URBAN GREEN INITIATIVE

Houston Miyawaki Forest

Native Species Guide

A comprehensive horticulture reference for landscape architects, park managers, horticulturists, HOAs, and state and city environmental infrastructure officials. All species verified against Texas A&M AgriLife Extension, Texas A&M Forest Service, Lady Bird Johnson Wildflower Center, Native Plant Society of Texas, Houston Chapter, and USDA PLANTS Database.

75	4	6	9a–10a
Species Profiled	Forest Layers	Site Catalog Types	USDA Zones

JUNE 2026 EDITION

urbangreeninitiative.org · info@urbangreeninitiative.org
Houston, Texas · © 2026 Urban Green Initiative

Introduction

How to Use This Guide

This guide profiles 75 native and regionally indigenous species recommended for Miyawaki-method urban forest plantings across the greater Houston metro area comprising of Harris, Fort Bend, Montgomery, Brazoria, Galveston, Liberty, and Chambers Counties. Species are organized by the four structural layers of a Miyawaki forest consisting of emergent, sub-canopy, shrub, and ground cover, reflecting their functional role in the forest canopy architecture.

Every species in this guide has been verified against at least two of the following authoritative sources: Texas A&M AgriLife Extension Service (Harris County), Texas A&M Forest Service Trees of Texas, Lady Bird Johnson Wildflower Center Native Plant Database, Native Plant Society of Texas (Houston Chapter), the City of Houston Native & Adapted Plants guide (Harris County Extension Horticulturists), Native Prairies Association of Texas plant lists, and the USDA PLANTS Database.

FLAG LEGEND	
✓ **RECOMMENDED**	Verified suitable for Houston Miyawaki forests across appropriate site types.
[!] SITE-SPECIFIC	Native species that are valuable, but have site, soil, or sourcing requirements that must be confirmed before use.
[!] USE WITH CAUTION	Active disease threat, invasive species confusion risk, or other critical factor requiring specialist review before planting.

DISCLAIMER

For Reference Purposes Only

This guide is published by Urban Green Initiative (UGI) as an educational and planning reference. All species profiles, zone data, site recommendations, planting protocols, and horticultural information contained herein are compiled in good faith from publicly available authoritative sources, including Texas A&M AgriLife Extension, Texas A&M Forest Service, the Lady Bird Johnson Wildflower Center, the Native Plant Society of Texas, the USDA PLANTS Database, and related scientific literature. However, UGI makes no representations or warranties — express or implied — as to the completeness, accuracy, currentness, or fitness for a particular purpose of any information in this guide.

Species performance, soil compatibility, disease risk, water requirements, and establishment outcomes vary significantly by site, microclimate, soil chemistry, planting season, maintenance regime, and other local conditions that cannot be fully anticipated in a generalized reference document. Information in this guide does not constitute professional horticultural advice, landscape architecture services, or a certified planting prescription.

Before any planting decision is made based on information in this guide, users are strongly advised to consult a licensed horticulturist, certified arborist, or registered landscape architect with demonstrated experience in Gulf Coast native plant ecology. Site-specific species selection, soil testing, disease risk assessment, and planting design should be reviewed and certified by a qualified professional prior to implementation.

Urban Green Initiative, its officers, directors, employees, volunteers, and affiliated partners accept no liability for any loss, damage, failed establishment, adverse ecological outcomes, or costs of any kind arising from reliance on this guide, whether in whole or in part. Use of this guide constitutes acceptance of these terms.

For project-specific guidance, contact Urban Green Initiative at info@urbangreeninitiative.org *or visit urbangreeninitiative.org.*

LAYER 01: EMERGENT (60–120 ft)

Large canopy trees 60–120 ft: primary structural anchors, maximum carbon storage, long-term habitat

The emergent layer defines the long-term ecological structure of any Miyawaki forest. These are the trees that will ultimately dominate the canopy, sequester the greatest volume of carbon, and provide the critical large-tree wildlife habitat — cavity nesting, raptor perches, mast crops — that smaller species cannot provide. In a new Miyawaki planting, emergent species are planted as small nursery stock (1–3 gal) and will initially be overtopped by fast-growing sub-canopy and shrub species. This is by design because the competitive pressure drives vertical growth. Within 5–7 years, the emergent species will overtop their neighbors and begin asserting canopy dominance.

Bald Cypress

Taxodium distichum

HEIGHT	70–100 ft	**SPREAD**	25–45 ft
WATER	Low–High (flood tolerant)	**LIGHT**	Full sun
SOIL	Acid to neutral; clay, loam, sand; tolerates periodic inundation	**WILDLIFE**	Wood ducks, songbirds nest; seeds eaten by waterfowl; raptor perch habitat

The signature bayou tree of Houston's coastal prairie. Deciduous conifer with feathery foliage turning russet in autumn. Exceptional stormwater retention; roots form knees (pneumatophores) in wet soils. Tolerates heavy clay and periodic flooding that makes it ideal for bayou-adjacent Miyawaki plantings. One of the fastest-growing large native trees in the region. Texas A&M ranks among top 5 trees for Gulf Coast urban landscapes. Longevity: 600–1,200 years. USDA zone 5–11.

Water Oak

Quercus nigra

HEIGHT	50–80 ft	**SPREAD**	40–60 ft
WATER	Moderate–High; tolerates seasonal flooding	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; heavy clay, silty bottomland soils	**WILDLIFE**	Prolific acorn producer — critical mast crop for 25+ bird species; white-tailed deer, squirrel

Semi-evergreen to deciduous. One of Houston's most common bottomland oaks, it naturally occurs in forests along Buffalo and Brays Bayou. Harris County AgriLife notes susceptibility to iron chlorosis on high-pH soils and notes it has been over-planted, therefore use selectively on acid to neutral sites. In Houston's Zone 8b climate, Water Oak typically holds foliage through mild winters, behaving functionally evergreen; true leaf drop occurs primarily in colder years or on drier sites. Acorn production begins at 20–25 years. USDA zone 6–10.

SITE RESTRICTION NOTE

Harris County AgriLife Extension notes Water Oak has been over-planted in the Houston region and shows susceptibility to iron chlorosis on alkaline soils. Restrict to acid soils (pH < 7.0); do not use on alkaline clay sites. Shumard Oak (Q. shumardii) is the preferred alternative on mixed-pH sites.

Shumard Oak

Quercus shumardii

HEIGHT	60–80 ft	**SPREAD**	40–60 ft
WATER	Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Acid to mildly alkaline; tolerates clay and compaction better than Water Oak	**WILDLIFE**	Abundant acorn producer; supports 40+ Lepidoptera species; woodpeckers, turkeys

The preferred large red oak for Houston-area Miyawaki plantings. Glossy deeply-lobed leaves with spectacular scarlet fall color for exceptional urban visibility. Tolerates mildly alkaline soils and urban stress better than Water Oak. Harris County Extension explicitly recommends over Water Oak for mixed-pH sites. Rapid growth (2–3 ft/year). USDA zone 5–9.

Nuttall Oak

Quercus texana (syn. Q. nuttallii)

HEIGHT	60–80 ft	**SPREAD**	30–50 ft
WATER	Moderate–High; exceptional clay tolerance	**LIGHT**	Full sun
SOIL	Heavy clay bottomland, acid to neutral; outstanding in poorly drained sites	**WILDLIFE**	Large acorns critical for waterfowl and wading birds; white-tailed deer

Harris County Extension specifically cites Nuttall Oak as *'particularly adapted to our heavy clay soils'*, making it among the top emergent choices for Houston's vertisol clay sites. It is in the red oak group and acorns mature in two years. Often confused with Shumard Oak but more bottomland adapted. Outstanding for retention pond edges and bayou buffer zones. USDA zone 5–9.

Bur Oak

Quercus macrocarpa

HEIGHT	60–80 ft	**SPREAD**	60–80 ft
WATER	Low–Moderate; highly drought tolerant once established	**LIGHT**	Full sun
SOIL	Wide range including alkaline clay; outstanding urban stress tolerance	**WILDLIFE**	Very large acorns (largest of all oaks) — critical mast for mammals; 100+ Lepidoptera species

The most alkaline-tolerant and urban-stress-tolerant large oak for Houston. Harris County Extension recommends specifically for its *'heavy spreading limbs, very large acorns, and tolerance of alkaline soils and urban stress'*. It is in the white oak group and acorns mature in one year with extremely high wildlife value. Essential for highway-adjacent and parking lot Miyawaki sites. USDA zone 3–8.

NOTE: Bur Oak is at its warm-climate performance limit in Houston's Zone 9a–9b; best specimens occur in northern Montgomery County. Alkaline clay soils and high humidity are manageable but monitor for heat stress during establishment.

Swamp Chestnut Oak

Quercus michauxii

HEIGHT	60–80 ft	**SPREAD**	40–60 ft
WATER	Moderate–High; bottomland specialist	**LIGHT**	Full sun to part shade
SOIL	Acid clay and alluvial bottomland; tolerates seasonal flooding	**WILDLIFE**	Sweet acorns favored by white-tailed deer, wild turkey, wood duck

Harris County Extension calls this *'an excellent large shade tree which tolerates heavy clay soils.*' White oak group. The chestnut-like toothed leaves and sweet acorns are distinctive. Natural range includes Houston's Big Thicket transition zone. Excellent for bayou-adjacent and park sites on acid soils. Under-planted in the region with high restoration value. USDA zone 5–9.

