



NATIVE LANDSCAPE TECHNICAL FIELD GUIDE



This BMP Field Guide serves as a land management document providing an initial restoration toolbox. The BMPs are broad recommendations and should be viewed as starting the process for restoration. Every site is unique and it will be up to the discretion of the conservation team to implement these BMPs in the most appropriate way given the conditions.

Native Landscape BMP Field Guide

DEFINITIONS

Native Landscaping is creating a natural habitat that references the local ecotype while implementing horticultural design practices to create a planted area that considers ecological function and aesthetics. It is a landscaping practice that combines ecology and horticulture (Rainer 2015). Plants should be selected based on diversity, function, and form. In a nature-based landscape, this is a combination of diversity for aesthetics as well as ecosystem function (Vogt 2023). Native Landscaping is the practice of creating spaces that consider the interactions of wildlife and plant community evolution over time.

PROJECT PLANNING

There are often many questions and pre-construction analyses that should be completed prior to any ground-breaking. To help with the extensive “pre” process, HPB has created a checklist:

[CONSERVATION PROJECT DEVELOPMENT CHECKLIST](#)

Use the completed record generated by Survey123 as a basis for developing your site action plan and other project documents.

DETERMINE PROJECT GOALS AND PRIORITIES

Setting specific goals for your project at the onset, can ensure work progresses linearly along an accepted trajectory.

Potential Native Landscaping Goals and/or priorities:

- Increase plant species diversity
- Capture and reduction of stormwater runoff
- Strategically create habitat for birds, bats and/or pollinators
- Aesthetic attraction for BG users

NATIVE LANDSCAPE PROJECT SPECIFIC CONSIDERATIONS

Native landscape(s) establishment is highly dependent on the proper preparation of the project site. There are special considerations that must be addressed.

As part of your analysis:

HYDROLOGY

- Generate a topographic map or note on other maps specific areas of ponding and/or water collection
- Document any existing and/or potential pollution sources, urban disturbances and health hazards (on-site and adjacent)
- Identify volume of annual rainfall ([Harris County Flood Warning System \(harriscountyfws.org\)](http://harriscountyfws.org))

SOILS

- Complete your soil survey ([Web Soil Survey - Home \(usda.gov\)](http://websoilsurvey.sc.egov.usda.gov))
- Take soil sample and obtain analysis from Texas A&M AgriLife Extension Soil Lab
- Assess soil compaction (through bulk density or soil cone penetrometer measurements)
- Test soil infiltration
- Assess extent, severity, and type of erosion on-site
- Soil biodiversity may play an important role in grass establishment. Collecting a sample for this test may be necessary.

VEGETATION

- Map zones of existing land cover/vegetation type
- Note invasive species of interest, native communities and relative abundance of each group
- Map vegetation structure (% cover for overstory, mid-story, understory/herbaceous, litter cover, bare soil) and dominant species in each layer

OTHER PROJECT CONSIDERATIONS

It is important to note elements surrounding the site that will influence a successful restoration project. Those elements may include the following:

- Parking lots
- Problematic adjacent properties
- Stands of invasive plants
- Major roadways
- Storm drain interceptors
- Proximity to BG trails
- Proximity to other park features

The planning process should include notations of these features, their relative distance to your proposed project and the general size of these features.

Maintenance capacity and logistics should be a design and layout parameter. Elements like pathways can be used to simplify maintenance and delineation of different types of areas.

Invasive species, often with viable seedbanks lasting over a decade, [require multiple herbicide](#) applications to deplete rhizome reserves and prevent regrowth. Managing a mix of warm and cool-season invasives typically involves a year-long preparation process: initial herbicide treatments paired with shallow tillage (up to 5 inches) and a 5-inch mulch layer left for a year. This approach suppresses growth, facilitating targeted spot treatments instead of broad herbicide applications.

INSTALLATION AND MAINTENANCE

SOILS

- Submitting a soil sample could prove useful for knowing the nutrient content in existing soil; urban soils are typically depleted of vital nutrients
- Soil improvements like adding compost and especially char may be necessary to help restore the soil food web
- It may be essential to complete an infiltration study on-site to understand how easily soil absorbs water or creates runoff

SITE PREPARATION

- Native landscapes are usually created systems, placed in locations which were previously sod and/or maintained lawns; therefore, importing soil is a must and should be a nutritious blend like 50:50 mix.
- Invasive species control is imperative to long-term project success and achievement of desired ecological functions. Consider [controlled herbicide methods](#) over methods which disturb the soil. Please refer to the [HPB Integrated Pest Management \(IPM\) Manual](#) if herbicide is required.

