

PRESERVE AREA MANAGEMENT PLAN AMENDMENT

MARTIN COUNTY GROWTH MANAGEMENT DEPARTMENT ENVIRONMENTAL DIVISION



THE PINE SCHOOL
STUART, FL 34990
34-38-42-000-195-00000-9

This PAMP amendment and cover page will supersede the January 2005 PAMP and address changes to preserve areas as outlined in this PAMP amendment.
(Original PAMP OR Book 2063 Pg 2055)

Approved by/Date : _____

April 23, 2026

PART I

ENVIRONMENTAL ASSESSMENT

The Pine School

1. Introduction – Property Description and History

This PAMP amendment/update is required based on the proposed modified Master Site Plan that is being approved as part of the ongoing use and modification of the Pine School. The Pine School is located west of US 1, south of Bridge Road within Sections 34, Township 38S, Range 42E, Martin County, Florida. A PAMP was previously approved by Martin County on June 28, 2005 and recorded in Book 2063, Page 2055-2087. This PAMP amendment will supersede the previously recorded 2005 PAMP. Please see the amended preserve area map to note which areas of the 2005 PAMP that will remain.

The subject property consists of ±174.22 acres. The previously approved Pine School Master Site Plan identified 138.19 acres of native uplands and associated Preserve Areas prior to construction. The new proposed construction associated with this phase retains 52.35 acres of upland preservation which is almost 18 acres greater than the 25% requirement of 34.55 acres. The preserve areas are identified with varying hatches in the Site Plan. The preserve area covered in this PAMP is shown on the site plan sheets included within the appendix and with the application.

2. Environmental Description and Summary

UPLAND PRESERVE MODIFICATION:

REQUIRED: (138.19 AC X 25%)	34.55 AC
UPLAND PRESERVE PREVIOUSLY PROVIDED:	46.28 AC
PRESERVE AREA IMPACT DUE TO SITE REVISIONS	11.07 AC
PRESERVE AREA ADDITION AREA:	17.14 AC
WETLAND BUFFER AREA	1.09 AC
Total NEW Provided:	52.35AC

While the vast majority of the site has been developed as a private school and the associated athletic facilities consistent with the master plan, the parcel has retained a significant portion of native habitat. The habitat has been maintained in accordance with the previously approved 2005 PAMP. The land owner, the Pine School, is proposing to expand the athletic and academic facilities within the parcel in order to serve the expanding student population. Based on the proposed site plan 1.55 acres of current preserve area is being removed for the relocated entrance road and adjacent to the golf course practice area. An additional 0.61 acres of previously impacted preserve west of the current school buildings is being removed to expand classroom areas. Finally, the remaining 8.91 acre current preserve area south of Banner Lake and west of the current athletic field is being retained with the understanding that this area may be impacted in the future for expanded institutional needs. The 8.91 acre area is subject to an updated listed species survey, and revised final site plan approval prior to silt fence installation land clearing. However, an additional modification of this PAMP will not be required for this proposed future impact. The landowner will continue to maintain the proposed and current preserve areas within the limits of the property in accordance with the proposed PAMP.

Pedestrian transects were completed throughout the proposed preserve areas and impact areas within the property in order to evaluate the area. The property was traversed in an east to west direction, with transects varying from approximately 20-30 feet apart so that all habitat could be observed. During that review, flora

and fauna was observed and recorded. Community assessments were also completed and recorded as part of the attached Florida Natural Areas inventory map. Habitats are delineated based on aerial delineation and were not based on infield geodetic survey points.

a. Soils

Based on a review of the USDA Natural Resource Conservation Service Web Soil Survey, the site is composed of:

5 - Waveland Sand, Depressional- This poorly drained soil is in depressions typically within flatwoods areas. Typically, the surface layer is very dark gray sand. The subsurface layer is light gray and grayish brown. Permeability is rapid in the surface and subsurface layer and medium in the subsoil. The water table is at a depth of 40 inches for 6 months or more during most years. The soil is often ponded for six to nine months. Native vegetation includes slash pine with a saw palmetto, gallberry, fetterbush, running oak and dwarf huckleberry. Grasses include pineland, threeawn, bluestem and panicum. The soil is not well suited for cultivated crops.

6 – Paola sand, 0 to 8 percent slopes- This nearly level to sloping soil is excessively drained and found on the coastal ridge and isolated knolls in coastal areas. Typically the surface layer of the soil is grey sand and the subsurface layer is white sand. The water table is below a depth of 72 inches throughout the year and permeability is rapid. Most areas where this soil is found contains native vegetation such as sand pine, scrub oak, rosemary, saw palmetto, various mosses, and lichen. The soil is not suited to cultivated crops and poorly suited for citrus.

14 – Archbold- Archbold soils are on nearly level to gently sloping ridges in the Lower Coastal Plain. Slopes range from 0 to 5 percent. The regolith is a thick bed of marine and eolian sands. The soil is sand or fine sand throughout. The silt plus clay content in the 10- to 40-inch control section is less than 2 percent. Depth to seasonal high water table ranges from 42 to 60 inches during the months of June through November in most years. The water table is at 60 to 80 inches for most of the remainder of the year. Permeability is very rapid. Most of this soil is in native scrub forest of sand pine, blue-jack oak, saw palmetto, prickly pear cactus and scattered stands of pineland threeawn. Some of the soil is used for building sites and as source of sand for concrete.

35 - Salerno sand- This soil is a nearly level, poorly drained soil in broad areas of flatwoods. The water table is typically at a depth of less than 10 inches for 2 to 4 months during wet seasons, and at a depth of greater than 40 inches during the dry season. The surface layer is typically black to very dark gray sand about 9 inches thick. Natural vegetation is characterized by slash pine, saw palmetto, gallberry, fetterbush, wax myrtle, creeping bluestem, broom sedge, bluestem, chalky bluestem, pineland threeawn, and panicums. This soil is too wet for cultivated crops and citrus unless water management system is installed. The soil is moderately suited for pasture.

53 – Udorthents: Urban land complex soil type. The Udorthents-Urban land Complex soil type “consists of. moderately well drained to excessively well drained soils that have been disturbed by capping or filling, and areas that are covered by buildings and pavement.

73 – Samsula muck- This nearly level, organic soil is very poorly drained. It is found in depressions and in freshwater swamps and marshes. The surface layer is typically composed of a 34 inch muck layer. The soil is ponded for six to nine months during most years. Natural vegetation includes St. John's wort, maidencane, red maple, saw grass, wax myrtle, and water tolerant grasses, shrubs, and forbs. If water is properly controlled, the soil is well suited for improved pasture.

77 - Paola and St. Lucie Sands, 8 to 20 percent slopes- This deep, strongly sloping to moderately steep sandy soil is excessively drained and found on the coastal ridge. Typically the surface layer is gray sand about 3 inches thick. Underlying this is white sand to a depth of 80 inches or more. The water table is below a depth of 72 inches at all times. Natural vegetation includes sand pine, scrub oak, with an

understory of saw palmetto, rosemary, deer moss, lichens, cacti and pineland threeawn grass. This soil is not suited to cultivated crops, citrus or improved pasture due to the low natural fertility, droughtiness and moderately steep slopes.

b. Wetlands

Wetlands – Wet Prairie (2111; 640) – ±1.99 acre

Wetlands were field located, approved by the SFWMD and surveyed under the previous approvals. The new PAMP and associated site plan will not impact the current limits of wetlands nor the wetland buffer. This FNAI category represents the natural wetland system within the Pine School. This classification is defined as being composed of predominately of grassy vegetation on hydric soils and is usually distinguished from marshes by having less water, less hydrological variance, and shorter herbage. The onsite community is currently dominated by the following representative species listed below. The vegetation observed includes the following:

- | | |
|--|---|
| Sawgrass (<i>Cladium jamaicensis</i>) | Maidencane (<i>Panicum hemitomon</i>) |
| Spike rushes (<i>Eleocharis</i> spp.) | Yellow Eyed grass (<i>Xyris</i> spp.) |
| Dog Fennel (<i>Eupatorium capillifolium</i>) | Wax Myrtle (<i>Myrica cerifera</i>) |
| Pink Sundew (<i>Drosera capillaries</i>) | Sedge grass (<i>Carex</i> spp.) |
| Rush grass (<i>Juncus</i> spp.) | |

No canopy is present within the Wet Prairie areas.

c. Native Upland Habitat

413 – Sand Pine Scrub (92.41 acres)

After observations within the property, this habitat type was found and is described with a canopy dominated by an overstory of sand pine (*Pinus clausa*). Dominant midstory vegetation includes myrtle oak (*Quercus myrtifolia*), runner oak (*Quercus minima*), sand live oak (*Quercus geminata*), Chapman's oak (*Quercus chapmanii*), tallow-wood (*Ximenia americana*), rosemary (*Certiola ericoides*) and saw palmetto (*Serenoa repens*). Groundcover consists of day flower (*Commelina erecta*), gopher apple (*Lucania michauxii*), prickly-pear cactus (*Opuntia humifusa*), spikemoss (*Selaginella myrsinites*), and lichen (*Cladonia prostrata*). The Florida Natural Areas Inventory (FNAI) recognizes sand pine canopy ranges from widely scattered trees with a short, spreading growth form, to tall thin trees forming a dense canopy of uniform height. As stated, the onsite sand pine scrub understory is characterized by either scrub oaks or Florida rosemary.

