PRELIMINARY MITIGATION, MONITORING and REPORTING PLAN
for
WAX MYRTLE PLANTING
on
MacKERRICHER STATE PARK

at
1201 & 1211 North Main Street, Fort Bragg, CA
APN 069-241-27-00 & -38-00
City of Fort Bragg

Property Owner:
Robert A. Hunt, Hunt InnVestments
PO Box 1470
McCall, ID 83638

Report Prepared By:
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1. PROJECT SUMMARY & BACKGROUND

In the process of applying for a Coastal Development Permit at APN 069-241-27-00 & -38-00, a wax myrtle planting preliminary Mitigation, Monitoring and Reporting Plan is proposed to Mendocino County Planning for the subject parcel located at 1201 & 1211 North Main Street approximately 1 mile north of the town of Fort Bragg in the Mendocino County Coastal Zone (**Figure 4**). Visitor accommodation development is proposed adjacent to Highway One on the east side of the subject parcels. Directly west of the project parcels is a walking trail that was historically used by logging trucks to transport logs to mill and is known as the Haul Road. West of the Haul Road walking trail is land that is part of MacKerricher State Park. Several social trails are present on the headlands leading from the Haul Road to overlooks on the bluff and/or down to the beach below. A narrow strip of State Park land west of the Haul Road across from the proposed inn structures is the proposed location for planting wax myrtle (**Figure 5**).

2. EXISTING ECOLOGICAL CONDITIONS

The suggested habitat enhancement area is the fill prism west of the Haul Road. Non-native plants are predominant within this area which is slightly higher in elevation due to fill soils added to raise the surface of the Haul Road. This mounded area is dominated by common velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), English plantain (*Plantago lanceolata*), wild radish (*Raphanus sativa*), and ice plant (Carpobrotus edulis). A wax myrtle hedge already exists on the northern edge of the planting area (**Figure 1**) and the plantings are intended to become a southward continuation of the hedge. Bluff species currently growing adjacent to the habitat enhancement area include: California wax myrtle (*Morella californica*), slough sedge (*Carex obnupta*), and Pacific oenanthe (*Oenanthe sarmentosa*). In addition to common native bluff species, three rare plants were observed west of the enhancement area: Mendocino coast Indian Paintbrush (*Castilleja mendocinensis*), Harlequin lotus (*Hosackia gracilis*), and Short leaved evax (*Hesperevax sparsiflora* var*. brevifolia*). Mendocino coast paintbrush and short leaved evax occur west of the planting area closer to the bluff edge. Harlequin lotus occurs adjacent to, but outside of, the vegetation enhancement area. Presumed wetland is adjacent to the enhancement area in patches.

Figure 1. Existing wax myrtle hedge on northern edge of planting area.

3. PROJECT DESCRIPTION

To mitigate the possibility of increased foot traffic through established social trails and sensitive habitat, the project applicants have proposed habitat enhancement plantings of native wax myrtle along the western side of the Haul Road, to begin prior to commencing development of the proposed project. Planting wax myrtle discourages the use of established social trails and creates native cover, feeding, and nesting habitat for birds. Existing social trails lead west from the Haul Road walking trail further into State Park land and disturb sensitive habitat areas, including special status plants and plant communities. Wax myrtle shrubs would discourage the use of these trails and eventually block out access to State Park land along this portion of the Haul Road. Birds use wax myrtles as habitat and the plantings would vegetate the habitat enhancement area with this native plant, which will overgrow the current non-native vegetation prevalent on the fill prism resulting from the creation of the Haul Road.

An area for wax myrtle planting and monitoring has been selected in cooperation with State Parks, the City of Fort Bragg, and Hunt InnVestments on State Park lands. The selected area for planting is adjacent to the western portion of the southern subject parcel. Consultation with State Parks deemed that additional plantings further north were neither necessary nor desirable because of the relative inaccessibility of these areas to the subject parcels (there is a significant elevation change and a pond between them), the fact that these areas are already vegetated with predominantly native plants, and there is an existing equestrian trail posted at that location. The extent of the vegetation management and monitoring area creates a protective buffer between the Haul Road and special status plant populations including: Mendocino coast Indian Paintbrush (*Castilleja mendocinensis*), Harlequin lotus (*Hosackia gracilis*), and Short leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), as well as preventing erosion along the bluff edge in this area.