Common Invasive Plant Species	
Scientific Name	Common Name
<i>Cynodon dactylon</i>	Bermudagrass
<i>Sorghum halepense</i>	Johnsongrass
<i>Bromus spp.</i>	Brome
<i>Bothriochloa ischaemum</i>	King Ranch Bluestem
<i>Paspalum notatum</i>	Bahia grass
<i>Verbena brasiliensis</i>	Brazilian Vervain
<i>Medicago polymorpha</i>	Burr clover
<i>Melilotus officinalis</i>	Yellow sweet clover
<i>Rapistrum rugosum</i>	Bastard cabbage
<i>Torilis arvensis</i>	Spreading hedge parsley
<i>Paspalum urvillei</i>	Vasey Grass
<i>Rumex crispus</i>	Curly dock
<i>Convolvulus arvensis</i>	Field bindweed

- Seeding: this method may be cost effective; be sure to consider [appropriate mixes](#)
- Plant similar plants together in clusters or swaths. When combining species together, it makes it more apparent when an undesirable plant needs to be removed
- Grouping plants based on sun, shade, or moisture preferences is critical to plant survivability.

Planting Windows	
Plants	Season
Spring forbs and grass mixes	March - May
Warm season grasses	October - May*
Cool season grasses	October - mid November
Perennial forbs	October - May**
Annual Forbs	March - April
Shrubs	October - Early November and March - June
Trees	November - February***
<p>*Best results when planted in spring. **Best results when planted in fall. ***Best to plant trees when they are dormant during the winter to avoid transplant shock. However, they can also be planted, depending on climatic conditions, in late fall and early spring if necessary. These trees will require more attention.</p>	

- Some plants like disturbed areas and very little competition while other plants work well paired with similar species. An important consideration is to pick hardy plants that will not need much maintenance but also are not too aggressive in taking over the planted area. Each plant also has specific ecosystem functions they provide
- Washing of installation equipment is necessary to ensure no cross-contamination
- Before beginning any planting, it is particularly important to remove any extra growth or invasive species from the pots. This should be done before plants arrive to the restoration site, but it is important to always double check before planting.
- Dig holes similar in size to the plant containers (e.g., 4-inch, 1-gallon, 3-gallon). Ensure the base of the plant is level with the surrounding ground. Use excavated soil to fill air spaces without over-compacting.
- When installing live plants, the hole should be like the size of the plant (e.g., 4", 1 gallon, 3 gallon, etc.). The hole should not be too deep so that the base of the plant is lower than the surrounding ground level. The excavated soil should then be used to fill any air spaces, but the soil should not be over-compacted.
- Planting smaller sized trees rather than larger trees is recommended regardless of species and eventual size. The benefits of planting smaller sized trees are that they are easier to plant, more affordable, and will typically fill out faster than a larger tree.
- It is important to not plant a tree too low. The hole should be shallow enough to allow the top of the root ball or root flare to sit just above ground (or even a bit higher as nursery soil is lighter than native soil and will compact causing the tree to sink over time).

- When removing the tree from the pot, the roots should be inspected for root binding and the soil should be lightly loosened from compaction. It is recommended to “tickle the roots” to get them ready for growth.
- When backfilling the soil, with native soil do not compress too much, add soil in stages, and make sure there are no air pockets. Break up the large clumps and heavily water the soil between rounds.
- Mulch is recommended around tree plantings and around herbaceous and shrub plantings to suppress weeds in addition to reducing watering requirements. Mulch should not be placed against the tree trunk.

ESTABLISHMENT

- Water weekly for the first couple months, but your site may need water for the first year of establishment, especially during drought conditions
- It is critical to water the site for the first 6 weeks after seeding, especially for large projects
- Remove invasives immediately to prevent establishment and/or seeding of noxious species
- Bare spots should be addressed immediately with additional plantings and/or seeding

MAINTENANCE/MONITORING

- Each project should have regular establishment monitoring for the first two years with the first year having a minimum of a [site visit](#) every two weeks.
- Vines should be removed in a 2' radius around trees.
- Hand removal can occur, and regular sweeps should be made during inspections to make sure undesired plants are not allowed to go to seed. [Site monitoring forms](#) can be completed to initiate these maintenance tasks.
- Any invasive, non-desired plants that are setting seed should be treated or pulled, seedheads or plants bagged, and then bags discarded. Herbicide treatment will be [need further approval by HPB](#). It is imperative that you consult the [IPM](#) for guidance on herbicide applications.
- If invasive spot treatment occurs and results in dead patches, conservation staff should remove dead material and then replant with fast growing plants. It is imperative to not leave the void unattended because urban areas are vectors for invasive species and could potentially fill the space if native seed or live plugs are not planted as soon as possible.
- Bare spots created by invasive removals **MUST** be addressed at the time of physical removal or after the REI has expired if herbicide treatment was utilized