry (top) and strawberry bush (bottom) produce fruits that are attractive to wildlife and the human eye. Photos by Chris Moorman

Many native plants produce showy flowers, abundant fruits and seeds, and brilliant fall foliage. A diversity of native plants in an urban landscape provides:

- Protective cover for most animals.
- Seeds, nuts, and fruits for squirrels and other mammals.
- Seeds, fruits, and insects for birds.
- Nectar for hummingbirds and butterflies (Figure 5).
- Larval host plants for butterfly caterpillars (many caterpillars are adapted to eat the foliage of specific plants, called their *host plants*).

Table 1 contains examples of native trees, shrubs, and herbs beneficial to wildlife. Use the table to identify native alternatives to the non-native plants commonly recommended to attract wildlife. For example, consider a viburnum (*Viburnum* spp.) or holly (*Ilex* spp.) in place of autumn olive, or consider one of our dozens of native oaks (Quercus spp.) in place of sawtooth oak, which has been introduced from Asia (Figure 6).

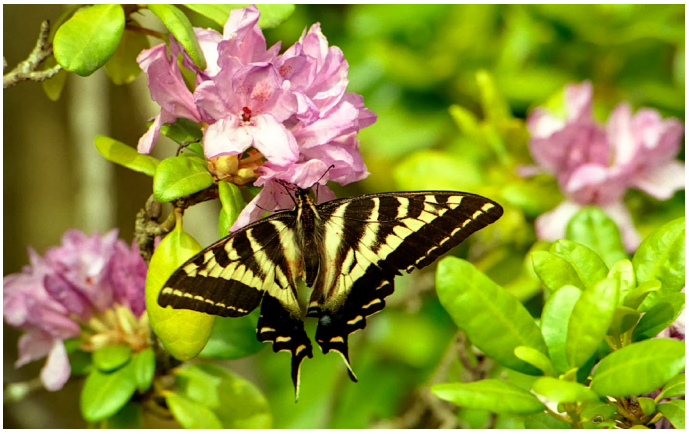

Figure 5. Tiger swallowtails, along with other butterflies and the ruby-throated hummingbird, eat nectar from larger flowers blooms. Photo by iStock.com/Angelcarver

Figure 6. A native Viburnum *sp. (above), rather than a non-native berry-producer like autumn olive, should be planted to attract wildlife. Photo by Chris Moorman*

Traditional landscape plantings don't fully mimic the dense foliage and high plant diversity of natural areas. Therefore, birds and butterflies are most likely to use native plants that grow naturally in unmowed or unmanicured portions of your yard or in adjacent natural areas. Allow native grasses, brambles, and shrubs to grow in small corners of your yard where neighbors will be less likely to see the "unsightly" growth. These areas provide nest sites, cover, and food for birds and commonly harbor host plants for butterfly caterpillars. Minimize the amount of lawn on your property because these areas require frequent use of water, fertilizer, and pesticides that can be harmful to the environment and the very insects you want to attract. Before making drastic changes that might upset your neighbors, describe your plan to them and explain why you intend to make the changes.

Landscaping with native plants

Retain as much native vegetation as possible during land clearing and construction of houses and buildings. However, areas where plants were cleared during development can be landscaped using native plants. It's best to provide a diversity of native plant species on your property, which in turn ensures that fruits and nectar will be available throughout the year (Figure 7). Each native plant species is adapted to a specific range of soil types, light conditions, and moisture regimes. Before planting, have your soil analyzed. A small sample from your yard can be tested for nutrient content and will allow you to receive specific recommendations for preparing your soil before planting. Use the results of the soil tests to help determine which native plants will grow best on your land. Contact your local Cooperative Extension Center for instructions on this free service.

