

Queens Botanical Garden Plant Collections Policy
Adopted by the Board of Directors on January 29, 2008

I. Introduction

Mission

Adopted December 15, 2010

Queens Botanical Garden is an urban oasis where people, plants and cultures are celebrated through inspiring gardens, innovative educational programs and demonstrations of environmental stewardship.

Mission of the Plant Collections

From the Master Plan for the Queens Botanical Garden, adopted September 21, 2001¹:

“Queens Botanical Garden will honor the past, celebrate the present, and welcome the future cultural landscapes of Queens, an area that has changed significantly since William Prince established the first commercial nursery in Flushing in 1737 and one that has continued to change.

The diverse plant collections will be developed to highlight cultural traditions, inviting visitors to experience their culture outside of its immediate setting and explore the traditions of others. The Garden will do this by creating relationships with people who have knowledge of the uses of plants, and by collecting and exhibiting plants that are especially meaningful. The Garden will give primary attention to plants significant to the ever-changing population of Queens, and also promote sustainability through selection of plants appropriate to the site, through sensitive environmental landscape practices and through the wise use of resources as demonstrated by various cultures. Plant selection and care will be informed by the multiple uses of the collections—for beauty and interest, education and research—by people both on-site and off. The dual focus on cultural traditions and sustainability, combined with the “collecting” of the people who have the knowledge of the use of plants, will provide Queens Botanical Garden with the framework for an interesting and meaningful public garden for residents of Queens, a gateway to America, and people of the world.”

With the adopted Vision, Mission and Master Plan providing inspiration and guidance, we enumerate here the main purposes for our Plant Collections:

- To give emphasis to *collecting* plants that are significant culturally, especially to the diverse ethnicities of Queens present and past; as such, this includes having representatives of both the native flora that once dominated this geographic area such as New York Ironweed (*Vernonia noveboracensis*), Compass plant (*Sylphium*

¹ The Master Plan for Queens Botanical Garden, p 30.

laciniatum) and plants that are or have been important economically, geographically or for traditional use by the people of Queens and beyond,

- To *grow* plants in a way that demonstrates cultural traditions, exemplary horticulture and environmental sustainability, understanding that as part of our educational and research missions this will lead us to demonstrate a range of horticultural techniques and practices,
- To *create displays* that emerge from and foster dialogue between people about the world of plants as seen through cultural and environmental traditions and practices, exhibits that are informed by the field of ethnobotany, which is a study of the relationships between groups of people, their culture and the plants they use,
- To *promote a better understanding and appreciation* of the relationship between humanity and the rest of the natural world through responsible stewardship, that includes the message of conservation of the world's natural resources,
- To *maintain a rich and diverse collection of living plants for use in education*, both at a popular and academic level.

II. Managing the Collections

Queens Botanical Garden is committed to maintaining comprehensive plant records, including maps, to keep track of permanent accessions in its collections. QBG currently has a known inventory of 36,090 plants (woody and perennial) of which 760 are mapped to date, at a rate of 200 plants being mapped monthly. Our permanent collections consist of mainly ornamental trees and shrubs. In 2007, we added an extensive collection of native plants (woody and perennial) that includes approximately 830 species and 27,000 individual plants in our new *Plants in the Community* garden.

The *horticulture department* is responsible for the care and maintenance of the living collections. A *collections committee*, comprised of representatives from the education, horticulture, visitor services and research departments along with other appropriate staff and at least two representatives from outside the staff will conduct periodic reviews, at least every five years, to keep this policy up-to-date with the garden's Vision, Mission and goals.

The Collections Policy, without the appendices, will be subject to board approval. Queens Botanical Garden is in its infancy in terms of true development of its collections. As this document will also serve as an educational and planning tool for staff, board and others, appendices have been developed. Staff will utilize the plant lists included in the Master Plan as a starting point for identifying new plants to acquire to further develop our niche.

These lists are:

1. Trees and Shrubs Native to New York City,
2. Plant Communities,
3. Summary of the Prince Nursery Catalogue,
4. Camp Followers at Queens Botanical Garden (i.e. weeds),

5. Plants for Food, Medicine and Ornamentation.

Appendix A includes a *Summary of Current Gardens* and will be updated by staff as needed. Appendix B shows the “*Voluntary Codes of Conduct for Botanic Gardens and Arboreta*” and Appendix C provides *Additional Resources*.

