

**ABACOA
MANAGEMENT PLAN
SECTION A: UPLAND PRESERVE**

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1.0 INTRODUCTION

The Upland Preserve Area encompasses 259 acres, and can be circumscribed by boundaries and dimensions that match the defined greenway system at Abacoa. Thus, to infer the Upland Preserve Area, is to symbolically speak of the greenway system, for they are one and the same, at the ecosystem/process level.

The Upland Preserve Area represents an array of micro-habitat features with a dominant association of open forest slash pine (*Pinus elliottii* var. *densa*) which has an expansive undergrowth of saw palmetto (*Serenoa repens*). Ecotonal variations have developed on site due to locally altered hydrologic ground-water features, in the most part due to existing wells within portions of the northwest quadrant of the Abacoa site. It is within these "scrubby flatwood" sections that there occurs sporadic frequency of scrub oak, mainly myrtle oak (*Quercus myrtifolia*) and a sparser herbaceous layer compared with the eastern sections.

Successional profiles within the Upland Preserve Area vary in species composition, relative abundance and physiognomy, due to a variety of edaphic and historical factors. These factors have created a seres from the northwest to the southeast sections of the site that have markedly similar vegetation composition, but vary considerably in community structure. Many of the physical features expressed in the height and density of the understory stands of saw palmetto are artifacts of exclusionary agents that have been operable throughout the upland areas of Abacoa for nearly a quarter of a century. Primary agents are linked to long-term fire exclusion and altered hydrologic regimes which have determined long-term patterns of spatial distribution and overall structural diversity.

In the southeast corner of the site, occasional wet depressional areas have standing water for periods that stretch beyond months. These areas are the furthest distance from the existing wells in the north. Here, saw palmetto ring these seasonal wetlands forming dense thickets that produce distinct ecotones. Saw palmetto are the pioneer species, along with slash pine, to first invade wet prairie habitats subjected to drainage. The dominance of any particular species depends, to a large extent, on the length of time since fire and its expression, has been active on the land. These fire activities have normal cycles from 2 to 5 to 7 years.

Soils within the Upland Preserve Area are generally acidic (3.5-6.0 P.H.) with very thin spodic (organic) horizons, and underlain at differing depths with a semi-impermeable consolidated layer that exist between two to three meters below surface features.

The Upland Preserve Area takes in all representative flatwood variants onsite, which range from drier flatwood scrub in the northwest, mixed pine flatwood prairie with dense herbaceous, mostly grasses (*Aristida stricta*) with discontinuous canopy features in the middle sections, and finally to more mesic pine flatwood in the east and southeast ranges.

1.1 CONSIDERATIONS

The Upland Preserve Management Plan has considered short-term (implementation) actions that invariably translate and carry-over to long-term (operational/maintenance) management strategies. These actions and management strategies imply long-range benefits derived over the lifetime of Abacoa. Within this framework of management at an ecosystem level, long-term management and maintenance initiatives will be operating simultaneously at different hierarchical levels. Genetic level Processes, Species/Populations Level Processes, Ecosystems/Community Level Processes and Bioregional/Landscape Processes have all been considered in developing the Upland Preserve Management Plan. In developing implementation and management strategies, the following broad-based initiatives, at each process level, were considered:

1. Genetic Level Processes represent the highest level of resolution/magnification within the context of a natural system. Largely it is an invisible process that operates over generations of exchange. From the standpoint of insitu flora (plant) components, management at this level implied preserving and maintaining suitable habitat and known pollinators, and site specifically derived seed sources to maintain signature plant species. In the case of faunal components management implied preventive measures to minimize elements that may dilute or simplify the insitu genetic strain on an individual, species, and population level.
2. Species/Population Level Processes, in many instances, has been aligned to accommodate specific targeted species (gopher tortoise) with the belief that such management is complementary to all other interspecific species operating at the ecosystem level (pine flatwoods). This is often the case, but instances do occur that produce tangential responses from management strategies that are too narrow to accommodate lower taxa (fungi, bacteria) and certain sedentary species (moths, butterflies, thrips, leafhoppers), all of which contribute to localized food chains. The species/population level processes are the key component of the Upland Preserve Management Plan.
3. Ecosystem/Community Level Processes are shaped by habitat size, shape, configuration, juxtaposition, and connectivity features. Critical elements of multi-community diversity (gradients and vegetative mosaics) are important factors in all management manipulation strategies. Ecosystem/Community Level Processes have been incorporated into the Species/Population Level approaches by addressing the ecosystem structure and function. The Species/Populations Level management is augmented within the Management Plan through a more focused approach to individual species needs.
4. Bioregional/Landscape Processes with respect to the Upland Preserve System at Abacoa, forms a regionally significant bio-refuge for both insitu species (listed, endemic, indigenous) and migratory species (neo-tropical, regional, local) which will only become more important over time, as less of what is left at this region functions as suitable habitat, because of alteration and/or benign-neglect. Attrition of natural systems is an ongoing process at this latitude by way of three board agents; Macroscale stressors (climate, hurricanes, and rising