Figure 7. The presence of a variety of herbaceous (jewelweed, left) and woody (trumpet creeper, right) flowering plants helps ensure that hummingbirds will have access to nectar from spring to fall. Photos by Chris Moorman

Here are some important concepts to consider when landscaping your property:

- Before initiating landscaping activities, create a map of the existing vegetation on your property. From this base map, identify areas where food and cover are limited and abundant. Then create a projected map and plan for your final landscape, making sure to incorporate areas that will provide food, cover, and water.
- Include a diversity of native plants in your landscape. Provide plants that produce winter cover (evergreens), seeds, fruits, and nectar attractive to birds, butterflies, and other wildlife. Also, use plants that are known hosts for the larvae of butterflies native to your area (Figure 8).
- Select plants that flower and bear fruit or seed at different times of the year (see *Managing Backyards and Other Urban Habitats for Birds* and *Butterflies in Your Backyard*), thereby assuring fruits, seeds, and nectar will be available throughout most of the year (Figure 9).
- Check to make sure the plant will fruit. Only the female of some plant species (American holly, wax myrtle, and eastern redcedar) produces fruit. In this case, be sure to provide at least one male plant for pollination.
- Plan viewing areas by mapping wildflower beds and fruit-producing plants in sight of windows and paths, but avoid planting them near reflective glass or windows to reduce accidental window strikes by feeding birds.
- Consider the moisture and light requirements of plants when including them in your plan. Map moisture-loving plants in low-lying areas, and position shade-loving plants underneath large trees or on the shady side of your home (Figure 10).
- Mimic "Mother Nature" by creating gentle curves in your landscape. Plant wildflower beds in irregularly shaped patterns. The beauty of a "natural" landscape rivals that of more regimented traditional ornamental plantings.
- Cluster similar types of vegetation to allow wildlife easy access to seasonally abundant food sources without excessive movement and increased exposure to predators (Figure 11). Clumping similar species and placing shorter herbs and shrubs in front of taller vegetation improves the appearance of your landscape.

Figure 8. Flowering dogwood is a great wildlife plant because it produces abundant fruits nearly every year. Photo by Chris Moorman

Figure 9. Eastern redbud (top left) is one of the first plants to flower in the spring, and cardinal flower (right) and goldenrod (bottom left) are two excellent late-season nectar sources for butterflies and other insects. Left photo courtesy of Alice B. Russell, NC State University retired; other photos by Chris Moorman

Figure 10. Position shade-loving plants like this flame azalea under tall trees or on the shady side of your home. Photo by Chris Moorman

Table 1. Plant species native to North Carolina* (including soil moisture and light requirements, region of primary occurrence, and benefit to wildlife)

