

The Invasive Plant Dilemma

A small number of non-native plants have become highly invasive by altering the natural environment and out-competing native plant species. These alien plants were introduced either accidentally or deliberately into North America. The natural controls, such as disease and insects, that kept these plants "in check" in their homeland do not exist here. Invasive species also affect native wildlife and insects. The balance and diversity of the Georgia Piedmont decline as these invasives continue to spread. Some of the invasive exotic plants considered most destructive in this area by the Georgia Exotic Pest Plant Council are:

MOST INVASIVE GEORGIA EXOTIC PLANTS

- 1 *Achyranthes japonica*
Japanese chaff flower
- 2 *Ailanthus altissima*
Tree-of-Heaven
- 3 *Albizia julibrissin*
Mimosa
- 4 *Alliaria petiolata*
Garlic Mustard
- 5 *Arthraxon hispidus*
Small carpetgrass,
joint-head grass
- 6 *Celastrus orbiculatus*
Oriental bittersweet
- 7 *Elaeagnus umbellata*
Autumn Olive
- 8 *Fallopia japonica*
Japanese Knotweed
- 9 *Hedera helix*
English ivy
- 10 *Imperata cylindrica*
Cogongrass
- 11 *Ligustrum sinense*
Chinese privet
- 12 *Lonicera japonica*
Japanese honeysuckle
- 13 *Pueraria montana var. lobata*
Kudzu
- 14 *Melia azedarach*
Chinaberry
- 15 *Microstegium vimineum*
Japanese Stiltgrass
- 16 *Paulownia tomentosa*
Empress or Princess tree
- 17 *Rosa multiflora*
Multiflora rose
- 18 *Wisteria sinensis*
& *W. floribunda*
Asian wisterias

More Information

GEORGIA EXOTIC PEST PLANT COUNCIL
www.gaepc.org

GEORGIA BOTANICAL SOCIETY
www.gabotsoc.org

GEORGIA NATURAL HERITAGE PROGRAM
<http://georgiawildlife.dnr.state.ga.us>

USEFUL WEBSITES

www.plants.usda.gov
www.georgianatives.net
www.natureserve.org
www.wildflower.org/plants-main
<http://biology.USGS.gov/s+t/SNT/noframe/se130.htm#61965>



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Acknowledgements

CONTENT

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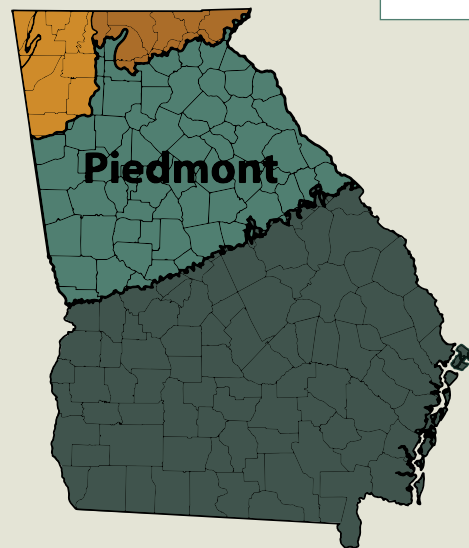
Hydrangea quercifolia

LANDSCAPING WITH NATIVE PLANTS IN THE

GEORGIA PIEDMONT

GEORGIA REGIONS

- Ridge and Valley
- Blue Ridge Mountains
- Piedmont
- Coastal Plain



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Trillium cuneatum
SWEET BETSY TRILLIUM

NATIVE
Species naturally occurring
in a region (indigenous)

EXOTIC
Species introduced by humans,
either deliberately or accidentally
(alien, non-native)

What are Native Plants?

Native plants are species that have grown naturally in an area, rather than being brought in by people from different regions and habitats. They are uniquely adapted to local conditions



Quercus alba
WHITE OAK ACORNS

because they have evolved in accordance with the physical factors specific to their region, such as climate (temperature and rainfall), soils and geology.

They have also co-evolved over the millennia with other organisms of the region, such as other plants, animals (including pollinators and insects), fungi and soil biota. When restoring landscapes, it is best to plant only those natives that naturally occur in the particular habitat, because they are suited to both the physical and biological conditions of the site.

