

## Docent Informational Booklet Text 2024

### I. History

- a. The land on which the Houston Botanic Garden sits today had been useful to and enjoyed by wildlife and the indigenous peoples of the Texas Gulf Coast since long before colonization. The town of Harrisburg, founded nearby – between Brays Bayou and Lawndale – in 1854, was the precursor to the emergence of Houston as the primary city in the region. The town saw many firsts for the area, including the first port and first railroad.
- b. Around this same time, Allen’s Ranch encompassed approximately 15,000 acres to the southwest of Harrisburg, where camels, among other animals, were known to graze. In the early 1900s, following the passing of Samuel E. Allen, Allen’s Ranch was divided, and a portion became the small city of Park Place. Intended as an innovative, modern suburb, promotional materials from as early as 1919 included mention of a clubhouse, with a gym, swimming pools, and more. In 1922, the Park Place golf course opened, unfortunately destroying many acres of timbered forest that had provided habitat for native plants and wildlife.
- c. By 1927, the city of Houston had annexed Park Place, and citizens petitioned the city to purchase the country club and turn it into a park. From 1943 until the mid-2010s, the Glenbrook Country Club and Golf Course served as the primary form of recreation in the area, although use began to decline in the 1970s and continued through subsequent decades.
- d. After raising \$20 million dollars between 2015 and 2017 to show the city of Houston that there was sufficient public interest, the non-profit Houston Botanic Garden received a long-term lease from the city for the 132-acre former Glenbrook Golf Course site. Construction on the 30-year master plan by Dutch landscape design firm West 8 started in the spring of 2019, and the Garden opened to the public on September 18, 2020, following an official ribbon-cutting the day prior.
- e. Phase I of the master plan includes approximately 25 acres of development, including the Global Collection Garden, Culinary Garden, Susan Garver Family Discovery Garden, Woodland Glade, Pine Grove, Coastal Prairie, and Stormwater Wetlands.

### II. The Global Collection Garden Overview

- a. The Global Collection Garden is a source of great plant diversity, with roughly 500 active taxa. Active taxa can be defined onsite as our living plants having at least one living representative, accessioned in our collections database, with a taxonomic profile supporting our display label content and icons. As of 2024 we estimate 1100 taxa reside onsite. The Global Garden is a 3 acre space, dense with collections of plantings from around the world that do well in our Houston climate.
- b. Many initial plantings were experimental for Houston, but following Uri and recent climatic events the collections plantings are less experimental and more designed with risk of loss in mind.
- c. Many zones are inspired by regions of the world that are climatically similar to Houston.
- d. Mass plantings and unusual plants can be found here: with 114 native, 140 medicinal, and 21 bat pollinated plants - and growing.

- e. There are several plants here that engage the senses more than just the eyes: **touch with the spiral ginger** located near the Southern live oak with several epiphytes and hanging baskets that include an orchid; smell with the Mexican Mint Marigold (*Tagetes lucida*) or Sweet Almond Verbena (*Aloysia virgata*) in the Pollinator Garden.

### III. Culinary Garden

- a. The Culinary Garden features a wide assortment of both edible and medicinal plants from around the globe. Across its many distinct beds, it serves to show visitors how some of their favorite produce is grown, and presents opportunities for discussing how fruits, vegetables, and herbs have been used as a basis for economic and cultural exchange across history. In a city like Houston, where cuisines from around the world -- the Americas, Mediterranean, Asia, and Africa -- are enjoyed on a daily basis, and in uniquely experimental ways, the Culinary Garden represents the important role agriculture continues to play even in an increasingly urbanized society.
- b. Currently we have part of the Habitat exhibit located in the first prominent bed of the Culinary Garden called the Habitat House – it will be a vine house soon – jasmine vines are starting to grow over the metal structure that guests can walk through.
- c. Produce that is ready to be harvested is collected on Saturday mornings with culinary gardener (and volunteers) and available for visitors to take home.

### IV. Fountain & Alcoves

- a. The fountain is made of coral stone that was brought in from the Dominican Republic. These pieces used for the fountain were ones that were deemed not ‘pretty’ enough for the alcove walls- and were instead repurposed for this fountain! Here at the Garden we believe in reducing waste and reusing any material we can. The pockets in the walls were made from waves and erosion in the ocean, and they are perfect for holding plants and make little homes for some tiny creatures.
- b. **Alcove Wall:** The walls of this football field length shady area stay cool, even in the summer. The alcoves host our vine collection as you can see vines going up each of the columns. The wall has built in planters. Each grouping of plants in the wall planters is a little different. Depending on the area there are bromeliads, ferns, woodsorrels, ficus, and some seasonal plants. The shape of the alcove's roof is designed for water to runoff into the parking lot so that it goes through the gravel and travels to the wetland below the ground.