Live Oak

Quercus virginiana

HEIGHT	40–60 ft	**SPREAD**	60–120 ft
WATER	Low–Moderate; highly drought tolerant once established	**LIGHT**	Full sun
SOIL	Wide range; acid to alkaline; sand to clay; salt tolerant	**WILDLIFE**	Dense canopy supports 100+ bird species; small acorns consumed by 10+ bird species; 150+ Lepidoptera

Houston's most iconic tree and by far the most widely recommended by Harris County Extension. Evergreen; broad spreading canopy; extraordinary wildlife value. Highly tolerant of salt spray, urban stress, and wide soil pH range. Use as a dominant emergent in commercial, school, and park catalogs. Moderate acorn production begins at 20 years; very long-lived (200–500+ years). USDA zone 7b–10.

Pecan

Carya illinoinensis

HEIGHT	70–100 ft	**SPREAD**	40–75 ft
WATER	Moderate; prefers deep, moist, well-drained soil	**LIGHT**	Full sun
SOIL	Deep loam or sandy loam; acid to neutral; does not tolerate compaction	**WILDLIFE**	Nuts consumed by 18 wildlife species; rich protein source; squirrel, woodpecker, wild turkey primary users

Texas state tree. Harris County Extension recommends native, ungrafted trees for restoration plantings. Highest wildlife food value of all native trees in the region with nut protein content nearly twice that of English walnut. Best on deep, well-drained soils away from heavy clay bottomlands. USDA zone 5–9.

NOTE: Pecan Scab (*Cladosporium caryigenum*) is a serious fungal disease in Houston's humid conditions; prioritize East Texas provenance seedlings with documented scab resistance. Meaningful nut crops require at least two trees of differing catkin-timing types (Type I and Type II) within pollination range.

Cedar Elm

Ulmus crassifolia

HEIGHT	50–70 ft	**SPREAD**	35–50 ft
WATER	Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; alkaline clay to rocky limestone; outstanding urban tolerance	**WILDLIFE**	Seeds eaten by songbirds; caterpillars of 75+ Lepidoptera species; cavity nesting sites

Harris County Extension states Cedar Elm *'should be more widely planted'* as it is tolerant of a wide range of growing conditions including urban stress and has *'interesting flaking bark*.' The most alkaline and drought-tolerant elm in the region. Late summer flowering is distinctive. Texas's most common native elm; well-suited for highway-adjacent and parking lot Miyawaki sites. USDA zone 6–9.

Sweetgum

Liquidambar styraciflua

HEIGHT	60–75 ft	**SPREAD**	40–50 ft
WATER	Moderate–High; tolerates occasional flooding	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral clay and loam; abundant in Houston's forests	**WILDLIFE**	Spiky seed balls consumed by goldfinch, purple finch, Carolina wren; primary food source for American Goldfinch in winter

A naturally dominant species in Houston's urban forest found abundantly along bayou corridors. Star-shaped leaves with outstanding multi-color fall display (red, orange, purple). Excellent for bayou edge and park plantings. USDA zone 5–10.

SITE RESTRICTION NOTE
Seed ball (*'gumball'*) litter can present a pedestrian hazard and maintenance challenge. Restrict use to naturalized or non-pedestrian zones. Not recommended for school grounds or high foot-traffic areas. Fruitless cultivar *'Rotundiloba'* exists but compromises wildlife seed value.

Sugarberry

Celtis laevigata

HEIGHT	40–60 ft	**SPREAD**	40–50 ft
WATER	Low–Moderate; highly adaptable	**LIGHT**	Full sun to part shade
SOIL	Wide range; tolerates poor, compacted, alkaline clay	**WILDLIFE**	Fruits consumed by 50+ bird species; larval host for Hackberry Emperor, Question Mark, Eastern Comma butterflies; essential urban wildlife tree

One of the highest wildlife value trees for Houston Miyawaki forests. Persistent purple black berries provide critical winter food for migrating birds. Extremely adaptable to Houston's difficult urban soils. Fast-growing. Native Plant Society of Texas, Houston Chapter cites as *essential* for urban forest wildlife corridors. The cork-like warty bark is diagnostic. USDA zone 5–10.

Loblolly Pine

Pinus taeda

HEIGHT	60–90 ft	**SPREAD**	25–35 ft
WATER	Moderate; prefers well-drained acid soils	**LIGHT**	Full sun
SOIL	Acid sandy or sandy loam; does poorly on alkaline clay	**WILDLIFE**	Seeds consumed by 15+ species; cavity nesting; Red-cockaded Woodpecker (endangered) habitat

The dominant tree of the East Texas piney woods, occurring naturally in northeast Harris County and throughout Houston's eastern edge. Fast-growing evergreen providing year-round canopy structure and wildlife habitat. Restrict to acid sandy or loamy soils; performs poorly on the alkaline clay soils common to central and west Houston. Outstanding for school and park Miyawaki sites on appropriate soils. USDA zone 6–9.

SITE RESTRICTION NOTE
Loblolly Pine requires acid soils (pH 5.5–6.5). Do not plant on alkaline clay or high-pH soils common to central/west Houston. Confirm soil pH below 6.5 before use. Best for northeast Harris County and sites with sandy loam soils.

Willow Oak

Quercus phellos

HEIGHT	50–70 ft	**SPREAD**	40–60 ft
WATER	Moderate–High; tolerates wet clay and seasonal flooding	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; heavy clay bottomland; excellent on poorly drained sites	**WILDLIFE**	Prolific small acorns consumed by Wood Ducks, mallards, squirrels, wild turkey; supports 40+ Lepidoptera

An excellent Houston native that is common in bottomland forests along Buffalo and Brays Bayou. Fine textured willow like leaves are distinctive and give the tree a graceful, elegant form. Fast-growing. Harris County Extension recognizes as a top street and park tree. Highly adaptable to clay soils. High wildlife value. USDA zone 6–9.

White Oak

Quercus alba

HEIGHT	60–80 ft	**SPREAD**	60–80 ft
WATER	Moderate; drought tolerant once established	**LIGHT**	Full sun
SOIL	Acid soils only (pH < 6.5); well-drained loam or sandy loam	**WILDLIFE**	Acorns consumed by 180+ wildlife species;

Excellent wildlife value and the most ecologically productive of all oaks. Requires acid soils and does not tolerate Houston's alkaline vertisol clay. Strong candidate for NE Harris County sandy loam sites. Distinctive rounded-lobed leaves with stately spreading form. Slow-growing but very long-lived (500+ years). USDA zone 3–9.

SITE RESTRICTION NOTE
Requires acid soils (pH < 6.5) and well-drained loam or sandy loam. Will not establish on alkaline clay soils that dominate much of Harris County. Restrict to northeast Harris County and confirmed acid sandy loam sites only. Confirm soil pH before planting.

Water Hickory

Carya aquatica

HEIGHT	60–100 ft	**SPREAD**	25–50 ft
WATER	Moderate–High; exceptional flood and clay tolerance	**LIGHT**	Full sun
SOIL	Heavy clay bottomland; acid to neutral; outstanding in poorly drained sites	**WILDLIFE**	Nuts consumed by waterfowl and squirrels; high protein mast crop; wood duck habitat

Highly underused native of Houston's bayou bottomlands. Exceptional tolerance of seasonally flooded heavy clay and among the most flood-tolerant of all hickories. Excellent mast crop. The bitter nuts are still consumed by waterfowl and squirrels. Perfect complement to Bald Cypress and Nuttall Oak in wetland and bayou-adjacent Miyawaki sites. USDA zone 5–9.

Shagbark Hickory

Carya ovata

HEIGHT	60–80 ft	**SPREAD**	25–45 ft
WATER	Moderate; prefers deep, well-drained loam	**LIGHT**	Full sun
SOIL	Deep loam or sandy loam; acid to neutral; does not perform on poorly drained clay	**WILDLIFE**	Nuts consumed by 10+ wildlife species; high protein mast; squirrel, turkey, deer primary users

Native to East Texas uplands but at the western edge of its range in Harris County. Requires deep, well-drained loam or sandy loam. Distinctive shaggy peeling bark is highly ornamental with high wildlife mast value. Best for park and school area with appropriate soils. USDA zone 4–8.

SITE RESTRICTION NOTE
Requires deep, well-drained loam or sandy loam and does not perform on poorly drained clay. Restrict to confirmed well-drained sites in park and school catalogs. Site-match carefully as for Pecan.

Texas Hickory

Carya texana

HEIGHT	40–60 ft	**SPREAD**	20–35 ft
WATER	Low–Moderate; drought tolerant once established	**LIGHT**	Full sun
SOIL	Dry, well-drained sandy or loamy upland soils; acid to neutral	**WILDLIFE**	Nuts consumed by squirrels and wild turkey; larval host for several moth species

More drought-tolerant than Shagbark Hickory; found on Post Oak Savanna uplands west of Houston. Suited to well-drained sandy or loamy soils. Best for drier upland sites in western and northern Harris County on appropriate soils. Distinctive dark, plated bark. USDA zone 7–9.

SITE RESTRICTION NOTE
Dry upland Post Oak Savanna sites only. Not suitable for heavy clay bottomlands or poorly drained soils that dominate much of Harris County. Confirm good soil drainage before planting.

Red Mulberry

Morus rubra

HEIGHT	30–60 ft	**SPREAD**	35–50 ft
WATER	Moderate; tolerates wide range of soils	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to neutral; clay, loam, sand	**WILDLIFE**	Berries consumed by 50+ bird species including orioles, tanagers, robins; larval host for several moth species

Native to Houston's bottomland forests with extremely high wildlife value because berries among the most sought-after by songbirds. Adapts to a wide range of soils including clay. Fast-growing. Source from verified native nurseries only to avoid confusion with invasive White Mulberry (Morus alba). USDA zone 4–9.

SOURCING NOTE
Source only from verified Texas-native nurseries. Hybridization risk with invasive White Mulberry (Morus alba) is well-documented. Confirm species with nursery before purchase. Rough-textured large leaves and dark-red elongated fruit distinguish native M. rubra from invasive M. alba.

