Robinson Preserve Expansion

Proposed Habitat Establishment Guidance

The following lists detail the specific habitat establishment activities proposed for each habitat type. These activities include vegetation installation (e.g. seeding, sodding, and individual plant installation) and "Habitat Establishment Period Adaptive Management Events" (HEPAM Events) that are necessary to create and restore natural habitats that will be long-term self-sustaining habitats. Buffer habitats (e.g. "Landscape Areas") are also included as these areas will include native vegetation components but will also serve functions associated with passive recreation.

UPLAND HABITATS

Live Oak Hammock (24.77 acres)

Features of mature habitat:

- Dense canopy dominated by oak species (*Quercus virginiana*, *Quercus geminata*, *Quercus myrtifolia*)
- Sparse understory and groundcover due to canopy shading
- Native groundcover and shrubs primarily contained under canopy openings and along periphery

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Pine Flatwoods (13.97 acres)

Features of mature habitat:

- Natural assemblage of pine trees (primarily slash pine) dominate canopy
- Minimal shrub layer dominated by clumps of saw palmetto
- Primarily graminoids groundcover with significant cover by wiregrass
- Habitat will be fire maintained utilizing prescriptive burning

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)
  - Direct seeding of native seed collected locally from similar natural habitats

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Cedar Hammock (8.39 acres)

Features of mature habitat:

- Dense canopy dominated by eastern red cedar (*Juniperus virginiana*)
- Sparse understory and groundcover due to canopy shading with Spanish bayonet (*Yucca filamentous*), prickly pear cactus (*Opuntia humifusa*), and similar maritime hammock species
- Native groundcover and shrubs primarily contained under canopy openings and along periphery

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

<u>Coastal/Tropical Hammock - Shrub (5.39 acres)</u>

Features of mature habitat:

- Variation of coastal/tropical hammock that contains very few trees and is dominated by shrubs
- Shrubs include Florida privet, stoppers, sea grape, etc.
- Native groundcover ranges from sparse to dense depending on shrub density

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Coastal/Tropical Hammock - Tree (2.81 acres)

Features of mature habitat:

- Coast/tropical hammock that contains a tall, moderately dense canopy of trees.
- Trees include buttonwood, Jamaican dogwood, live oak, etc.
- Native groundcover most common in areas of open canopy and along periphery.

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Cabbage Palm Hammock (0.39 acre)

Features of mature habitat:

- Dense canopy of cabbage palms with minimal groundcover and shrubs.
- Native groundcover most common in areas of open canopy and along periphery.

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Vegetative Screen (1.01 acres)

Features of mature habitat:

- Dense canopy and understory of sea grape and similar intertwined species to create a visual screening beneficial to wildlife utilizing created and restored habitats.
- Goal is to allow wildlife movement while minimizing light/noise pollution from adjacent residential developments.

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Viewing Mound (wildflower) (1.34 acres)

Features of mature habitat:

- Sun-exposed hill dominated by a low-growing wildflower habitat that provides significant benefits to local pollinators and larval stages of butterflies.

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)
  - Direct seeding of native wildflower and graminoid species seeds from local sources.

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Viewing Mound (lawn) (1.40 acres)

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation

- Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Landscape Areas (7.81 acres)

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Direct seeding of Bahia grass with annual rye or brown top millet for erosion control and weed suppression.

Time Zero to Two Years (Year 0 to Year 2)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 2 years (4 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 2 years (8 events)
  - Bi-monthly or as-needed mowing of groundcover (up to 12 mowing events)

Two Years (Year 2) Post-Grading

- Plant Installation
  - Installation of containerized plants (target installation period to coincide with rainy season to minimize stress and irrigation requirements)

Time Two Years to Seven Years (Year 2 to Year 7)

- HEPAM Events
  - Dormant Season Herbicide Treatment of Nuisance/Invasive Vegetation – 2 events/year for 5 years (10 events)
  - Growing/Rainy Season Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

WETLAND HABITATS

Freshwater Marsh (1.30 acres)

Features of mature habitat:

- Herbaceous marsh dominated by species generally associated with freshwater marsh with potential for some presence of salt-tolerant species
- Elevation-based zonation with an open water component in the center

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Elimination of nuisance/invasive species present post-grading
- Installation of containerized/bare-root plants

Time Zero to 5 Years (Year 0 to Year 5)

- HEPAM Events
  - Early Elimination Herbicide Treatment of Nuisance/Invasive Vegetation – 6 monthly (6 events)
  - Quarterly Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 4.5 years (18 events)

Saltmarsh (mangrove) (18.53 acres)

Features of mature habitat:

- Saltmarsh cordgrass dominated marsh
- Scattered pockets of black rush, leather fern, and other recruited species
- Significant forage habitat for wading birds
- Backwater marsh provides nutrient and detrital inputs important to fishery habitat

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Elimination of nuisance/invasive species present post-grading
- Installation of containerized/bare-root plants

Time Zero to 5 Years (Year 0 to Year 5)

- HEPAM Events
  - Quarterly Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)

Saltmarsh (mangrove) Islands (3.08 acres)

Features of mature habitat:

- Saltmarsh cordgrass dominated marsh surrounding mangrove islands
- Tidal flats located between marsh-rimmed islands
- Significant forage and roosting habitat for wading birds
- Saltmarsh and mangrove habitats provide significant essential fish habitat

Implementation Activities (in chronological order):

Time Zero (post-grading)

- Elimination of nuisance/invasive species present post-grading
- Installation of containerized/bare-root plants

Time Zero to 5 Years (Year 0 to Year 5)

- HEPAM Events
  - Quarterly Herbicide Treatment of Nuisance/Invasive Vegetation – 4 events/year for 5 years (20 events)