421 - Xeric Oak (11.01 acres)

This community is equally dominated by different scrub oak species. Major vegetation includes sand live oak, myrtle oak, and Chapman's oak. Other vegetation includes runner oak, pawpaw, tallow-wood, love vine (*Cassythia jiliformis*), prickly-pear cactus, spikemoss and lichen. According to the Florida Natural Areas inventory states the typical xeric hammock has an overstory of sand live oak sometimes associated with sand post oak, turkey oak, pignut hickory, blackjack oak, and/or laurel oak. There can be a sparse understory of sparkleberry and rusty lyonia. The ground may be have a dense cover of saw palmetto, or it can be more-or-less bare.

d. Other Land Uses

Lake (35.58 acres)

The 35.58 acre Banner Lake area consists primarily of shallow water zones densely vegetated by concentric bands of emergents, floating, and submersed aquatics, including pickerelweed, arrowhead, banana-lily, American lotus, spatterdock, fragrant water lily, coontail, watermilfoil, bladderwort, fanwort, and pondweed. Active cattail management is ongoing within the lake parcel and the transitional upland area is currently being managed to maintain exotic vegetation at or near zero percent coverage.

422-Brazilian Pepper (0.93 acre)

The 0.93 acre Brazilian pepper area is located in the NE corner of the property. The Brazilian Pepper (FNAI) vegetation category has a canopy that is dominated by the invasive shrub *Schinus terebinthifolia*, and in certain portions forms dense, monotypic thickets mainly near Federal Highway and adjoining properties. This category is classified as Florida Natural Areas Inventory (FNAI) invasive vegetation because Brazilian pepper aggressively displaces native plant communities—especially in mesic hammocks, pinelands, and wetland margins—by outcompeting for light, water, and nutrients. This area on the Pine School site exhibits reduced biodiversity, simplified structure, and altered fire and hydrologic regimes, making it ecologically degraded and a priority for restoration and management.

1710 – Institutional (31.20 acres)

The FNAI category 1710 – Institutional describes developed lands on the Pine School property. These areas are characterized by buildings, parking lots, maintained grounds, athletic fields and landscaped vegetation, with ecological value typically limited due to high levels of impervious surface and routine maintenance. While not considered natural habitat, the onsite institutional lands include small patches of turf, ornamental plantings, or remnant vegetation that provide minimal but sometimes functional green space.

e. Observed Listed Species

Members of Haley Ward environmental staff conducted extensive observations within the current property. During these observations, non-resident wading birds were observed within Banner Lake, evidence of gopher tortoise were observed within the active preserves, and finally Haley Ward conducted a scrub jay survey to determine if there are currently active scrub jay within the Pine School parcel. The gopher tortoise, scrub jay, and pedestrian surveys allowed for extensive coverage of the onsite native uplands and wetlands.

Evidence of Gopher Tortoises (GTs) were observed in various portions of the property, and during onsite observation burrows were recorded within area proposed for development of the expanded cafeteria. As part of that effort, Haley Ward applied for and received a Gopher Tortoise relocation permit (GTT-25-01293) for an area of disturbed vegetation associated with approved projects on the parcel. Additional burrows were observed within other portions of the property as well and a preliminary GT Map is attached documenting burrows observed during a review of approximately 60% of the Pine School property. Any and all areas to be cleared outside the proposed Preserve Area will have a 100% survey in accordance with FWC Protocol and Martin County requirements prior to land-disturbing activities. If necessary, an FWC approved GT relocation permit will be obtained prior to disturbing land within 25 feet of a known burrow entrance.

It should be noted that the federally listed Eastern Indigo snake (*Drymarchon couperi*) is known to utilize gopher tortoise burrows. Although none were observed during onsite surveys, if one was to be observed during land clearing and/or gopher tortoise relocation, all construction activity in proximity to the snake will cease until relocated in accordance with federal standards. The landowner will notify Martin County of the observation.

Past scrub jay surveys had revealed that at least one colony of scrub jay were previously found to be in or adjacent to the current and proposed southeastern preserve area. The limits of range for the previously documented colony did not extend onto the proposed construction areas for the project. In March of 2026, Haley Ward conducted a scrub jay survey in accordance with the USFWS protocol (survey attached in appendix of PAMP). The study included 21 separate stations located throughout the sand pine and xeric oak communities on the property. Each station was visited a minimum of six separate occasions. No evidence of scrub jay were found within the entire study area during the March 2026 survey. If scrub jays are found to be in proximity to land clearing in the future, the landowner will immediately coordinate with USFWS and notify Martin County.

During the scrub jay, gopher tortoise, and habitat survey the Haley Ward team also reviewed the parcel for state and federally listed plant species. As part of the survey, Haley Ward coordinated with Dr. Anne Cox who has been known to survey the parcel in the past and has great knowledge associated with scrub community plants within and throughout the Treasure Coast. Dr. Cox surveyed the Pine School property in 2004, 2021, and 2022. During the Haley Ward survey, we documented several species of airplant and lichen, one of which is likely *Cladonia perforata* (perforate lichen). The species is similar to *Cladonia leporine* but lacks the red fruiting bodies of the latter. There are several species of airplants (family Bromeliaceae) that have been observed on the parcel including multiple species of *Tillandsia*. All species noted were located within the sand pine scrub. According to data from the FNAI and others, lichen and airplants can be relocated with moderate levels of success. This is an accepted mitigation practice and promulgates the continuity of the species. Based on this, prior to land clearing activities, the land owner will coordinate with a qualified ecological professional to harvest observed listed plant species and relocate them to similar habitat within an onsite preserve. Attached is a draft proposed relocation methodology. A final methodology will be submitted to Martin County prior to land clearing and relocation activities.

Haley Ward also completed an iPAC review (Information for Planning and Consultation) from the USFWS. Multiple species were listed on the report as “potentially affected by activities at the location. This includes mammals such as the Florida panther, Florida bonneted bat, southeastern beach mouse, tricolored bat, and the West Indian manatee. None of these species are known to occur in the vicinity of the parcel and no evidence of these species on the parcel was documents.

While Haley Ward did extensive bird surveys on the parcel, of the listed avian species in the iPAC only the Crested Caracara was observed on the property. It should be noted it was observed one time on the property and was noted to be foraging. If during construction activities migratory birds are observed or discovered to be nesting within or adjacent to the construction activity, the land owner will notify Martin County and consult the pertinent state or federal agency prior to proceeding.

If additional state or federal listed species are found to occur within proposed active clearing sites on the parcel, the land owner will notify Martin County and consult with the appropriate agency. Evidence of consultation and resolution will be submitted to Martin County prior to resumption of land clearing activity.

3. Property and Habitat Site Data Table

Please refer to the attached Revised Final Site plan and attached Haley Ward maps for additional habitat and property use data. However, as this PAMP is updating the former 2005 PAMP, new acreage for the preserve areas are proposed. As part of the update, the applicant will be impacting portions of the existing PAMP and adding additional preserve area. As part of the expansion to serve students at the Pine School, the school will be constructing additional athletic and academic facilities. The facilities proposed will impact former preserve area and will cause the main access to shift to the south. This will allow for compact development within the school footprint. In exchange for 11.07 acres of existing preserve the applicant will add 17.14 acres of additional preserve creating a large, conjoined preserve area. The following is the breakdown of the proposed modification:

UPLAND PRESERVE MODIFICATION:

REQUIRED: (138.19 AC X 25%)	34.55 AC
PREVIOUSLY PROVIDED UPLAND PRESERVE:	46.28 AC
PROPOSED REMOVAL:	11.07 AC
NEW UPLAND PRESERVE PROVIDED:	17.14 AC
WETLAND BUFFER AREA	1.09 AC
TOTAL NEW PRESERVE AREA	53.25 AC

4. Additional Activities Allowed in Preserve Areas

The applicant recognizes that there are minor areas intersecting the southeast preserve area that contain well heads that are owned and operated by the South Martin Regional Utilities. The well sites and associated access roads are called out on the preserve map and site plan and are not counted within the preserve area calculation. The access roads can and will serve as fire breaks or access points for any required drinking water well maintenance. The applicant is not proposing any additional activities in the proposed Preserve Areas at this time other than required maintenance and enhancement associated with the attached draft scrub management and lichen relocation plan.

5. Authorized Impacts Through Environmental Waivers

No Environmental Waivers have been applied for as part of this application.

6. Proposed Exotic Removal & Maintenance Plan

Exotic vegetation can be found within the upland Preserve Area on the subject property. All nuisance and exotic vegetation as listed by the Florida Pest Plant Council will be eradicated from the preserve area. Exotic vegetation includes both woody and non woody species.

- All Brazilian pepper trees and other woody exotics will be eradicated by cutting of the trunk and treatment of the stump with an appropriately labeled herbicide. All vegetative debris will be removed from preserve areas and disposed of offsite.
- The criterion for completion of the woody exotic eradication will be 100 percent kill. If initial eradication efforts do not achieve this criterion, follow up treatment will be conducted.
- Any debris removed will be handled in accordance with the disposal specifications.

The exotic vegetation present in the preservation area also includes small patches of non-woody species that primarily include old world climbing fern.

- All eradication of non-woody exotic vegetation will be through application of appropriately labeled herbicide.
- The criterion for acceptance of eradication for all non-woody exotic vegetation will be 100 percent kill. If initial eradication efforts do not achieve this criterion, follow up treatment will be conducted.
- The exotic vegetation eradication in the preservation areas will generate vegetative debris that requires disposal. There will be a staging and storage area provided adjacent to the preservation areas on the proposed project site, outside the limits of the preserves.
- Transport of vegetative debris from the preservation area to the staging area will be conducted in a fashion that minimizes the distribution and dispersal of seeds from such debris.
- No cut exotic or nuisance vegetative material will be left in the wetland preservation area.
- All vegetative debris, either whole or chipped/mulched will be hauled off site and disposed of at a landfill or other such appropriately licensed facility.

Herbicides are required for the treatment of all stumps of woody vegetation to prevent re-growth, and for eradication of non-woody exotic and nuisance vegetation.