Approximately 250 young wax myrtles will be planted on six-foot centers within the fill prism west of the Haul Road (**Figures 2 & 3**). The new plantings will be marked as a habitat restoration area with a temporary rope barrier and signage noting the area as a restoration area. As the plantings grow they will create a permanent physical barrier.

Figure 2. Haul road fill prism facing north.

Figure 3. Haul road fill prism facing south.

4. SOCIAL TRAIL DECOMMISIONING & WAX MYRTLE PLANTING REFERENCES

Social trails are a common problem on public lands, which lead to habitat degradation. Different agencies and organizations have studied the best practices to keep visitors off of social trails to prevent habitat degradation and implement restoration techniques. Wax myrtles are the proposed plant species since nurseries and botanists often describe the shrub as a hearty, evergreen hedge plant that needs very little maintenance. Wax myrtle is native and present on other portions of the site.

The Rocky Mountain Field Institute created an Implementation Guide for the Garden of Gods Restoration Report that covers restoration guidelines for closing social trails. These guidelines include: restoring the disturbed area by revegetating the trails with native plants, marking the area with signage to communicate that the area is closed, constructing a clear border along the main trail, such as fencing or rope, to guide people to stay on the main path, and conducting routine monitoring. Borders are more effective in preventing foot traffic when paired with informational signs. If some plantings fail, replanting is suggested to produce a dense canopy that prevents the recolonization of invasive plants.
https://www.rmfi.org/sites/default/files/resources/publications/gog_implementation_guide_web.pdf

The Golden Gate National Parks Conservancy had a Habitat Restoration and Enhancement and Trail Management and Maintenance Strategy prepared for the Coastal Trail at Land's End in 2005. Temporary or permanent fencing was suggested to close off social trails that were to be regraded and vegetated. Revegetation of social trails aimed to help contribute to the revegetation of nearby native habitats. Proposed vegetation was planted along social trail paths and intended to link up with the current native habitat. Within the Suggested Planting Palettes in Appendix A-3, wax myrtle is listed as a shrub layer and is suggested to be planted on a 5ft center.
https://www.nps.gov/goga/learn/management/upload/-1430-Final-Report-Coastala-Trail-at-Lands-End.pdf

Wax myrtles range along the Pacific Coast from Gray's Harbor, Washington to southern California. It usually grows near the coast along streams, wetlands, and sand dunes. It is ideal for coastal planting since it is tolerant to salt spray. In association with the bacteria *Frankia sp.*, wax myrtles can fix nitrogen and restore soil fertility. Many birds, such as the yellow-rumped warbler, use the shrub as shelter and eat the small berries it produces. http://nativeplantspnw.com/pacific-wax-myrtle-morella-californica/

Wax myrtle is also an excellent hedge or screen plant due to its thick foliage and moderately dense growth habit. Plants can be spaced close together without harming them and when spaced seven to twelve feet apart will fill in quickly and form a thick, interwoven hedge when mature. Wax myrtle is a low maintenance plants as it tolerates flooding and moderate drought and withstands salt spray from the ocean.
https://homeguides.sfgate.com/far-apart-can-plant-wax-myrtle-81855.html

5. RESTORATION PLAN

5.1 Basis for Design

The intent of the Preliminary Mitigation, Monitoring and Reporting Plan is to provide guidance on planting wax myrtles within the fill prism of the Haul Road. Following this plan will allow for development and use of the Avalon parcel at the same time as making the habitat conditions on State Parks better than at the start of the project. This plan outlines performance goals and suggests methods for the property owner to meet these goals in order to block social trails, improve bird habitat, and buffer sensitive resources from the Haul Road.