A copy of this Policy, with the appendices, will be given to every new full-time horticulture staff member, educator and researcher. Key marketing and development staff will be informed of these organizational priorities. The policy will be available to all staff and others through electronic means. Updated appendices will be distributed as appropriate.

III. Selection Criteria for Collections

In accordance with QBG’s Vision and Mission, QBG will select plants that meet either or both of the following primary criteria:

I. **Cultural Expression** – plants with ethnobotanical value and symbolic significance in various cultures:

Plants have long been the major source of food, clothing and building materials and are widely used in healing, gardening, tempering living spaces and in religious ceremonies and folkloric ways. Plants that help illustrate such traditional uses, in particular those of significance to the diverse cultural communities of Queens, will be showcased.

--Consideration will be given to plants of *historical significance* within our institution or the local area. These include the three Blue Atlas Cedars (*Cedrus libani* subsp. *atlantica*) from the 1939 World’s Fair *Gardens on Parade Exhibit* that were transplanted to our Main Street gate from the Garden’s original site in Flushing Meadows Corona Park, or plant descendants from the Prince or Parsons’ Nurseries. The Prince Nursery was the first plant nursery in America, founded in 1737 in Flushing. The Parsons Nursery, founded in 1838, was on another section of the Kissena Park Corridor (QBG is within this corridor).

II. **Sustainability** – plants that require fewer human and natural resources, help maintain local biodiversity and keep a balance in our ecosystem:

We recognize the word sustainability in a broad context, acknowledging that different levels of inputs and methods of care are required for a wide range of plants and gardens. We also acknowledge there are different gardening practices such as composting, mulching and various methods of irrigating that help facilitate more sustainable collections. Our educational mission is to highlight these methods, and those that are unique to the diverse cultural groups who visit QBG, and to show how we can meet today’s challenge of conserving human and other natural resources.

--Consideration will be given both to a *plant's ability to sustain itself* and a *plant's role in contributing to the ecosystem*. Emphasis will be given to plants that can be maintained with *minimal labor, irrigation and/or synthetic pesticides and fertilizers*.

--Consideration will be given to plants that strengthen *local biodiversity*. This has two main aspects:

1. ***Native Plants***: QBG will monitor NYS endangered and rare species lists and take actions, from participating in education and community outreach activities, to acquiring species to be protected, to the degree feasible and in coordination with other local organizations. "Native plants *in a particular area*, are those that were growing naturally in the area before humans introduced plants from distant places. In eastern and central North America, native plants typically grew in communities with species adapted to similar soil, moisture and weather conditions."² For our purposes we are using all counties within a 50-mile radius of Manhattan as the parameter for the definition of "native plant."³
2. ***Invasive Plants***: Species that "spread rampantly when they are free of natural checks and balances found in their native range,"⁴ threaten our local biodiversity. Such plants, as listed on applicable local lists as noted in Appendix C, will not be introduced. Procedures for phasing out currently existing locally invasive species and introducing non-invasive alternative plants will be developed and generally implemented. In the event that having an invasive plant in our collection is considered to be of such high importance for education, research or other purposes, QBG, under the aegis of the Collections Committee, will develop clear and strict guidelines for monitoring and control.

These two criteria—cultural expression and sustainability—are broad enough to include plants of great interest for educational and display purposes yet specific enough to give a focus to the development of our plant collections, whilst still remaining faithful to our mission statement.

IV. Acquisition and Plant Record Management

Plant material will be acquired in accordance with the selection criteria stated above. Permanent woody and perennial plants will be accessioned, that is, catalogued and entered into the electronic plant records management system (currently BG-Base and BG-Map).

² Definition from the website: <http://for-wild.org/landscap.htm>. Wild Ones NPO National Education Organization, PO Box 1274, Appleton, WI 54912

³ A definition used by the Center for Urban Restoration Ecology (C.U.R.E.), a collaboration between the Brooklyn Botanic Garden and Rutgers University.

⁴ From the United States Department of Agriculture's website, see additional information in Appendix C.

Only plant material that has been collected, exported and imported in compliance with applicable laws and regulations will be allowed into the Garden's collections⁵.