ocean levels), habitat function loss and the effects of introduced species. By recognition of these three agents, the Upland Preserve Management Plan can affect all levels, save the first one, in some measure to the long-term benefit of biodiversity as we know it. Cognizant insight into the insitu species and their interactive relations onsite will bring a much better understanding of the dynamics operable within Abacoa's Upland Preserve ecosystem and the constructed/restored hydrologic features. Insight into migration and strategic locale of the site broadens our appreciation for the magnitude of the role with which the Upland Preserve and Abacoa plays in the great scheme of things.

Several verified migratory and transient avian species either utilize the site for rest-over, forage, feeding or nesting schemes. They are:

Least tern	Wood Duck*	Osprey
Tri-colored Heron	Fulvous Whistling Duck	Bachman's Sparrow
Little Blue Heron	Black Duck	Carolina Wren*
Red-shoulder Hawk	Florida Mottled Duck	Painted Bunting
Snowy Egret	American Kestrel*	Carolina Chickadee
Woodstork	Chuck-wills Widow	Tree Swallow*
Green Heron	Pileated Woodpecker*	Snipe
White Ibis	Rufous-sided Towhee	Screech Owl

**Denotes cavity nesters*

These hierarchical level processes are recognized within the overall implementation and management strategies of the Upland Preserve Area. They reflect possible degrees of magnification and resolution (micro to macro) and as a means of refining the inordinate amount of interactions that operate at the ecosystem-level. The management strategies have been examined through temporal and spatial scales, which rectify the actions that will assure the maintenance of this extant biological feature. Arguably, many finite factors and management considerations were added or omitted during the distillation process. Thus, the implementation and management strategies derived for the Upland Preserve Areas provides short-term actions that will provide long-term benefits to the Upland Preserve System.

1.2 SPECIES

The onsite variants particular to Abacoa provide primary habitat for several distinctive species of flora and fauna, unique to this type of ecosystem. Although no vertebrate species are exclusive to this biome, the onsite pine flatwood system is supportive of a number of species of special concern, rare and/or threatened. From a process level the various pine flatwood systems within the Upland Preserve Area are evolving successionally toward a more closed canopy and sub-canopy community. This shift in cover has also altered dominance and distribution of plant and animal species and has had an inhibitory effect on dispersal of species. The species list includes, but is certainly not limited to, a host of specific species which in an arbitrary ranking, will dictate and emphasize the management directives, specific to posturing the Upland Preserve Areas to successional seres (the

series of stages of community succession) development supportive to long-term survival of these species. The belief is that confirmation of the land to the needs of the species will generate, at the ecosystem level, habitat associations mutually supportive of other representative species unique to the pine flatwood biomes operable within the Upland Preserve.

Many of the management initiatives directed at the maintenance of the Gopher Tortoise (*Gopherus polyphemus*) will ultimately benefit the insitu species and habitats contained within the Upland Preserve, from the perspective that they will affect productivity, community structure, composition, and alter existing successional trends that are imposed by the initiatives. Specific to the support and protection of the gopher tortoise within the Upland Preserve, there will be required management initiatives directed exclusively to those areas designated for Gopher Tortoise Management. Management of these areas will entail active utilization of prescriptive fires (see Section D: Prescriptive Fire Management) for long-term maintenance of the gopher tortoise habitat (see Section C: Gopher Tortoise Management Plan).

Species management will be necessary if these systems are to be maintained in any semblance of natural conditions conducive to the support of the resident species which inhabit the Upland Preserve Area. These management ploys will be clarified in the following sections of the Management Plan.