The proposed plan is performance-based, which allows for management to be carried out in an adaptive manner. Monitoring provides feedback and shows the manager which plantings are successful. Vegetation management and monitoring should occur for a minimum of three years to meet the performance goals. It should be noted that the total number of years from start of project to achievement of success criteria is very likely to take more than three years due to limited availability of locally sourced wax myrtle stock. Due to the unknown starting size of available plants and unknowns about how the plants will react to the growing conditions at the site, it is difficult to estimate what the growth rate of the wax myrtles will be. Additional years of effort, management, and monitoring beyond the minimum 3 years recommended should not be viewed as a project failure as long as reasonable progress toward the goals is being made. If progress is slower than desired adaptive management strategies, such as planting additional plants between the originals, or layering of lower branches to encourage clonal growth, should be considered.

5.2 Performance Goals and Success Criteria

Goals for management are as follows:

1. Establish a wax myrtle hedge where the individual plants merge to form a single unit. Establishment of the hedge will be deemed a success when the leaves of the shrubs begin touching each other. To the greatest extent feasible, there shall be no trails through the wax myrtle hedge and no gaps where people can pass without touching a significant amount of vegetation. Dead/dying wax myrtles will no longer need to be replaced when their absence does not create a gap of more than 2-feet for a continuous stretch from the Haul Road westerly to the grassland on State Parks.
2. Ensure at least 200 wax myrtles are growing within the enhancement area.
3. Submit annual report to the City of Fort Bragg Community Development Planning Staff to summarize the status of planting and vegetation management recommended in this plan. A final report will subsequently be submitted to Mendocino County Planning Staff after a minimum of three years of vegetation management and monitoring in the habitat enhancement area

6. IMPLEMENTATION

6.1 Identify Planting Area

In order to establish the habitat enhancement area and baseline conditions for the enhancement effort, a qualified biologist will identify the boundaries of the planting areas with wooden stakes and flagging. Locations where wax myrtles will be planted on 6-foot centers within the planting area will be marked with pin flags.

6.2 Establish photo points

A qualified biologist will establish photo stations for the habitat enhancement area. Images will show detailed site management efforts and the entirety of the enhancement area. Photographs will be taken to document the baseline conditions within the enhancement area. The location and direction of each photo will be recorded to inform future management, monitoring and reporting activities. These activities should occur just prior to the planting effort so that wooden stakes and flagging will not need to be present along the Haul Road trail for longer than necessary.

6.3 Begin invasive plant removal

The area will be prepared by removing all iceplant (*Carpobrotus spp*.) from within the delineated habitat enhancement area. All vegetation will be removed within a 2-foot diameter of each wax myrtle planting location. It is not expected that all weeds or invasive grasses be removed from within the habitat enhancement area; they will eventually be shaded out by the wax myrtles. Plant removal shall be accomplished by hand and/or with hand tools; no heavy equipment or herbicides shall be used. Iceplant removed shall be disposed of outside the Coastal Zone or to a location approved by State Parks if allowable.

6.4 Plant wax myrtles

In order to establish a hedge of wax myrtle shrubs, a gardener, landscaper, or other qualified personnel will plant approximately 250 young wax myrtle (*Morella californica)* shrubs. Wax myrtles should originate from local stock and both male and female plants should be used. Wax myrtles will be planted on six-foot centers within the fill prism west of the Haul Road in the area delineated by the biologist. Wax myrtles will be planted at the beginning of the rainy season, so young transplants receive significant moisture to help lessen transplant shock and become well established before drier weather. The planting will avoid areas vegetated with native plants as well as presumed wetland. Special care during planting should be taken to avoid impacts to all native plants.

6.5 Mulch wax myrtles

Mulch will be placed around the base of each planted wax myrtle; the mulch should be at least 3-inches deep and extend at least 1-foot around the stem of the wax myrtle to prevent other plants from growing within the vicinity of the wax myrtle.

6.6 Install barrier & signage

Planting area will be marked as a habitat restoration area with a temporary rope barrier and signage noting the area as a restoration area.