Plant material may be acquired by QBG from the following sources:

1. **Purchases.** The appropriate horticulture department member in accordance with the selection criteria stated above may make plant purchases.
2. **Field collection.** Field collectors must comply with all relevant local, national, and international laws and regulations with respect to the collection and movement of plant material. Only plants that are acquired in a way that does not deplete wild populations will be accepted.
3. **Donations.** Donations are welcome if they meet one of our criteria, are needed and are given without restrictions placed by donor. All donated plant material is subject to approval by the Supervisor of Horticulture, or other designated staff member, who has the right to refuse, remove, donate, and/or dispose of gifts.
4. **Exchanges.** The exchange of living material with other gardens and institutions is encouraged and will be subject to approval by the Supervisor of Gardeners or other designated staff member.
5. **Loans.** Loans are temporary holdings of collections from other institutions or individuals. A loan period and other details shall be agreed upon in writing between the loaning institution/individual and the QBG.

Plant records will provide institutional continuity for long-term documentation of the Garden's collections. The Supervisor of Gardeners will be responsible for overseeing the plant records system and for determining, in consultation with other staff and/or the Collections Committee, the details of information to be recorded. Adopted plants will be inventoried annually and their condition noted in coordination the Development Department. All plant removals are recorded in the plant records database.

Deaccessioning: Plants may be deaccessioned from the living collection if they:

1. Are in conflict with the collections criteria,
2. Are unnecessary duplicates,
3. Are in poor health, diseased or damaged beyond repair,
4. Encroach on or crowd other plants, gardens or needs,
5. Are missing because they have been stolen or destroyed,
6. Are dead.

V. Evaluation and Maintenance

The overall health, maintenance, and general condition of the plant collections and gardens will be reviewed on a periodic basis. In some cases, outside experts may be consulted. Integrated Pest Management (IPM) will be given priority; licensed horticulture staff in compliance with all applicable laws and regulations, will conduct any application of

⁵ The Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) will be used for guidance.

regulated pesticides.⁶ As part of our mission of sustainability, QBG minimizes the use of regulated pesticides in our facilities and landscapes and makes every effort to limit synthetic chemical pesticides and fertilizers in our landscapes and greenhouses. Staff will use sound horticultural practices and maintain accurate, complete, and current plant records to the degree practical, through annual planning, prioritizing and constant evaluation. The Collections Committee will review the entire policy at minimum every five years and present the revised policy for board adoption.

ACKNOWLEDGEMENTS

The Queens Botanical Garden's Collections Policy Committee and horticulture staff, with input and oversight by QBG's Horticulture Committee, developed the Collections Policy.

Collections Policy Committee: - Patty Kleinberg, Marianne Kristoff, Susan Lacerte, Karl Mckoy, Jennifer Ward Souder.

Horticulture Committee: - Brian Carey, Evonne O'Dwyer, Jackie Fazio, Fred Gerber, Andrew Greller, Tim Heimerle, Morgan Potter, Karen Preuss, Catherine Redd, Magda Salvesen, Scott Stefan, Sophia Warsh.

Thank you also to additional QBG staff who provided input and review of the Collections Policy throughout its development.

⁶ The federal Environmental Protection Agency (US EPA), New York State Department of Environmental Conservation (NYS DEC), and the New York City Code of Rules and Regulations have jurisdiction. A summary of applicable laws and relevant website addresses is given in Appendix C.

Appendix A: Summary of Current Gardens

All-America Trial Garden

Award-winning display of annual flowers and vegetables seeds as determined by the All-America Selections.

Backyard Gardens

Small-scale gardening and landscaping solutions for Queens' backyards, originally designed and installed in the 1980s by member nurseries of the Long Island Nurserymen's Association, Inc. Pergola, Seaside, Fountain, Patio and Rock Gardens are the original settings that have been modified since inception. The City Gardens Club of New York City supported a renovation of the gardens in 2004.

Bee Garden

This popular garden includes a collection of plants and trees that attract bees. QBG's hives house Caucasian or Italian bees. This demonstration garden is especially popular for educational use and a number of the plants such as Bee Balm (*Monarda didyma*) and Stonecrop (*Sedum telephioides* 'Autumn Joy') are popularly known as bee favorites.

Bioswales

Bioswales are planted depressions designed to collect excess storm water. The plant species used in the bioswale are selected for their ability to tolerate both wet and dry conditions, plants such as Red Top (*Agrostis alba*) and Red Twig Dogwood (*Cornus stolonifera*). QBG's first bioswale was installed in 2005.

Booth Hill

A collection of predominantly native trees and shrubs that will succeed in a windy full-sun location and act as a block for snow drifts throughout the winter. Winter-hazel (*Corylopsis*), Witch-hazel (*Hamamelis*), Holly (*Ilex*), Cherry (*Prunus*), Blueberries (*Vaccinium*), Pepperbush (*Clethra*), Cornus Florida (*Dogwood*), Chokeberry (*Aronia*), Oxydendron (*Oxydendron*), Tulip tree (*Liriodendron*) and Oak (*Quercus*) are planted in groups along the hillside.