American Sycamore

Platanus occidentalis

HEIGHT	75–100 ft	**SPREAD**	60–100 ft
WATER	Moderate–High; thrives along bayou corridors	**LIGHT**	Full sun
SOIL	Wide range; acid to neutral; moist clay and loam; excellent on streambanks	**WILDLIFE**	Cavity nesting for Wood Ducks and other species; seeds consumed by waterfowl; raptor perch

One of Houston's most iconic and ecologically valuable large trees. Thrives along bayous and creek margins on Houston's clay soils. Exceptional for stormwater corridors. Very high wildlife value for cavity-nesting birds. Fast-growing. Anthracnose (*Apiognomonia veneta*) is cosmetic only in Houston's climate. Strong addition for wetlands. USDA zone 4–9.

Black Cherry

Prunus serotina

HEIGHT	50–80 ft	**SPREAD**	30–60 ft
WATER	Low–Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to neutral; clay to sandy loam	**WILDLIFE**	Berries consumed by 50+ bird species; larval host for Eastern Tiger Swallowtail and 400+ Lepidoptera

Among the highest wildlife value trees in eastern North America with berries consumed by 50+ bird species. It's a larval host for Eastern Tiger Swallowtail and hundreds of other moth and butterfly species. Fast-growing sub-canopy to emergent. Self-seeds aggressively and manage suckering. USDA zone 3–9.

SCHOOL SITE ADVISORY

Wilted leaves contain hydrocyanic acid and are toxic if consumed. Plant in areas not directly accessible to young children. Monitor for fruit/leaf litter in high-traffic zones. Manage aggressive self-seeding and suckering during establishment.

Eastern Cottonwood

Populus deltoides

HEIGHT	75–100 ft	**SPREAD**	50–75 ft
WATER	Moderate–High; thrives on moist riparian soils	**LIGHT**	Full sun
SOIL	Wide range; moist to wet; clay, sand, loam; streambanks	**WILDLIFE**	Cavity nesting; seeds consumed by waterfowl; larval host for 100+ Lepidoptera species

Among the fastest-growing native trees (6–8 ft/year) and makes it extremely valuable for rapid canopy closure. Excellent for riparian Miyawaki sites. Male trees only recommended to avoid cotton fluff nuisance. Short-lived (50–75 yr) but rapid establishment is ideal for Miyawaki pioneer phase. USDA zone 2–9.

SITE RESTRICTION NOTE

Restrict to riparian and bayou-edge sites. Cotton fluff from female trees can be a nuisance, therefore specify male trees only. Aggressive surface roots can damage infrastructure if planted near structures or paving. Short-lived; plan for succession to longer-lived emergent species.

LAYER 02: SUB-CANOPY (15–45 ft)

Mid-story trees 15–45 ft: flowering canopy, nesting sites, pollinator resources, wildlife food

The sub-canopy layer is the workhorse of a Miyawaki forest in the first decade. Fast-growing species in this layer rapidly close the canopy, create the humidity and shade that accelerates forest maturation, and provide the flowering, fruiting, and nesting resources that attract wildlife quickly. In Houston's climate, many sub-canopy species reach 15–25 ft within 5–8 years. The sub-canopy is where the greatest restoration value is created fastest.

Eastern Redbud

Cercis canadensis

HEIGHT	15–30 ft	**SPREAD**	15–25 ft
WATER	Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to mildly alkaline; clay to loam	**WILDLIFE**	Early spring nectar for native bees and hummingbirds; larval host for Henry's Elfin butterfly; seeds eaten by songbirds

The premier native flowering sub-canopy tree for all Houston Miyawaki catalogs. Spectacular magenta-pink blooms on bare branches during February to March, and among the earliest nectar sources for emerging pollinators. It offers a multi-season interest with flowers, heart-shaped leaves, persistent seed pods, and yellow fall color. The Texas variety (var. *texensis*) is more drought-tolerant. Strongly recommended by Harris County Extension and Native Plant Society of Texas for Gulf Coast landscapes. Short-lived (20–30 yr) but prolific reseed. USDA zone 4–9.

Sweetbay Magnolia

Magnolia virginiana

HEIGHT	15–35 ft	**SPREAD**	10–20 ft
WATER	Moderate–High; tolerates wet soils and periodic flooding	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; moist loam or clay; does not tolerate alkaline soils	**WILDLIFE**	Seeds consumed by songbirds, wild turkey; large white flowers support native bees; larval host for Spicebush Swallowtail

Semi-evergreen in Houston's climate and may retain leaves through mild winters. Fragrant white flowers May to September. Smaller leaves and more slender form than Southern Magnolia therefore better for interior forest layering. Excellent bayou-edge and wetland Miyawaki species. Native Plant Society of Texas identifies as a priority species for Gulf Coast forest restoration. USDA zone 5–10.

Mexican Plum

Prunus mexicana

HEIGHT	15–35 ft	**SPREAD**	15–25 ft
WATER	Low–Moderate; drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to alkaline; clay to rocky	**WILDLIFE**	Fruits consumed by mockingbirds, cedar waxwings, orioles; early spring blooms critical for native bees

One of the earliest native flowering trees in spring. White fragrant flowers in February before leaf-out provide essential early nectar when little else is blooming. Dark purple plums edible for wildlife and people. Very adaptable to Houston's soils including alkaline clay. Recommended by Lady Bird Johnson Wildflower Center and Harris County Extension. USDA zone 5–9.

Roughleaf Dogwood

Cornus drummondii

HEIGHT	6–15 ft	**SPREAD**	8–15 ft
WATER	Low–Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; clay to loam; acid to mildly alkaline	**WILDLIFE**	White berries consumed by 36 bird species — among highest avian food value of any native shrub/small tree

One of the highest-ranked wildlife shrub/small trees by the Native Plant Society of Texas, Houston Chapter. A thicket-forming species that creates dense interior forest structure rapidly via rhizomatous spread. White flower clusters in spring and white fruits in fall. Excellent for interior shrub-to-subcanopy transition in Miyawaki forests. USDA zone 4–9.

Carolina Cherry Laurel

Prunus caroliniana

HEIGHT	20–40 ft	**SPREAD**	15–25 ft
WATER	Low–Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; clay to loam; prefers well-drained soils	**WILDLIFE**	Black berries consumed by robins, Cedar Waxwings, mockingbirds, wild turkey; larval host for Eastern Tiger Swallowtail, Coral Hairstreak, Red-spotted Purple; dense evergreen cover for nesting

Fast-growing native evergreen of Houston’s coastal plain and bottomland forest edges. Dense glossy foliage provides outstanding year-round screening and nesting cover. White fragrant flower racemes February–April attract native bees and butterflies including Eastern Tiger Swallowtail. Shiny black berries ripen in fall and persist through winter, providing critical food for robins, Cedar Waxwings, and mockingbirds. Self-seeds prolifically, therefore restrict use away from sensitive natural remnant forests and riparian buffers. USDA zone 7b–10.

SITE RESTRICTION NOTE
Aggressive seeder. Do not plant adjacent to natural remnant forest, sensitive riparian buffers, or undisturbed native plant communities. Recommended for park, commercial, school, and highway catalogs in managed contexts only. Monitor and manage seedling spread during establishment. All parts of the plant contain cyanogenic glycosides and are toxic to humans and livestock if ingested. Plant away from areas directly accessible to children or grazing animals.

Mexican Buckeye

Ungnadia speciosa

HEIGHT	8–20 ft	**SPREAD**	8–15 ft
WATER	Low; highly drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Alkaline to neutral; limestone, caliche, rocky clay — thrives where others fail	**WILDLIFE**	Fragrant spring flowers attract hummingbirds and native bees; large seeds not consumed by wildlife (toxic)

Harris County Extension and Native Plant Society describe Mexican Buckeye as having *'fragrant pink flowers in Spring, attractive compound leaves in summer, interesting fruits, yellow fall color, and brown speckled bark in winter.'* Outstanding multi-season ornamental value. Naturally occurs on the Post Oak Savannah and Blackland Prairies that is suited to drier, alkaline Houston sites. Seeds are toxic to humans and most wildlife. USDA zone 7–10.

Red Buckeye

Aesculus pavia

HEIGHT	8–20 ft	**SPREAD**	8–15 ft
WATER	Moderate; tolerates part shade and some moisture	**LIGHT**	Part shade to full shade; unique shade tolerance
SOIL	Acid to neutral; moist, fertile loam or clay	**WILDLIFE**	Red tubular flowers the premier hummingbird nectar source among native trees; native bees

Harris County Extension describes Red Buckeye as *'a beautiful, small, red-flowering tree with coppery new growth in the spring... tolerant of a wide range of soil conditions and will grow in partial shade.'* The only major native flowering tree that thrives in the dense shade of a Miyawaki forest interior. Spectacular red panicle flowers from February to April. Seeds toxic. USDA zone 4–9.

Possumhaw

Ilex decidua

HEIGHT	7–15 ft	**SPREAD**	6–12 ft
WATER	Low–Moderate; adaptable	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; clay, loam; excellent on wet or dry sites	**WILDLIFE**	Persistent red/orange berries critical winter food for Cedar Waxwings, robins, bluebirds, mockingbirds

The native deciduous holly with the highest winter wildlife value for Houston Miyawaki forests. Brilliant orange-red berry clusters coat bare stems from October through March and is a primary winter food source for migrating songbirds. Very adaptable. Thicket-forming. Native Plant Society of Texas Houston Chapter lists as top 10 large shrub. USDA zone 3–9.