6.7 Site monitoring & maintenance

In order to help ensure the wax myrtle hedge is established, a gardener, landscaper, biologist or other qualified personnel will monitor and maintain the habitat enhancement area quarterly, for at least three years. After three years, monitoring and maintenance can occur less often but should occur at least annually until the success criterion are achieved. During these quarterly visits to the site weeds, will be removed, at a minimum, from within 1-foot from the base of each wax myrtle. Mulch will be maintained at a depth of 3-inches and a minimum of a 2-foot diameter around the base of each wax myrtle. Wax myrtles growing taller than six feet in height should be trimmed to encourage lateral growth and to prevent blocking the view of the ocean from the Haul Road. Any dead and/or dying wax myrtles observed during this effort should be documented and reported to the biologist who will write the end of year report as described below.

6.8 Replace dead/dying wax myrtles

In order to ensure the wax myrtle hedge is established, any wax myrtles that are dead and/or dying should be replaced in the fall after the seasonal rains have begun. Dead/dying wax myrtles will no longer need to be replaced when their absence does not create a gap of more than 2-feet for a continuous stretch from the Haul Road westerly to the grassland on State Parks.

6.9 Project adaptation

Using the quarterly monitoring procedure, active management components will be assessed based upon the performance value. If the performance goals are not being achieved or if there is evidence that they are vulnerable to failure, a consultation with California Department of Fish and Wildlife and/or State Parks should occur where criteria may be reassessed based upon current and projected conditions.

6.10 Monitoring

In order to ensure the effort to establish the wax myrtle planting is undertaken and followed through to completion of the success criterion, an annual report should be submitted to the Mendocino County Planning Staff to summarize the status of planting and vegetation management recommended in this plan. A final report will be submitted to Mendocino County Planning Staff after a minimum of three years of vegetation management and monitoring in the habitat enhancement area and not before the hedge is well established, with leaves of individual shrubs touching those of its neighbors and at least 200 wax myrtles growing within the habitat enhancement area. One or more additional years of management, monitoring and reporting may be required if success criterion are not met within the first three years. If it appears that success criterion are not achievable after significant effort is demonstrated then consultation with Mendocino County Planning and California State Parks should be undertaken to adapt the plan in order to achieve a satisfactory outcome. Pictures will be included, and a description of whether and how performance goals were met will be noted.

7. SCHEDULE

The table below gives an approximate outline of when in the life of the project each component of the wax myrtle planting plan should be undertaken.

Table 1. Wax myrtle planting implementation schedule

Phase	Implementation Date	Description
Phase 1 - Site Preparation & Planting		
Identify planting area	Just prior to planting	Identify the boundaries of the planting areas with wooden stakes and flagging. Mark locations where wax myrtles will be planted with pin flags on 6-foot centers within the planting area.
Establish photo points	Just prior to planting	Establish photo stations for the habitat enhancement area. Take photographs to document the baseline conditions within the enhancement area.
Prepare planting sites	Fall, Year 1	Remove all iceplant (*Carpobrotus spp.*) from within the delineated habitat enhancement area. Remove all vegetation within a 2-foot diameter of each wax myrtle planting location. Removal shall be accomplished by hand or with hand tools. No heavy equipment or herbicides shall be used. Iceplant removed shall be disposed of outside the Coastal Zone or within a location approved by State Parks if allowable.
Plant wax myrtles	Fall, Year 1	Plant approximately 250 young wax myrtle (*Morella californica*) plants, from local stock, including both male and female individuals. Plant wax myrtles on six-foot centers in locations marked with pin flags by the biologist. Plant at the beginning of the rainy season.
Mulch wax myrtles	Fall, Year 1	Place mulch 3-inches deep and 2-feet in diameter around the base of each planted wax myrtle.
Install barrier & signage	Fall, Year 1	Mark planting area as a habitat restoration area with a temporary rope barrier and signage noting the area as a restoration area.
Phase 2 - Maintenance & Documentation		
Site monitoring & maintenance	Quarterly, Year 1-3+	Monitor and maintain the habitat enhancement area quarterly for at least three years from the time of the planting. Trim wax myrtles growing taller than six feet in height. Any dead and/or dying wax myrtles observed during this effort should be documented and reported to the biologist who will write the end of year report.
Supplemental invasive removal	Quarterly, Year 1-3+	During quarterly visits to the sites, remove weeds at a minimum, from within 1-foot from the base of each wax myrtle.
Supplemental wax myrtle planting	Fall, Year 2-3+	Replace the dead/dying wax myrtles during the fall after the seasonal rains have begun.
Yearly reporting	Winter, Year 2-3+	Submit annual report to the Mendocino County Planning Staff to summarize the status of planting and vegetation management recommended in this plan.
Final Report	Winter Year 3+	Submit final report to Mendocino County Planning Staff after a minimum of three years of vegetation management and monitoring in the habitat enhancement area. One or more additional years of management, monitoring and reporting may be required if success criterion are not met within the first three years. If it appears that success criterion are not achievable after significant effort is demonstrated then consultation with Mendocino County Planning and California State Parks should be undertaken to adapt the plan in order to achieve a satisfactory outcome.