Cherry Circle

The Cherry Circle, a long-standing favorite backdrop for photographs and events at the Garden, was refurbished in 2007 to provide four seasons of interest. Ornamental Cherry trees, Kwanzan Cherry (*Prunus serrulata*), Weeping Higan Cherry (*Prunus subhirtella*), and Okame Cherry (*Prunus* 'Okame'), surround a garden path and boxwood hedge. Bordering the hedge and lawn, clusters of attractively arranged woody shrubs, perennials, ornamental grass, bulbs and annual plants provide beauty, texture and color through all seasons of the year.

Circle Garden

Originally the site of a circular fountain and later the temporary site of a monument important to the Korean community, the center ring of this bed was subsequently planted

with very tall sun-loving perennials and a Cut-leaf Sumac (*Rhus typhina* 'Laciniata'). The outer circle features plants significant in Korean culture such as Heavenly Bamboo (*Nandina domestica*), Rose of Sharon (*Hibiscus*) and Balloon Flower (*Platycodon grandiflora*) and/or plants native to the general area of Korea. These plantings were made through the support from the Korean Friends of the Queens Botanical Garden in 2002.

Cleansing Biotope

This is an area planted with native wetland species such as Common Rush (*Juncus effusus*) and Bulrush (*Scirpus americanus*). Rainwater from roofs and other runoff is directed to the plant root system, where contaminants are removed and treated through the bacterial activity of the root surface; then the water is stored in a 24,000-gallon cistern. Water is pumped to the entry plaza fountain where it continues to flow through channels back to the Visitor & Administration Building where the cleansing cycle begins again. It was installed in 2007.

Compost Demonstration Gardens

These gardens present lower-maintenance and resource alternatives to traditional front and backyard lawns. In it, Eco Grass (*Festuca*), Chamomile (*Chamaemelum nobile*), a mix of meadow flowers like Sweet Alyssum (*Lobularia maritima*) and Red Clover (*Trifolium pratense*), as well as compost bins and a patio made from recycled plastic lumber are displayed. This garden was originally installed in 1995 with funding provided through the NYC Department of Sanitation.

Constructed Wetland

This garden, installed in late 2007, is a functioning plant exhibit, providing habitat for plants, insects and birds while providing a way to cleanse and recycle gray water from the Visitor & Administration Building. The Constructed Wetland features a variety of wetland plants native to the area. Bottlebrush Sedge (*Carex comosa*), Great Bulrush (*Scirpus validus*), Marsh Fern (*Thelypteris palustris*) thrive and Cardinal Flower (*Lobelia cardinalis*) adds a dash of color. This landscape evokes the wetland plant communities that once existed throughout this region.

Craft Bed

Dry flower annuals are grown by and for the Crafts group for arrangements, pressed flower displays and making potpourri, sachets and other novelty items.

Fragrance Walk

Essential oils found in flowers, leaves, seeds, bark and roots give these plants their strong scent. This popular garden is a collection of shrubs, perennials and bulbs that are fragrant during the growing season. It includes Valerian (*Valeriana officinalis*), Mountain Mint (*Pycnanthemum virginianum*), and Bronze Fennel (*Foeniculum vulgare*). This border was originally installed in 2000 with funding from the Kaltman Family Foundation, which provided an additional donation in 2008 towards its upkeep and renovation.

Green Roof

A semi-intensive 3,000 square foot green roof with six inches of growing medium, most of the plants in this unusual garden are native species that require minimal artificial watering and provide habitat for birds, insects and humans. Plants featured are grasses such as Little

Bluestem (*Andropogon scoparius*) and Prairie Dropseed (*Sporobolus heterolepis*), a variety of Sedum (*Sedum*), Butterfly Weed (*Asclepias tuberosa*), New Jersey Tea (*Ceanothus americanus*) and Smooth Blue Aster (*Aster laevis*). The green roof was planted in 2007 and sits atop the Garden's 147-person auditorium.

Woodland Garden at base of Green Roof:

A collection of native woodland plants featuring ferns, shrubs, sedges, wildflowers including Foam-Flower (*Tiarella cordifolia*) and Woodland Sunflower (*Helianthus divaricatus*).