- All herbicide application activity will be conducted under the supervision of a Florida Agriculture licensed applicator, licensed for application of aquatic herbicides.
- All herbicides applied within the wetland area must be properly labeled for application in wetlands.
- All herbicide applied must include a visible tracer dye in the mix to facilitate observation of treated vegetation.

Replanting with Native Wetland/Transitional/Upland Vegetation

Any revegetation which might be necessary as a result of exotic vegetation removal, or previous recreational activities shall consist of native plant species representative of the existing native plant community. This will ensure that the Preserve Area maintains native plant communities. Revegetation plans shall be submitted to the Martin County Environmental Planning Administrator for approval prior to implementation.

7. Concluding Statement

The subject property, The Pine School, contains native upland habitat and native wetland habitat. As part of the expansion to serve students at the Pine School, the school will be constructing additional athletic and academic facilities. The facilities proposed will impact former preserve area and will cause the main access to shift to the south. This will allow for compact development within the school footprint. In exchange for 11.07 acres of existing preserve the applicant will add 17.14 acres of additional preserve creating a large conjoined preserve area. The following is the breakdown of the proposed modification:

REQUIRED: (138.19 AC X 25%)	34.55 AC
PREVIOUSLY PROVIDED:	46.28 AC
PROPOSED REMOVAL:	11.07 AC
NEW PROVIDED:	17.14 AC
TOTAL NEW PRESERVE AREA	53.25 AC

The final proposed native upland preserve area for this amended and updated PAMP will be ±52.35 acres in size and will be located throughout the site, but a large portion exists on the southeastern portion of the property. The Preserve Areas will be managed in their natural state as required by this PAMP.

PART II

GENERAL CONDITIONS

A. PURPOSE

This Preserve Area Management Plan (PAMP) has been established for the protection and long-term management and maintenance of native upland and wetland habitats on this property, in accordance with Martin County's Comprehensive Growth Management Plan and Land Development Regulations.

B. RECORDING

This PAMP shall be recorded by the Martin County Clerk of Courts and labeled with the appropriate O.R. Book and Page Number within 30 days of final approval. This PAMP may be altered or amended only with the agreement of the Martin County Environmental Planning Administrator and the owner/developer and with the approval of the Martin County Board of County Commissioners. If the PAMP is altered or amended, the revised document shall be recorded by the Martin County Clerk of Courts within 30 days of final approval.

C. TRANSFER OF OWNERSHIP

The Martin County Environmental Planning Administrator shall be notified in writing within thirty (30) days of transfer of ownership of any lands preserved by this PAMP. Failure to notify will be considered as non-compliance with the terms of this PAMP.

D. COMPLIANCE

The owner(s) of the lands to be preserved/maintained by this Preserve Area Management Plan and the developer(s) of the property described in this PAMP, their successors and assigns, and their environmental consultants and contractors shall implement and comply with all portions of this PAMP.

E. INSPECTION OF PRESERVE AREA

Compliance with the terms of this PAMP includes inspections by county staff to ensure PAMP compliance. For any required restoration, the preserve area will be inspected after replanting to verify compliance with the Restoration/Enhancement Plan included as part of this PAMP.

The Preserve Area may be subject to further inspections to ensure environmental integrity and consistency with the provisions of the PAMP.

F. PRESERVE AREA SURVEYING REQUIREMENTS

All Preserve Areas shall be surveyed and marked with permanent monuments at each corner and at other sites necessary for locating the boundary of the Preserve Area. These permanent monuments shall be constructed under the supervision of a Registered Land Surveyor and shall be shown on the Site Plan. The surveyed locations of Preserve Areas shall be provided to the Martin County

Environmental Planning Administrator in a form compatible for use in the County's GIS mapping system.

G. PRESERVE AREA SIGNAGE REQUIREMENTS

Preserve Area Signs. Preserve areas shall be posted with permanent signs. These signs shall be at least 11 x 14 inches in size, be posted in conspicuous locations precisely along the Preserve Area boundary, at a frequency of no less than one (1) sign per 500 feet. Signage will be placed at the linear exterior of the preserve and will not be placed along well head rights of way within the overall limits of preserve, Designs for preserve signs shall be approved by the Martin County Environmental Planning Administrator prior to installation and must be in place prior to the issuance of a building permit for construction on the site.

H. SITE PLAN

The Site Plan included as an appendix to this PAMP illustrates all preserve areas, right-of-ways and easements and the locations of permanent preserve area signs. Any proposed structures and fill/grade elevations with distances to on and off-site upland preserves, wetlands and wetland buffers shall be shown, as applicable. Site Plan shall be submitted in form of PDF drawing and a corresponding shape file with site coordinates projected in the State Plane Coordinate System.

The following areas and summaries shall be included in the Site Plan (as applicable):

1. Boundaries, dimensions, and acreage of wetland habitats under preservation
2. Boundaries, dimensions, and acreage of wetland buffers to wetlands on and off-site
3. Boundaries, dimensions, and acreage of on-site wetland mitigation areas
4. Boundaries, dimensions, and acreage of common upland habitats under preservation
5. Boundaries, dimensions, and acreage of rare upland habitats under preservation
6. Boundaries, dimensions, and acreage of existing impacts
7. Boundaries, dimensions, and acreage of proposed impact(s) through environmental waiver(s)
8. Total acreage under preservation
9. Total acreage of the site

The following notation shall be provided on the Site Plan:

"PRESERVE AREAS ARE NOT TO BE ALTERED WITHOUT WRITTEN PERMISSION OF THE MARTIN COUNTY BOARD OF COUNTY COMMISSIONERS."

I. SITE CLEARING

Where clearing of vegetation may be permitted (i.e., building envelope, utilities, drainage, road right-of-way, etc.), the developer shall ensure that all Preserve Areas are protected with construction barricades and erosion control devices in accordance with the following guidelines.

Construction barricades shall be placed at least 5 feet outside of all upland Preserve Areas, or at the dripline of the canopy trees, whichever is greater. Barricades shall be inspected by County Environmental Division staff prior to work approval. Barricades shall consist of high-visibility orange safety fence extending from the ground to a height of at least 4 feet and shall not be attached to vegetation. Removal of the barricades shall be approved only after the completion of construction and prior to the issuance of a Certificate of Occupancy.

Preserve areas shall be protected from possible surface water and sediment runoff by the placement of erosion control devices (e.g., silt screens, hay bales or other turbidity control measures) at least 5 feet outside the perimeter of the wetland buffer.

All barricades, silt screens and other erosion control devices shall be upright and maintained intact for the duration of construction.

The owner/developer is required to inform all contractors of site clearing requirements. Failure to comply with these requirements shall be considered a violation of the Site Plan approval. Work on the project may be stopped until compliance is achieved.

J. ACTIVITIES ALLOWED IN PRESERVE AREAS

Property owners are encouraged to enjoy the natural beauty of their Preserve Areas. Although development of Preserve Areas is not allowed, passive recreational uses, such as bird-watching and other non-destructive uses of natural areas are encouraged, as long as they do not negatively affect the hydrology, soils, or vegetative cover of a Preserve Area. See Part I (4), Activities Allowed in Preserve Areas, for additional prescribed allowances in preservation areas.

K. ACTIVITIES PROHIBITED IN PRESERVE AREAS

Activities prohibited in Preserve Areas or easements within Preserve Areas include, but are not limited to: construction; dumping or placing building materials, soil, garbage, trash, or dead vegetation on or above the ground; removal or destruction of native trees, shrubs or other native vegetation; excavation or dredging of soil; diking or fencing; vehicular traffic including use by non-motorized vehicles, recreational vehicles and off-road vehicles; permanent irrigation; trimming, pruning, or fertilization; and any other activities detrimental to drainage, flood control, water conservation, erosion control or fish and wildlife conservation and preservation.

No hazardous material other than fuel for refueling on-site equipment may be stored during construction. On-site fuel tanks may not be located within twenty-five (25) feet of any Preserve Areas and shall be removed upon completion of construction work.

Buildings proposed to be located adjacent to Preserve Areas shall be set back a minimum of ten (10) feet to allow for construction and maintenance without encroaching into the Preserve Area. All other accessory structures (e.g., pools, sheds, decks, etc.) and excavations and fill material shall be set back a minimum of five (5) feet from the Preserve Area boundary.

L. MAINTENANCE ACTIVITIES

Except for approved restoration, exotic removal, and maintenance activities, Preserve Areas shall be left undisturbed. All maintenance of Preserve Areas shall be in accordance with this PAMP. Maintenance and management activities shall be routinely performed by or under the supervision of a qualified environmental professional and must be conducted in accordance with this PAMP or as approved by the Martin County Environmental Planning Administrator. A description of all proposed restoration and maintenance activities to be conducted on the site shall be included in the Restoration/Mitigation Plan prepared as part of this PAMP. The following maintenance activities may be allowed within Preserve Areas with prior written approval from the Environmental Plannin

Administrator: mechanical exotic plant removal; revegetation with native plants and other activities required for habitat restoration; removal of plant material that is dead or-diseased, or considered to be a safety hazard; and prescribed burns.

Exotic Plant Removal

Exotic vegetation shall be removed from Preserve Areas by the least ecologically damaging method available. Such methods include hand pulling, hand spading, cutting with hand or chain saws and in-situ treatment with appropriate herbicides. Mechanical removal shall be allowed only if specifically approved as part of a Restoration/Mitigation Plan. No debris, including dead plants, plant clippings or wood scraps, shall be allowed in Preserve Areas, unless specified in the Restoration/Mitigation Plan. In addition, all dead plant material and exotic plant debris removed from Preserve Areas shall be disposed of in a County-approved recycling facility.