8. REPORTING

Reporting will occur on an annual basis, and reports will be received by the City of Fort Bragg Planning Department by December 31 of each year until all (or most with agency consultation) performance goals have been met for at least three consecutive years.

Reports will be sent by US Mail to:

Attn: Sarah McCormick, Assistant Planner
Community Development Department
City of Fort Bragg
416 North Franklin Street
Fort Bragg, CA 95437

Reports will include the following information:

- Name and contact information of person in charge of monitoring activities, and name and contact information of reporting party.
- Evaluation of each of the performance criterion; along with recommendations for meeting each of the criterion not already met.
- Color photos of the active management areas, from each photo point, each fall or winter of the reporting period.
- A summary of any issues encountered and management steps taken during the reporting period.
- Record of effort taken during that monitoring period to eradicate weeds and replace dead/dying wax myrtles
- Any new invasive plant species observed or evidence of other potential problems will be described.

9. QUALIFICATION OF THE PREPARERS

Nicole Bejar graduated from Gonzaga University with a Bachelor's Degree in Environmental Studies and a minor in Biology. After graduating, she worked as an intern for The Nature Conservancy conducting vegetation monitoring for the endangered golden-cheeked warbler. She served as an AmeriCorps member for the Watershed Stewards Program which aims to conserve, restore, and enhance anadromous watersheds for future generations. She worked as a fisheries technician conducting salmonid monitoring and habitat restoration for various agencies, including the California Department of Fish and Wildlife, Pacific States Marine Fisheries Commission, and the Bureau of Land Management. She also has experience planning and implementing northern spotted owl and amphibian surveys.

Asa B Spade graduated from Humboldt State University with a Bachelor's Degree in Environmental Science, with a concentration in Landscape Ecosystems as well as a minor in Botany. Since that time, he has been working in the natural resources field, first with Mendocino County Environmental Health and later with California State Parks and the Department of Fish and Game. He has been trained in Army Corps wetland delineation by the Coastal Training Program at Elkhorn Slough and in Advanced Wetland Delineation by the Wetland Science and Coastal Training Program. He has been trained in the environmental compliance process for wetland projects in San Francisco bay and outer coastal areas. In 2015 he attended a Townsend's big eared bat basal hollow habitat assessment and survey methods workshop taught by Michael Baker, Leila Harris, and Adam Hutchins. Asa has trained with the Carex Working Group in identifying grasses and sedges of Northern California as well as a CNPS sedge workshop taught by CA Fish and Wildlife staff biologist Gordon Leppig. In 2019, he completed a training for burrowing owls taught by Dr. Lynne Trulio through the Elkhorn Slough Coastal Training Program as well as a foothill yellow legged frog training taught by David Cook and Jeff Alvarez. He is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has done surveys for Behren's silverspot butterfly, Northern spotted owl, Sonoma tree vole, and the California red-legged frog. He has contributed to more than 150 coastal development projects in Mendocino County.