Herb Garden

This garden is a collection of woody, annual and perennial plants grouped by use for aromatic, culinary, medicinal and dye purposes. Throughout history, people have relied on herbs for cooking, healing, fragrance and in sacred cultural ceremonies and traditions. The Garden features plants such as Common Lavender (*Lavendula angustifolia*), Rosemary (*Rosmarinus officinalis*), Lemongrass (*Monarda fistulosa*). This Garden was originally planted in 1983 as a Youth Conservation Corps project, designed by Mrs. Whitman with funding from the Herb Society of America.

Meadow

Several acres of meadow are cut once a year and allowed to grow to mature height throughout the season. Perennial wild flowers such as Goldenrod (*Solidago canadensis*) and Asters (*Aster*) grow throughout the warmer months attracting birds, butterflies, bees and other insects that serve as planters of seed and pollinators, all helping to maintain biodiversity in Queens County. The sounds of the animal and insect life are striking, especially in summer. This area of the Garden has been managed as a meadow since 2003 and is especially important for use in education programs. Mowing this area only once a year not only improves air quality by reducing emissions from our mowers but also improves the quality of soil by reducing further compaction and building up organic content, which sets the stage for a diverse habitat.

Perennial Garden

A colorful succession of herbaceous plants that return each year and bloom from spring through fall. Special attention and coordination is given to blending plant heights, bloom time, color of flower and foliage. The Perennial Garden was installed in 1997. Some of the plants in this garden, such as Cardinal Flower (*Lobelia cardinalis*), can tolerate having "wet feet." Others such as the Cone Flower (*Echinacea* sp.) are versatile plants that adapt to varied conditions. The centerpiece of this perennial garden, a Chinese fringe tree (*Chionanthus retusus*), tolerates both wet soils and moderate drought conditions.

Pinetum

This collection of Spruce (*Picea*), Pine (*Pinus*), Cryptomeria (*Cryptomeria*), Juniper (*Juniperus*), Chamaecyparis (*Chamaecyparis*) and other cone-bearing trees was originally planted in groups by genus. It has educational value as an introduction to the diversity that exists within conifers.

Pin Oak Allée

The Pin Oak Allée provides long open views and features two stately rows of Pin Oak (*Quercus palustris*) that frame a central formal space in the Garden used for circulation as well events and passive enjoyment. Pin oaks are an important tree throughout NYC's parks and landscapes and were also part of both New York World's Fairs.

Plants in Community

This garden, installed in 2007, is organized around native plants that have been planted in their respective family groups. More than 15 plant families are highlighted: Asteraceae (Compositae), Asclepiadaceae, Berberidaceae, Caprifoliaceae, Fabaceae, Geraniaceae, Lamiaceae, Lilaceae, Oxalidaceae, Polygalaceae, Polypodiaceae, Primulaceae, Ranunculaceae, Saxifragaceae and Scrophulariaceae. These classifications will be of interest to both seasoned horticulturists and school groups who will be introduced to the morphological characteristics of plant families.

The Charles H. Perkins Memorial Rose Garden

A display of floribunda, hybrid tea, shrub, and miniature roses in attractive bed designs include plants that bloom from late May through October. The Rose Garden includes four arbors where climbers such as *Rosa* 'Zephirine Drouhin' and 'New Dawn' are displayed. This garden was installed by the Queens Rose Society in the late 1990s and maintained by them for several years before the group disbanded.

Wedding Garden

This highly cultivated area is a Victorian style garden that features beds of ornamental trees, shrubs, perennials, daffodils, tulips and annuals in bloom from late April through October. Its gazebo and the footbridge crossing a stream are popular places for wedding ceremonies and photographs. Although this garden is closed to the public except by appointment it is fully viewable from all sides.

Wetland Garden

Marsh, swamp and bog environments are disappearing in the wild and this garden serves as a demonstration of a natural habitat that attracts birds, fish and wildlife. Plants that grow predominantly in wet soil which include Turtle Head (*Chelone lyonii*), Pickerel Weed (*Pontederia cordata*) and Button Bush (*Cephalanthus occidentalis*) are featured. The trickling stream provides water to create the wet environment. This collection was originally installed in 1997 with funding from the Hudson River Foundation.

Woodland Garden

A forest setting of trees, shrubs and ferns complimented by "ephemerals" including spring flowering perennials and bulbs, this garden's walking trails and high canopy replicates within a city setting a woodland and also features bulbs for summer interest. The garden includes the Woodland Walk, a path meandering through an area of ornamental dry shade plants and shrubs including Flowering Dogwood (*Cornus florida*) and Witch Hazel (*Hamamelis x intermedia*) that border the woodland and paved path.