2.0 OBJECTIVES

The framework of the Upland Preserve Management Plan applies to the entire 259 acres. The associated Ranges are general spatial relationships relative to the overall Upland Preserve (see Exhibit A). More specific-habitat features (foraging, recipient sites, demographic areas, relocation/restocking sites) exclusive to the management of the gopher tortoise, within the Upland Preserve, are briefly addressed within this plan, but are provided in much greater detail within the Abacoa Management Plan Section C: Gopher Tortoise.

The utilized upland management strategies will involve unique combinations of preservation, restoration and enhancement initiatives to accomplish the long-range goals of optimizing the onsite natural resources. These goals are intended to the benefit of present and future biological diversity essential both for supporting the integrity and resilience of extant ecological systems and for their intrinsic values. Overall, the objectives (short and long-term) are accomplished through a series of broad-ranged initiatives. These objectives and initiatives, which form a holistic management approach, are described in the following manner:

- A. An overall management approach to the Upland Preserve which postures the extant systems to earlier pioneer stages of development with proportional increases in open understory features and graminoid grass groundstory expansion.
- B. Management strategies, although initially biased toward the architecture of the existing habitat features for support and habitat modifications for the onsite Gopher Tortoise

population, will in the long-term compliment and simultaneously benefit the Upland Preserve System as a whole.

- C. As a prerequisite to later prescribed burns, reduction in height of saw palmetto thickets will be necessary to reduce fuel loads and fuel ladder aspects of the understory.
- D. Integral to the Upland Preserve Management is the inclusion of human aspects into the upland matrix, that will be structured by a series of multiobjective trail systems for: maintenance ingress/egress, vegetative firebreaks, passive pedestrian corridors, and wildlife migration and travel networks.
- E. Management of the Upland Preserve Areas is viewed from a combination resource and restoration context.
 - 1. Resource: in the context that the pine flatwoods are existing insitu and contain a diversity of species that land managers are charged with protecting and enhancing that biodiversity.
 - 2. Restoration: in the respect that man, who is part of the process, has the benefit through acquired knowledge and observation to be able to read the past and infer the future successional trends and take actions to emulate natural patterns essential to its long-term survival. These actions may include: the use of prescribed fire and the translocation of species to recipient conservation areas within designated preserve areas.
- F. The land management of the pine flatwood communities, should be a realization that natural areas operate at micro-scales of resolution and that details count. The detailing is a microcosm of the larger concept of managing whole systems. Additionally, actions that target only the well-recognized or obvious community types and attributes, are in all probability overlooking species operating at lower levels of the pyramid (arthropods, fungi, and lichens) that not only contribute to biological diversity but also perform essential ecological functions and food chain linkages. Some (lower taxa) species will be affected negatively from management directives. Triage decisions are necessary, particularly on the emphasis of restoration of certain habitat dynamics which prescribe alterations of existing conditions which translate out as disturbance to the extant system in order to provide future options in management. This is especially true of alterations prescribed for Gopher Tortoise conservation which may be disruptive to certain sedentary species, such as butterflies, catapillars, moths, thrips, leafhoppers and beetles, which are constituent parts of long food chain dynamics, especially for birds; adversely affected, short-term, by prescriptive fire activities. Management will to the best of its ability use mosaic burns so as to not affect entire areas at one time.
- G. Management will be aligned within the specific context of the Gopher Tortoise Management areas to representative functional management "models" that are operating within similar

upland ecosystems. For purposes of "modeling", the Kitchen Creek Management Area, within Jonathan Dickinson State Park, will be referenced for operational standards and scale by the following rationale:

- The Kitchen Creek Management Area is located within a bioregional radii to Abacoa.
- The Kitchen Creek Management Area was initially very similar in composition, density and diversity of pine flatwood habitat.
- The Kitchen Creek Management Area has undergone successive burn cycles with results in line with Abacoa's management objectives.
- Gopher Tortoise are located within the management ranges at Kitchen Creek and have not been negatively affected by management practices.
- Ongoing management processes at Kitchen Creek Management Area affords a substantial baseline analysis of predictive outcomes of similar management that ultimately translate into assurances.

H. Just as all flatwoods do not look alike or operate at singular process levels, management and referenced "models" will be interpreted in the context of specific ranges and ultimate relationships within the Upland Preserve and the greater Abacoa matrix.