Yaupon Holly

Ilex vomitoria

HEIGHT	10–25 ft	**SPREAD**	8–15 ft
WATER	Low; extremely drought and flood tolerant	**LIGHT**	Full sun to full shade
SOIL	Wide range; acid to alkaline; sand to heavy clay; salt tolerant	**WILDLIFE**	Red berries consumed by 40+ bird species; dense branching provides essential nesting cover

The most adaptable and wildlife-valuable native woody plant for Houston Miyawaki forests. Evergreen. Native Plant Society of Texas Houston Chapter identifies as a top 10 large shrub and notes it as a *'thicket former.*' Harris County Extension describes as area-native, growing in sun or shade and wet or dry soil. Outstanding as a mid-story species in all 6 catalog types. USDA zone 7–10.

American Holly

Ilex opaca

HEIGHT	15–50 ft	**SPREAD**	10–30 ft
WATER	Low–Moderate; tolerates clay soils and part shade	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to neutral; clay, loam; tolerates wet and dry sites	**WILDLIFE**	Red berries consumed by 20+ bird species; dense evergreen foliage provides year-round nesting cover

Outstanding native evergreen with exceptional wildlife value and red berries persist through winter. Tolerates Houston's clay soils and part shade well. Natural understory tree of East Texas forests. Excellent complement to Yaupon Holly already in the guide; larger and more tree-like with a classic holly appearance. It is Dioecious and plant male and female for berry production. USDA zone 5–9.

Wax Myrtle

Morella cerifera

HEIGHT	10–20 ft	**SPREAD**	8–15 ft
WATER	Low–Moderate; highly adaptable	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; clay, sand, loam; tolerates wet and dry conditions	**WILDLIFE**	Grey berries consumed by 40+ bird species; dense evergreen cover for nesting; nitrogen-fixing root nodules

One of the most highly recommended native shrubs by every Houston-area authority consulted. Aromatic evergreen foliage; fast-growing. The waxy grey berries are used in bayberry candles. Nitrogen-fixing root nodules improve soil biology for neighboring species. Excellent for all Miyawaki catalog types. USDA zone 7–10.

Eastern Red Cedar

Juniperus virginiana

HEIGHT	15–50 ft	**SPREAD**	8–20 ft
WATER	Low; highly drought and alkaline-soil tolerant	**LIGHT**	Full sun
SOIL	Wide range; acid to strongly alkaline; clay, limestone, rocky soils; excellent on disturbed sites	**WILDLIFE**	Blue-gray berries consumed by 54 bird species including Cedar Waxwings; essential nesting structure

Native evergreen providing critical year-round nesting structure and winter berry food. Extremely drought and alkaline-soil tolerant that can be excellent for highway and parking lot forests. Dense foliage provides outstanding winter cover for birds. Long-lived. USDA zone 2–9.

PLANTING NOTE
Do not plant adjacent to Mexican Plum, Parsley Hawthorn, or other Rosaceae hosts to avoid Cedar-Apple Rust (Gymnosporangium juniperi-virginianae). It requires both Juniperus and Rosaceae hosts. Maintain 100+ ft separation from susceptible Rosaceae plants.

American Persimmon

Diospyros virginiana

HEIGHT	15–40 ft	**SPREAD**	10–25 ft
WATER	Low–Moderate; remarkably adaptable	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to alkaline; clay, sandy loam, rocky; tolerates poor soils	**WILDLIFE**	Fruit consumed by 40+ wildlife species including deer, raccoon, foxes, songbirds, and many mammals

Highly underused native with remarkable site adaptability that tolerates poor, clay, rocky, and alkaline soils across a wide range. Fruit consumed by 40+ wildlife species. Distinctive blocky bark is ornamentally striking. It is dioecious and both male and female trees needed for fruit. Excellent for difficult sites across multiple catalog types. USDA zone 4–9.

Blackjack Oak

Quercus marilandica

HEIGHT	20–40 ft	**SPREAD**	20–30 ft
WATER	Low; drought tolerant once established	**LIGHT**	Full sun
SOIL	Dry, sandy, poor soils; acid; Post Oak Savanna uplands	**WILDLIFE**	Acorns consumed by squirrels, deer, turkeys; supports 200+ Lepidoptera species

Native to Post Oak Savanna uplands at the western edge of Houston's range. Adapted to dry, sandy, poor soils and performs poorly on heavy clay bottomlands. Distinctive 3-lobed duck-foot leaves are unmistakable. Good wildlife value. Niche addition for upland sandy sites in western and northern Harris County only. USDA zone 6–9.

SITE RESTRICTION NOTE
Restrict to dry, sandy or sandy-loam upland sites in western and northern Harris County. Not suitable for heavy clay bottomlands or poorly drained soils. Confirm soil type and drainage before planting.

Hercules Club

Zanthoxylum clava-herculis

HEIGHT	10–20 ft	**SPREAD**	8–15 ft
WATER	Low–Moderate; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to neutral; clay, limestone, poor soils; coastal prairie	**WILDLIFE**	Berries consumed by many bird species; sole larval host for Giant Swallowtail butterfly in the region

Distinctively native to Houston's coastal prairies and forest edges. The spiny trunk and branches provide exceptional nesting protection. The only significant larval host for Giant Swallowtail butterfly in the greater Houston region, making it ecologically irreplaceable for that species. Highly drought-tolerant once established. USDA zone 7–10.

Black Willow

Salix nigra

HEIGHT	30–60 ft	**SPREAD**	25–45 ft
WATER	High; exceptional wet clay and flooding tolerance	**LIGHT**	Full sun
SOIL	Saturated clay, mud, sandy loam; streambanks and bayou edges; tolerates extended inundation	**WILDLIFE**	Cavity nesting for birds; larval host for Viceroy butterfly and 100+ Lepidoptera species; deer browse

Native to Houston's bayou corridors; among the fastest-establishing natives on saturated clay soils. Exceptional stormwater and erosion control on bayou banks. Short-lived (20–30 yr) but rapid establishment justifies inclusion for bayou sites. USDA zone 2–9.

SITE RESTRICTION NOTE

Restrict to C01 Wetlands and bayou-edge sites on saturated or seasonally flooded clay soils. Not suitable for parking lot, highway, commercial, or upland Miyawaki contexts. Short-lived (20–30 yr) — plan for succession to longer-lived species in the emergent layer.

Gum Bumelia

Sideroxylon lanuginosum

HEIGHT	10–30 ft	**SPREAD**	8–15 ft
WATER	Low–Moderate; exceptional drought and alkaline-soil tolerance	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to strongly alkaline; clay, limestone, rocky soils; outstanding on difficult sites	**WILDLIFE**	Dark berries consumed by mockingbirds, robins, and other frugivores; thorny structure provides nesting protection

An underappreciated native of Houston's coastal prairie and upland sites. Extremely tough and can tolerate alkaline clay, drought, and urban stress. Thorny structure provides excellent nesting protection. Dark berries consumed by mockingbirds and other frugivores. Virtually no disease or pest issues. An excellent 'workhorse' sub-canopy species for difficult sites. Semi-evergreen in mild Houston winters. USDA zone 6–9.

LAYER 03: SHRUBS (3–20 ft)

Woody shrubs 3–20 ft: dense understory structure, berry crops, nesting cover, soil stabilization

The shrub layer creates the forest interior structure that defines a Miyawaki forest's ecological density. These species fill the gap between the forest floor and developing canopy, providing nesting cover, berry crops, insect habitat, and the visual complexity that characterizes healthy native forest. Many shrub layer species are thicket-forming — by design, they will spread via rhizomes or seed, filling in gaps and knitting the forest together.

American Beautyberry

Callicarpa americana

HEIGHT	3–8 ft	**SPREAD**	4–6 ft
WATER	Low–Moderate; adaptable	**LIGHT**	Part shade to full shade; also tolerates full sun
SOIL	Acid to neutral; clay to loam; moist preferred	**WILDLIFE**	Purple berries consumed by 40+ bird species including mockingbird, robin, catbird; white-tailed deer browse foliage

Native Plant Society of Texas Houston Chapter lists as top 10 small shrub. One of the most ornamentally striking native shrubs with vivid magenta-purple berry clusters in late summer through fall. Outstanding as a forest-edge and interior shrub layer species in Miyawaki forests. Tolerates the shade cast by developing canopy and is fast-growing. USDA zone 6–10.

Buttonbush

Cephalanthus occidentalis

HEIGHT	5–12 ft	**SPREAD**	5–10 ft
WATER	High; thrives in standing water up to 6 inches; wetland specialist	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; saturated clay, mud, and shallow pond margins	**WILDLIFE**	Spherical white flower balls — outstanding butterfly and bee attractor; seeds consumed by waterfowl; larval host for Titan Sphinx moth

Native Plant Society of Texas Houston Chapter: *'If you want butterflies, get Buttonbush.*' A shrub that lives in shallow water (up to 6 inches) or in the ground. *'The late May to fall repeat blooms are perfectly round white balls with a heavy perfume.*' Essential for bayou-edge and retention pond Miyawaki sites. Native to Houston's coastal prairie. USDA zone 4–10.

Coralberry

Symphoricarpos orbiculatus

HEIGHT	2–5 ft	**SPREAD**	4–8 ft
WATER	Low; drought tolerant	**LIGHT**	Part shade to full shade; one of the most shade-tolerant native shrubs
SOIL	Wide range; acid to alkaline; clay to rock	**WILDLIFE**	Persistent coral-pink berries winter food for bluebirds, robins, cedar waxwings; dense stems provide nesting cover

An outstanding shade-tolerant native shrub for the forest interior layer of Miyawaki forests. The dense, arching stems and persistent coral berries provide excellent visual interest and bird food through winter. Thicket-forming via rhizomes creates natural wildlife cover. Native Plant Society of Texas Houston Chapter lists as top small shrub. USDA zone 2–9.