Groups of Plants by Genus:

As a prelude to determining future focus and priorities for collecting, genera with more than five species in database are noted below:

Crabapple (*Malus*)
Elm (*Ulmus*)
Hawthorn (*Crataegus*)
Birch (*Betula*)
Lilac (*Syringa*)
Oak (*Quercus*)
Magnolia (*Magnolia*)
Maple (*Acer*)

Historic:

QBG's site today holds some interesting tree specimens that reflect the unique horticultural heritage of Flushing. The Cork Tree (*Phellodendron japonicum*), Chinese Quince (*Pseudocydonia sinensis*) and Golden Rain Tree (*Koelreuteria paniculata*), are planted on a nearby site in Flushing originally used by Parsons nursery in the 1800s. Kiwanis originally sponsored a crabapple tree as a memorial and have since sponsored others. Other groups of plants such as the Rotary Cherry Grove and a donation to fund plants for the blind by the Lions Club, represent important connections to QBG's history.

Other Gardening Areas with Programmatic and/or Non-Public Uses:

Children's Garden

A private garden of vegetable, herbs and annual flowers, tended by children enrolled in the QBG's spring, summer and fall Children's Garden sessions. The Children's Garden has benefited from lead support from HSBC since 2003.

Propagation Greenhouse

Open for tours, the greenhouse is an area of intense activity where seeds and young plants are nurtured throughout the winter and spring by the horticulture staff. Tender plants, trees and shrubs from warmer zones over winter in the greenhouse in preparation for summer display. Collections, or groups, of orchids, bromeliads, bananas, ginger, and succulent plants that are housed in the greenhouse are often used for educational purposes and are generally not accessioned.

Senior Garden

More than 45 garden plots. The vegetable and flower gardens are planted, cultivated and maintained by persons age 60 and over.

World Farm/Staff Vegetable plots

This garden of vegetables and berry bushes, interspersed with topiary from a former day, is tended by staff and volunteers who work more than 8 hours a week.

Appendix B: Voluntary Codes of Conduct for Botanic Gardens and Arboreta, from the St. Louis Declaration on Invasive Plant Species (2001)

- Conduct an institution-wide review examining all departments and activities that provide opportunities to stem the proliferation of invasive species and to inform visitors. For example, review or write a collections policy that addresses this issue; examine such activities as seed sales, plant sales, book store offerings, wreath-making workshops, etc.
- Avoid introducing invasive plants by establishing an invasive plant assessment procedure. Predictive risk assessments are desirable, and should also include responsible monitoring on the garden site or through partnerships with other institutions. Institutions should be aware of both direct and indirect effects of plant introduction, such as biological interference in gene flow, disruption of pollinator relationships, etc.
- Consider removing invasive species from plant collections. If a decision is made to retain an invasive plant, ensure its control and provide strong interpretation to the public explaining the risk and its function in the garden.
- Seek to control harmful invasive species in natural areas managed by the garden and assist others in controlling them on their property, when possible.
- Promote non-invasive alternative plants or, when possible, help develop non-invasive alternatives through plant selection or breeding.
- If an institution participates in seed or plant distribution, including through Index Seminum, do not distribute known invasive plants except for bona-fide research purposes, and consider the consequences of distribution outside your biogeographic region. Consider a statement of caution attached to species that appear to be potentially invasive but have not been fully evaluated.
- Increase public awareness about invasive plants. Supply information about why they are a problem, including the origin, mechanisms of harm, and need for prevention and control. Work with the local nursery and seed industries to assist the public in environmentally safe gardening and sales. Horticulture education programs, such as those at universities, should also be included in education and outreach efforts. Encourage the public to evaluate what they do in their own practices and gardens.
- Participate in developing, implementing, or supporting national, regional, or local early warning systems for immediate reporting and control. Participate also in the creation of regional lists of concern.
- Botanical gardens should try to become informed about invasiveness of their species in other biogeographic regions, and this information should be compiled and shared in a manner accessible to all.
- Become partners with other organizations in the management of harmful invasive species.
- Follow all laws on importation, exportation, quarantine, and distribution of plant materials across political boundaries, including foreign countries. Be sensitive to conventions and treaties that deal with this issue, and encourage affiliated organizations (plant societies, garden clubs, etc.) to do the same.