Figure 4. Parcel location map.

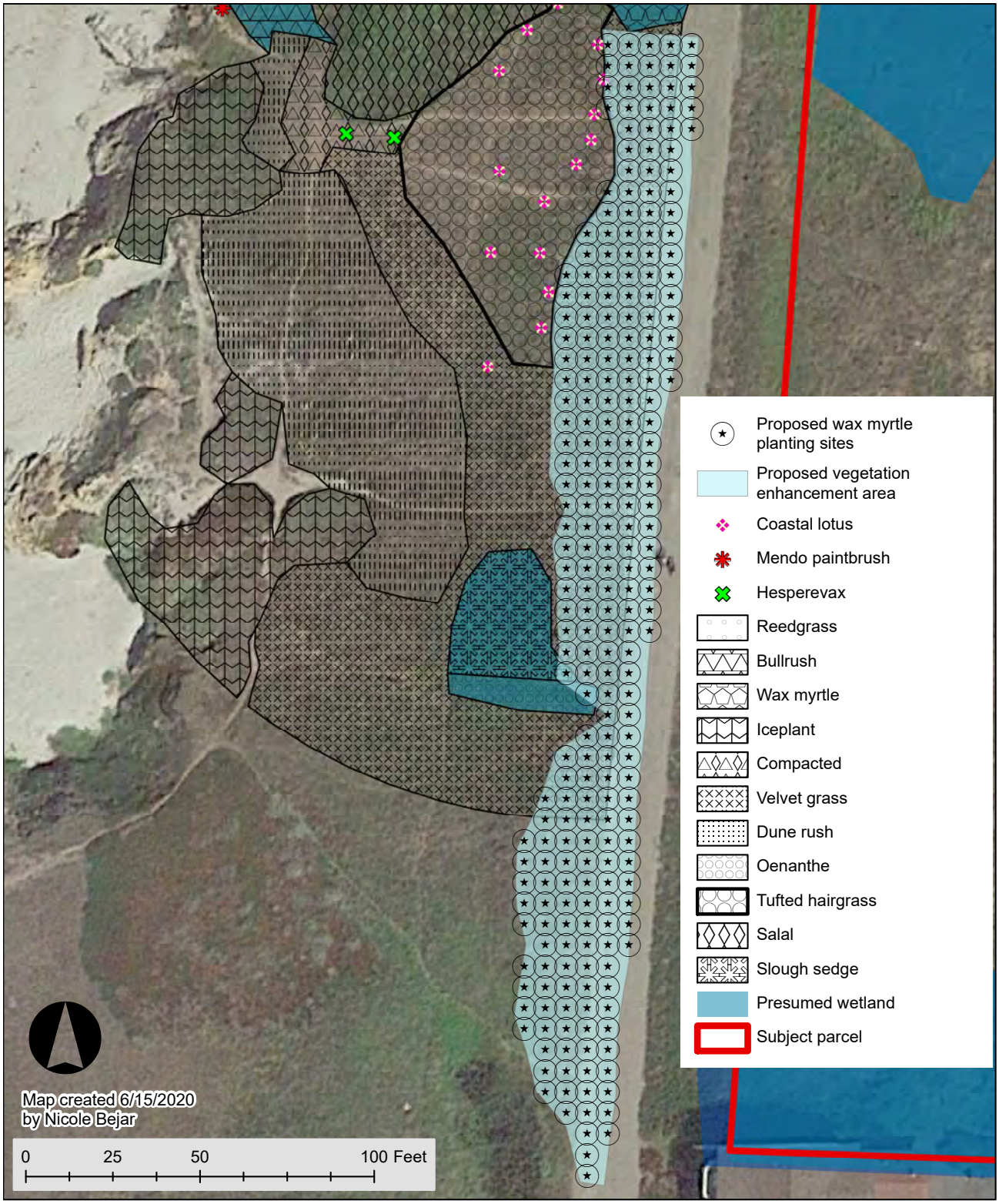

Figure 5. Proposed wax myrtle planting area.