Latin Name	Common Name**	Soil/Light	Region	Wildlife Value
Tall trees (more than 30 ft)				
Acer barbatum	Southern Sugar Maple	M/F-S	P,CP	S
Acer rubrum	Red Maple	W-D/F-P	M,P,CP	S
Acer saccharum	Sugar Maple	M/F-S	M	S
Aesculus flava	Yellow Buckeye	M/P-S	M	H
Betula lenta	Sweet Birch	M-D/F-S	M	S,L
Betula nigra	River Birch	W-D/F	P,CP	S,L
Carya glabra	Pignut Hickory	D/F-S	M,P,CP	S,L
Carya ovata	Shagbark Hickory	M-D/F-S	M,P,CP	S,L
Carya tomentosa	Mockernut Hickory	D/F-S	M,P,CP	S,L
Celtis laevigata	Sugarberry	M/F-S	P,CP	F,L
Chamaecyparis thyoides	Atlantic Whitecedar	W-M/F-P	CP	C,L
Diospyros virginiana	Persimmon	M-D/F-P	M,P,CP	F
Fagus grandifolia	American Beech	M/P-S	M,P,CP	S
Fraxinus americana	White Ash	M/F-S	M,P	S,L
Fraxinus pennsylvanica	Green Ash	W-D/F-P	M,P,CP	S,L
Gordonia lasianthus	Loblolly Bay	W-M/F-P	CP	C
Ilex opaca	American Holly	W-D/F-S	M,P,CP	C,F,N,L
Juniperus virginiana	Eastern Redcedar	M-D/F-P	M,P,CP	C,F,L
Liquidambar styraciflua	Sweetgum	W-M/F-P	M,P,CP	S
Liriodendron tulipifera	Yellow-Poplar	M/F-P	M,P,CP	S,H,N,L
Magnolia acuminata	Cucumber Tree	M/F-P	M,P	S
Magnolia grandiflora	Southern Magnolia	M/P-S	P,CP	C,S
Magnolia virginiana	Sweetbay	W-M/F-P	P,CP	S,L
Nyssa sylvatica	Blackgum	D/F-P	M,P,CP	F
Oxydendrum arboreum	Sourwood	D/F-S	M,P,CP	N
Persea borbonia	Redbay	W-M/F-S	CP	C,F,L
Pinus echinata	Shortleaf Pine	D/F-P	M,P,CP	C,S,L
Pinus palustris	Longleaf Pine	D/F	P,CP	C,S
Pinus strobus	Eastern White Pine	D/F	M,P	C,S
Pinus taeda	Loblolly Pine	M-D/F	M,P,CP	C,S,L
Platanus occidentalis	Sycamore	M/F-P	M,P,CP	S
Prunus serotina	Black Cherry	M-D/F	M,P,CP	F,N,L
Quercus alba	White Oak	M-D/F-P	M,P,CP	S,L
Quercus coccinea	Scarlet Oak	D/F-P	M,P	S,L
Quercus falcata	Southern Red Oak	M-D/F-P	M,P,CP	S,L
Quercus michauxii	Swamp Chestnut Oak	M/F-P	P,CP	S,L
Quercus nigra	Water Oak	M-D/F-P	P,CP	S,L
Quercus pagoda	Cherrybark Oak	M/F-P	P,CP	S,L
Quercus phellos	Willow Oak	W-M/F-P	P,CP	S,L
Quercus rubra	Red Oak	M/F-P	M,P	S,L
Quercus shumardii	Shumard Oak	M/F-P	P,CP	S,L
Quercus stellata	Post Oak	D/F	M,P,CP	S,L
Quercus velutina	Black Oak	M-D/F-P	M,P,CP	S,L
Quercus virginiana	Live Oak	D/F	CP	C,S,L
Robinia pseudoacacia	Black Locust	M-D/F-P	M,P	S,L
Salix nigra	Black Willow	W-M/F-S	M,P,CP	L
Sassafras albidum	Sassafras	M-D/F-P	M,P,CP	F,L
Taxodium distichum	Baldcypress	W-M/F-P	CP	S
Tilia americana	Basswood	M/F-P	M,P,CP	S,N,L
Tsuga canadensis	Eastern Hemlock	M/P-S	M,P	C,S
Ulmus alata	Winged Elm	M-D/F-P	M,P,CP	S,L
Ulmus americana	American Elm	W-M/F-P	M,P,CP	S,L