Appendix C: Additional Resources

I Cultural Expression and Ethnobotany

The Queens Botanical Garden has produced a number of publications and articles related to cultural expression and ethnobotany.

Harvesting Our History: A Botanical and Cultural Guide to Queens' Chinese, Korean, and Latin American Communities, (1998); Linda Mannheim, writer; with research input from “cultural specialists” Elena Acosta, Fabiana Chiu-Rinaldi, Ann Kao and Katherine Kim, and an introduction by Susan Lacerte.

*New Celebrations, Old Traditions: S.E. Asian Heritage in Queens** (2003); Chloe Frommer.

*Traditional Caribbean Healing in Queens** (presented in Spanish & English) (2004); Jillian De Gezelle.

A Garden of Diversity: The Plants and People of Queens, Draft (2002); Erin H. Moriarty.

Preserving the Roots of Natural and Cultural Resources through Participatory Research / Popular Education Methods at the Queens Botanical Garden, Draft (2003); Chloe Frommer.

The following papers are available on the QBG website,
<http://queensbotanical.org/education/56902/57016>:

Hot & Cold: The Art of Traditional Chinese Medicine
Greece in Memory: The Food Traditions of Greece
Tet Nguyen Dan: The Vietnamese New Year
Nusantara Travels: Spices, Celebrations, and Roots of Indonesia in Queens
Diversity of the Philippines in Queens
Persimmons & Papayas: The Ethnic Markets of Queens
Urban ethnography: Treasures of Thailand Gaining Rootedness Abroad

Other References:

M.J. Balick and P.A. Cox. 1996. Plants, People, and Culture: The Science of Ethnobotany. W.H. Freeman, Scientific American Library. 228 pp. Reprint edition 2005.

Access Excellence program of the National Health Museum
www.accessexcellence.org/RC/Ethnobotany/

* available on the Queens Botanical Garden's website

II Sustainability

The Queens Botanical Garden has developed extensive information related to sustainability. Information about the Queens Botanical Garden's sustainable landscapes can be found at http://www.queensbotanical.org/103498/sustainable/sustainable_systems
And resources can be found at:

<http://www.queensbotanical.org/103498/sustainable/resources>

The Queens Botanical has also produced brochures related to sustainability such as:

What do the Wetlands Mean to Me? (1999); Jennifer Ward Souder

Sustaining the Future (2005-07); Max Joel and Jennifer Ward Souder.

Other References:

The U.S. Environmental Protection Agency's (EPA's) GreenScapes program

<http://www.epa.gov/greenscapes/>

The U.S. Environmental Protection Agency's (EPA's) GreenScapes program provides cost-efficient and environmentally friendly solutions for landscaping. It was established to help preserve natural resources and prevent waste and pollution.

Characteristics of Invasive Plant Species

<http://www.usna.usda.gov/Gardens/invasives.html>

- Produce large numbers of new plants each season.
- Tolerate many soil types and weather conditions.
- Spread easily and efficiently, usually by wind, water, or animals.
- Grow rapidly, allowing them to displace slower growing plants.
- Spread rampantly when they are free of the natural checks and balances found in their native range.

Invasive Plant Council of New York State

<http://www.ipcnys.org/default.aspx>

The purpose of the Invasive Plant Council of New York State is to provide an information clearinghouse for invasive plant identification, research and management.

The National Invasive Species Information Center (NISIC)

<http://www.invasivespeciesinfo.gov/about.shtml>

The National Invasive Species Information Center (NISIC) was established in 2005 at the National Agricultural Library to meet the information needs of users including the National Invasive Species Council (Council). NISIC creates and manages the www.invasivespeciesinfo.gov Web site. The Web site serves as a reference gateway to information, organizations, and services about invasive species.

New York State Invasive Species Task Force

<http://www.dec.ny.gov/animals/6989.html>

The NYS Invasive Species Task Force is led by the NYS Department of Conservation and the NYS Department of Agriculture and Markets and includes a number of other agencies and organizations working together to combat the threat of invasive species with a comprehensive and coordinated effort. It was formed when new legislation was passed in 2003 that called for a team to explore the invasive species issue and to provide recommendations to the Governor and the Legislature by November 2005.

Adirondack Park Invasive Plant Program

<http://www.adkinvasives.com/>

Initiated in 1998, the Adirondack Park Invasive Plant Program (APIPP) is a regional cooperative effort initiated in 1998 among citizens and organizations of the Adirondacks with a mission to protect the park from the negative impacts of nonnative invasive plants. The program coordinates two projects: the Aquatic Invasive Plant Project and the Terrestrial Invasive Plant Project.