Cultivated varieties (cultivars) of native species are selections that people have propagated to encourage specific horticultural traits. These cultivated plants do not possess the genetic diversity that exists in wild native populations. So, while good for many native plant gardens, cultivars are not appropriate for restoring native habitats: they don't supply the genetic diversity that species require over time to survive in nature's ever-changing conditions of drought, flooding, freezing, insect infestation and disease.

Benefits of Natives

- 1 Require little maintenance after establishment if plants are properly matched with site conditions.
- 2 Withstand regional temperature and moisture extremes; less likely to be adversely affected by these extremes than many exotics.
- 3 Provide diverse sources of food and shelter for wildlife, and support native food chains.
- 4 Promote biodiversity.
- 5 Foster appreciation of our natural heritage and the beauty of our native landscapes.

Basics about Using Natives

Landscaping with native plants is art imitating nature. Visit natural areas, observe how plants occur in communities, and design accordingly; use plants that occur together in their natural habitats.

The Piedmont is a mosaic of vegetation: different plant communities occur on dry, south and west facing slopes, for example, than appear on

stream banks or cool, north facing slopes. So, when restoring landscapes or creating a native garden, match the right plants with the right site conditions: choose natives that grow in the same light levels, moisture levels, soil type (texture, pH, fertility), landscape position, and aspect (the compass direction a hill-slope faces).

Native Plants for Wildlife

Native butterflies, insects, birds, mammals, reptiles and other species evolved with the native flora. Therefore, using native plants in the landscape supports and sustains these creatures year round. Native plants support insects that feed birds migrating or nesting in spring or summer. In fall, migrat-

ing birds depend on high-energy fruits produced by native shrubs, vines and trees. Nut-bearing trees, such as oaks, hickory and beech, provide food for a wide variety of animals. In winter, evergreen trees, like eastern red cedar, pines and American holly, provide important shelter and food.

What You Can Do to Protect Native Plant Communities

- 1 Buy only nursery-propagated plant material.
- 2 Don't dig from the wild unless participating in an authorized "plant rescue" program from sites being developed.
- 3 Plant locally native plant species wherever possible. Use this list as a guide.
- 4 Learn about native plants and the plant communities in which they occur.
- 5 Protect native plant and natural area habitats.

Itea virginica
VIRGINIA SWEETSPIRE



Geology

Sandwiched between the rugged mountain provinces and the flatter Coastal Plain, the Piedmont is a region of broad rolling hills, punctuated by occasional granite outcrops, lone granite or gneiss mountains (monadnocks), long straight ridges, deep ravines and river bluffs. The rolling topography creates correspondingly gentle gradients of moisture and light. Where the topography is steeper, north-facing slopes are markedly cooler, while south-facing slopes and ridge tops are often hot and dry.

A hodgepodge of rock types underlies these contours, due to the Piedmont's dramatic geologic history: it is formed from the very different rocks of ancient limestone reefs, beaches, ocean crusts and islands that were pushed together hundreds of millions of years ago when a collision of tectonic plates raised the Appalachians, an immense mountain chain that resembled the Himalayas of today. Over millions of years, the great mountains eroded to form the land surface of the Blue Ridge and Piedmont we see now.

The pressure and heat of the mountain building metamorphosed (melted and recrystallized) the Piedmont's rocks into a mélange of metamorphic rocks, such as marble, gneiss, schist, quartzite and

amphibolite. Large expanses are made up of gneisses and schists that contain only small amounts of potassium, calcium, nitrogen and phosphorus. Intense weathering of these rocks created the famous "Georgia red clay." These clay soils are mildly acidic and host oak-hickory and – where disturbed by fire or farming – pine forests.

The Piedmont flora, extending from eastern Alabama to Virginia, mirrors the vast area of similar soil conditions. But ribbons and patches of richer bedrock, such as amphibolite and calcium-rich gneisses, weather to richer soils that foster more diverse hardwood communities, especially on moist north-facing slopes.

Before European settlement, vast stretches of forest created deep, loamy topsoils. Poor farming practices washed these soils down to the stream valleys, leaving underlying, low-nutrient clays at or near the surface in many places. It will take centuries for the topsoils to rebuild, requiring gardeners to amend their soils and restorationists to carefully evaluate the soils as they work to rebuild natural plant communities.



Lobelia cardinalis
CARDINAL FLOWER