Flameleaf Sumac

Rhus copallinum

HEIGHT	5–15 ft	**SPREAD**	8–12 ft
WATER	Low; drought tolerant once established	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to mildly alkaline; poor, rocky soils; excellent on disturbed sites	**WILDLIFE**	Red fruit clusters consumed by 35+ bird species; outstanding fall color attracts migrating warblers

The most spectacular fall color of any native shrub in the region that is vivid scarlet. Rhus copallinum (Flameleaf/Winged Sumac) is the eastern species and better adapted to Houston's wetter climate than Fragrant Sumac (Rhus aromatica). A thicket former. Excellent for highway-adjacent and disturbed-site Miyawaki plantings. USDA zone 4–9.

Virginia Sweetspire

Itea virginica

HEIGHT	3–8 ft	**SPREAD**	4–6 ft
WATER	Moderate–High; tolerates wet and boggy conditions	**LIGHT**	Part shade to full shade
SOIL	Acid to neutral; moist clay and loam; riparian and wetland margins	**WILDLIFE**	Fragrant white flower spikes attract bumblebees and native bees; dense thickets provide nesting cover

One of the most outstanding multi-season native shrubs for shaded, moist Miyawaki sites. Native Plant Society of Texas Houston Chapter: *'Virginia Sweetspire has fragrant drooping white spires in spring. This 5-foot shrub has fall color ranging from yellow, orange, red and purple; in mild winters you get to enjoy these changing colors.*' Excellent for bayou edge plantings. USDA zone 5–9.

Elderberry

Sambucus canadensis

HEIGHT	5–12 ft	**SPREAD**	8–12 ft
WATER	Moderate–High; thrives in moist, fertile soils	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; moist loam and clay; common along bayou margins	**WILDLIFE**	Black berries consumed by 120+ bird species — one of the highest wildlife food values of any shrub; larval host for multiple moth species

One of the highest wildlife-value native shrubs in North America, with 120+ bird species documented consuming the fruit. Flat-topped white flower clusters June through August and dark purple-black berries August through September. Fast-growing. USDA zone 3–9.

NOTE: Short-lived (5–10 yr) and therefore plan for periodic replacement and manage prolific suckering. SCHOOL SITES: All plant parts except ripe cooked berries are mildly toxic and therefore plant away from areas directly accessible to children.

Parsley Hawthorn

Crataegus marshallii

HEIGHT	8–20 ft	**SPREAD**	8–15 ft
WATER	Moderate; tolerates wet sites	**LIGHT**	Part shade to full shade; one of few thorny native trees tolerating shade
SOIL	Acid to neutral; moist clay, silty loam	**WILDLIFE**	White spring flowers critical early-season pollinator resource; red berries ('haws') eaten by 50+ bird species

Native Plant Society of Texas Houston Chapter lists as a priority native shrub/small tree for Gulf Coast landscapes. Deeply lobed, parsley-like leaves are distinctive. Shade tolerance makes it valuable as an interior shrub-to-subcanopy bridge in Miyawaki forests. Thorny structure provides nesting protection for songbirds. USDA zone 6–9.

Texas Lantana

Lantana urticoides

HEIGHT	2–6 ft	**SPREAD**	3–5 ft
WATER	Low; highly drought tolerant	**LIGHT**	Full sun
SOIL	Wide range; acid to alkaline; sand to rocky clay; poor soils	**WILDLIFE**	Outstanding butterfly attractor — nectar source for Gulf Fritillary, Monarch, Pipevine Swallowtail, Giant Swallowtail; hummingbirds

The native Texas Lantana (L. urticoides) is distinct from and preferred over the invasive exotic Lantana camara. Native Plant Society of Texas Houston Chapter: *'has bright yellow and orange flowers and leaves that are smaller than the exotic varieties.'* One of the premier butterfly plants for Houston Miyawaki Forest edges. Outstanding for commercial and school forest perimeter plantings. USDA zone 8b–10.

SITE RESTRICTION NOTE — SPECIES IDENTIFICATION CRITICAL
Use only Lantana urticoides (Texas Lantana — native) NOT Lantana camara (tropical lantana — invasive). Texas Lantana has smaller leaves, orange-yellow flowers, and native range restricted to Texas and Gulf states. L. camara is listed as invasive in Texas and should never be planted in restoration contexts. Confirm species with native plant nursery before purchase.

Agarito

Berberis trifoliolata (syn. Mahonia trifoliolata)

HEIGHT	3–6 ft	**SPREAD**	3–5 ft
WATER	Very low; highly drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Alkaline to neutral; rocky clay, caliche, limestone	**WILDLIFE**	Bright yellow spring flowers — critical early nectar; red berries consumed by mockingbirds, orioles

Hardy native evergreen shrub of Texas brush country that adapts well to Houston's alkaline upland soils and dry sites. Spine-tipped leaflets provide excellent nesting protection. The bright yellow flowers are among the earliest nectar sources of the year. Lady Bird Johnson Wildflower Center recommends for Gulf Coast landscapes. Best for highway-adjacent and commercial Miyawaki catalogs on dry, alkaline sites. USDA zone 7–10.

Elbow Bush

Forestiera pubescens

HEIGHT	4–12 ft	**SPREAD**	4–8 ft
WATER	Low–Moderate; drought and clay tolerant	**LIGHT**	Full sun to part shade
SOIL	Alkaline to acid; wide range including heavy clay	**WILDLIFE**	Small black drupes provide primary early spring food source for migrating songbirds; first fruiting shrub of the year

Among the first native shrubs to fruit in spring with the small black berries that are a critical food source for migrating songbirds arriving before other fruits are available. Dense, twiggy structure provides nesting protection. Very adaptable to Houston's range of soil types. USDA Plants Database confirms native to Harris County and surrounding region. USDA zone 5–9.

Carolina Buckthorn

Frangula caroliniana

HEIGHT	10–15 ft	**SPREAD**	8–12 ft
WATER	Low–Moderate; adaptable	**LIGHT**	Part shade to full sun
SOIL	Acid to mildly alkaline; clay to loam; adaptable	**WILDLIFE**	Red-to-black berries consumed by mockingbirds, robins, thrushes; larval host for several moth species

A native large shrub to small tree that bridges the shrub and sub-canopy layers in Miyawaki plantings. Multi-season interest: white spring flowers, red-ripening-to-black berries in summer, and late fall leaf retention. Adaptable to a wide range of Houston soils. Native to East Texas and the coastal plain. USDA zone 5–9.

Fragrant Sumac

Rhus aromatica

HEIGHT	2–6 ft	**SPREAD**	6–10 ft
WATER	Very low; highly drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Acid to alkaline; dry, rocky, sandy soils; does not tolerate wet clay	**WILDLIFE**	Red berries consumed by songbirds; excellent fall color attracts migrating warblers

Low spreading habit with excellent golden-orange fall color. Best on well-drained to dry soils. Avoid wet clay sites common to much of Houston. Aromatic foliage (lemon-scented when crushed). More appropriate for highway-adjacent and parking lot Miyawaki sites with good drainage than for bayou edges. USDA zone 3–9.

SITE RESTRICTION NOTE

Fragrant Sumac (R. aromatica) does not tolerate poor drainage or wet clay soils, conditions prevalent in many Houston sites. Restrict to well-drained sites with confirmed good percolation. Consider Flameleaf Sumac (R. copallinum) as the default sumac for wetter Houston sites.

LAYER 04: GROUND COVER & HERBACEOUS (0–6 ft)

Native grasses, wildflowers, and low shrubs 0–6 ft: pollinator habitat, soil biology, seasonal color

The ground layer is often undervalued in Miyawaki plantings but performs critical functions: it stabilizes the forest floor against erosion in the critical first 1–2 years, supports soil biology, provides critical habitat for pollinators and ground-nesting insects, and creates the visual richness that makes Miyawaki forests compelling to the public and civic funders. In Houston's climate, the ground layer can establish from seed or plugs very quickly.

Inland Sea Oats

Chasmanthium latifolium

HEIGHT	2–4 ft	**SPREAD**	2–3 ft
WATER	Moderate; tolerates wet and dry periods	**LIGHT**	Part shade to full shade; outstanding shade tolerance
SOIL	Acid to neutral; clay, loam; moist to average	**WILDLIFE**	Seeds consumed by songbirds; excellent winter bird cover; larval host for multiple skippers

The premier native woodland grass for shaded Miyawaki forest interiors. Unique flat, oat-like seeds hang in drooping clusters for outstanding fall and winter visual interest. Thrives in the deep shade created by a maturing Miyawaki forest canopy. Self-seeding; forms dense, stable colonies. Strongly recommended by Harris County Extension and Lady Bird Johnson Wildflower Center for shaded Houston landscapes. USDA zone 3–9.

Gulf Coast Muhly

Muhlenbergia capillaris var. filipes

HEIGHT	2–3 ft (flower spikes to 4 ft)	**SPREAD**	2–3 ft
WATER	Low–Moderate; very drought tolerant once established	**LIGHT**	Full sun to light shade
SOIL	Acid to neutral; sandy, loamy, or well-drained clay; poor soils tolerated	**WILDLIFE**	Seeds consumed by sparrows and grassland birds; clump structure provides small mammal cover

Texas genotype required — confirm nursery source. Native Prairies Association of Texas coastal prairie partnership specifically notes: *'Check native plant nurseries for the Texas genotype. M. capillaris is usually found in commercial nurseries and is a Florida genotype*.' The October–November pink-purple flower haze is one of the most spectacular fall displays of any native grass. Outstanding for forest edge and open Miyawaki planting margins. USDA zone 6–10.

GENOTYPE CRITICAL SITE RESTRICTION NOTE

Source only Texas-genotype Gulf Coast Muhly from reputable native plant nurseries. The Florida genotype (M. capillaris) commonly sold in commercial nurseries is not the correct ecological provenance for Gulf Coast Texas restorations. Confirm with nursery before purchase.