3.0 MANAGEMENT

In order to conserve a singular element or species, one must conserve or restore the next largest system of which it is a part. Thus, to conserve a species (element), especially in regards to classified rare species or keystone species, e.g. the Gopher Tortoise or Pinweed, it becomes imperative that a representative portion of the larger (flatwood) system be conserved and in some instances enhanced, in such a manner that the attributes of composition, structure, and function remain intact to maintain overall biological diversity at an ecosystem-level.

Management from an ecosystem approach level, rather than from an incremental species-focused approach, has expanded complementary benefits that include the entire array of ecological complexes in which individual organisms naturally occur and interact with each other. The concepts behind ecosystem management, endorse biological diversity; the variety of life and its processes, as essential, both for supporting the integrity and resilience of these ecological systems and for maintaining its intrinsic values.

Management operates within a frame of reference to space and time scales that are important for each ecosystem element of concern. From a spacial reference the Upland Preserve encompasses 259 acres and has a configuration that will provide the primary habitat, necessary to sustain all representative insitu native species, as well as, those anticipated to utilize the site, as the ecosystem structures and processes evolve. A time line of a decade, to a quarter century and beyond, may be applicable to certain ecosystem elements (e.g. Gopher Tortoise +/- 200 years).

In realistic terms, one of the key biodiversity issues; time frames and the degree of priorities associated with management over long-term inferences, are value-laden societal choices. It is, therefore, essential that integration of human use into these protected areas at sustainable levels, be part of the overall management strategy. Integral to this management process is the introduction of passive pedestrian corridors in the form of a trail network, which will promote integration of man with the natural systems operable within Abacoa.

3.1 IMPLEMENTATION

3.1.1 Upland Preserve Management Area(s). The basic interactive processes operable at an overall species level, within the Upland Preserve Management Area, shall be managed and maintained for overall fitness and variability, concurrently with accommodation of the Gopher Tortoise within 181 acres of the Upland Preserve Area. The remaining 78 acres of Upland Preserve Area shall be addressed in similar fashion and sequenced by phases of development, within the context of the Abacoa matrix. The following implementation sequences shall be applied to the upland flatwood associations within the Upland Preserve:

1. Upland Preserve Areas will be delineated and confirmed relative to the overall site and staked & flagged within each range parcel slated to be developed, within the referenced phase limits of Abacoa. For the exterior edges of the Upland Preserve, these delineated lines will form the "limits of clearing" where the preserve interfaces with the built-environment (streets, parcels, sidewalks, etc.). Additional delineation is prescribed for the interior sections where the Upland Preserve interfaces with the Constructed Surface Water Management system, which is often enveloped on either side by Upland Preserve.
2. The site will be cleared of exotic, nuisance species by mechanical or hand-methods and incorporate the following:
 - A. Obtain early work Vegetative Removal Permit from Town of Jupiter
 - B. In the majority of cases, the exotic, nuisance element is concentrated in growth areas which are designated as Constructed Surface Water Management Areas (dry and wet basins). These areas will be completely and thoroughly cleared of all such vegetative elements (eradicated) prior to actual construction. These areas because of their locations within the Upland Preserve will be cleared from within their own limits of growth and dimension. As a protective measure to assure that encroachment into the Upland Preserve does not occur and induce alterations to insitu preserve habitat structure, a set back of eight (8') feet from the upland boundary will be maintained until the final stage of clearing. Methodologies to accomplish

this include: fencing when installed as a pre-relocation/release requirement related to the Gopher Tortoise recipient site process, use of Kershaw mowers to cull the height of vegetation up to preserve boundary lines and vegetative fire break structuring utilizing mowers to reduce fuel height.

- C. Limited access (ingress/egress) to facilitate exotic removal will be allowed through designated areas of the Upland Preserve.
 - D. All exotic material is to remain onsite and reconstituted (chipped) or disposed in harmless ways where germination will not be a factor (e.g. bottom of berms).
 - E. After initial vegetative removal, base soils will be treated or scraped (6"-8") to remove soil layer which may contain seeds and disposed of in a manner which minimizes the recruitment of seeds. (Brazilian Pepper)
 - F. Recontouring may be initiated in relation to the Constructed Surface Water Management Systems.
3. Establish ingress and egress trails. Trails shall be viewed as multi-dimensional features with shared usages for wildlife linkages and passive pedestrian connections having destinations (overlooks, towers, catwalks, observation blinds) and enrichment elements (signage, naturalist guides, educational instructors) embedded within the greater context of the Upland Preserve. Trails shall be incorporating by the following:
- A. A high grade maintenance trail system will be part of the Constructed Surface Water Management System ingress/egress maintenance corridor (7' wide) located at the upper limits of this system and interface vegetatively with the Upland Preserve. These ingress/egress trails will also form access bike trails for connectivity between all pedestrian points of Abacoa.