### V. Cycad Collection

- a. One cool collection in the Corner of Curiosity is the cycads. We have over 17 species of cycad in the garden, each with a different leaflet shape.
- b. Cycads are ancient plants that existed during the time of the dinosaurs. Fun fact: cycads are more related to pine trees than they are to palm trees. They too have cones for reproduction, but instead of the female cones being persistent like conifers, they are ephemeral, and their males cones persist, unlike the conifer's wind pollinated ephemeral male cones. It is believed beetles are responsible for their pollination. Much is still unknown about these fascinating plants.

- c. Like conifers, the plants are gymnosperms which means that their seeds are not encased in an ovary.
- d. *The Cycas revoluta x micholitzii* is one of the most valuable plants in the garden. Its leaflets split into V's. All cycads have mid-veins, but they lack lateral veins. The forked leaflet pattern is rare.
- e. One fascinating cycad is *Encephalartos trispinosus* (Bushman's river cycad). Its leaflets are stiff, incredibly sharp, and vary in the number of points they have. Young leaves are a beautiful bronze color and unfurl like a fern.
- f. Almost all cycads have circinate venation - or when the tips of new leaves are coiled.
- g. We protect these plants with pine straw bales and freeze cloth to protect them during any Houston freezes.

## VI. Tropical/Sanctuary

- a. **In the Sanctuary** – The sanctuary provides shade and a tranquil place to sit in the Garden to reflect on nature's beauty. It is a home to mostly native plants that are shade and drought tolerant, like yucca, rock rose, and agave.
- b. **Tropical Heart** – In traditional medicine, *Galphimia glauca* (golden thyralis) is used to combat hay fever and allergy reactions. Also, this plant is extremely drought-tolerant. You can find this spreading plant with golden flowers surrounding the Tropical Garden.
- c. **Bananas** - Bananas aren't actually trees. They are monocarpic herbs. That means they flower once, and that part of the plant dies to the ground and leaves a pup that starts the next generation. The banana stem is under the ground, and the part of the plant that we think of as a tree is actually a pseudostem.

## VII. Bamboo Forest

- a. The garden has several species of bamboo. When mature, the bamboo will arch over the garden paths, making a tunnel of foliage. As quickly as bamboo grows, that won't take long.
- b. One species of bamboo at Houston Botanic Garden is blue bamboo (*Bambusa chungii*). One differentiating feature of bamboo species is the space between their nodes (where the leaves attach to the stem). In blue bamboo, that can be a distance of 3 feet! When you visit, you will notice that blue bamboo is covered with a glaucous, or blue-grey coating. This is water-proofing that helps bamboo avoid infection.
- c. In bamboo, where the node is, the plant stem is solid, but between nodes, the stem is hollow. This allows bamboo to grow quickly and be light. The solid nodes make bamboo strong.

## VIII. Arid Valley

- a. Representing the desert, are the Arid Valley, Cactus Garden, and Prickly Path where a variety of agave, yucca, cacti, and other arid loving plants are showcased. Succulents like cacti use stems to store water. Many cacti undergo a specialized photosynthesis to further conserve water; opening their stomata at night and storing CO<sub>2</sub> in specialized cells for use in the daytime when their stomata are closed. Some of these hardy plants can survive in extreme conditions relying on dew or mist.
- b. Their survival adaptation allows them to grow here among the Arizona onyx boulders.

## IX. Savanna

- a. In the wild, the savanna is a transitional zone between rainforests and the desert. These areas are typically drier, having a shorter wet season and can be quite diverse.
- b. A savanna is a mixed ecosystem with an open canopy of widely spaced trees that allow sufficient light through to support herbaceous groundcover, primarily grasses.
- c. This area of the Garden includes native grasses like little blue stem (*Schizachyrium scoparium*), palo verde tree (*Parkinsonia* × '*Desert Museum*'), mesquite trees, and the Dewdrop which is a beautiful small reflection pond that contains lotus flowers.

**X. Asian Hillside**

- a. This Garden collection includes camellias, Asian palms, azaleas, pines, and gardenias to name a few. This garden is in transition after losing 7 of its pine trees after Hurricane Beryl.
- b. Fun fact: the Asian Hillside is the highest point of elevation at the Garden!

**XI. Pollinator Garden and Perennial Border**

- a. This section of the Garden is dedicated to pollinator plants that attract native bees, flies, wasps, butterflies, and more. They include salvias, Mexican mint marigold, and so many more. Ethnobotany is an entire field of study focused on how people interact with and use plants.
- b. Fun Facts: The sweet almond bush (*Aloysia virgata*), is also known as an incense bush due to the strong almond scent. It is incredibly fragrant. Ask visitors to smell it.
- c. In the American beautyberry (*Callicarpa americana*), there is a chemical that was found to defend against mosquitoes.

**XII. Susan Garver Family Discovery Garden**

- a. Found on the Southside of the Garden, The Susan Garver Family Discovery Garden presents opportunities for families to engage with nature in hands-on ways, including simple water machines, a boardwalk maze around a lagoon, and plenty of space to roam and explore.
- b. Plants found here include the Louisiana Iris (a growing collection), Carnivorous Bog, Loblolly pines, and Rainbow themed display beds, bursting with seasonal color throughout the year.