Switchgrass

Panicum virgatum

HEIGHT	3–6 ft	**SPREAD**	2–3 ft
WATER	Low–High; extraordinary adaptability to wet and dry	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to alkaline; clay, sand, loam; tolerates poor soils	**WILDLIFE**	Seeds consumed by 15+ bird species; essential larval host for Swarthy Skipper and Delaware Skipper butterflies

One of the most ecologically important native prairie grasses for Houston Miyawaki Forest margins and open areas. Outstanding carbon sequestration via deep root systems (roots to 11 ft). Excellent stormwater infiltration. Dramatic fall color ranging from yellow to burgundy. Highly recommended by Texas A&M AgriLife as a foundation prairie restoration grass. USDA zone 5–9.

Eastern Gamagrass

Tripsacum dactyloides

HEIGHT	4–8 ft	**SPREAD**	3–5 ft
WATER	Moderate–High; tolerates wet clay and periodic flooding	**LIGHT**	Full sun to light shade
SOIL	Acid to neutral; heavy clay, moist loam; bottomland	**WILDLIFE**	Seeds consumed by waterfowl and grassland birds; dense clumps provide critical small mammal cover; relative of corn

A critical foundation grass for wet Miyawaki sites in Houston for bottomland and bayou-adjacent plantings. Very large clumping grass with exceptional tolerance of Houston's heavy clay soils and periodic flooding. Deep root system provides outstanding stormwater management. Texas A&M AgriLife identifies as a priority native grass for coastal prairie restoration. USDA zone 5–9.

Ironweed

Vernonia gigantea

HEIGHT	2–5 ft	**SPREAD**	1–3 ft
WATER	Moderate; tolerates dry periods	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; clay and loam; prairie edges	**WILDLIFE**	Brilliant purple flowers are premier late-season nectar for Monarchs, swallowtails, and native bees in August–October migration corridor

One of the most important native wildflowers for the Monarch migration corridor through Houston, blooming precisely when Monarchs pass through in late summer and fall. The vivid purple flowers are visible from distance and an outstanding ornamental. Tolerates clay soils well. Outstanding for Miyawaki forest edges, park, and school catalogs. USDA zone 4–9.

NOTE: Vernonia gigantea (Tall Ironweed) is the Harris County and Gulf Coast coastal prairie species. V. baldwinii occurs on drier, rocky upland sites but is not the appropriate species for typical Houston bottomland and coastal prairie restoration contexts.

Scarlet Sage

Salvia coccinea

HEIGHT	1–3 ft	**SPREAD**	1–2 ft
WATER	Low–Moderate; drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Wide range; acid to mildly alkaline; well-drained	**WILDLIFE**	Red tubular flowers are premier hummingbird nectar source; also attracts native bees and Gulf Fritillary

Native Plant Society of Texas Houston Chapter: Scarlet Sage has *'spikes of red, orange, pink, coral or white blooms from spring to frost.'* One of the most reliable hummingbird attractors for Houston landscapes. Self-seeding annual or short-lived perennial in Houston's climate. Excellent for Miyawaki forest edges and school catalog perimeter plantings. USDA zone 8–10.

Green-headed Coneflower

Rudbeckia laciniata

HEIGHT	3–8 ft	**SPREAD**	2–4 ft
WATER	Moderate–High; thrives in moist, shaded bottomlands	**LIGHT**	Part shade to shade; unusual shade tolerance for a coneflower
SOIL	Moist, rich loam to clay; acid to neutral	**WILDLIFE**	Seeds consumed by songbirds (especially goldfinches); flowers attract native bees and butterflies

A tall native wildflower that uniquely thrives in the partially shaded conditions of maturing Miyawaki forests. Yellow reflexed petals and distinctive green center disc are unmistakable in late summer. Outstanding for bayou-edge and wetland Miyawaki plantings where it can naturalize effectively. USDA zone 3–9.

Wild Azalea

Rhododendron canescens

HEIGHT	4–10 ft	**SPREAD**	4–8 ft
WATER	Moderate–High; acid, moist soils essential	**LIGHT**	Part shade to full shade
SOIL	Acid only (pH 4.5–6.0); moist, well-drained sandy loam with organic matter	**WILDLIFE**	Tubular pink flowers for early-season hummingbird and native bee nectar. Aromatic.

The native Piedmont Azalea of the Pineywoods and Big Thicket transition zone is one of the most spectacular flowering native shrub for shaded Houston Miyawaki forests on acid sandy soils. Intensely fragrant pink blooms in March–April before leaf-out. Harris County Extension notes native azaleas require *'raised beds with sandy, organic, acid soil*.' Restrict to acid sites in northeast Harris County and sandy loam transition zones. USDA zone 5–9.

SITE RESTRICTION NOTE

Strict soil pH requirement (4.5–6.0). Do not plant on alkaline clay as the species will fail on typical Houston vertisol soils. Restrict to acid, sandy loam soils of northeast Harris County and sites with confirmed low pH. Requires organic matter amendment and excellent drainage.

Spiderwort

Tradescantia ohiensis

HEIGHT	18–36 in	**SPREAD**	12–18 in
WATER	Moderate; tolerates dry to wet soils	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; clay to loam; adaptable	**WILDLIFE**	Blue-violet flowers attract native bees; foliage consumed by deer; historically used by Native Americans as food

Outstanding native perennial for forest edges and open Miyawaki areas. The blue-green foliage has long and narrow leaves and is generally evergreen in Houston. Flowers last a day and close by mid-day. Very adaptable and grows in sun to part shade and dry to wet soils. USDA zone 4–9.

Mealy Blue Sage

Salvia farinacea

HEIGHT	1–3 ft	**SPREAD**	1–2 ft
WATER	Low; drought tolerant	**LIGHT**	Full sun to part shade
SOIL	Acid to mildly alkaline; well-drained clay to loam	**WILDLIFE**	Blue flower spikes attract native bees, Monarch butterflies, and hummingbirds; long bloom season

Native Plant Society of Texas Houston Chapter describes it as *'a prairie plant, has 3-to-9-inch spikes of blue flowers.'* One of the most recommended native perennials for Gulf Coast landscapes. Long-season bloomer from March through November. Outstanding for Miyawaki forest perimeter and school/commercial catalog edges. USDA zone 7b–10.

Rattlesnake Master

Eryngium yuccifolium

HEIGHT	2–4 ft (bloom to 5 ft)	**SPREAD**	2–3 ft
WATER	Low; highly drought tolerant	**LIGHT**	Full sun
SOIL	Acid to mildly alkaline; well-drained; poor sandy or rocky soils	**WILDLIFE**	Spherical white flower heads attract 60+ native bee species — one of the top pollinator plants of the central US

Native Prairies Association of Texas coastal prairie partnership states: *'Rattlesnake master was selected for its evergreen and textured foliage and unusual bloom. Native throughout central and eastern US, from the gulf coast and east Texas extending east to Florida and north into Minnesota.*' Striking architectural plant with spiny, yucca-like leaves and globe flower heads on tall stems. Outstanding for open Miyawaki margins and park catalogs. USDA zone 3–9.

Swamp Milkweed

Asclepias incarnata

HEIGHT	3–4 ft	**SPREAD**	1–2 ft
WATER	Moderate–High; wetland and bayou edges	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; moist to wet clay and loam; tolerates standing water	**WILDLIFE**	Essential Monarch butterfly larval host and nectar source; bees, hummingbirds; critical for Monarch migration through Houston

The preferred native milkweed for Houston's wet Miyawaki sites that is adapted to the moist, clay soils common to bayou edges and retention pond margins where most milkweed species fail. Pink flower clusters June through August. Houston sits directly on the central Monarch migration corridor making milkweed critical infrastructure for this endangered migration. USDA zone 3–9 (reliably perennial throughout range; dies back to root crown in Houston's Zone 8b winters and re-emerges in spring). Source from Texas-native seed stock.

Zizotes Milkweed

Asclepias oenotheroides

HEIGHT	1–2 ft	**SPREAD**	1–2 ft
WATER	Low; highly drought tolerant; dry upland sites	**LIGHT**	Full sun
SOIL	Wide range; acid to alkaline; dry clay, sand, rocky soils; poor soils tolerated	**WILDLIFE**	Essential Monarch butterfly larval host and nectar source for dry sites; complements Swamp Milkweed's wet-site coverage

The most drought-tolerant native milkweed for Houston and a perfect complement to Swamp Milkweed (A. incarnata) already in the guide. While Swamp Milkweed covers wet sites, Zizotes covers dry upland sites. Together they provide milkweed coverage across all 6 catalog types on the Monarch migration corridor. Source from Texas-native seed stock. USDA zone 6–10.

Rain Lily

Zephyranthes traubii

HEIGHT	6–12 in	**SPREAD**	6–10 in
WATER	Low–Moderate; drought tolerant; blooms after rainfall events	**LIGHT**	Full sun to part shade
SOIL	Wide range; well-drained clay, loam, sand; coastal prairie	**WILDLIFE**	White funnel flowers attract native bees and small butterflies; bulb-forming — low maintenance once established

Native to South Texas coastal prairies and well-adapted to Houston's climate. Charming white flowers emerge after rainfall events, providing a dynamic and memorable display. Bulb-forming and very low maintenance once established. Outstanding for school and commercial catalog edges where a high-visibility seasonal moment is valuable. USDA zone 7–11.

Eastern Bluestar

Amsonia tabernaemontana

HEIGHT	2–3 ft	**SPREAD**	2–3 ft
WATER	Moderate; tolerates moist clay soils	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; moist clay and loam; riparian zones	**WILDLIFE**	Pale blue star-shaped flowers attract native bees; larval host for several specialist moths; outstanding golden fall color

Native to East Texas riparian zones with stunning pale blue star-shaped flowers in spring. Outstanding golden-yellow fall color forming one of the finest fall displays of any native perennial. Clump-forming, very long-lived. Tolerates moist clay soils making it excellent for bayou edge and park plantings. Highly recommended by Lady Bird Johnson Wildflower Center for Gulf Coast landscapes. USDA zone 3–9.