Latin Name	Common Name**	Soil/Light	Region	Wildlife Value
Small trees/shrubs (10-30 ft)				
Aesculus pavia	Red Buckeye	M/P	CP	H,N
Aesculus sylvatica	Painted Buckeye	M/P	P	H
Alnus serrulata	Alder	W-M/F-P	M,P,CP	S,L
Amelanchier arborea	Serviceberry	M-D/F-S	M,P	F,N,L
Amelanchier canadensis	Juneberry	W-D/F-P	P,CP	F,N,L
Amelanchier laevis	Allegheny Serviceberry	M-D/F-P	M	F,N,L
Aralia spinosa	Devil's Walking Stick	M/F-P	M,P,CP	F,N
Asimina triloba	Pawpaw	M/F-S	M,P,CP	F,L
Carpinus caroliniana	Ironwood	W-M/P-S	M,P,CP	S,L
Castanea pumila	Chinquapin	D/F-P	M,P,CP	S
Celtis tenuifolia	Dwarf Hackberry	D/F-P	P	F,L
Cercis canadensis	Eastern Redbud	M-D/F-P	M,P	S,N,L
Chionanthus virginicus	Fringetree	M-D/F-P	M,P,CP	F
Cornus amomum	Silky Dogwood	W-M/P-S	M,P,CP	F,N,L
Cornus florida	Flowering Dogwood	M-D/F-P	M,P,CP	F,N,L
Crataegus spp.	Hawthorn	M/F-S	M,P,CP	F,H,N,L
Cyrilla racemiflora	Titi, Swamp Cyrilla	W-M/F-S	P,CP	C,N
Halesia tetraptera	Carolina Silverbell	M/P-S	M,P	N
Hamamelis virginiana	Witch-Hazel	M/F-S	M,P,CP	S
Ilex decidua	Possumhaw	W-D/F-P	P,CP	F,N,L
Ilex verticillata	Winterberry	W-M/F-S	M,P,CP	F,N,L
Ilex vomitoria	Yaupon	W-D/F-S	CP	C,F,N,L
Morus rubra	Red Mulberry	M-D/F-S	M,P,CP	F,L
Myrica cerifera	Wax Myrtle	W-D/F-P	P,CP	C,F,L
Osmanthus americana	Wild Olive, Devilwood	M-D/F-P	CP	C,F
Ostrya virginiana	Hophornbeam	M-D/F-S	M,P	F,L
Prunus americana	Wild Plum	M-D/F	M,P	F,N,L
Prunus angustifolia	Chickasaw Plum	D/F	P,CP	F,N,L
Prunus caroliniana	Carolina Laurel Cherry	M-D/F-P	CP	C,F,N,L
Prunus pensylvanica	Fire Cherry	M-D/F	M	F,N,L
Rhus copallina	Winged Sumac	M-D/F-P	M,P,CP	F,N,L
Rhus glabra	Smooth Sumac	M-D/F-P	M,P,CP	F,N,L
Salix caroliniana	Carolina Willow	W-M/F-S	P,CP	L
Sambucus canadensis	Elderberry	W-M/F-P	M,P,CP	F
Sorbus americana	Mountain-Ash	M/F-P	M	F
Symplocos tinctoria	Sweetleaf	M-D/F-S	M,P,CP	S,N,L
Viburnum prunifolium	Black Haw	M/F-S	M,P,CP	F,L
Viburnum rufidulum	Rusty Blackhaw	D/F-S	P,CP	F,L
Small shrubs				
Callicarpa americana	American Beautyberry	M-D/F-S	P,CP	F
Calycanthus floridus	Sweetshrub	M/P-S	M,P	N
Ceanothus americanus	New Jersey Tea	M-D/P-S	M,P,CP	S,N,L
Cephalanthus occidentalis	Buttonbush	W-M/F-P	M,P,CP	S,H,N
Clethra alnifolia	Sweet Pepperbush	W/F-S	P,CP	F,H,N
Corylus americana	Hazelnut	M/F-S	M,P	S
Euonymus americanus	Strawberry Bush	M/P-S	M,P,CP	S
Gaylussacia dumosa	Dwarf Huckleberry	M-D/F-P	M,P,CP	F,N,L
Gaylussacia frondosa	Blue Huckleberry	M/F-P	P,CP	F,N,L
Hydrangea arborescens	Wild Hydrangea	M/P-S	M,P	S,N
Ilex glabra	Inkberry	M/F-P	P,CP	C,F,N,L
Itea virginica	Virginia Willow	W-M/P-S	M,P,CP	S,N
Kalmia latifolia	Mountain Laurel	M-D/F-S	M,P,CP	C,H,N
Leucothoe axillaris	Doghobble	W-M/F-P	M,P,CP	C,N
Lindera benzoin	Spicebush	M-D/F-S	M,P,CP	F,L

Soil moisture: W = wet; M = moist; D = dry.
Light requirements: F = full sun; P = partial shade; S = shade.
Region: M = mountains; P = piedmont; CP = coastal plain.
Wildlife Value: C = winter cover; F = fleshy fruit; S = seed, hard mast, or catkin; H = hummingbird nectar; N = butterfly and other insect nectar; L = butterfly larvae host plant.
*Use of specific plants by wildlife will vary regionally, and there always are exceptions.
**For information on which plants may be toxic to humans, visit https://plants.ces.ncsu.edu/plants/category/poisonous-plants/

Table 1. Plant species native to North Carolina* (including soil moisture and light requirements, region of primary occurrence, and benefit to wildlife)