Delaware River Invasive Plant Partnership

<http://www.paflora.org/DRIPP.html>

The Delaware River Invasive Plant Partnership provides invasive plant fact sheets and management plans for the Delaware River in New Jersey, New York, and Pennsylvania.

Nature Conservancy

<http://www.nature.org/initiatives/invasivespecies/>

The Nature Conservancy is working to prevent and control the spread of invasive species in all 50 states and across more than 30 countries around the world.

New York Flora Association

<http://nyflora.org/>

The New York Flora Association is dedicated to the promotion of field botany and greater understanding of the plants that grow in the wild in New York State. It is a non-profit group administered by the New York State Museum Institute.

Center for Environmental Research and Conservation

<http://www.cerc.columbia.edu/>

CERC's two-part mission is to build environmental leadership and to solve complex problems, in order to stem the loss of biological diversity and achieve environmental sustainability. CERC is a consortium of five world-renowned scientific institutions. It is headquartered at Columbia University and is part of the Earth Institute (<http://www.earthinstitute.columbia.edu/sections/view/9>)

US Fish & Wildlife Invasive Species Program

<http://www.fws.gov/invasives>

Ecology and Management of Invasive Plants Program

<http://www.invasiveplants.net/>

The Invasive Plants website contains information on invasive plants, their impact on native species, and their control (particularly biological control).

Center for Plant Conservation (CPC)

<http://www.centerforplantconservation.org/welcome.html>

The mission of the Center for Plant Conservation is to conserve and restore the rare native plants of the United States.

North American Plant Conservation Consortium (NAPCC)

http://www.aabga.org/web/2006/06/napcc_home.aspx

Resources regarding Rare, Threatened, Endangered NYS plants

Ecological Communities of New York State (1990); C. Reschke.

<http://www.dec.ny.gov/animals/29389.html>

Federally Protected Rare Plant Species Native to New York

<http://www.dec.ny.gov/animals/7133.html>

New York State's Protected Native Plants Regulation (6 NYCRR 193.3)

<http://www.dec.ny.gov/regs/15522.html>

Queens Botanical Garden is ever seeking to increase its role in plant conservation and biodiversity, as such we accept plants into our collection only when documentation shows their provenance adheres to the following laws that govern import/ export or exchange of living plant material.

Important Laws and Treaties

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973)

<http://www.cites.org>

CITES is an international agreement between governments. Its aim is to ensure that the international trade in specimens of wild animals and plants does not threaten their survival.

Plant Protections Act (2002)

<http://www.aphis.usda.gov>

The Plant Protections Act (PPA) prohibits or restricts the import, export or interstate movement of plants, plant pests, plant products, noxious weeds and biological controls. It became law after 17 years in the making. The PPA consolidates all or part of 10 existing USDA plant health laws into one comprehensive law.

Convention on Biological Diversity (1992)

<http://www.biodiv.org>

The Convention on Biological Diversity (CBD) is an international treaty created to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding sustainable development globally.

Agencies Important for Environmental Regulations

U.S. Environmental Protection Agency (EPA)

<http://www.epa.gov/>

The EPA is a Federal government agency charged with protecting human health and safeguarding the natural environment: air, water and land. EPA and the states register or license pesticides for use in the United States.

NYS Department of Environmental Conservation

<http://www.dec.ny.gov/>

This department was founded in 1970 it is responsible for the conservation and protection of natural resource within New York State. It manages state forests, forest preserves and state wildlife refuge areas, and oversees pesticide regulation for the State of New York.

NYC Department of Environmental Protection

<http://www.nyc.gov/dep>

Formerly known as the Bureau of Water Supply Police, the DEP monitors storage and disposal of hazardous waste and pesticides, water pollution, storm water complaints, septic systems and dumping.

United States Department of Agriculture (USDA)

<http://www.usda.gov/>

The Department of Agriculture is a Federal Agency set up to provide leadership on food, natural resources and related issues based on sound public policy, available science and efficient management.

New York City Local Law 37

<https://a816-healthpsi.nyc.gov/ll37/>

This new regulation administered by the NYC Department of Health, makes it illegal to use many traditional pesticide and herbicide products on city-owned or leased land. These targeted products have been found to contain carcinogenic ingredients. The law also institutes new record keeping and reporting procedures to be adhered to independent of existing DEC reporting practices.