Trails can create their own "edge effect" at the micro-scale level and monitoring for weedy opportunistic species which acclimate to these edges will need to be done on a regular (bi-monthly) basis, or until such time that the interface edge of the Constructed Surface Water Management System develops into a stable vegetative construct (shade, density, coverage, etc.) to naturally curtail such introduction. Trails may be mulched, seeded, or covered with permeable surfaces.

- B. Location and routing of spur trails will be governed by soils, vegetative sensitivity, end-point features and existing faunal dispersal networks. Spur trails in most instances will be a cleared pathway 4 - 5 feet in width that will

ultimately align itself on the principle of following the path of least disturbance. These trails may be mulched, seeded with an appropriate annual cover grass that may be utilized by gopher tortoise during feeding forays, or covered with a permeable surface.

4. Control of species/population level processes.
 - A. Keystone species (Gopher Tortoise) will be specifically managed within designated areas within the Upland Preserve. Other obligate species which interact with the gopher tortoise will be viewed as species of particular concern, especially during the excavation/relocation/release process that will be conducted on the dispersed tortoise populations which lie outside of the preserve areas. All listed species will be saved and relocated back into suitable habitat areas within the designated gopher tortoise areas or within protected sites within other portions of the Upland Preserve.
 - B. Plant species which are rare and/or with restorative potential, will be propagated, translocated into suitable sites, and/or dispersed as seed or relocated in restoration sites as either individuals, clumps, or by vertical soil transfers. Seed dispersal is especially applicable following management fire regimes with habitat ranges.
 - B. Opportunistic mesopredators (medium sized predators) such as jays, crows, opossums, raccoons, foxes, skunks, and domestic dogs and cats can, if allowed to dominate or cross freely into these areas, affect or reduce certain species such as Gopher Tortoise or low-nesting birds and will be monitored and maintained in accordance with the Gopher Tortoise Management Plan. Specifically, dogs will be controlled from entering the upland portions exclusively set aside for the maintenance of the Gopher Tortoise by the exclusionary fenced perimeters and self retracting gates.
5. Exterior limits of the Upland Preserve shall have recorded deed restrictions designating them as such. The boundaries will be posted with signage designating the Upland Preserve as an environmentally sensitive area. (see Exhibit B)

- 3.1.2. Development Parcels Outside of the Upland Preserve Management Area.** Development parcels located outside of the designated Upland Preserve Area represent a large portion of the Abacoa site and contain a high degree of transplantable/relocatable vegetation. These parcels represent an ideal opportunity to be inventoried and assessed, prior to the actual development of any parcel. To facilitate this identification of vegetation, the following sequences shall be implemented for any parcel outside of the Upland Preserve:

1. Identification of listed plant species (e.g. Pine Pinweed) encountered on the proposed development parcel. Each logged as to density, habitat condition, size, exposure, classification, stage of growth (flowering, in seed, dormant) and plotted on Map (1"=200' scale) and staked and flagged. Additionally, provisions may be made to transplant/relocate specimen plants by accepted methods (hand-transplant or tree spade) to similar site conditions. This method applies to all plant material identified as environmentally significant (listed or unique endemic traits) that may be encountered during the identification process.
2. Identification of trees (slash pine, oaks, Red Bay, etc.) and shrub material (palmetto, fetterbush, wax myrtle, dahoon holly, etc.) that are candidates for transplanting/relocation to recipient sites (preserve enhancement areas, landscape buffers, etc.). They will be flagged in the field for protection and may be moved during "initial" stages of development. Allowances shall be made for selective clearing to provide ingress and egress of transplanting machinery within individual parcels prior to actual parcel construction.

After the identification processes listed above have been completed, an early work permit may be issued, by the permitting agency, to facilitate the relocation or transplanting of materials prior to the actual construction permits being issued.