Latin Name	Common Name**	Soil/Light	Region	Wildlife Value
Lyonia lucida	Fetterbush	M/P-S	P,CP	C,N
Phoradendron serotinum	Mistletoe	parasite	M,P,CP	F,L
Rhododendron atlanticum	Dwarf Azalea	W-D/F-P	P,CP	H,N
Rhododendron calendulaceum	Flame Azalea	M-D/P-S	M	H,N
Rhododendron catawbiense	Catawba Rhododendron	M/P-S	M,P	C,H,N
Rhododendron maximum	Rosebay Rhododendron	M/P-S	M,P	C,H,N
Rhododendron periclimenoides	Wild Azalea	W-M/F-P	M,P,CP	H,N
Rubus spp.	Blackberry, Dewberry	M-D/F-P	M,P,CP	C,F,S,N
Sorbus arbutifolia	Red Chokeberry	W-M/F-S	M,P,CP	F,L
Vaccinium arboreum	Sparkleberry	D/F-P	P,CP	C,F,N,L
Vaccinium corymbosum	Highbush Blueberry	M/F-P	P,CP	F,N,L
Vaccinium stamineum	Deerberry	D/F-P	M,P,CP	F,N,L
Vaccinium vacillans	Lowbush Blueberry	D/F-P	M,P,CP	F,N,L
Viburnum acerifolium	Mapleleaf Viburnum	M-D/P-S	M,P	F,L
Viburnum dentatum	Arrowwood	M/F-S	M,P,CP	F,L
Viburnum nudum	Wild Raisin	W-M/F-S	M,P,CP	F,L
Vines				
Ampelopsis arborea	Peppervine	W-M/F-P	CP	F
Aristolochia macrophylla	Dutchman's Pipe	M-D/P-S	M	L
Berchemia scandens	Rattanvine, Supplejack	W-M/F-P	P,CP	F
Bignonia capreolata	Crossvine	M-D/F-P	P,CP	H
Campsis radicans	Trumpet Vine	M-D/F-P	M,P,CP	H
Decumaria barbara	Climbing Hydrangea	M/F-S	CP	N
Gelsemium sempervirens	Carolina Jessamine	M/F-P	P,CP	C,H,N
Lonicera sempervirens	Coral Honeysuckle	M/F-P	P,CP	H
Parthenocissus quinquefolia	Virginia Creeper	M-D/F-S	M,P,CP	F
Passiflora incarnata	Passionflower	M-D/F-P	M,P,CP	H,N,L
Smilax spp.	Greenbrier	W-D/F-P	M,P,CP	C,F
Toxicodendron radicans	Poison Ivy	M-D/F-P	M,P,CP	F
Vitis spp.	Grape	W-D/F-P	M,P,CP	F
Ferns				
Polystichum acrostichoides	Christmas Fern	M/P-S	M,P,CP	C
Herbs and wildflowers				
Apocynum cannabinum	Hemp Dogbane	M-D/F-P	M,P,CP	N
Aquilegia canadensis	Columbine	M-D/P-S	M,P,CP	S,H,N
Arisaema triphyllum	Jack-in-the-Pulpit	W-M/P-S	M,P,CP	F
Aristilochia serpentaria	Virginia Snakeroot	M-D/P-S	M,P,CP	L
Aruncus dioicus	Goat's Beard	M/P-S	M,P	L
Asclepias incarnata	Swamp Milkweed	W-M/F-P	M,P,CP	N,L
Asclepias tuberosa	Butterfly Weed	D/F-P	M,P,CP	N,L
Asclepias variegata	White Milkweed	M-D/F-P	M,P,CP	N,L
Baptisia australis	Blue False Indigo	M/F-P	M,P	N,L
Baptisia tinctoria	Yellow Wild Indigo	D/F-P	M,P,CP	N,L
Bidens aristosa	Sticktight	W-D/F-P	P,CP	S,N
Chamaecrista fasciculata	Partridge Pea	M-D/F	M,P,CP	S,L
Chrysogonum virginianum	Green and Gold	M/S	P,CP	S,N
Cimicifuga racemosa	Black Cohosh	M/S	M,P	L
Cirsium horridulum	Yellow Thistle	M-D/F	P,CP	S,H,N,L
Coreopsis angustifolia	Narrow-Leaved Coreopsis	M/F-P	CP	S,N
Coreopsis auriculata	Eared Coreopsis	M/F-P	M,P,CP	S,N
Coreopsis falcata	Sickle Tickseed	W-M/F-P	P,CP	S,N
Coreopsis lanceolata	Lance-Leaved Coreopsis	D/F	M,P,CP	S,N