Lance Leaf Coreopsis

Coreopsis lanceolata

HEIGHT	1–2 ft	**SPREAD**	1–2 ft
WATER	Low–Moderate; drought tolerant; requires good drainage	**LIGHT**	Full sun
SOIL	Well-drained clay to sandy loam; acid to neutral; poor soils tolerated	**WILDLIFE**	Bright yellow flowers attract native bees, butterflies, and beneficial insects; seeds consumed by finches

One of the most reliable and showy native wildflowers for Houston's full-sun sites. Long bloom season from April through July. Very adaptable to well-drained clay and sandy soils. Self-seeding; forms colonies quickly. Outstanding for school and commercial catalog perimeters. USDA zone 4–9.

Note: requires well-drained soils and not for bayou edges or poorly drained clay.

Firewheel

Gaillardia pulchella

HEIGHT	1–2 ft	**SPREAD**	1–2 ft
WATER	Low; very drought tolerant; thrives on poor soils	**LIGHT**	Full sun
SOIL	Wide range; sandy, loamy, or rocky; poor soils; excellent on disturbed sites	**WILDLIFE**	Outstanding butterfly and native bee nectar source; seeds consumed by birds; very high public engagement value

Texas's state co-designated wildflower. Spectacular red-and-yellow blooms from May through frost. Extremely drought tolerant and thrives in poor, sandy soils. Outstanding for highway median and parking lot Miyawaki edges where few other species establish as readily. Annual/short-lived perennial that self-seeds prolifically. USDA zone 3–10.

Giant Coneflower

Rudbeckia maxima

HEIGHT	4–9 ft	**SPREAD**	2–3 ft
WATER	Moderate; tolerates moist soils; full-sun prairie margins	**LIGHT**	Full sun to light shade
SOIL	Acid to neutral; clay and loam; moist to average prairie soils	**WILDLIFE**	Seeds consumed by goldfinches and other finches; tall flower spikes provide architectural interest; native bees

Complements Green-headed Coneflower (R. laciniata) in the guide with a different ecological niche: Giant Coneflower is a full-sun species for open Miyawaki margins and prairie patches, while R. laciniata is shade-tolerant. Spectacular 6–9 ft flower spikes with large drooping yellow petals and prominent dark cones. Highly architectural, exceptional for stakeholder-facing sites. USDA zone 5–9.

Lyre Leaf Sage

Salvia lyrata

HEIGHT	1–2 ft	**SPREAD**	1–2 ft
WATER	Low–Moderate; tolerates dry to moist soils	**LIGHT**	Part shade to full shade; one of the few native sages tolerating shade
SOIL	Wide range; clay to loam; acid to neutral	**WILDLIFE**	Blue-purple flower spikes attract native bees and bumblebees; rosette foliage provides year-round ground cover

An excellent ground-layer species for shaded Miyawaki forest interiors as it is one of the few native sages that tolerates part to full shade. Blue-purple flower spikes in early spring. Rosette-forming and fills the forest floor without competing aggressively with woody layers. Complements Scarlet Sage (S. coccinea) and Mealy Blue Sage (S. farinacea) in the guide across different light conditions. Self-seeding. USDA zone 5–10.

Sharp Sepaled Beardtongue

Penstemon tenuis

HEIGHT	2–3 ft	**SPREAD**	1–2 ft
WATER	Moderate–High; tolerates wet clay and seasonal flooding	**LIGHT**	Full sun to part shade
SOIL	Acid to neutral; heavy clay, moist loam; tolerates seasonal flooding	**WILDLIFE**	Purple-pink tubular flowers critical early-season nectar for native bees and hummingbirds; March–May bloom

The premier native Penstemon for Houston's wet clay soils uniquely tolerant of seasonal flooding and heavy clay, unlike most penstemons which require drainage. Purple-pink tubular flowers from March through May provide early nectar for native bees. Native Plant Society of Texas identifies as a priority species for Gulf Coast restoration. Fills an important early-spring pollinator gap. USDA zone 6–9.

Cherokee Sedge

Carex cherokeensis

HEIGHT	1–2 ft	**SPREAD**	1–2 ft
WATER	Moderate; tolerates wet clay and moist shade	**LIGHT**	Part shade to full shade; outstanding shade tolerance
SOIL	Acid to neutral; moist clay and loam; bottomland	**WILDLIFE**	Seeds consumed by ground-feeding birds; clump-forming structure provides small mammal cover

An excellent shade-tolerant sedge for moist, clay-rich Miyawaki forest floors. Evergreen, clump-forming, non-aggressive. Outstanding for stabilizing forest floors under developing canopy. Native to East Texas bottomlands. Pairs exceptionally with Inland Sea Oats (already in guide) to provide complete ground layer coverage in shaded interiors. USDA zone 6–9.

Standing Cypress

Ipomopsis rubra

HEIGHT	3–6 ft	**SPREAD**	1 ft
WATER	Low; highly drought tolerant; well-drained sites	**LIGHT**	Full sun
SOIL	Well-drained clay, sandy loam, or rocky soils; acid to neutral; poor soils tolerated	**WILDLIFE**	Brilliant scarlet tubular flowers are the premier hummingbird nectar source among native wildflowers; very high public engagement value

One of the most striking native wildflowers in the region with brilliant scarlet tubular flowers on 4–6 ft spikes attract hummingbirds from great distances. Biennial and self-seeds reliably. Adapted to well-drained sandy or rocky soils. Excellent for highway and parking lot Miyawaki margins. Outstanding stakeholder engagement species. USDA zone 4–9.

Drummonds Phlox

Phlox drummondii

HEIGHT	6–18 in	**SPREAD**	6–12 in
WATER	Low; drought tolerant; full sun sites	**LIGHT**	Full sun
SOIL	Wide range; sandy, loamy, or clay; well-drained; acid to neutral	**WILDLIFE**	Flowers attract native bees, butterflies, and hummingbirds; excellent early-season nectar source March–May

Named for Scottish botanist Thomas Drummond who collected it in Texas. Native to the Gulf Coast prairie and Post Oak Savanna with spectacular mass of pink/red/purple flowers from March through May. It is an annual and self-seeds freely in disturbed soil. Outstanding for Miyawaki site establishment phase when ground layer needs rapid visual impact. Works well in school and park catalogs. USDA zone 4–10.

Purple Meadow Rue

Thalictrum dasycarpum

HEIGHT	3–6 ft	**SPREAD**	2–3 ft
WATER	Moderate–High; moist bottomlands and bayou edges	**LIGHT**	Part shade to full shade
SOIL	Moist clay and loam; acid to neutral; riparian and wetland margins	**WILDLIFE**	Airy flower clusters attract native bees; feathery foliage provides exceptional textural contrast in forest understory

Elegant native wildflower of moist bottomlands and bayou edges with feathery purple tinged foliage and airy flower clusters provide exceptional textural contrast in forest understories. Tolerates wet clay soils hence best performance in moist, shaded riparian sites. USDA zone 4–7.

SITE RESTRICTION NOTE
Restrict to Wetlands and Parks in moist, shaded, acid soils. Not suitable for highway, parking lot, or commercial catalog types. Performs best in riparian understory conditions with consistent soil moisture.

Dakota Mock Vervain

Glandularia bipinnatifida

HEIGHT	6–18 in	**SPREAD**	12–24 in
WATER	Low; highly drought tolerant; thrives on poor soils	**LIGHT**	Full sun
SOIL	Wide range; sandy, loamy, rocky, or clay; well-drained; acid to neutral; excellent on disturbed sites	**WILDLIFE**	Outstanding butterfly nectar plant for Gulf Fritillary, Painted Lady, and many other species; long bloom season spring–fall

One of the best native ground covers for open, sunny, well-drained Miyawaki margins and highway edges. Profuse pink-purple flowers spring through fall. Very drought tolerant and thrives on poor soils. Outstanding butterfly nectar plant. Low-growing and non-aggressive. Excellent for highway and commercial perimeters. Self-seeds reliably. USDA zone 4–10.

Reference Table

Species × Catalog Site Matrix

This matrix indicates which species are suitable for each of the six Urban Green Initiative Houston Design Catalogs. ✦ = Primary recommendation ■ = Suitable secondary option — = Not recommended for this site type.

