

Plant Conservation for the Home Gardener

By Elizabeth Haegele

Depending on what source you read, the measure of biodiversity on our planet ranges from 270,000 to 422,000 different flowering plant species. These numbers don't even include the estimated 50,000 undiscovered species worldwide. As numerous as these figures seem, a more important fact is that 100,000 plant species are threatened worldwide. In fact, more than 200 plant species in the United States have become extinct as a result of human activities. Along with the loss in plant life, comes the extinction of animals, habitats, and usable water. Some scientists believe that 1/5 to 1/4 of the earth's flowering plants may become extinct within a few decades.

We have all seen the impacts of an increasing population in our own region. Yet the ever-growing human population is causing vegetation destruction in almost every area of the world. Things such as pollution, exploitation of natural resources, and clearance of land for agriculture increase with the rate of population. Biodiversity decreases with each passing year. In addition to this strain on our planet, other factors such as the introduction of invasive exotic plants, climate change, and loss of natural habitats are contributing to the loss in biodiversity. The overexploitation of specific plants has also added to a decrease in plant populations and genetic diversity.

In recent years government and private agencies have taken action against this crisis. Regulations such as the U.S. Endangered Species Act and groups like the Botanic Gardens Conservation International (BGCI) have helped place legal limitations on private industry as well as educating the public on the importance of conservation at local, national, and global levels. BGCI has created a Global Strategy for Plant Conservation with 188 governments around the world and also runs a database on plants grown in the world's botanic gardens at http://www.bgci.org/plant_search.php. Many botanic gardens and arboreta around the world have helped to educate and inspire people to appreciate plant conservation in hopes of inspiring them to learn more about plant conservation.

The Center for Plant Conservation's National Collection of Endangered Plants list is searchable and online at <http://www.centerforplantconservation.org>. The Scott Arboretum grows several plants on this list including *Diervilla sessilifolia*, southern bush honeysuckle, which is next to the Wister Greenhouse entrance. This plant's population is virtually unknown in the wild. It is extremely susceptible to the effects of overpopulation and development. Factors such as road construction, invasive exotic growth, and erosion after logging have all played a part in ranking this plant as "rare" (21 to 100 occurrences reported in the wild) on the USDA's Global Ranking of Threatened Species. With no recovery plan in place and only a small understanding of the habitat requirements of this plant, the future is unknown.

Amelanchier nantucketensis, Nantucket serviceberry, which is located in the Terry Shane Teaching Garden, is a plant that has been adversely affected by uncontrolled development of vacation homes along the east coast. The Nantucket serviceberry is endemic to North America's Atlantic coast. It has a protected status in Maine, Massachusetts, New Jersey, and New York because housing developments in these states have destroyed much of the needed rare coastal habitats. The introduction of invasive exotics in this region may also contribute to the future elimination of this species.

The Scott Arboretum is known for its thorough and historical rhododendron collection. *Rhododendron austrinum*, the Florida flame azalea, is an extremely popular garden plant, but is still listed on the CPC's National Collection of Endangered plants because not much is known about this plant in the wild. It is endangered in Florida because of habitat destruction associated with housing developments and citrus farms. Also in our collection, *Rhododendron prunifolium*, the plum-leaf azalea, is in danger of becoming extinct in the wild because few seedlings are ever found in this plant's natural habitat. Many of this plant's natural habitats in Georgia and Alabama have been destroyed because of erosion after logging.

A major threat to specific plant species is the overexploitation by people who collect from wild populations and sell in the nursery trade. By knowing the status of plant species you decide to grow in your own garden, you can be an informed and careful consumer when you shop at a local nursery. Always buy plants that you know are only nursery-propagated or from cultivated stock. Wording such as "nursery grown" can still mean the plant was dug up from the wild. Be especially cautious when buying orchids, cacti, bulbs, cycads, carnivorous plants and native wildflowers, as these are most threatened by wild collection. Use your power as a consumer to support businesses who work to conserve endangered or threatened plants.

If you know you have plants in your garden or home that are threatened, take the time to document their origins. Some specific orchids and cycads are so endangered, that the plants in private hands can be extremely valuable germplasm for future conservation efforts. An understanding of exactly where these plants came from increases the ability to conserve them properly.

Conserving threatened plant populations can actually begin at home by creating a garden of native plants that do not face a risk of extinction. Use plants to create a habitat for plant pollinators such as moths, bees, ants, birds, and bats. By gardening with plants that will help sustain a community of pollinators, you are contributing your part in conserving local plant communities. By not using plants that are known to be invasive, you can help protect native plants from being displaced. These native plants are part of an entire ecosystem that sustains animals, insects, and healthy humans.

Volunteer your time at botanic gardens around the country that have conservation efforts. The Center for Plant Conservation has a program that helps to ensure long-term care of certain species through a sponsorship program. The home gardener can choose a relative of a favorite garden plant to sponsor.

While many people feel the world-wide plant conservation effort is left to the botanists and conservation scientists, gardeners actually need to play a role in plant conservation. Remember that some plants like the *Franklinia alatamaha* are now extinct in their natural habitats and exist only in cultivated gardens. With the collaboration of scientists, public gardens, and home gardeners around the world, we can ensure that all of our gardens, both natural and man-made, can be passed to the next generation. In Janet Marinelli's *Stalking the Wild Amaranth: Gardening in the Age of Extinction*, she suggests the true environmental heroes of the future will not be conservation biologists or environmentalists, but rather gardeners who will embrace an ecologically wise landscape design and plant palette. In this book, Marinelli describes the history of garden design and the use of cultivated plants in relation to the increasing problem of plant extinction due to over-population and over-development. Marinelli wrote another book that is

geared toward the gardener who designs and plants with conservation in mind. Her book *Plant: The Ultimate Visual Reference to Plants and Flowers of the World*, is an encyclopedia of plants around the world with a fascinating introduction on the biodiversity crisis our planet faces today. Both of these books are available in the Scott Arboretum library.

While gardening at home contributes a different kind of conservation help than botanic gardens and conservation scientists can offer, it is important for everyone to play a part in understanding the threat that certain plants are under both locally and globally. Do not underestimate your power as a gardener to preserve, conserve, and consume responsibly to ensure future generations can love the same plants that we do today.

Woody plants at the Scott Arboretum on the Center for Plant Conservation National Collection of Endangered Plants list:

- *Amelanchier nantucketensis* – Terry Shane Teaching Garden
- *Chionanthus pygmaeus* – Glade Garden
- *Diervilla rivularis* – Summer Border
- *Diervilla sessilifolia* – In front of Wister Greenhouse
- *Rhododendron austrinum* – between Cedar Lane and Cherry Border
- *Rhododendron prunifolium* –Wister Garden

* *Franklinia alatamaha*- in the Peony Collection is not on the endangered list because it is considered extinct in the wild.

Photo captions:

1) The *Diervilla sessilifolia*, Southern bush honeysuckle, next to the Wister Greenhouse entrance is on the Center for Plant Conservation National Collection of Endangered Plants list. (Credit: E. Haegele)

2) A true testament to the influence that gardeners can have in plant conservation, the *Franklinia alatamaha* is extinct in the wild and exists only in the garden environment. (Credit: D. Mattis)

3) The *Rhododendron austrinum*, or Florida azalea, is a widely used garden plant but not much is known about this plant in the wild. It is listed on the CPC's National Collection of Endangered Plants list. (Credit: E. Haegele)

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