Revegetation

Any revegetation which might be necessary as a result of exotic vegetation removal or site construction activities shall consist of native plant species representative of the existing native plant community. This will ensure that the Preserve Areas maintain indigenous plant associations. Revegetation plans shall be included in the Restoration/Mitigation Plan prepared as part of this PAMP.

Native Vegetation Removal

Dead trees generally shall be retained in preserve areas as a natural function of habitat succession. Diseased and dead trees and vegetation considered to be a safety hazard may be altered or removed upon approval by the Martin County Environmental Planning Administrator. Other dead or diseased plant material may be removed from Preserve Areas upon approval by the Martin County Environmental Planning Administrator. Plant removal shall be conducted so that no debris, including dead plants, plant clippings or wood scraps, shall be retained in Preserve Areas. All dead plant material and debris removed from Preserve Areas shall be disposed of in a County-approved recycling facility. Revegetation may be required for any removed plant material.

Planting Plan

The preserve area shall be replanted in accordance with the standards established with a planting plan included with this PAMP. Planting plans may be provided to the Martin County Environmental Planning Administrator for approval to address any current or future required habitat management requirements.

Prescribed Burns

Martin County considers prescribed burns an acceptable habitat management tool. When approved by the Martin County Environmental Planning Administrator, prescribed burns may be conducted by a certified burn manager who shall be responsible for obtaining all appropriate permits from State and local agencies.

Other Restoration and Maintenance Activities

Alternative and innovative management techniques, which may provide for the long-term viability and habitat value of the Preserve Areas and for protection against imminent threats to public health and safety, may be approved by the Martin County Environmental Planning Administrator.

M. SITE HYDROLOGY

Previous or potential drainage impacts shall be corrected to the extent technically feasible. Water quality and the rate, timing, and volume of run-off shall recreate natural conditions for the benefit of onsite wetlands and other waterbodies.

N. PROTECTED SPECIES

If a protected species survey conducted as part of the Environmental Assessment of the project site indicates the presence of protected plant or animal species, the Environmental Assessment shall include a Protected Species Management Plan. This Plan shall include the results of the protected species survey; a listing and description of protected species occurring on, or utilizing, the site; documentation of the protection status of each species; a map of active and inactive burrows, nests, cavity trees, etc. found as part of the survey; a description of the protective measures being provided for each listed species found on the site; and copies of all correspondence with applicable state and federal agencies regarding the protection of listed species.

O. INSPECTIONS AND ENFORCEMENT

Martin County is authorized to inspect any County regulated site or appurtenance. Duly authorized representatives of Martin County may, at any time, upon presenting proper identification, enter upon and shall be given access to any premises for the purpose of such inspection. Martin County shall have the right to enforce the provisions of this PAMP through any available administrative or civil proceeding, which may result in penalties. Restoration of habitat and other remedies, such as fines and fees covering staff time, may be required of any person, corporation or other entity found in violation of any of the provisions of this PAMP or as may be found in the Martin County Code of Ordinances and Land Development Regulations.

APPENDICES

Example of Preserve Area Sign

Annual Monitoring Report Template

Haley Ward 2026 Scrub Jay Survey

DRAFT Listed Plant Relocation Methodology

Habitat Management/Restoration Plan

PRESERVE

AREA



PLEASE PROTECT

MARTIN COUNTY, FLORIDA

PRESERVE AREA MANAGEMENT PLAN

ANNUAL MONITORING REPORT FOR (Year)

Annual monitoring shall be conducted at the end of the wet season (usually by November 30) for five years from the date of PAMP approval. A report of the results of each monitoring event shall be submitted by the property owner to the Martin County Environmental Planning Administrator within 30 days of the completion of the monitoring. Monitoring and reporting are the responsibility of the property owner. However, a qualified environmental professional may conduct the monitoring, prepare the Annual Monitoring Reports, or submit the Reports.

All Annual Monitoring Reports shall contain the following information:

- **Name and address of current owner of Preserve Area;**
- **Location of Preserve Area** (*site/project location, Martin County Parcel Control Number, section/township/range, etc*);
- **Date PAMP approved;**
- **Documentation of vegetation changes, including encroachment of exotic vegetation;**
- **Fixed-point panoramic photos of all Preserve Areas;**
- **Synopsis of maintenance activities conducted in compliance with the PAMP requirements such as exotic vegetation removal, revegetation, and additional enhancement activities necessary to maintain the Preserve Area;**
- **A timetable for action within 90 days of the report;**
- **A list of all violations of the PAMP; and**
- **Recommendations for remedial actions, with a proposed schedule for the coming year.**

Signature/Date : _____

Typed Name/Title : _____

Company Name (if applicable) : _____

The Pine School - Location Map



The Pine School - Aerial Map



34-38-42-000-195-00000-9

Soil Map—Martin County, Florida
(The Pine School - Soil Map)



Soil Map may not be valid at this scale.

Map Scale: 1:9,570 if printed on A landscape (11" x 8.5") sheet.

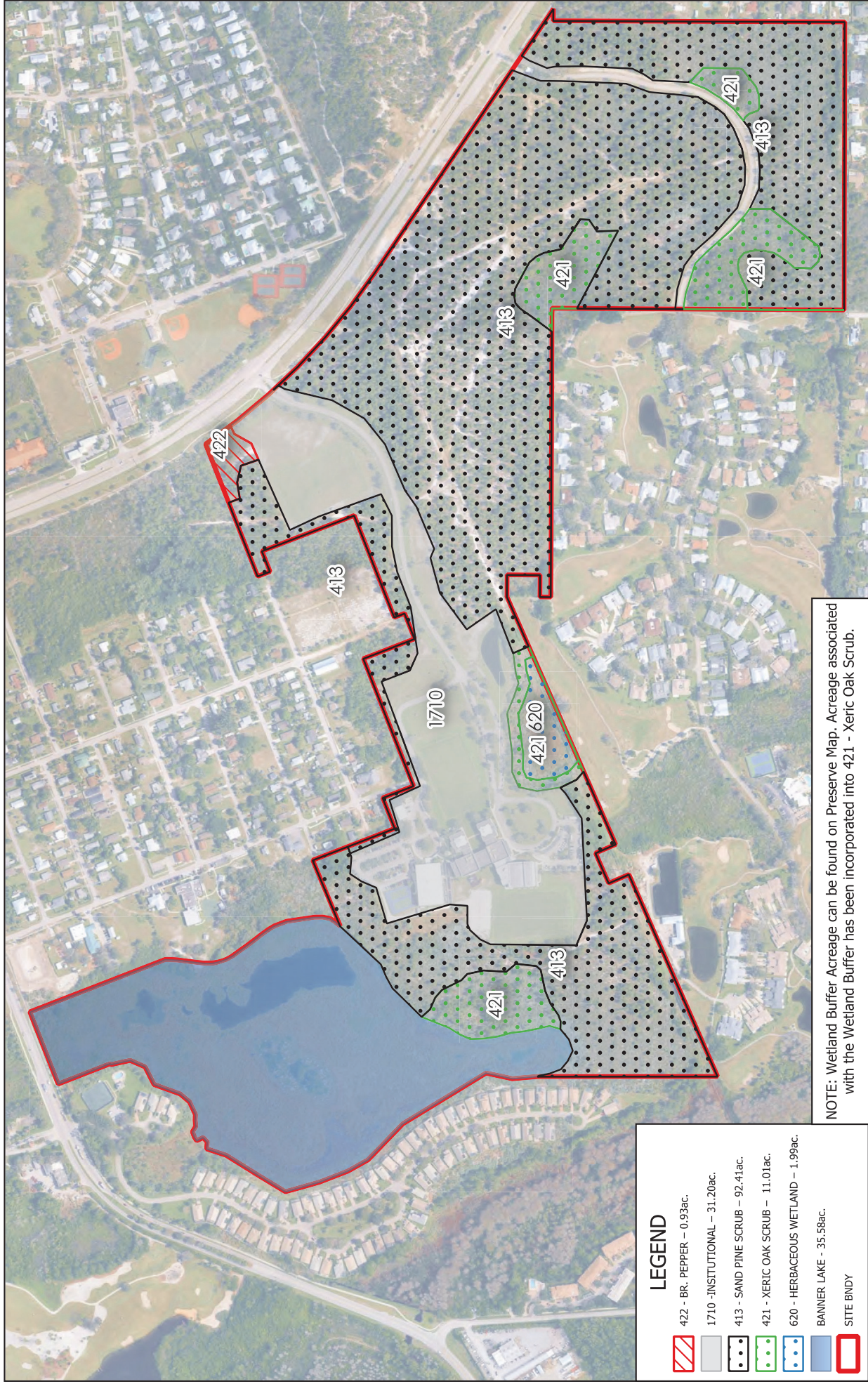
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84










Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

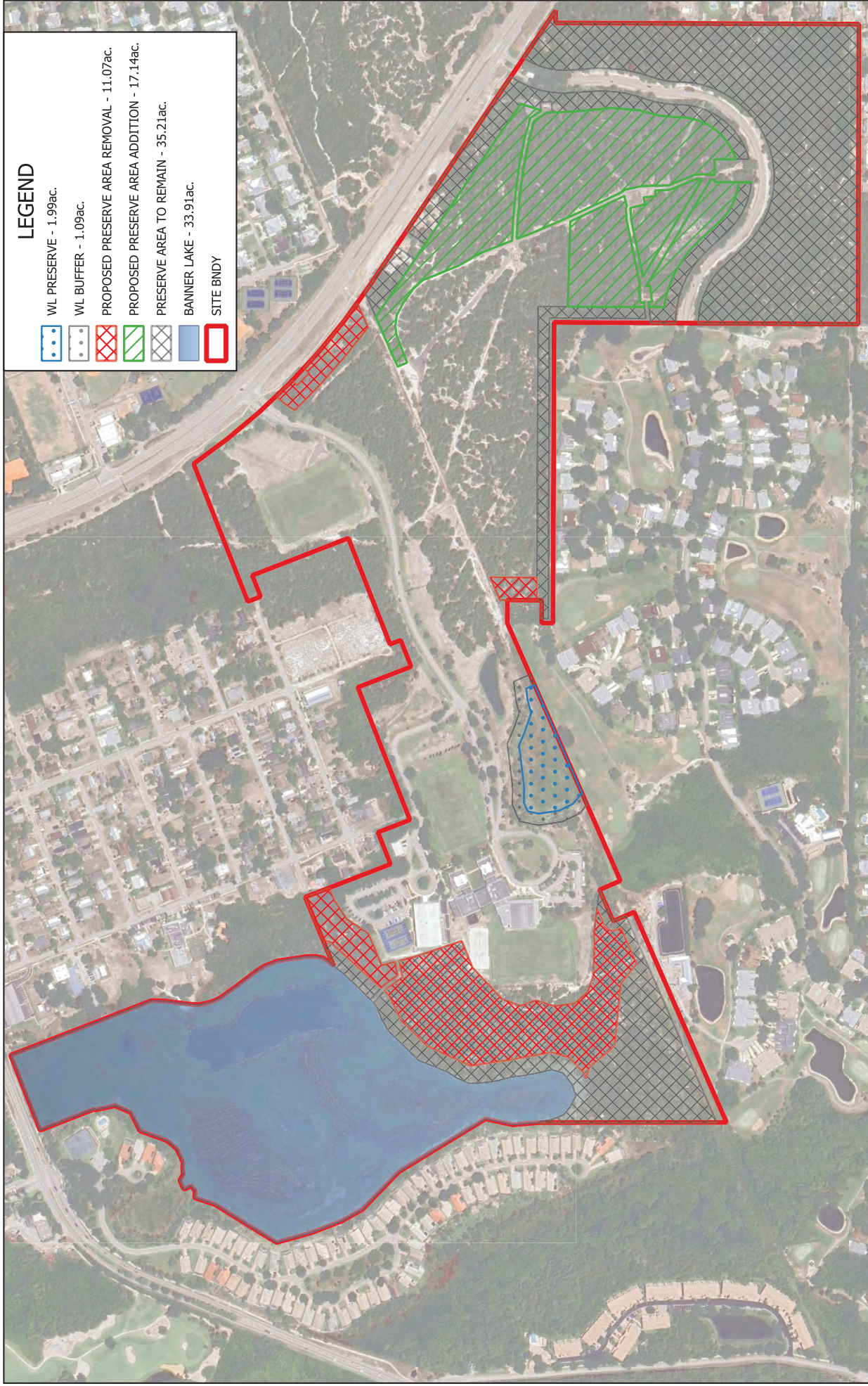
THE PINE SCHOOL - FNAI EXHIBIT



LEGEND

-  422 - BR. PEPPER - 0.93ac.
-  1710 - INSTITUTIONAL - 31.20ac.
-  413 - SAND PINE SCRUB - 92.41ac.
-  421 - XERIC OAK SCRUB - 11.01ac.
-  620 - HERBACEOUS WETLAND - 1.99ac.
-  BANNER LAKE - 35.58ac.
-  SITE BNDY

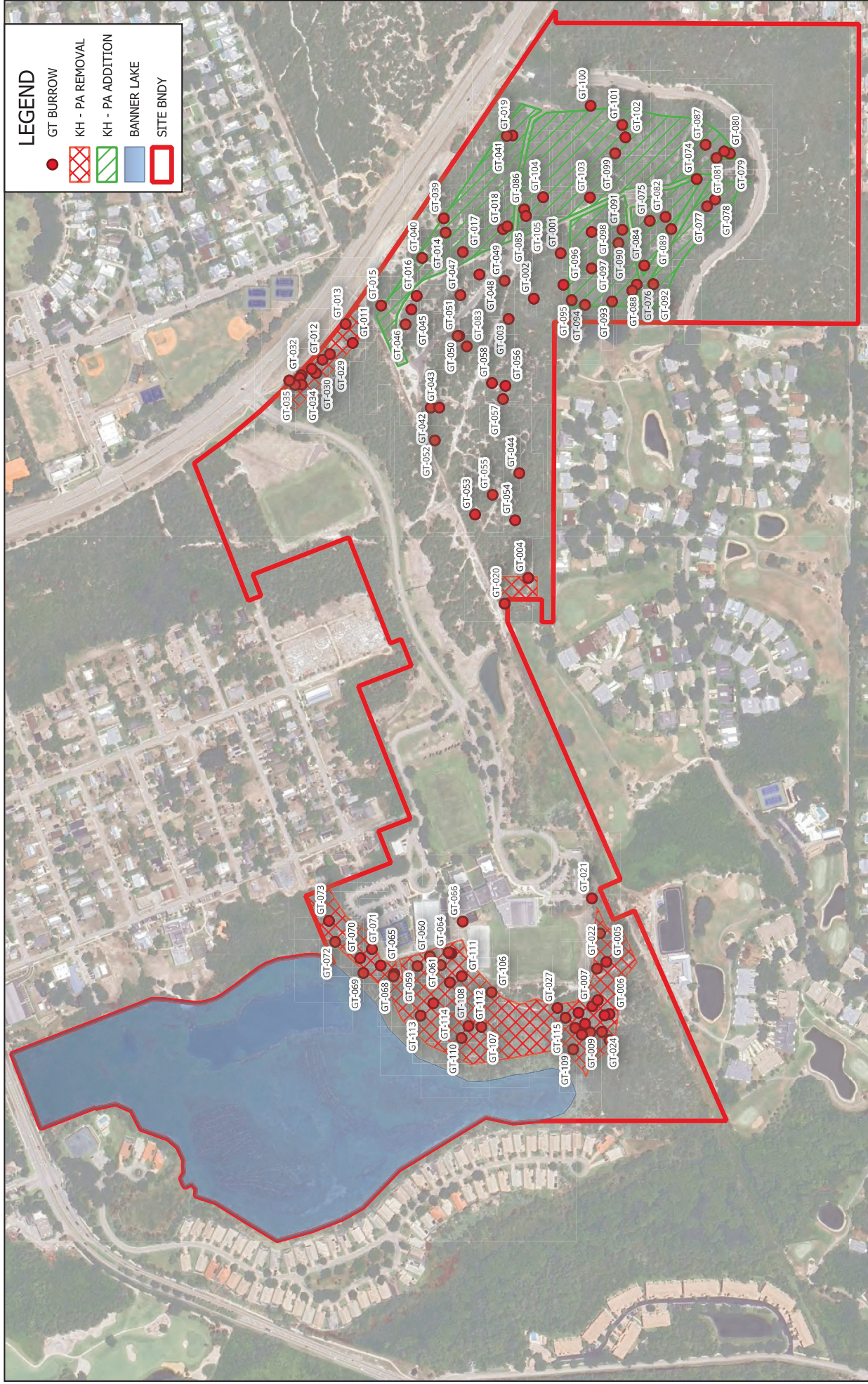
THE PINE SCHOOL - PROPOSED PRESERVE AREA EXHIBIT



LEGEND	
	WL PRESERVE - 1.99ac.
	WL BUFFER - 1.09ac.
	PROPOSED PRESERVE AREA REMOVAL - 11.07ac.
	PROPOSED PRESERVE AREA ADDITION - 17.14ac.
	PRESERVE AREA TO REMAIN - 35.21ac.
	BANNER LAKE - 33.91ac.
	SITE BNDY