Latin Name	Common Name**	Soil/Light	Region	Wildlife Value
Coreopsis major	Greater Tickseed	D/F-P	M,P	S,N
Coreopsis verticillata	Threadleaf Coreopsis	D/F-P	M,P,CP	S,N
Desmodium spp.	Beggarlice	M-D/F-P	M,P,CP	S,L
Echinacea purpurea	Purple Coneflower	M-D/F	M,P	S,N
Eupatorium coelestinum	Mistflower	M/F-P	M,P,CP	S,N
Eupatorium fistulosum	Joe-Pye-Weed	M/F	M,P,CP	S,N,L
Eurybia divaricata	White Wood Aster	M-D/P-S	M,P	S,N,L
Geranium maculatum	Wild Geranium	M-D/F-P	M,P	S,N
Helianthus angustifolius	Swamp Sunflower	W-M/F-P	M,P,CP	S,N
Helianthus atrorubens	Sunflower	D/F	M,P,CP	S,N,L
Helianthus divaricatus	Woodland Sunflower	D/P	M,P,CP	S,N
Heliopsis helianthoides	Ox-Eye	M-D/F-P	M,P,CP	S,N
Hibiscus moscheutos	Rose Mallow	M/F-P	M,P,CP	H,N
Houstonia caerulea	Bluets	M-D/F-S	M,P,CP	N
Impatiens capensis	Jewelweed	W-M/P-S	M,P,CP	H,N
Ipomoea coccinea	Red Morning Glory	D/F	M,P,CP	S,H,N
Iris cristata	Crested Iris	M/P-S	M,P	H
Liatris spicata	Blazing Star	W-M/F	M,P	N
Lobelia cardinalis	Cardinal Flower	W-M/F-S	M,P,CP	H,N
Lobelia puberula	Blue Lobelia	W-D/F-P	M,P,CP	H,N
Lobelia siphilitica	Great Blue Lobelia	W-M/P-S	M	H,N
Mitchella repens	Partridgeberry	M/F-S	M,P,CP	F
Monarda didyma	Beebalm	M/P-S	M	H,N
Monarda fistulosa	Wild Bergamot	M-D/F-P	M,P,CP	H,N
Monarda punctata	Horsemint	D/F-P	P,CP	H,N
Oenothera fruticosa	Sundrops	M-D/F-P	M,P,CP	S,H
Penstemon canescens	Hairy Beardtongue	M-D/F-P	M,P	H,N,L
Penstemon laevigatus	Smooth Beardtongue	M/F-S	M,P,CP	H,N,L
Phlox carolina	Carolina Phlox	W-D/F-P	M,P,CP	N
Phlox divaricata	Blue Phlox	M/P-S	M,P,CP	N
Phlox paniculata	Summer Phlox	M/F-P	M,P,CP	N
Phlox pilosa	Prairie Phlox	D/F-P	P,CP	N
Phlox subulata	Moss Pink	D/F	M,P	N
Phytolacca americana	Pokeweed	M-D/F	M,P,CP	F,S
Pycnanthemum incanum	Hoary Mountainmint	M-D/F-P	M,P,CP	N
Rudbeckia fulgida	Orange Coneflower	M/F	M,P,CP	S,N
Salvia lyrata	Lyreleaf Sage	M-D/F-S	M,P,CP	H,N
Silene virginica	Fire Pink	M-D/P-S	M,P,CP	S,H,N
Solidago spp.	Goldenrod	M-D/F-P	M,P,CP	S,N
Spigelia marilandica	Indian Pink	M/P-S	M,P,CP	H
Stokesia laevis	Stoke's Aster	M/F-P	P,CP	N
Symphyotrichum retroflexum	Whitetop Aster	M-D/F-P	M	S,N,L
Symphyotrichum novae-angliae	New England Aster	M-D/F-P	M	S,N,L
Symphyotrichum novi-belgii	New York Aster	M/F-P	CP	S,N,L
Symphyotrichum pilosum	White Heath Aster	D/F	M,P,CP	S,N,L
Vernonia noveboracensis	Ironweed	W-M/F-P	M,P,CP	N
Vicia caroliniana	Wood Vetch	D/F-P	M,P,CP	S,L
Viola pedata	Bird-Foot Violet	D/F-P	M,P,CP	L
Grasses				
Andropogon glomeratus	Brushy Bluestem	M/F	P,CP	C,S,L
Andropogon ternarius	Splitbeard Bluestem	D/F	M,P,CP	C,S,L
Aristida stricta	Wiregrass	D/F-P	P,CP	C,S
Arundinaria gigantea	Switchcane	W-D/F-S	M,P,CP	C,S,L
Panicum virgatum	Switchgrass	M/F-P	M,P,CP	C,S,L
Sorghastrum nutans	Indiangrass	M-D/F	M,P,CP	C,S