3.2 MAINTENANCE / MONITORING

Throughout the process of maturation, maintenance and monitoring shall be performed and will include the following sequences:

1. Maintain staked/flagged limits of clearing (e.g. delineated boundary of Upland Preserve).
2. Monitor and maintain spread or germination of exotic element either at edge interface of exotic/Upland Preserve or into actual Preserve Areas. Treatment will be maintained monthly by hand-pulling, cutting, or selective herbicide treatment.
3. Assure that encroachment into the Upland Preserve does not occur at any stage of the adjacent construction phases by physical presence and coordination of the Preserve Manager with construction operations.
4. Edge areas can develop depressed species richness if allowed to become invaded by specific exotic species, thus control of negative vegetative features will be monitored and kept in check throughout each phase of development and formulated into a maintenance continuum.
5. Inventories of insitu species and population dynamics within the Upland Preserve will be an ongoing process. Cataloging biotic features and components will establish an important

guideline for future ongoing management.

6. Maintain functional redundancy of species level networks, dispersal corridors to provide multiple movement pathways within the Upland Preserve to mitigate against temporary disturbances brought on by site alterations. This would include existing wildlife trails, tortoise foray trails, nesting sites, perches, as well as, designed trails that may offer expanded networks and temporary escape routes during management fire regimes within the designated Gopher Tortoise Management Areas.

4.0 SUMMARY

The management of the Upland Preserve System contains multiple initiatives in short-term management strategies which ultimately translate into long-term directives which will guide the management process throughout the development of Abacoa. Specific to management within this Upland Preserve System there is an underlying objective to maintain the designated sites allocated to the Gopher Tortoise, exclusively for the long-term management of the significant population onsite, which is presently expressed as a dispersed home range assemblage.

Conversely, with this more specific objective, there are active management ploys described which will be enacted to assure long-term quality and viability of the habitat components and insitu species of the extant pine flatwood system by virtue of the Upland Preserve Management Area. They will be initiated as long-range provisional means of maintenance of these objectives across an elongated time-line inference that from a broad-based management context can be described sequentially and concurrently within each phase of development. By the Upland Preserve Management Plan incorporating the following management ploys, the integrity of the greater Upland Preserve shall remain an integral supportive element for the future.

- A. Boundary surveys, legal descriptions, deed and deed restrictions shall be established for the Upland Preserve System. (e.g. Constructed Surface Water Management Area, Gopher Tortoise Management Areas and the Upland Preserve Areas)
- B. Long-term commitment for maintenance of the Upland Preserve provisioned by unit of development 9A & 9B specific to Abacoa by Northern Palm Beach County Improvement District (NPBCID).
- C. Exotic, invasive, and nuisance species eradicated and monitored long-term for regeneration and reintroduction of exotic elements within the Upland Preserve. (Long-term Maintenance and Monitoring Schedule adopted Post Initial Initiatives)
- D. Specific portion of Upland Preserve which are designated as Gopher Tortoise preserve shall be fenced and posted with signage.

- E. Trail systems enacted. Provisions made to restrict detrimental factors (domestic animals, ATV, trampling, etc).
- F. Provisions for protection of listed plant species within Upland Preserve and relocation of those found outside of preserve prior to construction on that parcel. (Pinweed, Pineland Lily, Nodding Club Moss, etc.)
- G. Provisions made to protect the Upland Preserve System boundary by staking and flagging limits of clearing of adjacent parcels prior to construction and onsite orchestration by the land manager during construction.
- H. Provision for the protection of plant species (relocatable) material from areas outside of the Upland Preserve boundary by flagging, mapping, early relocation and field coordination during clearing operations of such parcel(s).
- I. Management strategies initiated - fire breaks, vegetative reduction of fuel ladders, prescriptive fire regimes initially begun onsite, with follow-up analysis to ascertain successional trends post/fire regimes and provision directives for future periodicity and seasonal burn cycles specific to the Gopher Tortoise areas.
- J. Long-term enhancement of insitu Gopher Tortoise through additional structuring specific to habitat formulation into newly constructed areas. This process may include small windrows formulated at the interface between the Upland Preserve (saw palmetto ecotone) and the Constructed Water Management System Areas. Use of vertical relocated soils from surrounding altered areas outside of preserve to create additional tortoise habitat structures near created migratory/travel corridors produced from the constructed ingress/egress trail system may be incorporated.

Overall configuration and habitat components will eventually interface and blend with other habitat areas, such as the Constructed Water Management System, to create a more dynamic system. Combined with active management and public participation, the system as a whole will become something far greater than its constituent parts.