THE PINE SCHOOL - GT LOCATION MAP



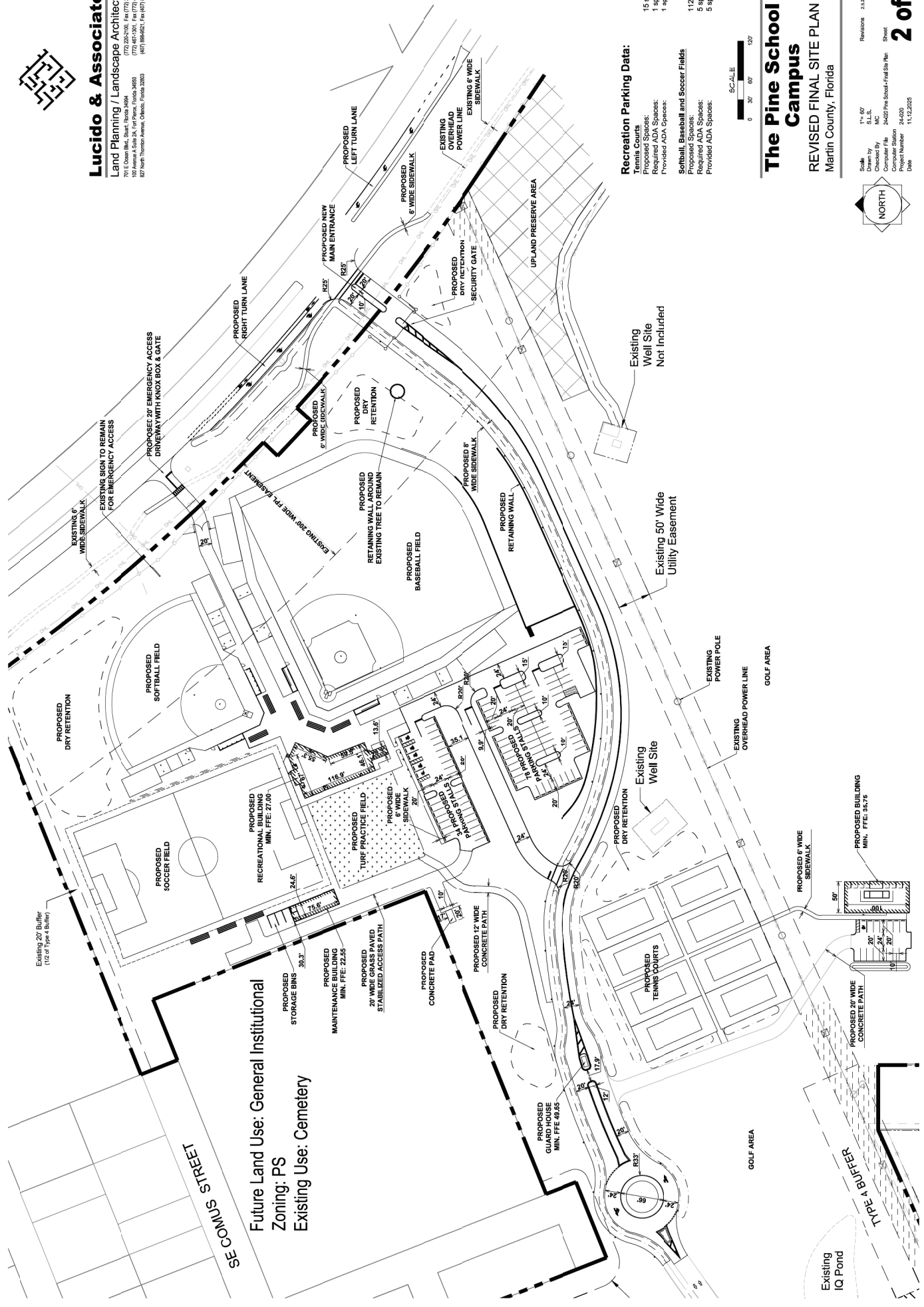
GT ID	LAT + LONG	ACTIVITY CLASS
GT-001	27°3'2.2"N 80°7'55.2"W	GT - PO
GT-002	27°3'3.3"N 80°7'57.4"W	GT - PO
GT-003	27°3'4.4"N 80°7'58.4"W	GT - PO
GT-004	27°3'3.6"N 80°8'11"W	GT - AB
GT-005	27°3'0.2"N 80°8'29.6"W	GT - AB
GT-006	27°3'0.1"N 80°8'32.2"W	GT - AB
GT-007	27°3'0.8"N 80°8'31.8"W	GT - AB
GT-008	27°3'0.3"N 80°8'32.2"W	GT - AB
GT-009	27°3'0.9"N 80°8'33.1"W	GT - AB
GT-010	27°3'1.6"N 80°8'32.9"W	GT - AB
GT-011	27°3'1.2"N 80°7'59.6"W	GT - AB
GT-012	27°3'12.5"N 80°8'0.4"W	GT - AB
GT-013	27°3'11.5"N 80°7'58.6"W	GT - AB
GT-014	27°3'7.2"N 80°7'54.2"W	GT - PO
GT-015	27°3'9.9"N 80°7'57.7"W	GT - PO
GT-016	27°3'8.4"N 80°7'57.3"W	GT - PO
GT-017	27°3'6.4"N 80°7'55.1"W	GT - PO
GT-018	27°3'4.7"N 80°7'54"W	GT - PO
GT-019	27°3'4.3"N 80°7'49.5"W	GT - PO
GT-020	27°3'4.6"N 80°8'12.2"W	GT - PO
GT-021	27°3'0.8"N 80°8'26.6"W	GT - PO
GT-022	27°3'0.5"N 80°8'28.3"W	GT - PO
GT-023	27°3'0.6"N 80°8'31.5"W	GT - PO
GT-024	27°3'0.4"N 80°8'33"W	GT - PO
GT-025	27°3'0.1"N 80°8'33.4"W	GT - PO
GT-026	27°3'1.3"N 80°8'33.2"W	GT - PO
GT-027	27°3'2.3"N 80°8'31.9"W	GT - PO
GT-028	27°3'0.6"N 80°8'30"W	GT - PO
GT-029	27°3'12.2"N 80°8'0.1"W	GT - PO
GT-030	27°3'12.8"N 80°8'1"W	GT - PO
GT-031	27°3'13"N 80°8'0.8"W	GT - PO
GT-032	27°3'13.4"N 80°8'1.1"W	GT - PO
GT-033	27°3'13.5"N 80°8'1.3"W	GT - PO
GT-034	27°3'13.4"N 80°8'1.6"W	GT - PO
GT-035	27°3'13.7"N 80°8'1.6"W	GT - PO
GT-036	27°3'13.9"N 80°8'1.4"W	GT - PO
GT-037	27°3'1.4"N 80°8'32.1"W	GT x 2

GT ID	LAT + LONG	ACTIVITY CLASS
GT-038	27°3'1.1"N 80°8'32.7"W	GT X 2
GT-039	27°3'7.2"N 80°7'53.5"W	GT - AB
GT-040	27°3'8.2"N 80°7'55.4"W	GT - PO
GT-041	27°3'4.5"N 80°7'49.5"W	GT - PO
GT-042	27°3'7.8"N 80°8'2.7"W	GT - AB
GT-043	27°3'7.4"N 80°8'2.7"W	GT - AB
GT-044	27°3'4"N 80°8'5.9"W	GT - AB
GT-045	27°3'8.6"N 80°7'57.9"W	GT - PO
GT-046	27°3'8.9"N 80°7'58.7"W	GT - PO
GT-047	27°3'6.5"N 80°7'57.2"W	GT - PO
GT-048	27°3'5.7"N 80°7'56.2"W	GT - PO
GT-049	27°3'4.6"N 80°7'56.5"W	GT - PO
GT-050	27°3'6.6"N 80°7'59.2"W	GT - PO
GT-051	27°3'6.6"N 80°7'59.2"W	GT - PO
GT-052	27°3'7.6"N 80°8'4.3"W	GT - PO
GT-053	27°3'5.9"N 80°8'7.9"W	GT - PO
GT-054	27°3'4.1"N 80°8'8.2"W	GT - PO
GT-055	27°3'5.1"N 80°8'6.9"W	GT - PO
GT-056	27°3'4.6"N 80°8'1.6"W	GT - PO
GT-057	27°3'4.7"N 80°8'2.3"W	GT - PO
GT-058	27°3'5.2"N 80°8'1.5"W	GT - PO
GT-059	27°3'8.4"N 80°8'29.8"W	GT - PO
GT-060	27°3'7.8"N 80°8'29.4"W	GT - PO
GT-061	27°3'7.4"N 80°8'29.8"W	GT - PO
GT-062	27°3'6.9"N 80°8'29.2"W	GT - PO
GT-063	27°3'7"N 80°8'29.2"W	GT - PO
GT-064	27°3'7"N 80°8'29.2"W	GT - PO
GT-065	27°3'10"N 80°8'29.8"W	GT - PO
GT-066	27°3'6.4"N 80°8'27.7"W	GT - PO
GT-067	27°3'9.4"N 80°8'30.2"W	GT - PO
GT-068	27°3'9.4"N 80°8'30.3"W	GT - PO
GT-069	27°3'10.7"N 80°8'30.2"W	GT - PO
GT-070	27°3'10.9"N 80°8'29.5"W	GT - PO
GT-071	27°3'10.4"N 80°8'29"W	GT - PO
GT-072	27°3'11.9"N 80°8'28.7"W	GT - PO
GT-073	27°3'12.2"N 80°8'27.6"W	GT - PO
GT-074	27°2'56.3"N 80°7'51.6"W	GT - PO

GT ID	LAT + LONG	ACTIVITY CLASS
GT-075	27°2'58.3"N 80°7'53.6"W	GT - PO
GT-076	27°2'58.9"N 80°7'56.7"W	GT - PO
GT-077	27°2'55.8"N 80°7'52.9"W	GT - PO
GT-078	27°2'55.5"N 80°7'52.6"W	GT - PO
GT-079	27°2'54.9"N 80°7'50.4"W	GT - PO
GT-080	27°2'55.1"N 80°7'50.2"W	GT - PO
GT-081	27°2'55.4"N 80°7'50.6"W	GT - PO
GT-082	27°2'57.6"N 80°7'53.4"W	GT X 2
GT-083	27°3'6.2"N 80°7'59.7"W	GT X 2
GT-084	27°2'58.6"N 80°7'55.8"W	GT - AB
GT-085	27°3'4.5"N 80°7'53.9"W	GT - AB
GT-086	27°3'3.8"N 80°7'53.1"W	GT - AB
GT-087	27°2'55.9"N 80°7'49.9"W	GT - ACT
GT-088	27°2'59.1"N 80°7'57"W	GT - PO
GT-089	27°2'57.4"N 80°7'54"W	GT - PO
GT-090	27°2'59.7"N 80°7'54.7"W	GT - PO
GT-091	27°2'59.5"N 80°7'54.1"W	GT - PO
GT-092	27°2'58.2"N 80°7'56.7"W	GT - PO
GT-093	27°2'60"N 80°7'57.5"W	GT - PO
GT-094	27°3'1.1"N 80°7'57.7"W	GT - PO
GT-095	27°3'1.7"N 80°7'57.5"W	GT - PO
GT-096	27°3'2.1"N 80°7'56.7"W	GT - PO
GT-097	27°3'0.8"N 80°7'55.9"W	GT - PO
GT-098	27°3'0.8"N 80°7'54.2"W	GT - PO
GT-099	27°2'59.8"N 80°7'50.3"W	GT - PO
GT-100	27°3'0.9"N 80°7'48"W	GT - PO



Lucido & Associates
 Land Planning / Landscape Architecture
 791 E Ocean Blvd., Suite 300, Boca Raton, FL 33432
 (561) 993-3301, Fax (561) 993-3300
 10000 NW 17th Avenue, Suite 200, Boca Raton, FL 33433
 (561) 993-3301, Fax (561) 993-3300