Soil moisture: W = wet; M = moist; D = dry.
Light requirements: F = full sun; P = partial shade; S = shade.
Region: M = mountains; P = piedmont; CP = coastal plain.
Wildlife Value: C = winter cover; F = fleshy fruit; S = seed, hard mast, or catkin; H = hummingbird nectar; N = butterfly and other insect nectar; L = butterfly larvae host plant.
*Use of specific plants by wildlife will vary regionally, and there always are exceptions.
**For information on which plants may be toxic to humans, visit https://plants.ces.ncsu.edu/plants/category/poisonous-plants/

Figure 11. A cluster of orange coneflowers allows butterflies and birds access to abundant nectar and seeds without excessive movement or exposure to predators. Photo by Chris Moorman

- Plant low-growing herbs and shrubs under taller shrubs and trees. This helps to provide the layering important to birds. Different birds eat and nest on the ground and in the shrub, midstory, and canopy layers of a landscape.
- Make sure to provide adequate growing space for landscape plantings. Avoid planting large-maturing trees and shrubs where they will overgrow their space and interfere with overhead utilities or crowd homes and other structures. Shrubs and trees should be at least 6 feet away from all structures.
- Consult a local expert or one of many guides for recommended planting procedures. Because of North Carolina's hot summers, fall planting works best for most native plant species.
- Remain patient. It generally takes 3 to 5 years before the results of landscaping efforts pay off and wildlife use of native plants becomes obvious. An old adage says, "The first year a garden sleeps, the second year it creeps, the third year it leaps."

Where to find native plants

Look for native plants propagated from locally collected seed. This helps protect the unique characteristics of individual plants of the species growing wild in your area and ensures that the plants you use in your landscaping are best adapted to the local environment. Avoid planting cultivars of native plants when possible. Most of these variants may have been selected for qualities other than their value to wildlife, making them less desirable as wildlife plants. Although many conventional nurseries do not carry a large variety of native species, especially noncultivars, the number of reputable nurseries specializing in these plants is on the rise. Be wary of "deals" on native plants, especially orchids and trilliums, which often indicate the plants were collected from

Figure 12. You'll have to compete with American goldfinches for coneflower seed if you hope to propagate your own plants from seed. Photo by iStock.com/ABDESIGN

wild areas. Collecting plants from the wild contributes to the destruction of their habitats and often increases the chance of planting failure. Occasionally, local nature centers and botanical gardens initiate native plant rescues from areas soon to be cleared for development—these can be good and appropriate wild sources. In addition, it is possible to collect wild seed and sow or propagate native plants from the seed (Figure 12). See Phillips (1985), Bir (1992), and Schopmeyer (1974) for more on propagating native plants from seed.

To locate a nursery near you that sells native plants, visit:

- North Carolina Botanical Garden: **ncbg.unc.edu/recommended-sources-of-native-plants**
- North Carolina Forest Service: **www.ncforestservice.gov/Urban/pdf/NurseriesSellingNativeTrees.pdf**
- North Carolina Native Plant Society: **ncwildflower.org/native_plants/nurseries**

In addition, you can consult with local parks, nature preserves, garden clubs, botanical gardens, arboreta, and your local Extension Center for the names of additional native plant providers.

Eradication and Control of Non-natives

Herbicides, prescribed fire, selective removal of unwanted plants, and disking (or a combination of these activities) can be used to eliminate or control unwanted non-native plants (Figure 13). Because the results of these activities vary from county to county, you may need to experiment before finding the most successful approach for your property. In some cases, a range of native plant species already may be present. In others, a single non-native species may dominate a piece of property, requiring the landowner take extreme measures to increase the diversity and abundance of native plants.