Species	C01 Wetlands	C02 Highways	C03 Parking	C04 Parks	C05 Schools	C06 Commercial
EMERGENT LAYER						
Bald Cypress	✦	—	—	✦	■	—
Water Oak	✦	■	—	✦	■	—
Shumard Oak	■	✦	■	✦	✦	✦
Nuttall Oak	✦	—	—	✦	■	—
Bur Oak	—	✦	✦	✦	✦	✦
Swamp Chestnut Oak	✦	—	—	✦	■	—
Live Oak	■	✦	✦	✦	✦	✦
Pecan	—	—	—	✦	✦	■
Cedar Elm	■	✦	✦	✦	✦	✦
Sweetgum	✦	■	—	✦	■	—
Sugarberry	✦	✦	✦	✦	✦	✦
Loblolly Pine (acid)	■	—	—	■	■	—
Willow Oak	✦	■	—	✦	✦	—
White Oak (acid)	■	—	—	✦	■	—
Water Hickory	✦	—	—	✦	■	—
Shagbark Hickory	—	—	—	✦	✦	■
Texas Hickory	—	■	■	✦	■	■
Red Mulberry	✦	—	—	✦	✦	■
American Sycamore	✦	—	—	✦	■	—
Black Cherry	■	—	—	✦	■	■
Eastern Cottonwood	✦	—	—	■	—	—
SUB-CANOPY LAYER						
Eastern Redbud	✦	✦	✦	✦	✦	✦
Sweetbay Magnolia	✦	■	—	✦	✦	■
Mexican Plum	■	✦	✦	✦	✦	✦
Roughleaf Dogwood	✦	✦	■	✦	✦	✦
Carolina Cherry Laurel	—	■	■	✦	✦	✦
Mexican Buckeye	—	✦	✦	✦	✦	✦
Red Buckeye	✦	—	—	✦	✦	■
Possumhaw Holly	✦	■	■	✦	✦	✦
Yaupon Holly	✦	✦	✦	✦	✦	✦
Wax Myrtle	✦	✦	✦	✦	✦	✦
American Holly	■	■	—	✦	✦	✦
Eastern Red Cedar	—	✦	✦	✦	✦	✦

American Persimmon	■	✦	✦	✦	✦	✦
Blackjack Oak	—	■	■	✦	■	■
Hercules Club	■	✦	✦	✦	✦	✦
Black Willow	✦	—	—	■	—	—
Gum Bumelia	—	✦	✦	✦	✦	✦
SHRUB LAYER						
American Beautyberry	✦	✦	■	✦	✦	✦
Buttonbush	✦	—	—	✦	■	—
Coralberry	✦	✦	✦	✦	✦	✦
Flameleaf Sumac	■	✦	✦	✦	✦	✦
Virginia Sweetspire	✦	—	—	✦	✦	■
Elderberry	✦	✦	■	✦	✦	✦
Parsley Hawthorn	✦	■	—	✦	✦	■
Texas Lantana	—	✦	✦	✦	✦	✦
Agarito	—	✦	✦	✦	✦	✦
Elbow Bush	■	✦	✦	✦	✦	✦
Carolina Buckthorn	✦	✦	■	✦	✦	✦
Fragrant Sumac	—	✦	✦	✦	■	✦
Inland Sea Oats	✦	■	■	✦	✦	✦
Gulf Coast Muhly	■	✦	✦	✦	✦	✦
Switchgrass	✦	✦	■	✦	✦	✦
Eastern Gamagrass	✦	—	—	✦	■	—
Ironweed	■	✦	■	✦	✦	✦
Scarlet Sage	✦	✦	✦	✦	✦	✦
Green-headed Coneflower	✦	—	—	✦	✦	■
Wild Azalea (acid)	✦	—	—	✦	■	—
Spiderwort	✦	✦	■	✦	✦	✦
Mealy Blue Sage	■	✦	✦	✦	✦	✦
Rattlesnake Master	—	✦	✦	✦	✦	✦
Swamp Milkweed	✦	—	—	✦	✦	—
GROUND COVER LAYER						
Zizotes Milkweed	—	✦	✦	✦	✦	✦
Rain Lily	—	■	■	✦	✦	✦
Eastern Bluestar	✦	■	—	✦	✦	■
Lance Leaf Coreopsis	—	✦	✦	✦	✦	✦
Firewheel	—	✦	✦	✦	✦	✦
Giant Coneflower	■	✦	■	✦	✦	✦
Lyre Leaf Sage	✦	—	—	✦	✦	■
Sharp Sepaled Beardtongue	✦	■	—	✦	✦	■
Cherokee Sedge	✦	■	■	✦	✦	✦
Standing Cypress	—	✦	✦	✦	✦	✦

Drummond's Phlox	—	■	■	✦	✦	✦
Purple Meadow Rue	✦	—	—	✦	■	—
Dakota Mock Vervain	—	✦	✦	✦	✦	✦

Field Protocol

Procurement, Nursery Quality & Establishment Standards

Nursery Stock Standards

Quality of nursery stock is a primary determinant of Miyawaki forest establishment success. The following standards should be considered to all procurement for Houston-area plantings:

- **Container size:** 1-gallon minimum for shrubs and ground cover; 3-gallon minimum for sub-canopy and emergent species. Bare-root stock acceptable during dormant season (December–February) for oaks, pecans, and elms only.
- **Root quality:** No circling roots at container base. Reject any stock showing root girdling. Firm root ball; no loose or compacted media.
- **Provenance:** Source from Texas-native seed stock wherever possible. For coastal prairie grasses (Gulf Coast Muhly, Switchgrass, Eastern Gamagrass), confirm Gulf Coast / East Texas provenance with nursery.
- **Disease and pest screening:** Inspect all stock for scale insects, root weevil damage, and canker lesions. Reject symptomatic stock. Do NOT accept any Persea species (including avocado or redbay) from nurseries in Laurel Wilt-affected counties without certified disease-free certification.
- **Label verification:** Confirm scientific name at purchase. Texas Lantana (Lantana urticoides) is frequently mis-labeled or sold alongside invasive L. camara, verify before purchase.

Invasive Species in Houston Region

The following invasive species represent the greatest competitive threat to Miyawaki forest establishment in the greater Houston area. All planting sites should be surveyed before planting, and management protocols implemented during the establishment phase:

1. **Chinese Tallow Tree (Triadica sebifera):** Most aggressive invasive tree in Houston. Must be removed by cut-stump herbicide treatment before planting. Any remaining root stock will resprout vigorously. Monitor weekly during establishment.
2. **King Ranch Bluestem (Bothriochloa ischaemum):** Dominant invasive grass on disturbed upland sites. Remove by solarization or targeted herbicide before planting. Will outcompete native grasses during establishment if not controlled.
3. **Sericea Lespedeza (Lespedeza cuneata):** Invasive legume that smothers ground layer species. Hand pull before seed set. Do not mow because it stimulates resprouting.
4. **Japanese Privet (Ligustrum japonicum):** Invasive evergreen shrub forming dense monotypic thickets under canopies. Cut-stump treatment required; herbicide essential to prevent resprouting.
5. **Giant Reed (Arundo donax):** Invasive grass of creek banks and wet edges. Highly competitive with native Bald Cypress and Buttonbush plantings at bayou sites. Mechanical removal plus herbicide required.
6. **Saltcedar (Tamarix ramosissima):** Invasive wetland tree species. Less common in Harris County but expanding — monitor bayou edge sites.
7. **Chinaberry (Melia azedarach):** Prolific invasive tree widely naturalized across Houston. Produces toxic fruits; spreads aggressively into disturbed urban soils. Remove by cut-stump herbicide treatment before planting.
8. **Air Potato (Dioscorea bulbifera):** Rapidly spreading invasive vine documented in Harris County. Can rapidly smother developing Miyawaki plantings at bayou-edge (C01) sites. Tubers must be removed completely — even small fragments resprout.

References & Sources

Authoritative Sources & Bibliography

1. **Texas A&M AgriLife Extension Service — Harris County**
   Native & Adapted Plants for Houston. Compiled by Harris County Extension Horticulturists. Harris County Cooperative Extension, 3033 Bear Creek Dr., Houston, TX 77084.

2. **Texas A&M Forest Service — Trees of Texas**
   Texas Tree Identification Database | Texas Tree Planting Guide.

3. **Native Plant Society of Texas — Houston Chapter**
   Houston Native Plant Guide. Plants that grow well in the soil conditions of Harris and surrounding counties, including gumbo, AND provide value to wildlife.

4. **Lady Bird Johnson Wildflower Center — UT Austin**
   Native Plants Database. University of Texas at Austin. 25,000+ species profiles.

5. **Native Prairies Association of Texas**
   Nine Native Plant Species for the Gulf Coast Prairie Landscape Guide.

6. **City of Houston / Harris County Extension**
   Native & Adapted Plants for Houston (AgriLife Extension Fact Sheet).

7. **USDA PLANTS Database**
   National plant data repository — distribution, taxonomy, nativity verification.

8. **Flora of North America Editorial Committee**
   Flora of North America North of Mexico. New York and Oxford.

9. **Texas Invasives Database — Texas A&M**
   Redbay Ambrosia Beetle / Laurel Wilt Disease.

10. **The Woodlands Township Forestry Division (2025)**
    Public Advisory: Laurel Wilt Disease in The Woodlands. May 2025.

11. **Texas A&M Forest Service — Oak Wilt**
    Oak Wilt in Texas. Publication for Live Oak and red oak wilt management.

Acknowledgement & Credits

AI Assistance & Methodology

This guide was researched and written with the assistance of Claude, an AI assistant developed by Anthropic (anthropic.com). The collaboration between human expertise and AI tools enabled comprehensive coverage of botanical science, urban planning regulations, and ecological methodology.

AI assistance was used for the following components of this document:

- Species photography review and image-to-species accuracy audit
- USDA Plant Hardiness Zone verification against 2023 federal data (planthardiness.ars.usda.gov)
- Taxonomy corrections cross-referenced against Flora of North America and USDA PLANTS Database
- Document design, layout, and production (PDF and Word formats)

All content has been reviewed and validated by Raj Dharamshi, Founder of Urban Green Initiative, and subject matter experts. All AI-assisted content was independently cross-checked against primary government databases, peer-reviewed literature, and established botanical authorities before inclusion. The author retains full responsibility for the accuracy and application of the information presented.

Primary Author

Raj Dharamshi

Founder, Urban Green Initiative | M.S. Electrical Engineering, University of Houston | 30+ years global technology innovation | Climate & Urban Resilience Advocate, Houston, TX

Technical Reviewers

The following experts provided technical review and subject matter expertise in the development of this guide:

1. Jaime González, Executive Director, Institute for Ecological Resilience (IER), University of Houston
2. Wally Wilkins, Director of Horticulture and Living Collections, The John Fairey Gardens

Urban Green Initiative · Houston, Texas · urbangreeninitiative.org · info@urbangreeninitiative.org

This guide is intended as a living document. Species recommendations will be updated as new disease monitoring data, climate adaptation research, and Houston-region planting trial outcomes become available. Report corrections and additions to info@urbangreeninitiative.org.