**XIII. Plant Morphology**

- a. Plant morphology is the general term for the study of the physical form and external structure of plants. This is usually considered distinct from plant anatomy, which is the study of the internal structure of plants, especially at the microscopic level.
- b. Docent Tip: Look up plant parts to visualize different parts of a plant. We want visitors to see the beauty of the plant beyond/in addition to the flower. A great example of this is the toothed margins of some agave plants or how certain plant stems zig-zag back and forth.
- c. Biodiversity is a priority for Houston Botanic Garden. The key to understanding biodiversity is "interconnectivity" or how everything is linked together. Biodiversity is biological diversity in an environment as indicated by numbers of different species of plants and animals, which are all interconnected with each other and the environment.
- d. Botanic gardens showcase plant diversity and allow researchers to find new ways to protect and increase biodiversity. Managing & showcasing nearly 30% of all plant species diversity

**XIV. Woodland Glade**

- a. Event space for outdoor ceremonies

- b. Shade loving plants and trees – ferns, holly ferns, camellias, hippeastrum, magnolia (almost all of them are there in the Garden)
- c. Diverse tree collection – any mature trees we did not plant

**XV. Mediterranean Garden**

- a. The plantings in the Mediterranean Garden represent the vibrancy of the coastal areas, from the Costa del Sol in Spain to the French and Italian Riviera, through the islands of Greece, and around the Nile River Delta to North Africa.
- b. The plants located here are the hardest areas to grow due to Houston’s climate – we have had to remove plants like lavender that did not do well with the heat and humidity and were not happy with the original soil mix.
- c. Jerusalem sage, agave collection and aloe – came from San Diego Botanic Garden
- d. Aloe blooms November until our first freeze in winter

**XVI. Botanist's Alley and Confetti Garden**

- a. Botanists’ Alley celebrates the men and women – past and present – whose plant exploration has contributed to the knowledge and conservation of plants. Ferdinand Lindheimer, John Fairey, Lynn Lowery, and others identified, collected, and studied the plants on display, which reflect the biodiversity that thrives along the Gulf Coast.
- b. Confetti Garden features spots of color and small flowers.

**XVII. Local Habitat**

- a. **Stormwater Wetlands** – Prior to development, Houston and the entire gulf coast region was mostly prairie and wetlands. These natural ecosystems absorbed excess rain water and prevented erosion for centuries. With the loss of more than 90% of such natural systems, manmade stormwater wetlands are an essential remedy.
  - i. Houston Botanic Garden’s 3-acre Stormwater Wetlands can store water for up to 72 hours while providing natural habitat for native wildlife. The green infrastructure houses thousands of native wetland plants evolved to take up large amounts of water while removing pollutants and fixing nitrogen. All the drainage you see at the Garden goes into the three basins that host an impressive range of native-to-Texas herons, egrets, turtles, frogs, insects, and fish (most notably, mosquito fish that team up with dragonflies to ensure little to no mosquitos call the waterbodies home).
  - ii. Some key plants present (mostly obligatory wetland plants aka ‘hydrophytes’ while some are facultative wetland plants):
    - 1. Southern blue flag iris (*Iris virginica*), ZigZag Iris (*Iris brevicaulis*), Bulrush species, Sagittaria species (commonly called arrowheads), *Spartina alterniflora* (Gulf cordgrass), Yellow water lilies (*Nymphaea Mexicana*), Texas Water Canna, Pickerel, *Thalia dealbata*, Creeping burhead, bacopa, Swamp lilies, Texas Spider lilies, and so much more!
- b. **Coastal Prairie** - If one were to stand on the shoreline of the Gulf Coast at any point between New Orleans and Mexico, then move inland up to 60 miles, they’d be standing in the original true coastal prairie region.

- i. Today, less than one percent of that coastal prairie region remains making it essential to restore as much of those one-of-a-kind ecosystems. Houston Botanic Garden's Coastal Prairie is a five-acre slice of land being restored to what it might have looked like centuries ago. It resembles a coastal prairie by way of plant species, low spots referred to as prairie potholes, and small hills often referred to as pimple mounds.
  - ii. It does NOT accurately resemble a naturally occurring coastal prairie in the unusual 22' slopes – a feature meant to provide extra detention capacity during times of high rainfall. When we're talking coastal prairie, there are what we call 'early succession plants' (the ones that show up first and are often annuals such as evening primrose and Indian paintbrushes etc.), and 'late succession plants' that show up when the environment is closer to where it needs to be (tall grasses and other staple perennials).
  - iii. Ideally, we want good representation of all the 'Big 4' species. The 'Big 4' refers to four iconic prairie grasses: Switchgrass, Indiangrass, Big Bluestem, and Little Bluestem.
- c. The restoration and management of these wilder spaces is a long process that requires the commitment of our conservation horticulturists and lots of help from volunteers. Many group volunteer projects occur in these areas of the Garden to help control invasive species and dominant species.