5.0 EXHIBITS

- A. Upland Preserve Range Designations
- B. Representative Signage

ABACOA

JUPITER, FLORIDA



FIVE MINUTE WALK
0' 400' 800' 1200'
SCALE: 1" = 400'

ALTERNATE A1A

FREDERICK SMALL ROAD

MILITARY TRAIL

RANGE VIII

RANGE VII

RANGE V

RANGE III

RANGE I

RANGE I

INDIAN CREEK PARKWAY

CENTRAL BOULEVARD

RANGE IV

RANGE VIa

RANGE VIIb

RANGE IX

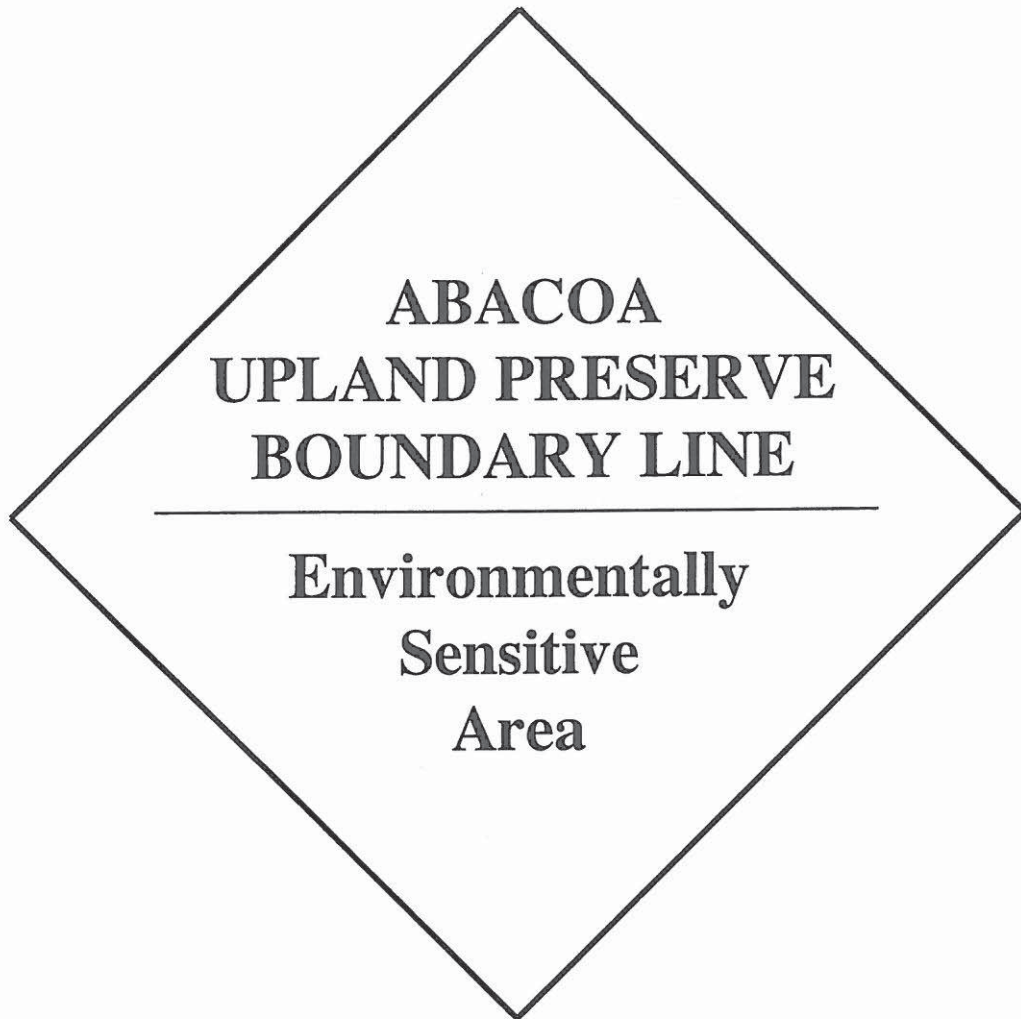
RANGE X

DONALD BOSS ROAD

RIGHTS BLVD

EXHIBIT A
UPLAND PRESERVE
RANGE DESIGNATIONS

EXHIBIT B



Representative signage to be installed as part of the overall Upland Preserve Management Area posted approximately 100 ft. apart exterior to the preserve. Signage shall be posted on free standing posts, approximately 2 ft. high from grade, or attached to the gopher tortoise fencing as provided.