Future Land Use: General Institutional
 Zoning: PS
 Existing Use: Cemetery

Recreation Parking Data:
 Tennis Courts
 Proposed Spaces: 15 spaces
 Required ADA Spaces: 1 space
 Provided ADA Spaces: 1 space

Softball, Baseball and Soccer Fields
 Proposed Spaces: 112 spaces
 Required ADA Spaces: 5 spaces
 Provided ADA Spaces: 5 spaces



The Pine School Campus
 REVISIONS FINAL SITE PLAN
 Martin County, Florida



Scale: 1" = 60'
 Drawn by: S.L.S.
 Checked by: S.L.S.
 Computer File: 24000 Pine School-Final Site Plan
 Project Number: 24-000
 Date: 11.12.2025
 Revisions: 2.1.2026
 Sheet: 2 of 2

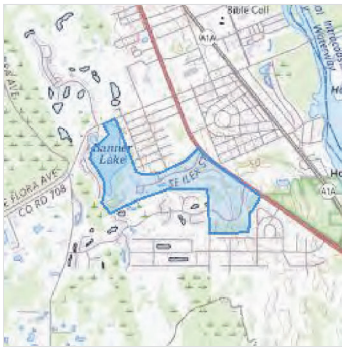
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Martin County, Florida



Local office

Florida Ecological Services Field Office

☎ (352) 448-9151

📠 (772) 562-4288

✉ fw4flesregs@fws.gov

777 37th St
Suite D-101
Vero Beach, FL 32960-3559

<https://www.fws.gov/office/florida-ecological-services>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Florida Bonneted Bat <i>Eumops floridanus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8630	Endangered
Florida Panther <i>Puma (=Felis) concolor coryi</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1763	Endangered
Puma (=mountain Lion) <i>Puma (=Felis) concolor</i> (all subsp. except coryi) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6049	SAT
Southeastern Beach Mouse <i>Peromyscus polionotus niveiventris</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3951	Threatened
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

West Indian Manatee *Trichechus manatus*

Threatened

Wherever found

Marine mammal

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<https://ecos.fws.gov/ecp/species/4469>

Birds

NAME

STATUS

Crested Caracara (audubon's) [fl Dps] *Caracara plancus audubonii*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8250>Eastern Black Rail *Laterallus jamaicensis jamaicensis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/10477>Everglade Snail Kite *Rostrhamus sociabilis plumbeus*

Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<https://ecos.fws.gov/ecp/species/7713>Florida Scrub-jay *Aphelocoma coerulescens*

Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6174>Wood Stork *Mycteria americana*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8477>

Reptiles

NAME

STATUS

American Alligator *Alligator mississippiensis*

SAT

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/776>American Crocodile *Crocodylus acutus*

Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<https://ecos.fws.gov/ecp/species/6604>Eastern Indigo Snake *Drymarchon couperi*

Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/646>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Proposed Threatened

Wherever found

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.<https://ecos.fws.gov/ecp/species/9743>

Flowering Plants

NAME

STATUS

Beach Jacquemontia *Jacquemontia reclinata*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/1277>

Four-petal Pawpaw <i>Asimina tetramera</i>	Endangered
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3461	
Lakela's Mint <i>Dicerandra immaculata</i>	Endangered
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6390	
Tiny Polygala <i>Polygala smallii</i>	Endangered
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/996	

Lichens

NAME	STATUS
Florida Perforate Cladonia <i>Cladonia perforata</i>	Endangered
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7516	

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1626</p>	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

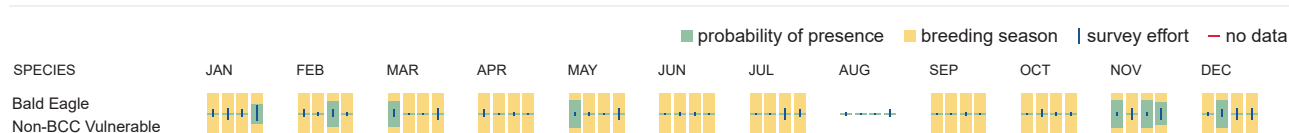
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Great Blue Heron <i>Ardea herodias occidentalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Least Tern <i>Sternula antillarum antillarum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 25 to Sep 5
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Magnificent Frigatebird <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Oct 1 to Apr 30
Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 15

Pectoral Sandpiper <i>Calidris melanotos</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Prairie Warbler <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617	Breeds Mar 1 to Sep 15
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Worthington's Marsh Wren <i>Cistothorus palustris griseus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

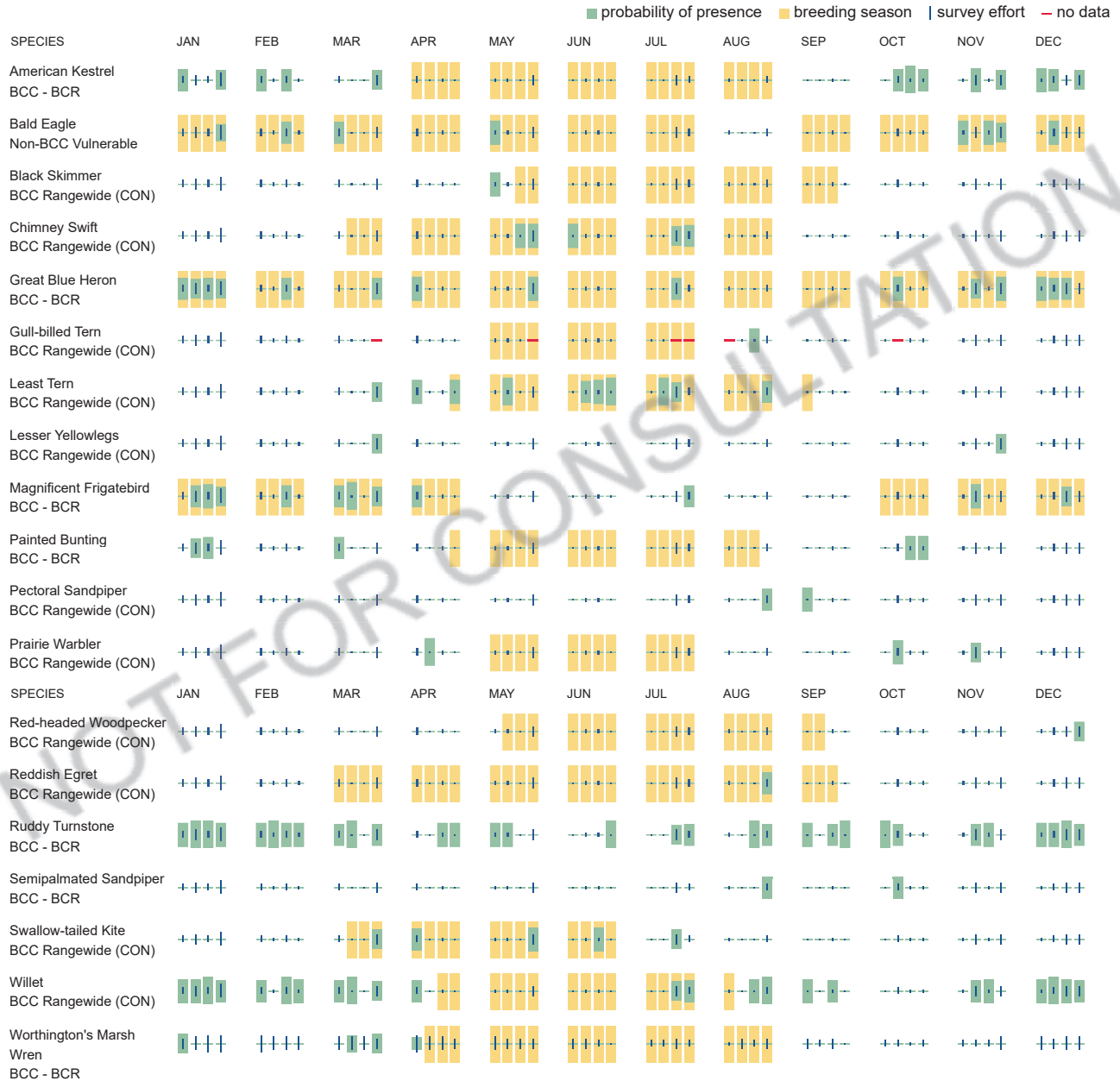
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#), and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walrus, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
<https://ecos.fws.gov/ecp/species/4469>

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

PERFORATE REINDEER LICHEN

Cladonia perforata Evans

Synonyms: none

Family: Cladoniaceae (reindeer lichen)

FNAI Ranks: G2G3/S2S3

Legal Status: US-Endangered; FL-none



Ann F. Johnson

Field Description: Terrestrial lichen in tufts 6.0 - 6.5 cm tall, consisting of densely forking branches. Branches up to 6 mm wide, hollow, smooth, glossy, pale yellowish-gray, and intricately forked with large, conspicuous holes below each branching point.

Similar Species: British soldiers lichen (*Cladonia leporina*) often has small holes in its branches, but its branches are rough, dark yellow-green, and usually tipped with red fruiting bodies. *Cladonia* species have finer, narrower branches. *Cladonia uncialis* is smaller and has green patterning, visible with a magnifier, on its branches; *Cladonia pachycladodes* is yellowish-gray but has finer branches drooping at the tips.

Related Rare Species: Other rare or endemic lichens in Florida include *Cladonia botryocarpa*, *Cladonia abbreviatula*, *Coccocarpia asterella*, *Ramalina paludosa*, and *Leptogium floridanum*.

perforate reindeer lichen

Cladonia perforata

Habitat: Rosemary scrub on FL Panhandle coast, Lake Wales Ridge, Atlantic Coastal Ridge, and Manatee County.