Known invasive plants in North Carolina are listed in Table 2. This list is not comprehensive, and most of the plants named have already spread throughout North Carolina to the extent they can never be controlled completely. To prevent the list from continuing to grow, carefully consider a non-native plant's potential for invasiveness before introducing it on your property, especially when trying to attract wildlife. For more information on methods of control required for non-native plant species, contact your local Extension Center. The *North Carolina Agricultural Chemicals Manual*, published by North Carolina State University, and *Controlling Invasive Plants*, by the North Carolina Botanical Garden, are excellent references for non-native plant control.

Figure 13. Although many invasive plants like Japanese honeysuckle are here to stay, they can be controlled locally by using herbicides or removing by hand. Photo by Chris Moorman

Table 2. Known invasive plants in North Carolina

Common Name	Scientific Name
Trees	
Tree-of-Heaven	*Ailanthus altissima*
Mimosa	*Albizia julibrissin*
Chinaberry	*Melia azedarach*
Princess Tree	*Paulownia tomentosa*
Chinese Tallow Tree	*Sapium sebiferum*
Shrubs	
Japanese Barberry	*Berberis thunbergii*
Russian Olive	*Elaeagnus angustifolia*
Autumn Olive	*Elaeagnus umbellata*
Bicolor Lespedeza	*Lespedeza bicolor*
Japanese Privet	*Ligustrum japonicum*
Chinese Privet	*Ligustrum sinense*
Common Privet	*Ligustrum vulgare*
Oregon Grape	*Mahonia bealei*
Multiflora Rose	*Rosa multiflora*
Vines	
Porcelain-Berry	*Ampelopsis brevipedunculata*
Oriental Bittersweet	*Celastrus orbiculatus*
English Ivy	*Hedera helix*
Japanese Honeysuckle	*Lonicera japonica*
Kudzu	*Pueraria lobata*
Japanese Wisteria	*Wisteria floribunda*
Chinese Wisteria	*Wisteria sinensis*
Herbs	
Crown Vetch	*Coronilla varia*
Queen Anne's Lace	*Daucus carota*
Tall Fescue	*Lolium arundinaceum*
Sericea Lespedeza	*Lespedeza cuneata*
White Sweet Clover	*Melilotus alba*
Japanese Grass	*Microstegium vimineum*
Johnson Grass	*Sorghum halepense*

Internet resources

Native Plant Information

North Carolina Native Plant Society
www.ncwildflower.org

North Carolina Botanical Garden
ncbg.unc.edu

North Carolina Plant Conservation Program
www.ncagr.gov/plantindustry/plant/plantconserve

North Carolina State University Consumer Horticulture
projects.ncsu.edu/cals/hort_sci/gardening

Going Native: Urban Landscaping for Wildlife with Native Plants
www.ncsu.edu/goingnative/index.html

Non-native and Invasive Plant Information

Going Native: Urban Landscaping for Wildlife with Native Plants
www.ncsu.edu/goingnative/howto/mapping/invexse/index.html

Non-native Invasive Plants of Southern Forests: A Field Guide for Identification and Control
www.srs.fs.usda.gov/pubs/gtr/gtr_srs062/

Southeast Exotic Pest Plant Council
www.se-eppc.org

Plant Conservation Alliance—Alien Plant Working Group
www.nps.gov/plants/alien

U.S. Fish and Wildlife Service
invasives.fws.gov

United States Department of Agriculture PLANTS Database
plants.usda.gov

North Carolina Agricultural Chemicals Manual
content.ces.ncsu.edu/north-carolina-agricultural-chemicals-manual

Backyard and Other Wildlife

North Carolina Extension Wildlife, Fisheries, and Aquaculture
forestry.ces.ncsu.edu/forestry-wildlife

North Carolina Wildlife Resources Commission
www.ncwildlife.org

National Wildlife Federation
www.nwf.org/Garden-For-Wildlife/Wildlife.aspx

Going Native: Urban Landscaping for Wildlife with Native Plants
www.ncsu.edu/goingnative/index.html

Additional resources

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Funding for creation of this publication was provided in part through an Urban and Community Forestry Grant from the North Carolina Forest Service, in cooperation with the USDA Forest Service, Southern Region, and by the North Carolina Botanical Garden, University of North Carolina at Chapel Hill.

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Cover photo by iStock.com

Published by:
NC State Extension

NC STATE UNIVERSITY College of Natural Resources

copies of this publication were printed at a cost of $ or $ per copy.

06/17—DI Revised AG-636-03

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