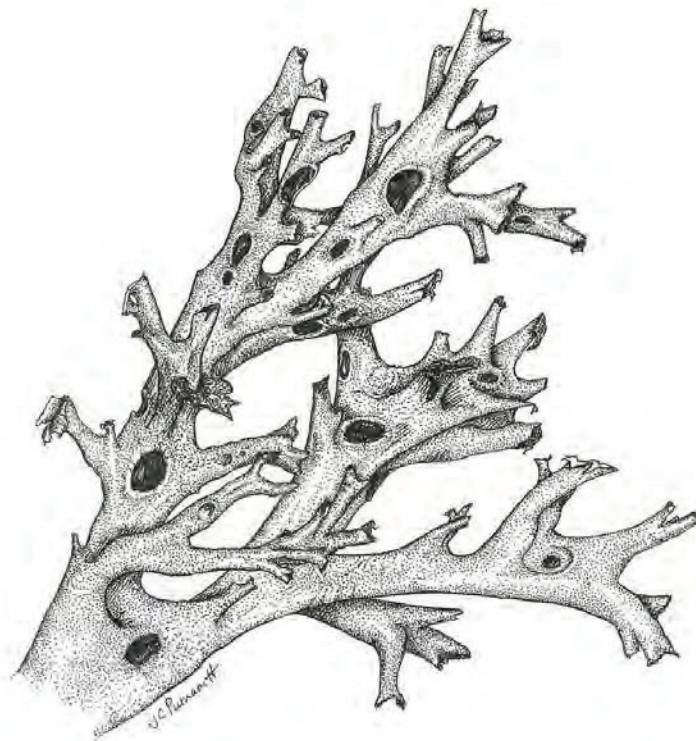
Best Survey Season: Year-round.

Range-wide Distribution: Endemic to FL.

Conservation Status: Approximately 32 populations are known, about two-thirds on conservation lands. Several sites have successfully reintroduced this species. Privately owned sites are subject to clearing and conversion.

Protection and Management: Manage scrub fires to create a mosaic of microhabitats. Avoid frequent or catastrophic fires at occupied sites. Limit foot and vehicle traffic in scrub. Transplanted populations have shown great success when thalli are anchored to the substrate (DeBolt 2021). Transplanted fragments should be at least 8 mm long for greatest survivability (Witmer 2014). Control invasive plants, such as *Melinis repens*, in scrub habitat.

References: Coile 2000, Evans 1952, Moore 1968, USFWS 1998, Yahr 1997.



DRAFT Relocation Methodology for *Cladonia perforata* (Perforate Lichen)

Overview

Cladonia perforata is a federally listed endangered lichen endemic to Florida's coastal scrub and sandhill ecosystems. It is highly sensitive to disturbance, requiring intact, well-drained sandy soils, open canopy conditions, and stable microclimates. Within the Pine School development area, the applicant will coordinate with a local native plant botanist to further enhance the methodology. Final relocation methodology will be submitted to Martin County prior to initiation of relocation activities.

1. Pre-Relocation Planning

- **Baseline Survey:** Map occupied patches using sub-meter GPS where possible. Document thallus size, density, substrate conditions, orientation, and associated proximal vegetation.
- **Recipient Site Selection:**
 - Located within the same ecological region
 - Xeric, well-drained sandy soils (e.g., scrub or sandhill)
 - Open canopy (<30% cover), minimal litter accumulation
 - Protected from trampling and future disturbance

2. Timing

- Conduct relocation during cooler, drier months if possible (typically late fall through early spring in Florida) to reduce physiological stress and desiccation risk.

3. Donor Site Preparation

- Flag and photograph each colony.
- Lightly moisten the substrate (if needed) to reduce fragmentation during removal.
- Avoid disturbance to surrounding native vegetation and soil crust.

4. Collection Techniques

- Carefully remove lichen mats **with intact substrate** (top 1–3 cm of sand and organic crust) using hand tools (e.g., flat trowels) or metal sheeting.
- Maintain patch integrity—do not break thalli.
- Place each sample in rigid, shallow containers (e.g., trays or boxes) with minimal stacking.
- Label containers to preserve spatial reference/orientation.

5. Transport

- Transport immediately to the recipient site.
- Keep samples cool, shaded, and dry (avoid direct sunlight and excessive handling).
- Do not seal containers airtight—allow airflow.



6. Recipient Site Installation

- Prepare micro-sites by gently clearing loose debris but **do not disturb native soil crust**.
- Place lichen mats directly onto the soil surface, matching original orientation.
- Lightly press to ensure contact with substrate; do not bury.
- Maintain natural spacing and distribution patterns.

7. Post-Relocation Protection

- Install temporary exclusion fencing or signage to prevent trampling.
- Avoid irrigation, fertilization, or chemical treatments.
- Maintain open canopy conditions through compatible land management (e.g., prescribed fire where appropriate and coordinated with experts).

8. Monitoring & Success Criteria

- **Monitoring Schedule:** 3, 6, and 12 months post-relocation
- **Metrics:**
 - Survival (presence/absence of thalli)
 - Percent cover and expansion
 - Evidence of new growth or fragmentation spread
- **Success Benchmarks:**
 - $\geq 70\%$ survival after Year 1
 - Stable or increasing areal coverage over 3–5 years

Scrub Management Plan

Objective

Restore and maintain xeric scrub habitat structure using **mechanical methodologies** to achieve a low, open, patchy vegetation mosaic consistent with scrub-dependent species requirements (e.g., open sand, shrub heights ~4–5.5 ft, limited canopy). As the Pine School property is not conducive to prescribed fire, mechanical manipulation will likely provide the best methodology. A further restriction is the amount of listed species (gopher tortoise and lichen) that are documented within the property.

1. Site Assessment & Planning

- **Vegetation Mapping:** Delineate scrub types (oak scrub, scrubby flatwoods, rosemary scrub) and identify areas of overgrown (>5.5 ft) shrub height.
- **Constraints Identification:**
 - Protected species (e.g., gopher tortoise burrows)
 - Rare plants/lichen patches
 - Invasive species presence
- **Management Units:** Divide site into manageable blocks (typically 10–50 acres) to allow phased treatment and mosaic structure.

2. Target Conditions

- Shrub layer: **4–5.5 ft average height**
- Open ground: **10–50% bare sand**
- Tree canopy: **<1 tree per acre**
- Spatial structure: Heterogeneous (“patchy”) mosaic of treated and untreated areas

These structural targets align with scrub habitat conditions described in the Florida scrub management guidance .

3. Mechanical Treatment Methods

A. Selective Cutting (Low Impact)

- **Tools:** Chainsaws, brush cutters
- **Application:**
 - Remove individual tall shrubs and small trees
 - Maintain patches of optimal-height shrubs
- **Advantages:** Minimal soil disturbance; high selectivity
- **Use Case:** Sensitive areas (lichens, rare plants, tortoise habitat)



B. Mastication / Mulching

- **Equipment:** Fecon Bull Hog, Gyro-Trac, similar forestry mulchers
- **Application:**
 - Reduce dense, overgrown scrub to ground level or partial height
 - Use **coarse cut settings** to avoid excessive mulch buildup
- **Guidance:** Avoid fine grinding that creates deep mulch layers, which can alter fire behavior

C. Roller Chopping

- **Equipment:** Drum choppers (single-pass preferred)
- **Application:**
 - Knock down shrubs without excessive soil disturbance
 - Promote regrowth at lower heights
- **Best Practice:**
 - Limit number of passes
 - Avoid sharp turns to prevent rutting

D. Strip Treatments / “Sloppy Chop”

- Mechanically treat **linear strips or irregular patches**, leaving untreated islands.
- Creates a **mosaic pattern** that mimics natural disturbance and improves habitat heterogeneity .

E. Overstory Thinning

- **Method:** Chainsaw removal or selective harvest
- **Goal:** Reduce canopy to <1 tree per acre
- Improves light penetration and understory response.

4. Operational Best Practices

- **Minimize Soil Disturbance:**
 - Use tracked equipment over wheeled vehicles
 - Avoid root raking except as a last resort
- **Protect Sensitive Features:**
 - Flag and avoid gopher tortoise burrows and rare plant areas
- **Equipment Hygiene:**
 - Clean machinery before/after use to prevent invasive species spread
- **Seasonality:**
 - Conduct work in **dry season** when soils are firm
 - Consider winter operations for reduced wildlife impacts



5. Spatial Implementation Strategy

- Treat **30–70% of the site per cycle**, leaving untreated refugia.
 - Maintain **variable vegetation heights** across the landscape.
 - Focus initial treatments on **long-unburned or overgrown areas**.
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6. Integration with Fire (Critical) – not likely at Pine School

- Mechanical treatment is **not a substitute for fire** and should be followed by prescribed burning when feasible.
 - **Timing:**
 - Burn within **3–12 months post-treatment**
 - Delays reduce fuel effectiveness and ecological benefit
 - Mechanical work can also:
 - Create firebreaks
 - Improve burn coverage
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7. Invasive Species Management

- Monitor disturbed areas for colonization (e.g., Natal grass).
 - Apply targeted herbicide or manual removal as needed.
 - Pre-treat adjacent infestations to reduce seed sources.
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8. Monitoring & Adaptive Management

- **Frequency:** Annually for first 3–5 years
 - **Metrics:**
 - Shrub height distribution
 - Percent bare ground
 - Native species recruitment
 - Invasive species presence
 - Adjust treatment intensity, pattern, and frequency based on results.
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9. Maintenance Cycle

- Re-treat areas mechanically only as needed to maintain structure.
- Prioritize transitioning to a **fire-driven regime** over time.
- Expected retreatment interval: **5–15 years**, depending on growth rates and site conditions.